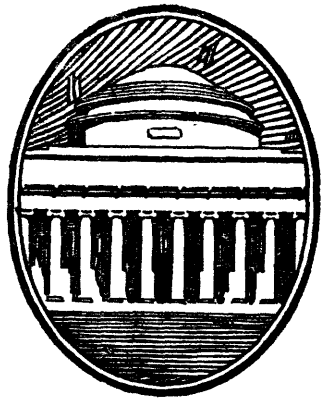
MASSACHUSETTS INSTITUTE
OF TECHNOLOGY BULLETIN

PRESIDENT'S REPORT
ISSUE

VOLUME 80 NUMBER 1



OCTOBER, 1944

Published by

Massachusetts Institute of Technology
Cambridge, Massachusetts

Entered July 3, 1933, at the Post Office, Boston, Massachusetts, as second-class matter under Act of Congress of August 24, 1912.

Published by the Massachusetts Institute of Technology, Cambridge Station, Boston, Massachusetts, in February, June, August, and October.

Issues of the BULLETIN include the reports of the President and of the Treasurer, the General Catalogue, the Undergraduate Course Schedules, and the Directory of Officers and Students.

MASSACHUSETTS INSTITUTE
OF TECHNOLOGY
BULLETIN

President's Report Issue

1943-1944

Covering Period from Meeting of Corporation October, 1943
to Meeting of Corporation October, 1944

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PUBLISHED BY THE INSTITUTE, CAMBRIDGE

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REPORT OF THE PRESIDENT

To the Members of the Corporation:

IN my report a year ago I devoted special attention to our war-time policies, problems and experiences of both business and educational character. The present state of the war justifies special consideration at this time of our post-war program. I proceed to discuss this subject, after brief review of the past year's operations, with mixed feelings: on the one hand, a powerful urge, which we all share, to cast off the fetters of war and get ahead with the constructive work of peaceful progress; on the other hand, that relentless conscience which whispers that nothing must yet interfere with steps which can speed a victorious end of the conflict. So my discussion of post-war opportunities is confined only to subjects which have stood out with increasing clarity in the experience and thought of our group in recent years.

Not only the state of the war, but also the logic of our situation, justify special consideration of post-war plans. Our war-time policies are well established, and there has been little significant change during the year; we are not yet permitted to talk about the most interesting aspects of our war services; we have been too busy with emergency jobs to have much of new educational accomplishment to report. So, to paraphrase Calvin Coolidge, I shall "talk about the future; everybody is for it." But first a brief look at some of the highlights of the past year.

1. Highlights of the Past Year

War Research. Prior to the war, the Institute employed approximately 1,100 persons, 600 staff and the rest accessory. The roster now shows a fivefold increase with employees

totaling approximately 5,500, of whom 2,100 are professional staff and 3,400 non-staff. The increase is largely the result of our war research program and provides one index of the size of this program. As I write, the total number of research projects is 175, of which 110 are for the government and 65 are for industry.

For the fiscal year 1943–44, the total volume of all research contracts was about $25,000,000, compared to $16,000,000 in the preceding year. Based upon our complete cumulative total of research expenditures since the war program started, these have been distributed as follows:

Overhead	6.6%
Salaries and Wages	37.8%
Materials and Services	43.3%
Buildings	6.3%
Miscellaneous	6.0%

I call attention to the small amount of expenditure for overhead and for building purposes.

Continued progress has been made in the fiscal management of these large-scale operations, and without any weakening of our research effort, we are now preparing carefully for termination. To insure that these fiscal preparations for terminating contracts are as complete as possible, we have secured the services of a well known firm of industrial engineers and arranged to check all plans with legal counsel.

Educational Program. The Faculty has undertaken to simplify our curriculum, so that we may be in a more favorable position to handle the large number of returning veterans expected after the war. The plan adopted for a trial period reduces the total number of undergraduate subjects by about twenty per cent, this being accomplished by standardizing on a few subject sizes and thus eliminating a variety of hour lengths for subjects of substantially the same content and objective. I believe that this has been accomplished without signifi-

cant educational loss and that it will yield a more efficient use of staff and facilities.

The Faculty has likewise revised our program in the humanities with results which will greatly strengthen and broaden this aspect of our work without detracting from the professional side of the curriculum. This new program provides for a coördinated four-year contact with the humanities.

The first year will be devoted to English, with special emphasis on written and oral expression. The same instruction will not be given to all students; those who are ready for fairly advanced composition will have an opportunity to work at their level. The work in English for foreign students will be given by the Department of Modern Languages and, when necessary, taught from the point of view of persons studying a second language. The emphasis on good writing and expression will continue to be emphasized in other subjects throughout the remainder of the four-year program.

In the second year all students will have an introductory course in modern history, with special reference to the place of the United States in world affairs. This course will give the student historical perspective and a knowledge of the development of American civilization, and will incidentally further his training in written and oral expression.

In the third year all undergraduate students will devote the first half-year to economic principles, and the second half-year will have the choice of a course in introductory psychology, one in labor relations or one in industrial economics.

With this background in English, history and the social sciences, every student in his fourth year will choose one of four options: (*a*) History of Science and Thought; (*b*) Fine Arts; (*c*) Introduction to Literature; or (*d*) International Relations. Each of these four courses will be closely coördinated with the background and objectives of those given in the preceding three years.

Among other significant educational changes may be mentioned the establishment of Food Technology as a separate division of the Department of Biology and Biological Engineering, and the decision to offer an undergraduate, in addition to the existing graduate, curriculum in Meterorology.

War Training. Our Navy V-12 program has continued undiminished and our quota for the term beginning in November has been reduced only about eight per cent. The Institute is proud to participate in this service program; it is soundly conceived and effectively managed by the Navy; the students in our unit are excellently qualified and their morale is fine.

The Army's A.S.T. program at the Institute was terminated last March, and the only Army students here now are officers in highly specialized technical work.

One of the Institute's major war training activities is the operation of the Harbor Building School for both Army and Navy officers. This school, not previously explicitly reported, is a self-contained unit directed by Professor Carlton E. Tucker of the Department of Electrical Engineering, with a teaching and operating staff of over 250.

We are continuing meteorological training for the Navy but have completed the excellent Army program in this field. All told, we prepared over 800 meteorological officers for the Army Air Forces.

These war training programs, together with our continuing civilian training, were carried on despite the fact that 172 members of our regular permanent staff were engaged full or part-time on government war work, 100 of these being stationed away from the Institute.

Other facts of the past year's operations are given in the section on Statistics of the Year at the end of this report. I turn now to the future.

2. Post-War Program

Purpose. I assume that our purpose is to provide the finest possible education in our special fields of science, engineering and architecture; to be as effective as possible in the advancement of science and its important practical applications; to mold the interests and characters of our students to the best type of American citizenship; to coördinate and direct these efforts in the spirit of service to the public.

These have always been the aims of M. I. T. What implementation is needed to carry them out in the foreseeable post-war period? I shall take for granted that our purpose is not "for good," but for "*the best.*"

Background. I need not recite past achievements. The record speaks for itself and is well known. But I should call attention to certain significant lessons from our current war experience.

(1) M. I. T. staff and laboratories have contributed enormously to leadership and achievement in the technological aspects of the war. Devices developed here have contributed importantly to success on every front and on every sea, and their commercial war production has run into exceedingly large figures. Staff members have held high advisory, executive and operating posts in the technological war organization all the way from the United States to the Southwest Pacific in one direction and to the European theater and even Russia in the other. These services were possible because, in peace time, we had appointed top grade men to our staff and had initiated forward looking research programs.

(2) In war training of Army, Navy, Air Force and civilian personnel, the Institute has played a notable role. In a few important fields it has been the only, or the principal, training center in the country. In other fields it has taken its share along with many sister institutions.

(3) Although its war research and training activities have

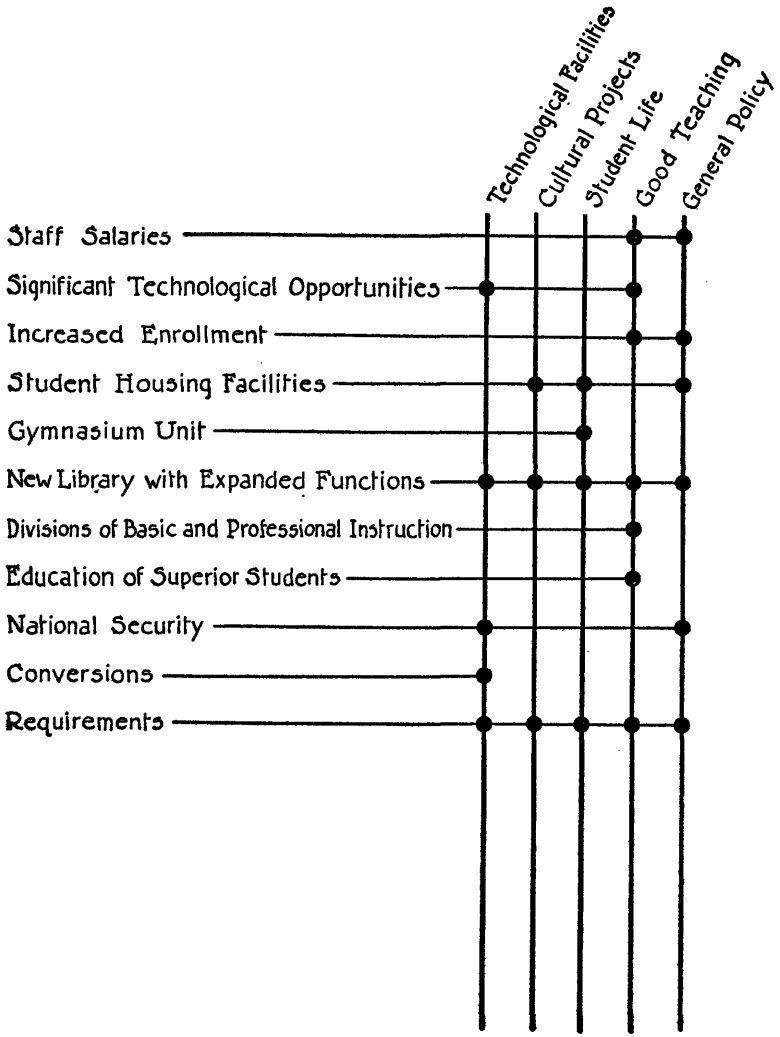
been on a strictly cost basis, the Institute has made other very substantial financial contributions to the war effort. For example, it has freely given the Government the services of many members of its staff, whose salaries are equivalent to an outright contribution of several hundred thousand dollars. At one critical time it underwrote an important war project to the amount of a half million dollars during a period of uncertainty as to Congressional appropriations. It has even sent its own stenographers into Washington offices during periods when important scientific work was being delayed because of inability of Civil Service to provide essential secretarial help.

I mention these things because they prove the value to our country of this type of institution in a time of emergency. Its war value is parallel with that of a fleet or an army. But of course its principal value is in the year by year life of our country and resides in the lives and achievements of our thirty-five thousand alumni.

This is the institution for whose performance and future we of the Corporation are responsible. I submit that its value to our country justifies its maintenance on the highest possible plane of effectiveness, and that we are justified in asking for its support on this plane, and that we have an obligation to take the necessary steps to insure such effectiveness.

To proceed on this basis I might follow the practice now so common among public figures of all degree, namely, present a "ten-point program" or a "five-year plan" for meeting obvious problems and opportunities of the foreseeable post-war period. I shall not use these formulas, but instead I present a diagram which, by its analogy to an electrical wiring diagram, is more appropriate to this scientific setting. And the analogy may be carried further: the vertical lines are "trunk lines" of educational power, and the cross connections are to "feeders" which should be provided to keep the potential high.

POST-WAR PROGRAM FOR M·I·T



I trust that the significance of this diagram is clear, and I proceed to discuss the specific items in order, as follows:

Staff Salaries. First in importance I would place more adequate staff salaries to meet increased living costs. Over a year ago the Department of Labor, as I recall it, announced that living costs had risen over sixteen per cent during the war. Now two War Labor Board Panels report living cost increases of twenty-five to forty-three per cent since January 1941.

Even before the war I pointed out that our salary scale was below that of several other educational institutions. A man valuable for our staff is usually of a type in demand by industry or in professional practice. We cannot hope to maintain our staff at the highest level with too large a salary differential.

The war has accentuated the difficulty. Prices have risen, and will probably rise further after the war. The national income has risen to unprecedented levels, but academic incomes on the whole have remained constant. Thus the academic profession has slipped downward, relatively to the country as a whole, and will slip further unless something is done. Industrial organizations can keep their salary and wage scales more or less in balance with living costs by raising the selling price of their products. Thus is the cycle of inflation complete. But the only selling price of educational institutions is tuition, and the tuition rate is another whole problem in itself. After the last war, practically every educational institution was forced to raise its salary scale and to put on a fund raising campaign to finance it.

Significant Technological Opportunities. We must handle effectively certain great opportunities within our grasp. I refer to aspects of our regular educational and research program which have acquired new importance as a result of new technological developments or social requirements. I hesitate to give specific examples: whenever I do this, some colleagues

inevitably — and usually quite rightly — point out to me that their interests which I omitted are also very important. Nevertheless some examples will best illustrate my thesis.

During the last few years there have been extraordinary developments in electronics, instrumentation, methods of propulsion, mechanisms for control of machinery, calculating devices, energy sources, plastics, organic chemistry, food technology, mechanics of materials, hydraulics, applied mathematics, and other fields. In most of these, members of our own staff have been leaders and in all of them we have men of high competence. They are all destined to play important roles in the scientific and industrial activity of the near future. They all fall within the scope of our educational and research programs. Students trained in them will be in demand and advances in their knowledge or art will be valuable. We should emphasize them promptly and vigorously.

As preliminary moves to exploit these opportunities, the Executive Committee has recently: (*a*) authorized the establishment of an *electronics laboratory* as a joint enterprise of the Departments of Physics and Electrical Engineering, and appropriated initial funds; (*b*) set aside for further work in instrumentation a substantial fund received as a result of past achievement in this field; (*c*) authorized the construction of a special laboratory for study of new propulsion devices, with provision for initial equipment and operation; (*d*) undertaken an important investigation of plastics on behalf of the plastics industry; (*e*) appointed Dr. Arthur C. Cope to the new post of Professor in Charge of the Division of Organic Chemistry; (*f*) established the Samuel Cate Prescott Laboratory of Food Technology under the direction of Professor B. E. Proctor; (*g*) appropriated funds for special work on the mechanics of materials; (*h*) made similar provision for expanded activity in applied mechanics; (*i*) made provision to house a desired new hydraulics laboratory in the near future. These are highly important moves, but

I emphasize that they are only introductory to the possibility of really large accomplishments.

Architecture, after a hard time in the depression and nearly vanishing in the war, is surely destined for activity ahead, with remarkable opportunity for young men to fill the gaps left from the last dozen years of depleted graduating classes. And never have there been such opportunities ahead for city and community planning. Our able new Dean of the School of Architecture and Planning should be given every possible support as he leads the School into this new era.

Increased Enrolment. Our plan of stabilized enrolment, which sets quotas based on the numbers which can be handled with existing facilities without such crowding as to detract from optimum performance, has operated advantageously since its adoption in 1935. Under it we have had a normally stabilized, selected enrolment of about thirty-one hundred.

At the close of the war we shall have available some new educational facilities, notably the new Chemical Engineering Building and the permanent part of the quarters now used by the Radiation Laboratory — the former built entirely and the latter partially with our own funds. In the post-war redistribution of space we can relieve some bottlenecks which set the previous limits.

Returns from questionnaires sent to our former students now in the Armed Forces indicate that practically all who entered the Service before graduating plan to return to complete their courses for their degrees. Many graduates also tell us that they wish to return for postgraduate study. Undoubtedly there will be many applicants, not former students, from demobilized soldiers under the G. I. Act. Also there is every indication of a large lot of new civilian applicants for admission, including a perplexingly large number from foreign countries.

It thus appears that we should now aim at a normal stabilized enrolment of about 3,600, based on 700 freshmen and

850 graduate students; also that we should raise the total to about 4,500 with returning soldiers during about three post-war years, and that we should operate on the accelerated three-term-a-year basis for these veterans. These tentative conclusions are to be refined and defined by action expected in the near future upon recommendation by the Faculty Committee on Stabilization.

Internally the Faculty is taking effective steps to handle the curriculum and teaching schedules. But the Corporation should soon provide funds totaling about $300,000 for reconversion, readjustment of facilities and some new equipment. Of this, $75,000 was recently voted by the Executive Committee for complete new replacement, with improvements, of the now badly deteriorated desks in the first year chemical laboratories.

Student Housing Facilities. Even before the war it was evident that increased housing facilities for our students were desirable. Now, with the outlook for an enlarged student body, such facilities are not only desirable but urgent. The conditions in our existing dormitory system have continually improved and the morale is high and facilities are in great demand.

In what follows I would take the need for granted and devote my argument to the type of facility required and to proposed methods of bringing them into being.

(*a*) *A "House Plan" Unit.* I would recommend the provision of dormitory facilities for at least another 200 students, constructed along the lines of what is now well known as the "House Plan." This means that the unit should be complete in living accommodations including dining service, reading, recreation and social rooms, and that there should be attached to it some younger member of the staff, perhaps with his family, as "guide, philosopher and friend" to the residents. I would propose that the cost of necessary rooming facilities be carried from our Endowment Fund, with the rental of the rooms providing a modest financial return equal to the average return

on our investment funds. The cost of the accessory embellishments to transform a barracks into a home should not be charged to the occupants but should be provided by outside funds given for this purpose. By this division of costs a relatively modest gift could insure a very fine addition to the life of our resident students.

The cost of such a facility can be estimated roughly in advance of any detailed plans. A pre-war survey of college dormitory facilities showed that their capital cost varied between about $1,500 per occupant and $5,500 per occupant. The smaller figure applied to mere "barracks," while the latter figure applied to several of the elaborate houses built as memorials at certain universities. Building costs have undoubtedly risen and the over-all cost of the type of facility which I think we should seek would undoubtedly run nearer the larger figure than the smaller. If, for example, we should take a figure of $4,000 per student, then a 200-student house would cost on the order of $800,000, of which perhaps one-fourth would have to be provided as new funds.

If such a housing unit, or by good fortune two such units, should be secured, then I believe we should consider the advisability of reserving such units for freshmen. This would provide a wholesome transition between previous life at home and the later life of a greater independence in the fraternity houses or of less personal attention in the present dormitories. It would add much to the development of good traditions and of college spirit in the constructive sense.

(*b*) *Another "Student House."* An interesting small-scale experiment in student housing at M. I. T. has been extraordinarily successful. It is a "student house" provided by an anonymous benefactor. The house is operated by the students themselves under the general sponsorship of the Technology Christian Association. The students hire the minimum of servant help, and divide the operations of the house so as to

keep the expenses at a minimum by coöperative effort. Students are admitted to this house on application and on the basis of character, quality and need. The number of worthy applicants has always considerably exceeded the capacity of the house. There is an excellent opportunity here for another donor, anonymous or otherwise, to make available another "student house" for this worthy altruistic purpose.

(*c*) *House for Women Students.* For reasons, some logical and some traditional, technology has been predominantly of interest to the male of the species, but logically and traditionally also, the female of the species continues to display both interest and effectiveness in technological pursuits and this interest is slowly but definitely increasing. At M. I. T. we had, on the average, about 45 women students during each year of the 1920's, about 50 during the 1930's, and there have been about 65 per year thus far in the 1940's. A considerable proportion of these women are postgraduate students.

We have reasonably satisfactory accommodations for our women students during their daytime work at the Institute, through the provision of a suite of rooms especially outfitted for their use. We have made no provision to assist them in securing appropriate living accommodations. For these students the local living problem is difficult and serious. I believe that the Institute should do something about this, perhaps along the following lines.

If one of the good houses which so well served the last Boston generation, but which are not now in such demand, could be bought (or rented for say five years) and outfitted as a home for women students, a very good arrangement for the time being could be established at relatively small expense along the following lines. There should be a house mistress, preferably a professional woman. She could provide advice and appropriate chaperonage to the occupants of the house, together with a certain amount of top management. The house itself

might be operated under a house committee of the girls themselves on whatever scale of service the occupants might desire.

I would recommend this project, for the benefit of women students, for consideration and appropriate action by the Women's Alumnae Association of the Institute.

Gymnasium Unit. One requirement of the "prompt must" category after the war is the building of at least a second unit of our ultimate gymnasium, whose first unit was the Alumni Swimming Pool. To make room for war activities we had to tear down the old Hangar Gymnasium — wood and tar paper relic of the first world war, which had served ever since for basketball and other indoor sports. This will cost approximately $300,000 or $600,000, depending on which of two alternative units is selected for first construction. The larger unit could also be used for convocations, like the graduation exercises, for which we now have to rent space in Boston, or risk the whims of the weather in the open court.

New Library with Expanded Functions. Our Corporation's Visiting Committees on the Library and on Student Life have developed some highly significant plans for improving the cultural life of our students, on and off the campus. Numerous steps have in the past been taken in this direction, but have never achieved much more than minimum necessities. We could, if we handled it properly, add very greatly to the reservoirs of spiritual strength and the adjustment to social environment with which our graduates leave the Institute to enter their life's work.

Both the Corporation's and the Faculty's Committees on the Library have repeatedly emphasized the defects of the present Central Library. We have a good group of well organized working branch libraries for the various departments, but the Central Library was never designed for the purpose, is badly outgrown, never was adequate and will continually be less so.

The Committee visualizes a new library building, located near the center of student traffic between Building 2 and the Walker Memorial and connected cleverly with both. It should contain the most modern facilities of the library art to give optimum library service, such as microfilm reproduction and viewing, and automatic selection and delivery of card catalogue information. In fact it might well become a pioneering, or try-out center for the ingenious mechanoelectrical aids to the storing and distribution of printed information whose development was just getting under way when the war broke out.

In addition to being a great technological library serving M. I. T. students and staff and the New England region generally, the plan contemplates features which will make this library the cultural center of the institution. These include seminar rooms and headquarters for the Division of Humanities, attractive rooms for both study and recreational reading, music rooms, exhibition space for library and art treasures, including the remarkable Dard Hunter Paper Museum, and a little theater. Such facilities would contribute wonderfully to the wholesome enjoyment of college life by successive generations of students and to their education for enriched and well-balanced lives.

Through several years of study, the Visiting Committee and its consultants have developed this plan. It is sound and thoroughly worth while. Its realization should now be recognized officially as one of the major objectives in the Institute's post-war program. As evidence of this recognition, the Executive Committee has very recently appointed Professor John E. Burchard to be Director of the M. I. T. Libraries. He was the first Chairman of the Friends of the Library. In his new post he will take the lead in developing more detailed objectives, assist in making this plan a working reality, and guide its program. Under him, the Librarian will continue to head the professional library service.

Divisions of Basic and Professional Instruction. In professional education, there is often a more or less sharply defined distinction between the first two years of college, which are primarily devoted to general and fundamental subjects prerequisite to the more specialized work of the later college years, and the remaining program. This is recognized, for example, in the junior college movement, in the plan adopted at the University of Chicago several years ago, and in the programs of institutions which emphasize professional or "major" studies during the last two years of the normal four-year course.

We at M. I. T. are in the latter category. We have not made a formal distinction between the first two and the later years because we consider the entire educational program to be a unit. Nevertheless it is true that, with the exception of one introductory professional course in the second year, the entire schedule of the first two years is devoted to basic as distinct from professional studies.

While I should not favor a formal line of demarcation between the first two and the later years in our M. I. T. program, I do believe that there is some reality to this distinction which deserves consideration along the following lines.

We have, in effect, a division of basic studies extending through the first two years, and a division of professional studies extending through the third and fourth undergraduate years and into the Graduate School. The program for the division of professional studies is set by the individual professional departments, subject to approval by the Faculty as a whole. On the other hand, the work of the first two years is more or less the "common interest" or "common property" of all the departments.

The first two years have in no sense been neglected by the Faculty, which in fact has devoted much constructive thought to the determination of the most advantageous curriculum and method of instruction in these first two years. Nevertheless, it

is true that the first concern of nearly every member of the staff is for the effective operation of the program of his department. To this extent, therefore, the work of the first two years is a secondary interest shared by all.

There are problems rather peculiar to these first two years — problems of selection and guidance of students, problems of handling effectively large classes with many instructors and many sections, problems of supervising instructional work of many assistants in the laboratory and some even in the classroom, problems of training new instructors and developing the best possible educational programs. One reason why this is so important in the first two years is that the students there have usually not yet reached the stage at which the urge of professional interest accomplishes for them far more than any special pedagogical performance by Faculty members.

For this reason I would recommend that the Institute formally recognize the particular problems of the first two years of basic instruction, by the appointment in the Faculty of a "Supervisor of Basic Instruction." This Supervisor of Basic Instruction should not relieve the Faculty and departments from interest in and responsibility for the work of these two years. He should serve rather as a focal point to mobilize and render more effective this interest. He should not control the instructional work of the first two years because that is a function of the Faculty as a whole. He should, however, seek to improve teaching procedures and student performance through his study of the problems, his advice and criticism, and his initiative in bringing to the Faculty or Administration situations in which action should be taken. I would envisage, for example, that he would be free to visit classes, that he would seek to secure coördination between instructional work going on nearly simultaneously in different subjects, that he would be alert both to the problems of students and of instructors and seek in all cases to secure optimum performance. In

these duties he should obviously work in close coördination with the Dean and the Associate Dean of Students, with the registration officers, with the Student-Faculty Committee, and especially with the departments involved in the teaching work of the first two years. Since the major portion of the teaching program of these years is carried on by the scientific departments, this Supervisor of Basic Instruction might properly be attached to the Office of the Dean of Science.

Education of Superior Students. This is a subject to which the Faculty and the Administration of the Institute have given a very great deal of attention over many years. It is a subject on which many speeches can be made and many articles written, and it is far too comprehensive a topic to be treated adequately as part of this report. Nevertheless, the subject is so vitally important to an institution like ours that I present certain pertinent aspects of the problem.

One approach to the problem has been described as follows: "Place all the good students under all the good teachers; place all the poor students under all the poor teachers; devote a great deal of attention to the first group and very little attention to the second group." There is a great deal of sense to this approach, though the problem is not as simple as this formula might imply. In a democratic society there is a responsibility to the poorer student as well as to the better student, especially since the poorer student probably predominates greatly in numbers. Good education for "the masses" is essential to stable society. It has been an essential feature of our national program since the founding of the republic.

There is, however, a legitimate question as to the level to which each type of education should be brought and as to the type of responsibility of any given educational institution. I take it, for example, that our state universities, and other institutions wholly or principally financed by public funds, have a basic responsibility to provide educational facilities for every

category of young man or woman whose education will be beneficial to the community. On the other hand, it is certainly proper and in the public interest that certain institutions, including those under private management, should have the privilege of concentrating on special types of education. Certain institutions may undertake to provide only the most advanced type of educational program. Other institutions may go to the opposite extreme and specialize on education for persons of lesser natural endowment, including even those who are physically or mentally handicapped. There is room and real need for all of these types of educational effort.

The Massachusetts Institute of Technology has for many years striven for the ideal of providing only the highest attainable type of education in its technological fields. A corollary to this policy is, as an ideal, to have only good teachers and good students. To a staff imbued with this ideal, the entire educational effort takes on the aspect of an "honors program." The admission of any educational element which is admittedly less than the best obtainable, whether in staff or curriculum or teaching procedure, tends to be viewed by our staff as an admission of failure and almost as a moral lapse in the line of duty.

It is partly for this reason, I believe, that our staff has, on the whole, not been excitable over any one specific plan for dealing with superior students. Nevertheless, the subject has really received exceedingly careful and constructive consideration, and I would enumerate the following achievements of very distinct value, which have enthusiastic backing as meeting the situation in specific fields.

Three departments, Electrical and Mechanical Engineering, and Marine Transportation, conduct coöperative courses with certain important industrial organizations. These combine the purpose of handling superior students with the objective of giving these students a valuable educational experience

in contact with practical problems of the industries in which they are most interested.

One department, Chemical Engineering, attains essentially similar objectives through its program of Practice Schools which are operated with coöperation of three important types of chemical industry.

Three departments, Electrical, Mechanical and Aeronautical Engineering conduct Honors Courses in which superior students are given special freedom and responsibility. Other departments, Physics, Chemistry and Mathematics, and others, deal in similar manner with their superior advanced students, though not under the formal label of "Honors." Cases like the young chemist and mathematician who completed all requirements for both bachelor's and doctor's degrees in four or five years illustrate the fact that our procedures are flexible enough to give a superior student an unrestricted opportunity.

In addition to these, there was formerly the very successful Research Laboratory of Applied Chemistry at the postgraduate level in the Chemical Engineering Department. This was discontinued during the depression, but I believe it should be reëstablished just as soon as circumstances permit.

These special programs have generally given excellent results. Each appears to be well suited to the department of study in which it is established, with the additional factor that the enthusiasm of the department for its particular program is one of the most important requirements for its success.

During the 1930's the Faculty gave very intensive consideration to these and other suggested programs for providing exceptional educational opportunities for exceptional students. It was clear that the interest in this subject was very sincere and was universal in the staff. It was also clear that no single formula was suggested which appeared to meet the needs or to arouse the enthusiasm of the entire staff. However, certain forward moves were made as follows.

Honors and coöperative courses were established in several departments which had not previously adopted them. A program was instituted in the larger classes of the lower years whereby students were from time to time resectioned in accordance with academic standing, so that in general the students of highest academic standing would be found grouped together and vice versa. This has always proved to be an advantageous arrangement, both for the better and for the poorer students. The latter, for example, react with greater confidence and initiative when not overpowered by the presence of other students who are distinctly more alert or otherwise academically superior. At the same time a special faculty committee was established to give continual thought and oversight to superior students. During the present war this committee's activities, and also most of the honors and coöperative courses, have had to be temporarily abandoned.

The faculty committee on the study and handling of superior students will again go into action just as soon as the war emergency is passed. The post-war conditions will differ somewhat from the pre-war conditions, and it is reasonable to expect that new opportunities or improvements over the methods which have thus far been found successful may be possible in the near future. The problem is certainly one deserving of continual best attention and of a periodic fresh approach. In leaving this subject, however, I would again emphasize the thought introduced at the beginning, namely, that this institution, by its facilities and its opportunities for selective admission, is definitely undertaking to focus its facilities and efforts on superior students only, and that when we talk of superior students at M. I. T. we are talking about a selected group of a selected group.

National Security. Realistic planning of the future activities of the Institute must include consideration of its contributions to national security. You may be surprised at the magni-

tude of these contributions, measured budgetwise, since the founding of the Institute. Since its establishment in 1861, the aggregate expenditures by M. I. T. for all operating purposes total $210,000,000, in round numbers. Of this amount, a total of $100,000,000 has been spent for purposes of national security by direct contract with Army, Navy or other governmental agencies. Thus almost fifty per cent of all the operations of the Institute since its beginning have been directly concerned with national security.

The temper of the times justifies the expectation that this type of contribution by M. I. T. to the national welfare will continue to be substantial. The War and Navy Departments and also committees of Congress are actively concerned with plans to maintain an efficient preparedness program after this war, and this program calls for participation by civilian agencies which can contribute effectively to it. Prior to the present war we maintained a postgraduate educational program in various scientific and engineering specialties for certain branches of the War and Navy Departments. It appears certain that this activity will continue after the war with increased emphasis and in new fields. We were furthermore called upon to assist in developing various instrumentalities of war. It appears certain that similar requests will also continue after the war with increased emphasis.

M. I. T. has been exceedingly fortunate in the quality of Armed Service personnel detailed to supervise Army and Navy interests here. It is important that representatives of this type be continued at the Institute by the Armed Services.

Looking beyond the immediate post-war enrolment of large numbers of ex-service students, for which special administrative arrangements will of course be made, we should plan more permanently for the appointment of some administrative officer who will be especially concerned with the problems and contacts involving special Army or Navy students sent by

these Services for special work at the Institute. In the later years of the active service of Professor Fuller, he occupied the post of Dean of Army Students. A similar post should again be established and broadened to include students sent here by both Army and Navy.

Still another requirement is for special laboratory and office space which can be set aside for the use of advanced Army or Navy students at the Institute, or for special research projects carried out in very intimate relationship with Army or Navy personnel, or for special training programs which may involve the use of secret equipment. Prior to this war, a considerable amount of such work was scattered throughout the Institute. The problem of safeguarding adequately the secret equipment used on many of these projects was always an embarrassing one to the Institute and to our Army and Navy representatives.

It is already clear that the magnitude of such responsibilities after this war will be considerably greater than before. The Institute therefore must make an effort to secure, for this type of work, suitable housing and facilities which can be kept under guard and which will be adequate for a number of educational and research programs already under consideration. Initial steps in this direction have been taken and it is hoped that a satisfactory solution to this requirement will soon be found.

Congress plans to consider the establishment of one year of military training for all physically fit young men beyond the age of eighteen and after graduation from high or preparatory school. The Gallup Poll and other surveys indicate approximately a 2–1 sentiment in the country favoring the establishment of such a program. If this becomes national policy, then there will obviously be no point in M. I. T.'s continuing to require Military Training during its first and second years. In this event our policy would undoubtedly be to continue the

advanced ROTC program, which has been very successful in the past and which could be even more successful if backed by the preliminary year of universal military training. Under such an arrangement, for example, it might be possible for the advanced ROTC program to go much more extensively into some of the technological specialties which are now so important in warfare. I would hope that, in such an event, there would also be established at M. I. T. a Naval ROTC Unit, in recognition of the very great importance of technological developments to the Navy and of the wide variety of contributions to such developments in which M. I. T. has participated and can continue to participate.

Conversions. As war activities terminate, there are major tasks of conversion and reconversion. I have alluded to reconversion under "Increased Enrolment," as the reconditioning of preëxisting space and facilities which have been temporarily turned over to war use. In general our war contracts provide the necessary funds for reconversion.

By conversion, however, I mean the acquirement and conditioning for academic use of new buildings erected for war use. In most cases the new war buildings are of temporary construction, to be torn down at government expense under the terms of the contracts. In one important case, however, the building was of permanent construction, with Executive Committee approval of a contract substantially to the effect that M. I. T. would reimburse the government by the amount of excess building cost over the cost which would have been incurred for equivalent facilities in a temporary structure.

There are four minor buildings or additions to existing buildings which the Institute would also have an interest in acquiring under suitable terms. We should count on the possibility of spending not over $500,000 to purchase these facilities after the termination of their war use. Had it not been for the war, such expenditure would not have been justifiable. Under

the circumstances, however, it appears to be the efficient thing to do from a long term point of view, especially since the additional space will enable us to handle better some of the post-war obligations.

Requirements. The simplest way to summarize the cold, hard side of the program which I have here submitted is by saying that we need four million dollars for additions to plant and about a million dollars per year for increased annual budget. This is a brutal way of stating what is really needed to provide brains and services. How can this be secured?

Increased enrolment will provide some additional income. We can reëxamine our tuition charges on the basis of increased living costs and national income. We can count on considerable support of some projects through industrial or governmental contracts. But all reasonable and proper income from these sources will be inadequate. One gift of $25,000,000 would take care of the situation, but "mysterious Mr. Smiths" like George Eastman are as rare in numbers as they are rare in spirit.

Examination of the individual items of the program shows that, one by one and by various possibilities they are reasonable of attainment, and this should be our goal during the next few years.

Conclusion. In the preceding sections I have outlined a large and important program for the Institute as it enters the post-war world. I present this program with my hearty endorsement and with the explanation that it represents the constructive, coöperative thought of many colleagues. I can say with certainty that there is no element whose need and feasibility have not been proven.

In his recent broadcast from Quebec, the British Prime Minister said that hope, science, good sense, and experience were the prerequisites to successful peace. These same qualities are prerequisites to any post-war success of this institution which will be commensurate with its opportunities. We have

enthusiastic hope for this institution's effective future. We have science in large quantities, not only in the work of the institution, but in the spirit with which its opportunities are analyzed and its affairs administered. I trust that we have good sense in this Corporation and in the Administration, Faculty and Alumni Constituency of the institution. We have adequate experience on the basis of which to justify our hope for important accomplishments to come.

Over against this hope and faith in the future, we cannot fail to recognize some very serious problems facing us, and all other educational institutions, and many other bulwarks of our society in the years to come. The devaluation of the dollar some years ago, the significant increase in the costs of living during the past four years, the heavy increase in taxation, the decreased yield on invested funds, all impose unprecedented handicaps to the accomplishment of most of the objectives which I have listed, and even to the maintenance of the status quo.

But admission of difficulties is not synonymous with acceptance of defeat or abandonment of objectives. You will recall the message from Marshal Foch to Marshal Joffre in the Battle of the Marne of the last war: "My right has been rolled up, my left has been driven back, my center has been smashed. I have ordered an advance from all directions." This strategy was successful at that time, and I believe that the same strategy offers the best chance of success to our institution under the conditions which we face. If we ever lose faith in the possibility of attaining to better things and surrender to the difficulties facing us, then certainly we are headed downhill.

On the encouraging side I would urge that the value, effectiveness and prestige of the Massachusetts Institute of Technology have never before been at so high a level. This is certainly a strategic vantage point from which to inaugurate the next advance. This advance will challenge the best efforts

of our Corporation, Staff, Alumni, and friends. The objectives are of great and permanent value to the oncoming youth of this country and to its scientific, industrial, and security interests. The beneficial influences extend throughout the world. I count on your active coöperation in this program for increasing the usefulness of this institution which I serve and of which you are trustees.

3. Statistics of the Year

This report concludes with the following statistical summaries, which will be found in fuller detail in the appended reports of the various administrative officers.

Finances. Having already mentioned the dollar volume of our war research program, I now wish to summarize our regular operations on a basis that affords fair comparisons with normal years. The fiscal year 1943–44 ended with an excess of expenditures over income of $39,553. The all-time cumulative current surplus, after adjustments on account of previous years' operations, stands at $6,725.

Of the Institute's total budgeted regular expenditures of $4,305,000, 55 per cent was Academic Expense (*i.e.* teaching and research), 41 per cent Plant and Administration, and 4 per cent Miscellaneous Expense. The distribution of 1942–43 was 61, 35 and 4 per cent respectively. 26 per cent of the 1943–44 Operating Income was derived from civilian students, 20 per cent from Army and Navy training contracts, 22 per cent from investments, 4 per cent from Loans and Scholarships, and 26 per cent from other sources, including overhead income from research contracts. These percentages compare with 40, 6, 24, 6, and 24 per cent respectively for the preceding year.

The yield on investments based on market values as of June 30 was 3.20 per cent compared with 3.77 per cent one year ago, and 4.22 per cent two years ago. The decrease is attributable in large part to the increase in holdings of low yield government bonds.

The table below shows the status and trend of operating income and gifts:

FINANCIAL TRENDS

	Operating Income Budget	*Total Gifts*
1930–31	$2,880,131	$1,339,280
1931–32	3,029,881	1,781,473
1932–33	2,779,815	306,395
1933–34	2,646,649	208,635
1934–35	2,694,799	580,695
1935–36	2,714,301	429,533
1936–37	2,977,573	812,421
1937–38	3,008,530	2,347,693
1938–39	3,203,300	1,362,392
1939–40	3,334,271	790,559
1940–41	3,361,052	888,180
1941–42	3,668,186	926,897
1942–43	3,991,956	884,268
1943–44	4,271,014	1,367,507

Of the total gifts of $1,367,507, $1,132,835 represent capital additions.

The fourth year of operation of the Alumni Fund ended with a total of 8,853 Alumni contributing $115,534. Comparison with last year's figures of $102,026 from 8,533 Alumni continues to show an encouraging trend.

Enrolment. During the year, the number of civilian students decreased to 1,271, a reduction of over 50 per cent of our normal registration. Compensating partially for the decrease in civilian registration, were 972 Service trainees, including 900 Navy V-12 students. As of July 13, our total student body numbered 2,173, which is about two-thirds normal. This does not include certain full time special Army and Navy programs, which if included would bring our total figure to approximately 3,000. In 1944, for the first time in many years, the first-year class entered at two separate dates; 106 on March 6 and 478 on July 10. The two groups gave us a normal sized freshman class.

Dean Lobdell has prepared a detailed history of changes in our war enrolment, of the effects of Selective Service changes, and of our undergraduate training programs for the Services. This interesting account, which will be included in the full edition of the President's Report, should be of great value in appraising the national policy with respect to college students during the war.

ENROLMENT AT M. I. T.*

	Total Undergraduate	*Freshmen*	*Total Graduate*	*Total Civilian Enrolment*	*Army and Navy*	*Total*
1934–35	2,009	542	498	2,507	....	....
1935–36	2,018	561	522	2,540	....	....
1936–37	2,174	650	619	2,793	....	....
1937–38	2,305	605	661	2,966	....	....
1938–39	2,401	656	692	3,093	....	....
1939–40	2,379	605	721	3,100	....	....
1940–41	2,379	605	759	3,138	....	....
1941–42	2,376	640	679	3,055	....	....
1942–43	2,451	731	569	3,020	....	....
1943–44	1,222	557	357	1,579	2,016	3,595
1944–45	999	551	272	1,271	972	2,243

* All figures are as of November 1 each year, save 1943–44 and 1944–45, which are as of August 2 and July 13 respectively. The totals do not include short war-training courses or full-time E.S.M.W.T. programs.

Student Aid. The distribution of aid to students during 1942–43 as compared to the preceding year is given in the table below:

SUMMARY OF STUDENT AID

	1942–43		*1943–44*	
	Number	*Amount*	*Number*	*Amount*
Undergraduate Scholarships	476	$78,225	375	$57,125
Graduate Scholarships and Fellowships	337	90,576	348	83,139
Loans	228	98,991	92	39,225
Student Employment Service	394	51,109	227	26,608
TOTAL STUDENT AID		$318,901		$206,097

Of the entire undergraduate student body, 29 per cent received aid; of the graduate group, 93 per cent. The effects of the war are obvious in the reduction of the several forms of assistance.

Personnel. Alumni Term Members whose terms on the Corporation expired in June were Charles Edison, Philip W. Moore, Harold B. Richmond. The term of Mr. Charles R. Hook as Special Term member expired in January.

New members elected during the year include Mr. George A. Sloan, Special Term Member, to serve for five years from January; two Alumni Term Members, Harold B. Harvey and Dr. William J. Mixter; and the new President of the Alumni Association, Raymond Stevens. The third Alumni Term Member proposed, Mr. Lewis W. Waters, died suddenly before his election was completed. The vacancy in Term Membership will be filled at the time of the next annual Alumni ballot.

The Faculty lost by death during the year, Professor Theodore B. Parker, Head of the Department of Civil and Sanitary Engineering, John W. Howard, Associate Professor in Civil Engineering, Charles H. R. Mabie, Assistant Professor in Graphics, and Mr. Rufus C. Reed, Technical Instructor in the Department of Metallurgy.

Retirements from the Faculty included Walter R. MacCornack, Head of the Department and Dean of Architecture since 1939 (who continues as an Honorary Lecturer during 1944–45); Ernest F. Langley, Head of the Department of Modern Languages, and member of the staff since 1920; Floyd E. Armstrong, Professor in Economics and member of the staff since 1916; Miles S. Sherrill, Professor in Chemistry and member of the staff since 1903, all of whom were retired with the title Professor Emeritus; and Roy G. Burnham, member of the staff since 1902, who was retired with the title Assistant Professor Emeritus.

Several important new appointments were made during the year. To succeed Dean MacCornack, we were fortunate in securing William Wilson Wurster, distinguished California architect and student of housing, as Dean of the School of Architecture and Planning. Under his direction, the School is assured a continuance of its fine achievements as the oldest School of Architecture in America. In late summer, Dr. Arthur C. Cope of Columbia University, and recent recipient of the Annual Prize of the American Chemical Society, was engaged for the post of Professor and Head of the newly created Division of Organic Chemistry in the Department of of Chemistry, with leave of absence for the duration. In addition, Dr. Norman J. Padelford, until recently with the Fletcher School of Law and Diplomacy and now a special consultant to the State Department, was appointed Professor of International Relations in the Department of Economics and Social Science. He will take charge of the senior option in International Relations of the new coördinated program in the Humanities. Earlier, William E. Stanley of Cornell University was appointed Professor of Sanitary Engineering.

The following Assistant Professors have been appointed: Lawrence J. Cuddire, Military Science; William W. Hearon, Chemistry, with leave of absence for the duration; Donald McAllister, Military Science; R. H. Miller, Aeronautical Engineering; Harlan Turner, Jr., Naval Architecture and Marine Engineering; and Edward R. Van Driest, Mechanical Engineering.

An important new post created during the year was that of Director of Libraries, to which Professor John E. Burchard, Director of the Bemis Foundation, was appointed. In this post, Professor Burchard will have the responsibility of developing our library services and program along new lines recently recommended by the Visiting Committee on the Library and discussed earlier in this report.

The untimely death of Professor Parker, Head of the Department of Civil and Sanitary Engineering, required within the short space of a year a new appointment to this post. In the emergency, Dr. John B. Wilbur, Professor of Structural Engineering, accepted appointment as Acting Head of the Department.

Mr. Robert M. Kimball, Assistant Director of Admissions, joined the staff of the Office of the President during the year, in addition to continuing his assignment as Director of the Personnel Office.

Promotions included the following: to the grade of Professor: Major A. A. Wagner to Professor of Military Science and Tactics and Head of the Department; Frederick J. Adams and Lawrence B. Anderson, Architecture; Martin J. Buerger, Geology; Nathaniel H. Frank, Physics; Murray F. Gardner, Electrical Engineering; Edward R. Gilliland, Chemical Engineering; Ernst A. Guillemin, Electrical Engineering; George C. Manning, Naval Architecture; Walter H. Newhouse, Geology; Bernard E. Proctor, Biology; and Francis W. Sears, Physics.

To the grade of Associate Professor: James M. Austin, Meteorology; Ross M. Cunningham, Business and Engineering Administration; Arthur E. Fitzgerald, Electrical Engineering; Harold A. Freeman, Economics; Peter E. Kyle, Mechanical Engineering; Norman Levinson, Mathematics; William H. Radford, Electrical Engineering; A. Rudolph Rogowski, Aeronautical Engineering; Paul A. Samuelson, Economics; Theodore Smith, English and History; Donald W. Taylor, Civil Engineering; George P. Wadsworth, Mathematics; and Earle F. Watts, Graphics.

To the grade of Assistant Professor: John E. Arnold, Mechanical Engineering; E. L. Bartholomew, Jr., Mechnical Engineering; Draveaux Bender, Architecture; John T. Burwell, Mechanical Engineering, with leave of absence for the duration of the war; Karl W. Deutsch, English; Walter C. Eberhard,

Graphics; Frederick R. Evans, Mechanical Engineering; Joseph Kaye, Mechanical Engineering; Andrew L. Johnson, Metallurgy; Deane Lent, Mechanical Engineering; Kurt S. Lion, Biology; Gerald Putnam, Graphics; Ascher H. Shapiro, Mechanical Engineering; and George B. Thomas, Mathematics.

In addition to leaves of absence granted previously and continued, the following were granted leave during the current year: Professors Wyman P. Fiske and Walter H. Newhouse; Associate Professors Charles H. Blake, Robert C. Hockett, John M. Lessells, M. Stanley Livingston, Paul A. Samuelson and Louis F. Woodruff; Assistant Professors Albert G. Dietz, Peter E. Kyle and Charles A. Stokes.

Resignations were accepted from the following: Lt. Col. Joseph F. Cook, Jr., Head of the Department of Military Science and Tactics; Associate Professors Thomas R. Camp and Kenneth C. Reynolds, who has accepted the position of Head of the Civil Engineering Department at Cooper Union; Assistant Professors Perley D. Baker, William C. Bauer, Burdette H. Buckingham, William T. Cameron, James D. McNitt, Lincoln W. Ryder, and William C. Scoville.

Respectfully submitted,

KARL T. COMPTON,
President.

REPORTS OF ADMINISTRATIVE OFFICERS

Dean of Students

During 1943–44 the number of *civilian* undergraduate students fell to one-third the pre-war average, but the numbers of trainees, cadets, and officers of the military and naval services kept the *total undergraduate registration* well above normal for most of the year. The changing trends are described in this year's report, in which are also presented summaries of the instructional and other operating features of the several uniformed units of the Army, the Army Air Forces, and the Navy.

As unanimously voted by the Faculty on January 6, 1943, in order to meet conditions imposed by the training plans of the military and naval services, year-round operation for *civilian* students began with the opening of the Institute's 1943–44 academic year on June 28. The gross number of applicants seeking admission as freshmen at that time was 2,059, compared with 2,080 in September, 1942; and the numbers matriculating were 583 and 731, respectively. The percentage geographical distribution of these 583, compared with the corresponding groups of the previous four years, was:

	Percentage of First-Year Class				
	1943–44	*1942–43*	*1941–42*	*1940–41*	*1939–40*
From outside New England ...	62.0	59.5	61.0	61.5	62.0
From outside Massachusetts...	69.0	68.1	69.3	67.6	69.3

At the opening of the spring term in April, 1944, a special group of 106 freshmen were admitted — principally students who had been in continuous attendance at secondary schools throughout the summer of 1943 under one or another form of "speed-up" plan; and at the opening of the summer term in July, 1944, the freshman "Class of 2–47," numbering 478, matriculated. The percentage geographical distribution of these two groups showed that 62.9 per cent were from outside

New England and 71.4 per cent were from outside Massachusetts.

As noted in last year's report, the war had no appreciable effect upon the number of *civilian* undergraduates registered up to the end of the fall term in January, 1943, at which time the total was 2,372 compared with the 1938–43 five-year average undergraduate registration of 2,397.* From then on, the situation fluctuated as demonstrated by Tabulations (1) and (2), page 40.

How the decline in *civilian* undergraduate registration was more than offset during the first two-thirds of 1943–44 by the increased numbers of uniformed undergraduates sent for instruction by the Army, the Army Air Forces, and the Navy, is illustrated in Tabulation (3), page 41.

Selective Service Changes during 1943–44

The age at which registrants would be liable to call to active military duty under Selective Service had been lowered from 20 to 18 as of November 16, 1942, but when the academic year 1943–44 opened the regulations still provided that occupational deferment might be requested for a student in most M. I. T. Courses if "he is competent and gives promise of successful completion of such courses of study, and that if he continues his progress he will graduate from such course of study within 24 months from the date of certification." Under the Institute's accelerated calendar, all our undergraduate students were thus immediately eligible for certification except freshmen of the group admitted June 28, 1943, and these would become so late in the following December.

On December 11, 1943, President Roosevelt transferred responsibility for Selective Service (which he had entrusted to the Chairman of the War Manpower Commission by Executive Order on December 6, 1942) back to Major General Lewis B. Hershey as Director of Selective Service. In the press of January 9, 1944, General Hershey announced that all occupational deferments in effect February 1 for registrants of the 18–22 age group (except those in agriculture and those excepted by him or by State directors) would be allowed to

* The maximum deviation from this figure in any one year was 2.3 per cent.

Tabulation (1)	*Seniors*	*Juniors*	*Sophomores*	*Freshmen*	*Totals*
Five-Year "Official Count" average (1938–43).....	584	592	575	646	2,397
'Official 1942–43 Count" (November 2, 1942).....	522*	600	603	727	2,452
Opening of Spring Term (February 15, 1943).....	165	572	502	556	1,795
"Official 1943–44 Count" (August 2, 1943).....	299	139	227	557	1,222
Opening of Fall Term (November 8, 1943).....	261*	149	214	450	1,074
Opening of Spring Term (April 3, 1944).....	175	207	306	106†	794
Opening of Summer Term (July 13, 1944).....	105	137	206	551‡	999

* At Commencement Exercises held at Symphony Hall on February 1, 1943, and February 28, 1944, baccalaureate degrees were awarded to 338 and 216 candidates, respectively.

† A newly matriculating group of freshmen, composed principally of students who attended secondary schools throughout the summer of 1943 under various wartime "speed-up" plans.

‡ Including 478 members of the "Class of 2-47" matriculating July 10, 1944.

Tabulation (2)	*Seniors*	*Juniors*	*Sophomores*	*Freshmen*	*Totals*
Five-Year "Official Count" average (1938–43).....	100%	100%	100%	100%	100%
"Official 1942–43 Count" (November 2, 1942).....	89.4	101.3	104.8	112.5	102.3
Opening of Spring Term (February 15, 1943).....	28.3	96.6	87.3	86.1	74.9
"Official 1943–44 Count" (August 2, 1943).....	50.1	23.5	39.4	86.1	50.9
Opening of Fall Term (November 8, 1943).....	44.7	25.2	37.2	69.7	44.8
Opening of Spring Term (April 3, 1944).....	30.0	34.9	53.2	16.4	33.1
Opening of Summer Term (July 13, 1944)	18.0	23.1	35.8	85.3	41.7

Tabulation (3)	*Civilians and their Percentage of the Undergraduate Body*	*Army Air Forces Meteorology Cadets* "A"	"B"	*Army*	*Navy A.S.T.P. V-12*	*Navy Officer Programs*	*Totals (and their % Comparisons with the Average Pre-War)*
Five-Year "Official Count" average 1938–43	2,397 (100%)	...	...	...	...	...	2,397 (100%)
"Official 1942–43 Count" (November 2, 1942)	2,452 (100%)	*	...	...	...	...	2,452 (102.3)
Opening of Spring Term February 15, 1943)	1,795 (76.2)	470	...	...	...	89‡	2,354 (98.2)
"Official 1943–44 Count" (August 2, 1943)	1,222 (37.7)	416	201	401	910	88§	3,238 (135.1)
Opening of Fall Term (November 8, 1943)	1,074 (33.3)	289	...	889†	857	124¶	3,233 (135.1)
Opening of Spring Term (April 3, 1944)	794 (40.3)	241	...	...	853	81‖	1,969 (82.2)
Opening of Summer Term (July 13, 1944)	999 (50.6)	...	...	...	902	70**	1,971 (82.3)

* Meteorology "A" aviation cadets were classified by the Registrar as Graduate Students up to December 31, 1942.

† Including 193 former Advanced R.O.T.C.

‡ Aeronautical Engineering, 46; Aircraft Engines, 43.

§ Aeronautical Engineering, 47; Aircraft Engines, 41.

¶ Aeronautical Engineering, 29; Aircraft Engines, 33; Meteorology "A", 62.

‖ Meteorology "A," 56; Marine Transportation, 25.

** Meteorology "A," 49; Marine Transportation, 21.

expire, and would not be renewed. These changes were prompted, it was commonly understood at the time, by the acute military needs for younger men, better fitted for combat service than "fathers" of 30 years and upwards, who were then being inducted in appreciable numbers.

Students' deferments would be limited hereafter, General Hershey said, by a reduction in the number of specialized fields of study which were deferable, and by the fixing of a national quota of 10,000 students who might be occupationally deferred, in addition to those who would be graduated on or before July 1, 1944. His announcement was elaborated in a directive (No. 33–6), the locally pertinent sections of which were published in *The Tech* of January 21.

Hitherto, affidavits requesting deferments had been forwarded by us directly to the Local Board concerned; but from now on they were to be sent, accompanied by a certified transcript of the individual's academic record, to the National Roster of Scientific and Specialized Personnel of the War Manpower Commission. If approved by the Roster, an individual's papers would be returned to us for transmission to the Local Board, which would continue to have a veto power. This procedure was carried out for 25 of our seniors due to be graduated between February 28 and July 1, and all requests were granted.

The Institute also furnished to the Roster in late January data on our civilian undergraduate students of the 18–22 age group for use by the Roster in determining how the country-wide "quota of 10,000 engineering, physics, chemistry, geology, and geophysics" students might be allotted among the many institutions involved. Concurrently, we undertook a "census" of the Selective Service status of all our undergraduate students for later use by a Faculty Committee in "nominating" men under our *institutional quota* after it had been established by the Roster.

On February 3 we were advised that M. I. T.'s institutional quota would be 128. Our first set of nominations was forwarded to the Roster within ten days, and on February 14 we notified the students concerned that their names had been submitted. In due course all our nominations were approved

by the Roster and returned for transmission to the Local Boards.

But in the meantime changes of "status" had occurred, *e.g.* some students we had nominated for deferment had applied directly to their Local Boards and obtained voluntary induction. Also the Roster had found it possible to readjust certain institutional quotas and on February 29 we were notified that ours was raised by 9 to 137. Consequently, the tedious "paper work" connected with the scheme continued, a condition which was inherent in the idea and not the fault of the Roster.

During March it became increasingly evident that the quota system was an unhappy compromise between the immediate pressing military demands for more and more "younger" physically fit recruits and the equally prudent, but less immediately pressing, demands for training replacements for war industry and research, and for the technical branches of the uniformed services. The quite natural resistance to any "exceptions" on the part of the Selective Service as administered by Army authority, and the belief in many quarters that the war could be successfully ended before deferred students would have graduated and become actively helpful, were telling arguments against any continuing student-deferment plan. Moreover, the necessary smallness of the institutional quotas produced inevitable administrative and emotional complications on campuses. For these and probably other reasons, the abortive quota system was abolished on April 8, and henceforth no educational institution could request occupational deferment for any physically qualified student, except for those registered in certain professional courses who would graduate before July 1, 1944. After July 1, 1944, the only students eligible for deferment were those holding classifications 1-A (L) or 4-F.

Comparisons with World War I

Before describing the procedures followed in carrying out instruction of military and naval undergraduate students during 1943–44, it will be of interest to interpose here a summary of the corresponding trends during World War I.

Conscription was not effective upon the declaration of war on April 6, 1917. The registration of those declared eligible for immediate military service, men of the 21–30 age group, did not take place until June 5, and the first "draftees" reported at training camps early in September. It was not until August 31, 1918, when the war had been in progress nearly 17 months, that the "draft age" was lowered from 21 to 18, whereas in the present conflict it was lowered from 20 to 18 on November 16, 1942, or less than a year after Pearl Harbor.

Early in May, 1918, the War Department announced plans for a Student Army Training Corps — the S.A.T.C. — which was to have a World War II counterpart in the Enlisted Reserve Corps — the E.R.C. — established in the early summer of 1942. (The E.R.C. was described in some detail in my report for 1942–43.) According to the S.A.T.C.'s original plans, college students over 18 years of age were to be enlisted and immediately furloughed to inactive duty in order that they might continue with their normal studies until the national requirements necessitated their withdrawal for active service. In July, 1918, Richard C. Maclaurin, then President of the Institute, accepted appointment as Educational Director of the S.A.T.C. from the Secretary of War.

During the summer of 1918 — as during the summer of 1942 — the unfolding exigencies of war emphasized the imperative and urgent needs for training vast armies for overseas combat service. Hence, the original plans of the S.A.T.C. — like those of the E.R.C. — were countermanded almost before they became operative, in September of 1918 and 1942, respectively. In each instance, the revision called the students to active duty — within a month for the S.A.T.C. and "at the end of the term then in progress" for the E.R.C. Men in the S.A.T.C. were not to be separated immediately from their studies upon being called to active duty, but instead upon a sliding schedule as follows: within three months upon becoming 21, within six months upon becoming 20, and within nine months upon becoming 19. A member of the E.R.C., however, upon being called to active duty was ordered to a replacement center, regardless of age, to receive approximately three months basic military training. After that was completed, he had the possi-

bility of being assigned to some unit of the A.S.T.P. which was to begin operation in March, 1943.

October 2, 1918, was the chosen date upon which men of the S.A.T.C. would commence instruction on their own campuses on active duty as members of military S.A.T.C. or naval S.N.T.C. units. (The establishment of a parallel Student Navy Training Corps had been announced as an afterthought on September 21.) Actually, the official start was delayed until October 10, because of the outbreak of an influenza epidemic, and it was on October 14 that the Institute completed registration of approximately 847 in its S.A.T.C. and 363 in its S.N.T.C. units. Hardly had the complications of its hasty inauguration been partially adjusted when the Armistice of November 11 indicated further modifications in the program; and on November 30 it was announced that the S.A.T.C. and S.N.T.C. at the Institute would be disbanded beginning on December 4.

Contemporary press comment charitably stated that "the S.A.T.C. and S.N.T.C. did not fail in their object. They simply never started, and like so many other excellent war measures, found themselves at the date of the Armistice only beginning to reach a point where results might have been expected."

But in his ensuing Annual Report, President Maclaurin more significantly observed: "It will be evident that the educational value of remaining in college under such conditions must be relatively slight and that the main purposes of initiating the plan of the S.A.T.C. under the *changed conditions* were two: first, the military one of mobilizing the forces available for officer material; and second, the educational one of maintaining the organization of the colleges so that the continuity of education may not be completely broken by war conditions."

Instruction of "Service" Undergraduates during 1943–44

Arrangements for the instruction of trainees, cadets, and officers of the military and naval services who were registered as undergraduates were carried out as follows under a series of contracts between the Government and the Institute. Nearly all of these involving enlisted personnel were under a complicated so-called "cost-analysis" arrangement which usually

covered messing, housing, medical attention, and textbooks, as well as instruction.

A.S.T.P., Advanced Engineering and Basic: Contract W-19-073 A.S.T. (SC-1)

On March 1, 1943, the Institute received notification from the War Department to prepare to receive an Army Specialized Training Program unit of 500 soldiers, who would begin classes on March 15. But, as noted in last year's report, the A.S.T.P. experienced considerable delay in selecting properly qualified personnel during its early stages. Thus instruction actually began for 330 trainees on April 5 in "Advanced Engineering" (Civil, Mechanical, Electrical, and Chemical), but of this number nearly a third had to be academically disqualified before the end of the term. The curricula of the A.S.T.P. were laid down rigidly by the Army authorities in cycles of 12 weeks, but because of the starting confusion permission was granted for the first cycle at the Institute to be extended to 13 weeks, *i.e.* from April 5 to July 3.

For the second cycle (July 12–October 2), the Army's "screening" procedures operated more effectively, and replacements brought the size of our unit to 401, or 80 per cent of the strength originally contemplated. For the third cycle (October 11–December 31), 560 trainees were registered for Advanced Engineering and 141 for "Basic" studies at the freshman level — a total of 701. Marine Transportation was added to the four Advanced Engineering fields noted above for 25 trainees in the third cycle only. For the fourth, and last, cycle (January 10–March 31), reductions took place: to 439 for Advanced Engineering and 91 for Basic — a total of 530.

Colonel Edward W. Putney, C.A.C., as the Professor of Military Science and Tactics, was commanding officer of the A.S.T.P. up to August 1, 1943, on which date he was transferred from M. I. T. and relieved by Lieutenant Colonel Joseph F. Cook, Jr.

Professor R. S. Williams, as Deputy Dean of Engineering, served as chairman of a Faculty Committee charged with administering the academic aspects of the A.S.T.P. throughout the entire period.

Press comment in December indicated that the continuance of the A.S.T.P. was debatable, but on the thirteenth the War Department denied that it was "in process of liquidation. The number of soldiers in the program will depend in the future, as in the past, on the actual needs of the Arms and Services." During January, however, the House Committee on Military Affairs had under serious consideration a recommendation against continuing the A.S.T.P., except for "engineers and men for military government operations abroad." Congressional interest was directed, it was reported, in order "to save an estimated 200,000 pre-war fathers from military induction."

In view of the current state of public opinion, the 200-odd participating educational institutions were prepared for some shrinkages, but not for the War Department's decision of February 18 which meant a virtual abandonment of the program. "The increased tempo of offensive operations, together with the mounting casualties demanding immediate replacements in the field," the War Department statement read, "have created a situation which has necessitated drastic economies in the employment of personnel throughout the United States, and a decision to reduce the soldiers in colleges taking the A.S.T.P. from 145,000 to 35,000. . . . The 35,000 remaining in the program will be primarily those trainees taking advanced courses in medicine and dentistry, or engineering, and include 5,000 pre-induction students." In commenting, the Secretary of War stated: "This decision has been made for reasons of imperative military necessity. I desire at this time to express my conviction of the great value that this training has been to the Army and to express my appreciation of the devoted and intelligent coöperation of the colleges and their faculties, who have done so much to make the program a success."

The severity of the curtailment, as well as its sudden application, and the fact that nearly a month was to elapse before the War Department made known in mid-March which particular local units would be discontinued, were especially disturbing to the colleges. On many campuses the prospective loss of an A.S.T.P. unit meant being threatened with very real financial and other operating readjustments. Although the Institute had one of the two larger groups of Advanced

Engineering trainees in the First Service Command, we immediately undertook to formulate plans for shifting assignments of instructing personnel, which would become obligatory if the War Department eventually determined to drop us from the list — an outcome which seemed not unlikely in view of our parallel training commitments to the Army Air Corps and to the Navy.

On March 14 we received formal notification that our unit would be discontinued on March 31, at the end of the then current cycle. By April 1 we were fortunate in being able to reassign all members of the Faculty and instructing staff previously engaged in teaching A.S.T.P. to other duties (with the sole exception of one physical training instructor who had been employed solely for the A.S.T.P.) and to make other arrangements which relieved the Government of considerable expense otherwise accruing under the "90 day's notice" clause in the termination article of its contract.

After audit, a final settlement on the contract was reached on September 5, 1944, and for the 12½-month life of the A.S.T.P,. the Institute's net total financial reimbursement was $588,918, of which $788 was for activation expenses, $180,326 for messing, $81,636 for housing, $14,070 for special medical attention, and $41,606 for textbooks, slide rules, and drawing instruments. The balance of $269,283, received in lieu of a tuition fee, amounted to approximately $11.50 per trainee per week, which compares with the Institute's regular tuition fee prorated at $20 per student per week of instruction.

At one time or another, 920 individual A.S.T. trainees were in attendance as shown below, 391 (42%) being here *less than the equivalent of one M. I. T. semester*, 248 (27%) longer than one semester but less than two, and 281 (31%) the *equivalent of at least one normal academic year*, viz.:

	Advanced Engineering	*Basic*	*Total*
For four cycles	109	...	109
For three cycles	172	...	172
For two cycles	174	74	248
For one cycle	219	40	259
Less than one cycle	119	13	132
	793	127	920

At this writing one is still too close to the event with its academic and administrative operating tensions — of which there were many — to appraise impartially the merits of the A.S.T.P. at Technology. In all our other service units, such as the V-12 and those of the Army Air Forces, a trainee or cadet had commissioned status as an ultimate goal. But the objectives of the A.S.T.P. were seldom stated except in broad, and often vague, generalities. On our campus, therefore, the A.S.T.P. suffered in the minds of staff and students by contrast since it was not an "officer" program, but even more so because graduation from the A.S.T.P. held out no specified promise of non-commissioned advancement, nor of any assignment to duties which would enable the Army and the soldier to capitalize upon his achievement in the A.S.T.P.

Despite these circumstances, morale seemed surprisingly good on the whole and no doubt many of the 181 men who completed Advanced Engineering curricula, as well as some of the 607 others who attended at least one full cycle of the A.S.T.P. at the Institute, will seek further engineering education here or elsewhere in the post-war period.

A.S.T.P., Former Advanced R.O.T.C.: CONTRACT W-19-073 A.S.T. (SC-1)–30

In mid-April, 1943, 267 members of the Advanced R.O.T.C. were placed on active duty at Fort Devens but permitted to return to the Institute and continue with their regular academic programs during the balance of the spring term. Some were thus able to complete graduation requirements by June, but the majority were third-year students of the Class of 1944. These latter presumably could all graduate by February, 1944, if allowed to continue under the Institute's year-round plan of operation which became effective June 28. But, instead, all 267 were ordered to report during June at replacement training centers of their respective service branches for basic military training, in order that they might afterward be rushed to Officer Candidate Schools to fulfill anticipated demands for more commissioned personnel in the lower grades.

Hardly had they begun basic military training, however, than a press release of the War Department, issued July 21,

stated "that reduced quotas for the Officer Candidate Schools in connection with a slowing up of the officer training program have made possible a modification of the original plan of training R.O.T.C. students called to active duty. It is now possible to permit this group to be returned to school for additional academic training designed to increase their value as future officers." Therefore, upon completion of basic military training, "they will be returned to college under the supervision of the Army Specialized Training Division, pending the availability of vacancies in the Officer Candidate Schools. . . . Ultimately, all advanced R.O.T.C. students will be assigned to Officer Candidate Schools to complete their officer training."

The last sentence of the press release was contradicted the following day by a War Department memorandum (No. W145–16–43) which indicated that R.O.T.C. students "at replacement training centers who are not recommended for attendance at officer candidate school because of their unsatisfactory training or leadership record or other reason will lose their R.O.T.C. status and will complete their training . . . as other non-R.O.T.C. trainees at replacement centers." Later this ruling was successfully protested on the ground that the agreement entered into by a student joining the Advanced R.O.T.C. was equally binding on the Government, and obligated the Army to give him the opportunity of attending Officer Candidate School. It was also pointed out, in connection with the protest, that deficiencies found in "leadership records" seemed quantitatively excessive.

Since the duration of basic military training varied for the different branches, it was clear that returning R.O.T.C. men would not report upon any common date. Furthermore, since their stay would depend upon the "availability of vacancies" in their respective Officer Candidate Schools, the voluminous and complex directive issued by the A.S.T. Division to prescribe detailed curricula manifestly served no useful purpose in so far as our situation was concerned. Under a compromise reached with the First Service Command, the Institute Faculty obtained discretionary control over the academic arrangements of the returning R.O.T.C., and every endeavor was made to adapt our schedules so that a man might, in so far as practicable,

carry on with the Course in which his registration had been interrupted the preceding June.

The first contingent, a group of 80, resumed instruction on October 11, and the last to depart, a group of 18, were ordered away 170 days later, on March 31. The average number under instruction throughout this period was 137.4.

By the end of October, the attendance reached 200, and it continued at 200 or more throughout November and December, attaining a maximum of 223 on December 17, 18 and 19. During the first three weeks of January a few less than 150 were present, but additional late arrivals brought the total to 206 on the 31st. On February 1, however, departures reduced the strength below 150, by the tenth it fell below 100, and by the end of the month below 50. From March 1 on, 20 or less remained.

Of the 230 individual R.O.T.C. men who reported, 204 were among the group who had left the Institute the previous June, while 26 had been members of the Advanced R.O.T.C. at three other schools. Of the 204 former M. I. T. Advanced R.O.T.C. who returned, 14 were allowed to stay long enough to be able to satisfy degree requirements before being ordered to Officer Candidate School.

The Institute's net total reimbursement for the R.O.T.C. group was $101,936 of which $26,413 was for messing, $13,878 for housing, $1,993 for special medical attention, and $2,287 for textbooks. The balance of $57,365 covered 23,357 man days of instruction computed on the basis of the Institute's regular tuition fee prorated at $75 per *calendar month.*

A.A.F., Class "B" Pre-Meteorology: Contract W 2620 ac-126

Instruction of 242 trainees of the Army Air Forces, to prepare them to become aviation cadets and then undertake Class "A" Meteorology, started March 15, 1943. On September 18, 1943, 198 of this group were graduated from the program, 41 having been eliminated en route for academic failure and three for other causes.

After audit, a settlement on this contract was reached June 6, 1944, and later amended on September 29. The

Institute's net total financial reimbursement was $118,465, of which $46,338 was for messing, $21,669 for housing, and $6,624 for textbooks, supplies, and miscellaneous items. The balance of $43,834 was received in lieu of a tuition fee. Apportioning this latter sum over 26 weeks of instruction and among 222 trainees (the average number in attendance) yields an average of $7.59 per trainee per week as compared with the Institute's regular tuition fee prorated at $20 per student per week of instruction.

A.A.F., Class "A" Meteorology

As indicated in Tabulation (4), three separate groups of aviation cadets of the Army Air Forces received advanced Class "A" Meteorology instruction between March 16, 1942, and June 5, 1944; and 699 cadets graduated from this program and thereby qualified themselves to be commissioned as 2d Lieutenants in the Air Corps.

Students in Class "A" Meteorology, together with those in Class "B" Pre-Meteorology, formed the 3515th A.A.F. Base Unit under command of Major J. F. Ratliff, Sr., Air Corps.

Tabulation (4)			*(as individuals, no group contract)*	*Contract W 2620 ac-127*	*Contract W 30-053 ac-602*	*Totals*
Instruction began			March 16, 1942	January 4, 1943	October 4, 1943	
Aviation cadets	registered		105	427	293	825
	eliminated for	academic failure	6	43	47	96
		other causes	...	21	9	30
	graduated		99*	363*	237	699*
Date of graduation			November 30, 1942	September 6, 1943	June 5, 1944	...

* In addition four officers also took Class "A" Meteorology "training in grade" and were graduated: one on November 30, 1942, and three on September 6, 1943.

The detachment established its own medical facilities at the Institute, and all cadets received individual commutation allowances for quarters and subsistence, which were furnished them in the Undergraduate Dormitories and by the Walker

Memorial Dining Service. Reimbursement to the Institute for Class "A" Meteorology students was as follows:

(1) For the group in attendance March 16–November 30, 1942, at $600 per student, or an average of $70.59 per student per month, which compares with the Institute's regular tuition fee prorated at $75 per calendar month.

(2) Contract W 2620 ac-127: Payments on a sliding scale for the eight-month period of $600 for the "first 100 students enrolled," $500 for the "second 100," and $300 for "each student enrolled in excess of 200" — with abatements for any students withdrawn during the period. Charges accruing on this basis amounted to $167,319, from which a deduction of $9,774 was taken to offset the services of six Air Corps officers detailed to M. I. T. as instructors. An apportionment of the $167,319 over eight months and among 391 students (the average number in attendance) yields an average of $53.59 per student per month, which compares with the Institute's regular tuition fee prorated at $75 per calendar month.

(3) Contract W 30–053 ac-602: Payments under the standard "cost analysis" type of arrangement including an allowance of $2,524 for activating. Other costs are now in process of computation preliminary to audit and settlement.

Navy V-12: Contract NOp 73

On July 1, 1943, the Navy V-12 program became operative in 131 American colleges and universities with 77,000 student trainees selected from secondary schools and colleges, and from the fleet and shore establishments of the Navy. Its "mission" was that of meeting the Navy's calculated mounting demands for *officers* for active duty in the different branches, viz., deck, aviation, engineer, engineer specialist, supply corps, chaplain corps, aerology specialist, physics major, medical corps, dental corps, and reserves for the Marine Corps and Coast Guard.

Students under instruction in the V-12 program have the status and pay of apprentice seamen in the Navy, and are furnished tuition, uniforms, housing, food, and medical services. An excellent descriptive summary of the V-12 will be found in the *Journal* of the American Association of Collegiate Registrars, January, 1944.

The Institute was designated as one of the schools to participate in parts of this program for which we were especially qualified by reason of faculty and facilities, and our V-12 unit, which is housed and messed in the Graduate House, was established July 1, 1943, with an initial complement of 910 undergraduates as follows:

(*a*) Former V-1 and V-7 naval reservists who had been civilian students at the Institute during 1942–43, and who continued for 1943–44 in the regular M. I. T. curricula of their respective professional Courses	249
(*b*) Former V-1 and V-7 naval reservists who had been civilian students during 1942–43 at other colleges and universities at which V-12 units were not established. Among these were 62 men designated as pre-medical or pre-dental students. The remaining 351 transfers, men interested in engineering or scientific studies, were placed for 1943–44 in the Institute's regular curricula after a careful evaluation of each individual's academic credits	423
(*c*) Entering V-12 freshmen, selected by the Navy as a result of its country-wide V-12 examination held April 2, 1943. These students followed a "Basic" curriculum prescribed by the Navy in its V-12 Bulletin, No. 101	238
	910

At the close of the spring term of March, 1944, one academic year had been completed and the "fully-prescribed" (second year) curricula became effective for trainees of group (c) above. During the spring term these men were "screened" for upper-level specialties in engineering in accordance with the Navy Regulations. The Bureau of Naval Personnel had requested the Institute to give the fully-prescribed curricula (set forth in Bulletin 101) for Mechanical Engineering, Electrical Engineering (Power and Communications), Aerology, Naval Architecture and Marine Engineering, Aeronautical Engines and Aeronautical Structures, and, on March 6, 1944, 198 trainees were assigned to take work in these fields.

The V-12 freshmen who entered in July, 1943, contained many men of high promise and accomplishment, and since the content of the Navy's "fully-prescribed" curricula in the upper-level specialties paralleled the make-up of the Institute's undergraduate Courses in these fields, the Faculty voted on January 19, 1944:

"That the schedules listed in Navy V-12 Bulletin 101, with such minor changes as may be approved by the Committee and the Commanding Officer, be accepted by the Faculty as adequate for S.B. Degree in Courses I, II, VI, VIII, XIII, and XVI with respect to the following students *only*; those now in attendance in the first year of these schedules at the Institute and those who may transfer into this group from other V-12 programs in March, 1944, for the second year and following schedules. No decision, favorable or unfavorable, is implied with respect to other schedules or other groups until the need for a decision arises. Approval of these schedules for degrees is withdrawn when the Navy V-12 program is terminated."

At the close of each term there was considerable shifting of the trainees in the V-12 unit for many reasons other than academic, but new trainees assigned by the beginning of the following term brought the total complement "on board" to 857 for the fall term of 1943, and to 853 and 902 for the spring and summer terms of 1944, respectively. These new men were added as (1) basic V-12 (freshmen), (2) transfers from other V-12 units following a "fully prescribed" engineering course, or (3) "irregular" college transfers who were adjusted to the M. I. T. civilian schedules in engineering or scientific programs.

The curricula laid down for V-12 students mainly comprise subjects already being offered to civilian students, and the length of a V-12 term corresponds with that of our semester. Moreover, the underlying philosophy of the program, as expressed by Vice-Admiral Randall P. Jacobs, Chief of Naval Personnel, is "to give prospective naval officers the benefits of college education in those areas most needed by the Navy. We desire, in so far as possible, to preserve the normal pattern of college life. . . . We are contracting not merely for class-room, dormitory, and mess-hall space and for a stipulated amount of

instruction, but for the highest teaching skill, the best judgment, and the soundest administration of which colleges are capable."

Consequently, the integration of the V-12 unit with our regular schedules and practices has been more complete than for any other service program, and through the effective and wholehearted coöperation of the commanding officer, Captain Charles S. Joyce, U.S.N. (Ret)., Senior Naval Officer at M. I. T. and his staff with our Faculty and Administrative officers, the entire V-12 program has gone forward in a well-organized manner.

Navy Officer Programs

Aeronautical Engineering and Aircraft Engines: CONTRACT NOp 71 — Four groups, comprising a total of 330 commissioned personnel, received 12 weeks of instruction in these fields beginning February 8, 1943, as follows:

Period	*Aero. Eng.*	*Aircraft Eng.*	*Totals*
February 8–May 1	46	43	89
May 3–July 24	47	44	91
August 2–October 24	47	41	88
Nov. 8, 1943–Jan. 29, 1944	29	33	62
			330

On January 11, 1944, notification was received that no further "officers are now available and eligible for training in these fields." Instruction under this program, therefore, ended January 29; the contract was terminated as of February 7; and a final financial settlement was reached March 31.

The Institute's net total financial reimbursement (NOp 71 was under the "cost analysis" arrangement) amounted to $37,791, all being in lieu of a tuition fee since the contract included no provision for quartering or messing the officers. An apportionment of this sum over 49 weeks of instruction and among 83 officers (the average number in attendance) yields an average of $9.48 per officer per week. This average, however, is not comparable with the Institute's regular tuition fee prorated at $20 per student per week inasmuch as instruction

under NOp 71 was given by the equivalent of seven teachers carrying an average full-time teaching load of whom three were "full-time" naval officers provided without salary cost to the Institute.

Meteorology A: CONTRACT NOp 72 — A total of 101 naval officers, including 39 Waves, have so far completed eight-month courses in Meteorology "A," as follows:

Period	*Enrolled*	*Completed*
January 4, 1943–Sepember 6, 1943.....	50	46 (including 21 Waves)
October 4, 1943–June 5, 1944.....	63	55 (including 18 Waves)

A third group of 49 officers, including 24 Waves, began instruction on July 10, 1944.

Payments are being made to the Institute at "the rate of $410 per student for the eight month's course of instruction, based on the number of students enrolled in the course as of the tenth day after the beginning of the terms," *i.e.* at an average rate of $51.25 per student per month, which compares with the Institute's regular tuition fee prorated at $75 per calendar month.

Marine Transportation: CONTRACT NOp 359 — A total of 58 Navy Supply Corps officers completed 10-week courses in Marine Transportation as follows:

Period	*Enrolled*	*Completed*
March 20, 1943–May 27.....	25	24
June 5–August 12	21	21
August 21–October 28.....	13	13

Payments were made to the Institute at the rate of $175 per officer per 10-week course based on the number enrolled as of the tenth day, *i.e.* at an average rate of $17.50 per officer per week, which compares with the Institute's regular tuition fee prorated at $20 per student per week of instruction.

Student Life

Undergraduate Dormitories. On November 6, 1942, civilians removed from three halls of the Senior House (Atkinson, Runkle and Holman) to accommodate A.A.F. personnel,

and those in a fourth hall (Nichols) similarly left the following February. On March 6, 1943, all remaining civilian occupants in the Undergraduate Dormitories were obliged to vacate because of the impending inauguration of the A.S.T.P.

On April 5, 1944, it was possible, because of the departure of the A.S.T.P., to reopen three halls (Goodale, Bemis and Walcott) for civilian use, and to undertake reconditioning of the Senior House. By the beginning of the summer term, on July 10, practically the entire system was available for civilian occupancy, except Crafts and the fourth floor of Nichols in the Senior House. These latter sections were reserved as quarters for 24 Chinese Naval Officers who arrived July 1, under the auspices of the United States Navy, to begin a 24-month period of instruction in the Department of Naval Architecture and Marine Engineering.

Graduate House. All facilities, including the dining service (which closed to civilians on June 11, 1943) were turned over for use by the Navy V-12 unit beginning July 1, 1943, and are still being so used. Living accommodations for graduate students are now temporarily provided in the Undergraduate Dormitories.

Walker Memorial Dining Service. A.A.F. and A.S.T. personnel were messed along with civilians up to June 11, 1943, on which date all facilities were turned over for exclusive use by the A.A.F. and A.S.T.P. Temporary cafeteria service for civilian students, staff, and employees was provided from June 14 on in a newly constructed extension of the Barbour Field House. On April 3, 1944, Walker Dining Service reopened for service to civilians, with A.A.F. personnel of the last Meteorology "A" group continuing to mess there until June 5.

Fraternities. Despite the known handicaps of the situation, and its potential uncertainties, all chapters, except one, have managed to continue to operate. The Institute has endeavored, and will continue to exert every effort, to coöperate with student officers and their alumni trustees and advisers in order to preserve the elements of the Technology fraternity system which is now passing through the most trying period of its long history which dates back to 1882.

Athletics. Competition has been carried on during 1943–44 in 10 sports: basketball, crew, cross country, fencing, golf, lacrosse, squash, swimming, tennis and track. Seven sports have been dropped temporarily: boxing, gymnastics, hockey, pistol, rifle, soccer and wrestling. Freshman-sophomore Field Days were held on August 28, 1943, and on August 26, 1944. Under Naval regulations members of the V-12 unit are permitted to participate in intramural sports and as members of varsity teams on the same basis as civilian students.

The Briggs Field House, preëmpted by Army Anti-Aircraft troops on the Monday following Pearl Harbor, reverted to student use on July 1, 1943.

Publications. The Tech, on a weekly basis, and *T.E.N.* and *Voo Doo*, on their normal monthly basis, have maintained year-round publication schedules during 1943–44. *Technique 1944* was issued last spring, and *Technique 1945* is due to appear this autumn.

Freshman Camps. This feature of the normal undergraduate calendar, arranged under the auspices of the T.C.A. to acquaint the incoming freshman with extra-curricular opportunities to be found in student activity system, took place twice during 1943–44: on June 25–26, 1943, for the class entering June 28, and on March 4, 1944, for the group entering March 6. The first camp of 1944–45 was held July 7–8, 1944, for the class entering July 10. Each of these three camps was held on the Institute grounds rather than at Camp Massapoag, the scene of pre-war Freshman Camps.

Freshman Smoker. The President extended the Institute's official welcome to members of the first-year class at a dinner and smoker held at Walker Memorial on August 16, 1944, under the auspices of the Institute Committee. The speakers of the evening were Professor Edward L. Bowles, of the Department of Electrical Engineering, presently on leave from the Institute and serving as Expert Consultant to the Secretary of War, and Communications Consultant to the Commanding General of the Army Air Forces, and Raymond S. Stevens, President of the Alumni Association.

Student Aid

Distribution of student aid to undergraduates during 1943–44 compared with 1942–43 is set forth in Tabulation 5.

Tabulation 5	*1943–44*		*1942–43*	
	Number	*Award*	*Number*	*Award*
Freshman Scholarships	183	$33,900	214	$37,845
Other Undergraduate Scholarships	192	23,225	262	40,380
Total Scholarships	375	$57,125	476	$78,225
Undergraduate Loans	81	34,925	181	83,120
Total Aid to Undergraduates	356*	$92,050	577*	$161,345
Percentage of Undergraduate Registration Receiving Aid	29.1		23.5	

* Allowing for individuals receiving both scholarship and loan.

Tabulation 5, however, does not include grants totalling $3,900 to nine undergraduates of the three upper classes "born in Massachusetts," made possible by the continued generosity of the trustees of the James Melvin Trust, which aided 13 men to the extent of $3,750 during 1942–43. Nor does it include William Barton Rogers Awards of $300 made to five members of the Class of 1944 who had in the opinion of the Faculty on Undergraduate Scholarships demonstrated "outstanding qualities," judged on the dual basis of their academic records and extracurricular accomplishments.

Including both graduate and undergraduate students, the Loan Fund Board received 116 applications during 1943–44 and acted favorably upon 92, or 79.3 per cent, $39,225 being loaned. For 1942–43 the corresponding figures were: 308, 228, 74 per cent, and $98,991.

Repayments to the Fund during 1943–44 were $172,377 on principal account and $16,185 for interest, or a total of $188,562. Thus, for the third year in the history of the Fund, repayments on principal account exceeded the total of loans made, the excess being $149,332.

The cumulative record of the Fund from its establishment to 1930 up to June 30, 1944, appears in Tabulation 6.

Tabulation 6	*At June 30, 1944*	*At June 30, 1943*
Number of Individuals receiving Loans...	2,575	2,521
Total Amount Loaned.....	$1,874,301	$1,835,075
Average Amount Loaned per Capita....	$728	$728
Number of Individuals whose Indebtedness has been Completely Discharged..	1,480	1,262
Repayments Received on Principal Account.....	$1,204,075	$1,031,698
Total Matured Principal.....	$1,247,773	$1,086,345
Percentage of Maturities Paid.....	96.5	95.0
Total Matured Principal Unpaid.....	$43,698	$54,647
Total Interest Received.....	$180,964	$164,778

It is notable that the $180,964 received for interest up to June 30, 1944, was over four times the amount of matured principal then unpaid, $43,698.

The Student Employment Bureau of the T.C.A. placed a total of 227 individuals compared with 394 in 1942–43, and those placed in 1943–44 earned $26,608 compared with $51,109 last year.

As in June, 1943, no scholastic averages have been compiled this year for student activity groups, and the computation of coöperative fraternity averages is also being discontinued indefinitely.

H. E. LOBDELL.

DEAN OF THE GRADUATE SCHOOL

Statistics of registration in the Graduate School are presented in the report of the Registrar which next follows. The Registrar's Table 3A shows a total Graduate School enrolment of 357 (compared with 596 on a similar date of the previous year). The tabulation for the current year excludes 416 Meteorology "A" students, whereas in the previous year the corresponding group were included in the tabulation. The true comparison between 1942–43 and 1943–44 is 455 and 357, respectively, excluding students not actually enrolled for advanced degrees.

For certain groups assigned to us by military or naval authority for advanced specialized training, it has been possible to shape the specified training programs to meet established

requirements for a Master's degree; in other cases, the prescribed training or the preparation of the men has precluded the enrolment of these students for degrees.

As is to be expected under the requirements of young men for war service, a larger proportion than usual of graduate students is comprised of those from outside the United States.

The academic credentials of certain students from European countries are not available because of war conditions; those from certain other countries differ in form so much from ours that it is often difficult fairly to evaluate them. For this reason, and also in anticipation of post-war applications of students with irregular preparation and perhaps missing credentials, the Committee on the Graduate School has approved an amendment to its regularly established policy on admission requirements, which while maintaining our academic standards, permits a certain degree of flexibility.

An applicant who, though unable to present the documentary evidence of a Bachelor's degree and of his academic record for reasons beyond his control, is nevertheless judged by a Department Committee on Graduate Students to be well prepared and to possess the qualifications necessary to prosecute successfully work in that department toward an advanced degree, with or without additional preparation in prerequisite studies, may be granted admission as a Provisional Graduate Student.

The status of a Provisional Graduate Student will be changed by approval of the Dean of the Graduate School to that of a regular graduate student upon demonstration of necessary ability by passing a certain number of "A" grade graduate subjects of instruction with a satisfactory record under conditions set forth in *Rules and Regulations of the Graduate School*, edition of 1944, and as published in the catalogue.

It is intended that admission as Provisional Graduate Student will be applied only in cases where there is convincing evidence that the student is competent, and in no sense is it intended to become a mode of entry for applicants with inadequate preparation or low records.

It is a pleasure to announce the establishment of the

following new Graduate Fellowships established during the period covered by this report: Cauca University of Colombia Scholarship, available to one advanced student each year from that university who is accepted as a graduate student at the Massachusetts Institute of Technology, including a reciprocal arrangement; and the Institute of Inter-American Affairs Fellowship in the field of Sanitary Engineering.

Graduate scholarship aid was extended to 183 applicants toward tuition expenses applicable between July 1, 1943 and June 30, 1944 in the sum of $55,478 (excluding tuition for staff-member graduate students now chargeable to departmental budgets).

Advanced degrees conferred during the calendar year were: Ph.D., 22; Sc.D., 21; Dr. P.H., 3; S.M., 140; M.Arch., 4; M.C.P., 7; and M.P.H., 8; a total of 205.

JOHN W. M. BUNKER.

REGISTRAR

The replacement of civilians by Army and Navy students continued. The registration of the several groups for the past six terms is shown in Table A. The increase in the civilian registration this present term is due to the entering Freshman Class of 478 students.

During the period of the A.S.T.P. our total registration was above the normal of recent years. The continued decrease in civilian students and the withdrawal of all Army students have now reduced the registration to approximately 75 per cent of the normal registration, and the number of Navy students is about equal to the number of civilians.

There will be a further slight decrease in the term beginning November 6, 1944 as the Navy V-12 quota will be 824 instead of 900 and the civilian students are still being drafted.

J. C. MACKINNON.

TABLE A

REGISTRATION FROM SEPTEMBER, 1942 TO OCTOBER, 1944

	SEPT., '42–JAN., '43 (Nov. 1, '42)	FEB., '43–JUNE, '43 (Feb. 15, '43)	JULY, '43–OCT., '43 (Aug. 2, '43)	NOV., '43–FEB., '44 (Nov. 8, '43)	MARCH, '44–JUNE, '44 (April 3, '44)	JULY, '44–OCT., '44 (July 13, '44)
Civilians (Inc. XIII-A)	2,907	2,210	1,579	1,470	1,165	1,271
Army and Navy Meteor. "A"	141	470	416	351	297	...
Army						
A.S.T.P.	...	*	401	696	...	...
Meteor. "B"	...	†	201	...	...	...
Former R.O.T.C.	...	...	‡	193	...	...
Navy						
Aero. Eng.	...	46	47	29	...	...
Aircraft Eng.	..	43	41	33	...	..1
N.C.T.P. (V-12)	...	...	910	857	853	902
Marine Trans.	...	...	...	...	25	21
Meteor. "A"	...	...	...	...	...	49
Total	3,048	2,769	3,595	3,629	2,340	2,243

* Attended April '43 to March '44.
† Attended March '43 to Sept. '43.
‡ Attended Oct. '43 to Feb. '44.

STATISTICS ON REGISTRATION AND DEGREES

FOR THE YEAR 1943-1944

All statistics on registration are as of August 2, 1943
All statistics on degrees are through June, 1944

TABLE 1. Registration of Civilian Students Since the Foundation of the Institute

Year	Number of Students	Year	Number of Students	Year	Number of Students
1865–66	72	1892–93	1,060	1918–19	1,819
1866–67	137	1893–94	1,157	1919–20	3,078
1867–68	167	1894–95	1,183	1920–21	3,436
1868–69	172	1895–96	1,187	1921–22	3,505
1869–70	206	1896–97	1,198	1922–23	3,180
1870–71	224	1897–98	1,198	1923–24	2,949
1871–72	261	1898–99	1,171	1924–25	2,938
1872–73	348	1899–00	1,178	1925–26	2,813
1873–74	276	1900–01	1,277	1926–27	2,671
1874–75	248	1901–02	1,415	1927–28	2,712
1875–76	255	1902–03	1,608	1928–29	2,868
1876–77	215	1903–04	1,528	1929–30	3,066
1877–78	194	1904–05	1,561	1930–31	3,209
1878–79	188	1905–06	1,466	1931–32	3,188
1879–80	203	1906–07	1,397	1932–33	2,831
1880–81	253	1907–08	1,415	1933–34	2,606
1881–82	302	1908–09	1,461	1934–35	2,507
1882–83	368	1909–10	1,479	1935–36	2,540
1883–84	443	1910–11	1,506	1936–37	2,793
1884–85	579	1911–12	1,559	1937–38	2,966
1885–86	609	1912–13	1,611	1938–39	3,093
1886–87	637	1913–14	1,685	1939–40	3,100
1887–88	720	1914–15	1,816	1940–41	3,138
1888–89	827	1915–16	1,900	1941–42	3,055
1889–90	909	1916–17	1,957	1942–43	3,048
1890–91	937	1917–18	1,698	1943–44	1,579
1891–92	1,011				

TABLE 2. The Corps of Instructors

	'31	'32	'33	'34	'35	'36	'37	'38	'39	'40	'41	'42	'43
Faculty Members of the Staff	253	242	235	245	245	244	267	273	282	285	292	313	319
Professors	98	93	88	83	87	78	87	90	98	99	95	97	97
Associate Professors	68	60	57	69	81	87	89	98	89	92	99	104	108
Assistant Professors	79	81	80	82	68	70	76	72	83	83	86	98	99
Ex-Officio	3	3	5	6	6	6	5	6	7	7	7	8	9
Instructors	5	5	5	5	3	3	3	3	3	3	2	3	3
Technical Instructors	—	—	—	—	—	—	—	—	—	—	1	1	1
Research Associates	—	—	—	—	—	—	7	4	2	1	2	2	2
Other Members of the Staff	335	283	263	272	284	291	331	368	401	396	395	370	306
Instructors	133	105	90	86	90	97	101	97	99	91	101	100	97
Technical Instructors	—	—	—	—	—	—	—	—	—	—	6	7	8
Teaching Assistant	—	—	—	—	—	—	—	—	—	—	—	—	1
Teaching Fellows	—	21	22	20	24	51	52	52	52	55	52	60	52
Assistants	96	45	43	70	76	64	69	79	78	85	87	75	49
Technical Assistants	—	28	31	28	—	—	—	—	—	—	—	—	—
Lecturers	34	28	25	25	24	19	29	28	31	31	17	18	16
Research Consultant	—	—	—	—	—	—	—	—	—	—	—	—	1
Research Associates	31	32	25	22	27	31	22	25	36	35	47	34	23
Research Assistants	36	20	21	18	30	24	42	72	90	91	84	64	59
Research Fellows (D. I. C.)	5	3	3	2	1	—	—	—	—	—	—	—	—
Research Fellows	—	—	3	1	12	5	16	15	15	8	—	—	—
National Research Council Fellows	—	—	—	—	—	—	—	—	—	—	1	—	—
Special Investigator	—	1	—	—	—	—	—	—	—	—	—	—	—
Staff Members (D. I. C.)	—	—	—	—	—	—	—	—	—	—	—	12	—
Total	588	525	498	517	529	535	598	641	683	681	687	683	625
Other Members of the Faculty	15	17	25	26	27	31	28	28	28	32	37	40	39
Professors: Emeriti	7	13	21	23	24	29	27	27	27	31	36	39	38
Retired	3	—	—	—	—	—	—	—	—	—	—	—	—
Non-Resident	5	4	4	3	3	2	1	1	1	1	1	1	1

TABLE 3-A. Classification of Civilian Students by Courses and Years

Course Name and Number	1941–42 YEAR						1942–43 YEAR						1943–44 YEAR					
	1	2	3	4	G	Total	1	2	3	4	G	Total	1	2	3	4	G	Total
Aeronautical Engineering XVI	—	44	42	39	22	147	—	56	46	39	28	169	106	26	15	34	18	199
Architecture IV, IB-B, IV-C	13	13	21	11	18	76	12	13	15	14	12	66	2	3	3	3	11	22
Architecture (IV, IV-B, IV-C) Fifth Year	—	—	—	16	—	16	—	—	—	11	—	11	—	—	—	8	—	8
Biology and Public Health VII, VII-T	—	3	3	5	37	48	—	8	11	8	42	69	—	10	—	2	22	34
Building Engineering and Construction XVII	—	2	8	4	—	14	—	8	2	6	—	16	3	3	2	1	—	9
Business and Engineering Administration XV	—	67	55	61	22	205	—	60	63	52	2	177	27	8	8	16	9	68
Chemical Engineering X	—	97	70	62	68	297	—	123	95	41	43	302	127	49	16	14	33	239
Chemical Engineering Prac. X-A, X-B, X-C	—	—	—	10	41	51	—	—	—	28	30	58	—	—	—	21	18	39
Chemistry V	—	19	29	36	67	151	—	18	20	22	52	112	30	10	7	6	42	95
Civil Engineering I	—	23	14	18	16	71	—	21	17	14	20	72	27	12	7	11	15	72
Economics and Engineering or Science	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—
Electrical Engineering VI	—	22	40	50	39	151	—	39	39	42	39	159	95	38	11	18	34	196
Electrical Engineering (Coöperative) VI-A	—	31	41	19	14	105	—	43	27	42	16	128	—	8	10	16	7	41
Food Technology and Indust. Biology VII-B	—	6	5	9	—	20	—	—	—	—	—	—	—	—	—	3	—	3
General Engineering IX-B	—	7	13	16	—	36	—	7	11	20	—	38	9	—	1	10	—	20
General Science IX-A	—	3	8	10	—	21	—	—	3	9	—	12	—	1	1	1	—	3
Geology XII	—	3	5	5	14	27	—	1	2	2	8	13	1	—	—	—	5	6
Industrial Economics	—	—	—	—	12	12	—	—	—	—	15	15	—	—	—	—	8	8
Marine Transportation XIII-C	—	10	5	5	—	20	—	5	9	8	—	22	1	—	—	—	—	1
Marine Transportation (XIII-C) Fifth Year	—	—	—	7	—	7	—	—	—	—	—	—	—	—	—	—	—	—
Mathematics XVIII	—	5	7	4	11	27	—	4	1	7	10	22	4	5	1	2	7	19
Mechanical Engineering II	—	116	66	91	46	319	—	101	99	63	35	298	71	28	13	53	29	194
Torpedo Engineering (in Mech. Eng. Dept.)	—	—	—	—	2	2	—	—	—	—	2	2	—	—	—	—	6	6
Mechanical Engineering (Coöperative) II-A	—	—	8	9	7	24	—	—	11	9	10	30	—	—	—	—	—	—
Metallurgy III	—	25	23	33	32	113	—	20	25	18	19	82	6	2	5	11	14	38
Ceramics (in Metallurgy Department)	—	—	—	—	12	12	—	—	—	—	6	6	—	—	—	—	2	2
Meteorology XIV	—	—	—	—	110	110	—	—	—	—	141	141	—	—	—	—	19	19
Naval Architecture and Marine Eng. XIII	—	32	27	23	3	85	—	31	28	27	—	86	21	8	8	13	1	51
Naval Engineering (in Naval Arch. Dept.)	—	—	—	—	13	13	—	—	—	—	7	7	—	—	—	—	—	—
Naval Construction and Engineering XIII-A	—	—	19	18	9	46	—	—	27	17	18	62	—	—	21	41	17	79
Physical Biology VII-A	—	6	3	2	2	13	—	2	3	4	1	10	2	—	1	1	1	5
Physics VIII	—	18	16	27	59	120	—	28	20	16	39	103	25	16	9	13	37	100
Sanitary Engineering XI	—	2	3	1	2	8	—	—	3	2	1	6	—	—	—	1	2	3
Unclassified	—	13	43	4	—	60	—	15	23	1	—	39	—	—	—	—	—	—
First Year (Not including Course IV)	627	—	—	—	—	627	715	—	—	—	—	715	—	—	—	—	—	—
Total	640	567	574	595*	679	3,055	727	603	600	522*	596	3,048	557	227	139	299*	357	1,579

* These totals include fifth year in Architecture IV, City Planning IV-B, City Planning Practice IV-C, and Marine Transportation XIII-C.

TABLE 3-B. Classification of All Students by Courses and Years

I. Civilian and Navy V-12

Course Name and Number	August 2, 1943 — Year 1		Year 2		Year 3		Year 4		G	Total		November 8, 1943 — Year 1		Year 2		Year 3		Year 4		G	Total		April 3, 1944 — Year 1		Year 2		Year 3		Year 4		G	Total	
	C	N	C	N	C	N	C	N	C	C	N	C	N	C	N	C	N	C	N	C	C	N	C	N	C	N	C	N	C	N	C	C	N
ronautical Engineering XVI	106	1	26	16	15	16	34	6	18	199	39	92	10	27	20	16	16	29	7	26	190	53	18	8	43	68†	24	18	19	17	28	132	111
chitecture IV, IV-B, IV-C	2	—	3	—	3	—	3	—	11	22	—	3	—	4	—	5	—	3	—	8	23	—	1	—	5	—	5	—	4	—	8	23	—
Architecture (IV, IV,B, IV-C)																																	
Fifth Year	—	—	—	—	—	—	8	—	—	8		—	—	—	—	—	—	9	—	—	9	—	—	—	—	—	—	—	4	—	—	4	—
ology and Public Health VII, VII-T	—	4	10	56	—	4	5	—	22	37	64	2	3	9	44	1	3	3	—	25	40	50	1	1	6	7	7	17	1	1	19	34	26
ilding Engineering and Const. XVII	3	—	3	—	2	—	1	1	—	9	1	1	—	2	—	2	—	1	—	—	6	—	4	1	3	—	2	—	3	—	—	12	1
siness and Engineering Admin. XV	27	20	8	18	8	9	16	7	9	68	54	18	16	10	20	8	9	13	5	9	58	50	4	1	12	12	6	14	13	14	4	39	41
emical Engineering X	127	13	49	40	16	33	14	3	33	239	89	107	4	44	33	15	26	15	4	49	230	67	18	6	77	17	43	29	16	14	43	197	66
emical Engin. Prac. X-A, X-B, X-C	—	—	—	—	—	21	2	18	39	2		—	—	—	—	—	—	18	—	6	24	—	—	—	—	—	—	—	1	—	2	3	—
emistry V	30	—	10	2	7	2	6	—	42	95	4	20	—	7	3	6	2	6	—	48	87	5	5	—	15	—	9	2	5	2	41	75	4
vil Engineering I	27	17	12	7	7	4	11	2	15	72	30	18	9	12	5	7	4	9	3	17	63	21	10	5	9	10	12	6	10	7	13	54	28
ectrical Engineering VI	95	29	38	55	11	8	18	4	34	196	96	79	35	38	55	16	8	15	5	30	178	103	20	12	59	83	24	42	13	8	34	150	145
ectrical Engineering (Coöp.) VI-A	—	—	8	—	10	—	16	—	7	41	—	—	—	6	—	8	—	12	—	6	32	—	—	—	—	—	13	—	10	—	4	27	—
neral Engineering IX-B	9	—	—	1	1	—	10	4	—	20	5	6	1	—	3	2	1	7	4	—	15	9	—	—	3	—	—	5	4	2	—	7	7
neral Science IX-A	—	—	1	1	1	—	1	—	—	3	1	—	—	—	1	—	—	2	—	—	2	1	1	—	—	—	—	1	1	—	—	2	1
ology XII	1	—	—	—	—	—	—	—	5	6	—	—	—	—	—	—	—	1	—	4	5	—	1	—	1	—	—	—	1	—	2	5	—
dustrial Economics	—	—	—	—	—	—	—	—	8	8	—	—	—	—	—	—	—	—	—	10	10	—	—	—	—	—	—	—	—	—	7	7	—
arine Transportation XIII-C	1	—	—	—	—	3	—	3	—	1	6	—	—	—	—	—	2	—	3	—	—	5	—	—	—	—	—	—	—	1	2	—	1	2
athematics XVIII	4	—	5	—	1	—	2	—	7	19	—	2	—	3	—	1	—	1	—	10	17	—	—	—	2	—	4	—	1	—	7	14	—
echanical Engineering II	71	55	28	110	13	35	53	11	29	194	211	52	45	30	100	14	30	44	8	32	172	183	12	11	36	79	32	91	19	20	33	132	201
Army Ordn. (In Mech. Eng. Dept.)	—	—	—	—	—	—	—	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—
Torpedo Eng. (In Mech. Eng. Dept.)	—	—	—	—	—	—	—	—	6	6	—	—	—	—	—	—	—	—	—	6	6	—	—	—	—	—	—	—	—	—	3	3	—
etallurgy III	6	1	2	4	5	12	11	2	14	38	19	6	1	3	2	5	12	6	2	13	33	17	2	—	3	1	3	5	8	9	22	38	15
Ceramics (in Metallurgy Department)	—	—	—	—	—	—	—	—	2	2	—	—	—	—	—	—	—	—	—	5	5	—	—	—	—	—	—	—	—	—	4	4	—
eteorology XIV	—	1	—	—	—	4	—	—	19	19	5	—	1	—	—	4	5	—	—	25	29	6	—	—	—	39	4	20	—	4	22	26	63
aval Arch. and Marine Eng. XIII	21	—	8	16	8	11	13	10	1	51	37	20	3	5	14	7	12	12	10	1	45	39	2	1	14	28†	5	14	8	10	1	30	53
aval Construction and Eng. XIII-A	—	—	—	—	21	—	41	—	17	79	—	—	—	—	—	21	—	41	—	17	79	—	—	—	—	—	—	—	21	—	41	62	—
ysical Biology VII-A	2	—	—	—	1	—	1	—	1	5	—	—	—	—	—	1	—	1	—	—	2	—	2	—	—	—	—	—	2	—	—	4	—
ysics VIII	25	1	16	3	9	5	13	—	37	100	9	24	—	14	4	10	5	12	—	47	107	9	5	5	18	5	14	7	10	3	28	75	20
nitary Engineering XI	—	—	—	—	—	—	1	—	2	3	—	—	—	—	—	—	—	1	—	2	3	—	—	—	—	—	—	—	—	—	4	4	—
rst Year V-12	—	238	—	—	—	—	—	—	—	—	238	—	239†	—	—	—	—	—	—	—	—	239	—	69†	—	—	—	—	—	—	—	—	69
Total	557	380	227	329	139	146	299*	55	357	1579	910	450	367	214	304	149	135	261*	51	396	1470	857	106	120	306	349	207	271	175*	113	371	1165	853

* This total includes fifth year in Architecture.

† These figures include first term and second term students.

C = Civilian. N = Navy.

TABLE 3-B—(*Continued*) II. ARMY SPECIALIZED TRAINING PROGRAM (ASTP)

	TERM													
	1	4A		4		5		6		7		Total		
Course No.	Nov. 8, 1943	Aug. 2, 1943	Nov. 8, 1943	Aug. 2, 1943	Nov. 8, 1943	Aug. 2, 1943	Nov. 8, 1943	Aug. 2, 1943	Nov. 8, 1943	Aug. 2, 1943	Nov. 8, 1943	Aug. 2, 1943	Nov. 8, 1943	April 3, 1944
I	—	34	30	37	57	14	37	—	14	—	—	85	138	—
II	—	33	7	51	35	42	40	—	39	—	—	126	121	—
VI	—	21	41	25	122	21	37	—	21	—	—	67	221	—
X	—	41	—	48	—	11	39	—	11	—	—	100	50	—
XIII-C	—	—	—	—	—	—	—	—	—	23	25	23	25	—
Basic	141	—	—	—	—	—	—	—	—	—	—	—	141	—
Total	141	129	78	161	214	88	153	—	85	23	25	401	696	—

III. ASTP (FORMER ROTC) AS OF NOVEMBER 8, 1943

Course No.	No. of Students	Course No.	No. of Students	Course No.	No. of Students			
I	16	VI	35	XI	1			
II	39	VII	4	XII	1			
III	7	VIII	6	XV_1	14			
IV	6	IX-B	3	XV_2	11			
V	6	X	31	XVI	13			
					193	—	193	—

IV. OTHER ARMY AND NAVY GROUPS

Meteorology A (Army)	369	289	241
Meteorology B (Army)	201	—	—
Navy Aeronautical Engineering	47	29	—
Navy Aircraft Engineering	41	33	—
Meteorology A (Navy)	47	62	56
Navy Supply Officers	—	—	25
Navy College Training Program (V-12) (Given under I.)	910	857	853
Civilians (Given under I.)	1,579	1,470	1,165
Grand Total	3,595	3,629	2,340

TABLE 4-A

Classification of Civilian Students by Courses, Options and Years

COURSE No.	Name	Option	Opt.	YEAR 1 Opt.	1 Tot.	2 Opt.	2 Tot.	3 Opt.	3 Tot.	4 Opt.	4 Tot.	G Opt.	G Tot.	Total	Course Number
I	Civil Engineering			—	27	—	12	—	7	—	11	—	15	72	I
II	Mechanical Engineering			—	71	—	28	—	13	—	53	27	35	200	II
	Torpedo Engineering			—		—		—		—		6			
	Textile Technology			—		—		—		—		2			
III	Metallurgy	1. Metallurgy	1	—	6	—	2	—	5	10	11	11	16	40	III
		2. Mineral Dressing	2	—		—		—		1		3			
	Ceramics			—		—		—		—		2			
IV	Architecture			—	2	—	3	—	3	—	3	—	3	22	IV
	Fifth Year			—	—	—	—	—	—	—	8	—	—	8	IV-B
IV-B	City Planning			—	—	—	—	—	—	—	—	—	—	8	IV-B
V	Chemistry			—	30	—	10	—	7	—	6	—	42	95	V
VI	Electrical Engineering	1. Electric Power	1	52	95	7	38	1	11	7	18	—	34	196	VI
		2. Illuminating Engineering	2	—		1		—		1		—			
		3. Electrical Communications	3	22		14		8		6		—			
		4. Electronic Applications	4	21		16		2		4		—			
VI-A	Electrical Engineering — Coöperative			—	—	—	8	—	10	—	16	—	7	41	VI-A
VII	Biology and Biological Engineering	1. Quantitative Biology	1	—	—	—	10	—	—	2	5	—	10	25	VII
		2. Food Tech. and Ind. Biology	2	—		—		—		3		—			
VII-A	Physical Biology			—	2	—	—	—	1	—	1	—	1	5	VII-A
VII-T	Public Health			—	—	—	—	—	—	—	—	—	12	12	VII-T
VIII	Physics	1. General	1	19	25	10	16	5	9	8	13	—	37	100	VIII
		2. Applied	2	6		6		4		5		—			
IX-A	General Science			—	—	—	1	—	1	—	1	—	—	3	IX-A
IX-B	General Engineering			—	9	—	—	—	1	—	10	—	—	20	IX-B
X	Chemical Engineering			—	127	—	49	—	16	—	14	—	33	239	X
X-A	Chemical Engineering Practice — Graduate			—	—	—	—	—	—	—	—	—	9	9	X-A
X-B	Chemical Engineering Practice — Undergraduate			—	—	—	—	—	—	—	17	—	—	17	X-B
X-C	Chemical Engineering Practice			—	—	—	—	—	—	—	4	—	9	13	X-C
XI	Sanitary Engineering			—	—	—	—	—	—	—	1	—	2	3	XI
XII	Geology	1. Geology	1	—	1	—	—	—	—	—	—	—	5	6	XII
		2. Mineral Resources	2	—		—		—		—		—			
XIII	Naval Architecture and Marine Engineering			—	21	—	8	—	8	—	13	—	1	51	XIII
	Naval Engineering			—		—		—		—		—			

(Continued on page 71)

TABLE 4-A — (*Continued*)

Classification of Civilian Students by Courses, Options and Years

COURSE No.	Name	Option	Opt.	YEAR 1 Opt.	1 Tot.	2 Opt.	2 Tot.	3 Opt.	3 Tot.	4 Opt.	4 Tot.	G Opt.	G Tot.	Total	Course Number
XIII-A	Naval Construction and Engineering			—	—	—	—	—	21	—	41	—	17	79	XIII-A
XIII-C	Marine Transportation			—	1	—	—	—	—	—	—	—	—	1	XIII-C
XIV	Meteorology			—	—	—	—	—	—	—	—	—	19	19	XIV
XV	Business and Engineering Admin.	1. Physical Sciences	1	23	27	3	8	5	8	14	16	—	9	68	XV
		2. Chemical Sciences	2	4		5		3		2		—			
XVI	Aeronautical Engineering			—	106	—	26	—	15	—	34	—	18	199	XVI
XVII	Building Engineering and Construction			—	3	—	3	—	2	—	1	—	—	9	XVII
XVIII	Mathematics	1. Pure	1	—	4	—	5	—	1	2	2	—	7	19	XVIII
		2. Applied	2	—		—		—		—		—			
		3. Industrial Statistics	3	—		—		1		—		—			
	Industrial Economics			—	—	—	—	—	—	—	—	—	8	8	Ind.Econ.
	Total			557		227		139		299*		357		1,579	Total

* This total includes fifth year in Architecture

TABLE 4-B

Classification of Special Civilian Students by Courses and Years

(Included in Table 4-A)

COURSE	YEAR					TOTAL	COURSE
	1	2	3	4	G		
II Mechanical Engineering	—	1	1	—	4	6	II
III Metallurgy	—	—	—	—	1	1	III
IV Architecture (Fifth Year)	—	—	—	1	—	1	IV (Fifth Year)
IV-B City Planning	—	—	—	—	3	3	IV-B
V Chemistry	1	—	1	—	1	3	V
VI Electrical Engineering	—	—	—	1	6	7	VI
VII Biology and Biological Engineering	—	—	—	—	1	1	VII
VII-A Physical Biology	—	—	—	—	1	1	VII-A
VIII Physics	—	1	—	1	1	3	VIII
X Chemical Engineering	—	—	—	—	3	3	X
XI Sanitary Engineering	—	—	—	—	1	1	XI
XIII Naval Architecture and Marine Engineering	—	—	1	—	—	1	XIII
XIV Meteorology	—	—	—	—	4	4	XIV
XV Business and Engineering Administration	—	—	—	—	7	7	XV
XVIII Mathematics	—	2	—	—	3	5	XVIII
Total	1	4	3	3*	36	47	Total

*This total includes Fifth Year in Architecture.

TABLE 4-C

Classification of Former Civilian Students Who Returned This Year*

(Included in Table 4-A)

COURSE	YEAR					TOTAL	COURSE
	1	2	3	4	G		
I Civil Engineering	1	—	—	—	—	1	I
II Mechanical Engineering	—	1	—	1	2	4	II
III Metallurgy	—	—	—	1	—	1	III
IV Architecture	—	—	—	—	1	1	IV
IV-B City Planning	—	—	—	—	1	1	IV-B
V Chemistry	1	—	—	—	5	6	V
VI Electrical Engineering	—	—	1	—	1	2	VI
VII Biology and Biological Engineering	—	1	—	—	—	1	VII
VII-T Public Health	—	—	—	—	2	2	VII-T
VIII Physics	—	—	—	—	2	2	VIII
IX-B General Engineering	—	—	—	1	—	1	IX-B
X Chemical Engineering	—	1	—	—	3	4	X
XIII Naval Architecture and Marine Engineering	—	—	—	1	—	1	XIII
XIV Meteorology	—	—	—	—	1	1	XIV
XVI Aeronautical Engineering	—	—	1	—	1	2	XVI
Total	2	3	2	4	19	30	Total

* Excludes seven special students.

TABLE 5. Classification of Civilian Students by Courses since 1936

	1936–37	1937–38	1938–39	1939–40	1940–41	1941–42	1942–43	1943–44
Engineering Courses . . . . . Total	2,187	2,288	2,379	2,418	1,922	1,836	1,861	1,276
Aeronautical Engineering XVI	221	210	230	245	237	147	169	199
Architectural Engineering IV-A	12	5	2	—	—	—	—	—
Building Engineering and Construction XVII	23	27	29	26	17	14	16	9
Business and Engineering Administration XV	274	269	265	251	223	205	177	68
Chemical Engineering X, X-A, X-B, X-C	452	473	524	497	338	348	360	278
Civil Engineering I	122	123	114	104	80	71	72	72
Army Engineer (in Civil Engineering Dept.)	11	15	17	13	—	—	—	—
Electrical Engineering VI, VI-A	444	452	448	432	325	256	287	237
‡Electrochemical Engineering XIV	23	22	9	2	—	—	—	—
General Engineering IX-B	47	64	73	68	42	36	38	20
Mechanical Engineering II, II-A	313	370	401	433	353	345	330	200
Army Ordnance (in Mechanical Engineering Dept.)	10	12	10	22	4	—	—	—
*Metallurgy III	81	84	108	124	129	125	88	40
‡Meteorology XIV	—	—	—	—	—	110	141	19
*Mining Engineering III	32	35	25	10	—	—	—	—
Naval Architecture and Marine Eng. XIII, XIII-C	93	100	89	139	121	125	115	52
Naval Construction and Engineering XIII-A	23	21	28	42	49	46	62	79
Sanitary Engineering XI	6	6	7	10	4	8	6	3
Science Courses . . . . . Total	467	501	555	543	453	427	341	265
Biology and Public Health VII, VII-A, VII-B, VII-T	91	94	86	91	82	81	79	42
Chemistry V	176	186	203	194	162	151	112	95
General Science IX-A	20	25	33	30	22	21	12	3
Geology XII	26	32	45	36	34	27	13	6
Mathematics XVIII	20	27	28	40	30	27	22	19
Physics VIII	134	137	160	152	123	120	103	100
Architecture IV, IV-B, IV-C . . . . . Total	97	111	100	108	112	92	77	30
Economics and Eng. or Sci., and Industrial Eng. Total	7	3	4	1	3	13	15	8
Unclassified . . . . . Total	35	63	55	30	64	60	39	—
†*First Year (not including Course IV) . . . . . Total*	—	—	—	—	584	627	715	—
Grand Total	2,793	2,966	3,093	3,100	3,138	3,055	3,048	1,579

* June 1940, Mining Engineering discontinued. Metallurgy, formerly Course XIX, changed to Course III.
† From September 1940 to November 1942, First Year Students not required to designate choice of course except for Course IV.
‡ June 1940, Electrochemical Engineering discontinued. June 1941, Meteorology, formerly included in Aeronautical Engineering, changed to Course XIV.

TABLE 6

GEOGRAPHICAL CLASSIFICATION OF CIVILIAN STUDENTS SINCE 1939

UNITED STATES	1939	1940	1941	1942	1943
North Atlantic . . . . . Total	2,050	2,060	2,056	2,068	1,002
Connecticut	124	104	116	142	61
Maine	22	22	28	30	12
Massachusetts	979	951	896	906	445
New Hampshire	19	21	28	32	12
New Jersey	173	180	178	168	73
New York	522	558	586	566	303
Pennsylvania	152	165	177	170	76
Rhode Island	50	47	35	41	12
Vermont	9	12	12	13	8
South Atlantic . . . . . Total	185	187	167	192	104
Delaware	15	14	10	12	7
District of Columbia	59	52	42	41	32
Florida	21	26	25	32	14
Georgia	11	11	13	11	1
Maryland	27	36	29	36	14
North Carolina	6	11	16	12	9
South Carolina	5	4	1	6	4
Virginia	23	21	20	30	11
West Virginia	18	12	11	12	12
South Central . . . . . Total	106	99	103	98	45
Alabama	15	9	9	10	5
Arkansas	6	4	8	8	2
Kentucky	14	18	18	14	4
Louisiana	12	12	9	5	5
Mississippi	4	7	8	6	2
Tennessee	13	14	18	20	12
Texas	42	35	33	35	15
North Central . . . . . Total	375	403	377	363	169
Illinois	115	121	103	106	51
Indiana	12	22	23	19	8
Iowa	9	14	5	5	2
Kansas	8	7	7	13	4
Michigan	44	45	47	39	26
Minnesota	14	18	10	20	6
Missouri	50	41	44	39	18
Nebraska	9	13	9	10	7
North Dakota	2	1	4	5	2
Ohio	96	99	99	90	35
South Dakota	2	3	3	3	—
Wisconsin	14	19	23	14	10
Western . . . . . Total	153	154	145	136	72
Arizona	6	6	—	3	2
California	42	44	45	42	26
Colorado	28	26	22	19	8
Idaho	1	—	1	1	—
Montana	11	6	8	7	4
Nevada	2	1	—	1	1
New Mexico	7	6	3	4	2
Oklahoma	9	19	19	11	8
Oregon	12	12	15	16	10
Utah	11	10	7	4	4
Washington	22	21	23	27	7
Wyoming	2	3	2	1	—
Territories and Dependencies . . . . Total	14	11	12	13	12
Alaska	—	—	1	—	—
Canal Zone	1	1	1	1	—
Hawaii	4	5	4	5	2
Puerto Rico	9	5	6	7	10
Total for United States	2,883	2,914	2,860	2,870	1,404

(Continued on page 75)

TABLE 6 — (*Continued*)

Foreign Countries	1939	1940	1941	1942	1943
Total	217	224	195	178	175
Argentina	5	6	4	7	9
Australia	1	1	1	—	—
Bahamas	—	—	—	1	—
Barbados	—	2	—	—	—
Belgium	4	2	—	—	—
Bolivia	—	1	—	2	1
Brazil	11	11	14	13	11
British West Indies	3	1	2	1	1
Canada	47	37	24	21	12
Chile	1	3	—	3	2
China	29	26	37	31	34
Colombia	6	6	6	4	3
Cuba	11	13	15	15	14
Czechoslovakia	1	1	—	—	—
Denmark	2	1	1	—	—
Dominican Republic	1	1	1	1	2
Ecuador	—	—	1	1	—
Egypt	—	1	—	—	—
England	4	2	1	—	—
Finland	—	—	1	1	—
France	6	2	2	—	—
Germany	4	2	1	—	—
Greece	—	2	1	1	—
Guatemala	1	2	2	4	3
Haiti	1	2	—	—	1
Honduras	2	2	2	1	—
Iceland	—	1	—	1	1
India	4	14	11	7	7
Iran	—	—	1	1	1
Italy	4	3	1	—	—
Japan	1	2	—	—	—
Mexico	8	8	9	12	10
Netherlands	7	1	1	—	—
New Zealand	1	1	—	—	—
Nicaragua	—	—	—	1	1
Norway	7	7	4	—	—
Palestine	—	1	—	—	—
Peru	1	5	6	7	10
Philippines	10	18	11	5	2
Poland	1	—	—	—	—
Portugal	—	1	2	1	—
Rhodesia	—	1	—	—	—
Roumania	1	2	2	—	—
Salvador	—	1	1	1	1
Scotland	1	—	—	—	—
South Africa	—	—	—	1	—
Spain	1	1	—	—	—
Straits Settlements	1	1	1	1	1
Sweden	1	1	—	—	—
Switzerland	5	4	1	2	—
Syria	1	1	1	—	—
Thailand	8	6	4	—	—
Turkey	9	12	16	17	35
Union of South Africa	1	1	1	1	1
Union of Socialistic Soviet Republics	2	—	—	—	—
Uruguay	—	—	2	5	3
Venezuela	2	4	4	8	9
Grand Total, United States and Foreign	3,100	3,138	3,055	3,048	1,579

TABLE 7. New Civilian Students Entering from Other Colleges as Candidates for Degrees

Class Joined at the Institute	Years Spent at College				Total
	One	Two	Three	Four or more	
First Year	10	1	—	1	12
Second Year	7	11	2	—	20
Third Year	—	1	3	27	31
Fourth Year	—	—	—	1	1
Graduate Year	—	—	13	47	60
Total	17	13	18	76	124

TABLE 8

Women Students Classified by Courses and Years

COURSE	YEAR					Total
	1	2	3	4	G	
II Mechanical Engineering	1	—	—	—	—	1
IV Architecture	1	2	2	1	1	7
Fifth Year	—	—	—	3	—	3
IV-B City Planning	—	—	—	—	1	1
V Chemistry	4	3	1	1	3	12
VI Electrical Engineering	—	—	1	—	—	1
VII Biology and Biological Engineering	—	—	—	1	4	5
VII-T Public Health	—	—	—	—	9	9
VIII Physics	—	2	—	—	2	4
IX-B General Engineering	1	—	—	—	—	1
X Chemical Engineering	1	1	1	—	1	4
XIII Naval Architecture and Marine Engineering	—	—	1	—	—	1
XIV Meteorology	—	—	—	—	2	2
XV Business and Engineering Administration	—	—	—	—	1	1
XVI Aeronautical Engineering	3	—	—	2	—	5
XVIII Mathematics	1	3	1	—	—	5
Industrial Economics	—	—	—	—	3	3
Total	12	11	7	8*	27	65

*This total includes Fifth Year in Architecture.

TABLE 9

Old and New Civilian Students

Year	1938–39	1939–40	1940–41	1941–42	1942–43	1943–44
Students registered at end of last academic year (including specials)	1,955	1,985	1,973	1,897	1,936	855
Students who have previously attended the Institute, but were not registered at end of last academic year (including specials)	96	100	127	77	84	37
New students who entered by examination	213	198	229	318	212	190
New students who entered without examination	399	338	303	264	462	351
New students who entered from other colleges as candidates for degrees	379	419	404	367	326	124
New students (specials, not candidates for degrees)	51	60	102	132	28	22
Total	3,093	3,100	3,138	3,055	3,048	1,579

TABLE 10. List of American Colleges and Universities with Number of Graduates Attending the Institute

College		College		College	
Adelphi College	1	Loyola University	1	University of Akron	2
Alfred University	1	Mass. Inst. of Tech.	94	University of Alabama	1
Amherst College	4	Mass. State College	1	University of Arkansas	1
Bates College	1	Miami University	1	University of Buffalo	1
Beloit College	1	Missouri School of Mines	1	University of California	7
Berea College	1	Montana School of Mines	2	University of Delaware	1
Boston College	1	Morehouse College	1	University of Florida	1
Boston University	1	Mt. Holyoke College	2	University of Illinois	3
Bowdoin College	1	New Bedford Textile School	1	University of Kansas	4
Bridgeport Engineering Institute	1	New York University	2	University of Kentucky	2
Brooklyn College	1	North Carolina State College A. & E.	3	University of Michigan	2
Brown University	1	North Central College	2	Univ. of Memphis Law Sch.	1
Bucknell University	1	Northeastern University	1	University of Minnesota	2
California Inst. of Tech.	3	Oberlin College	2	University of Missouri	1
Carleton College	1	Ohio State University	4	University of Nebraska	2
Case School of App. Science	1	Ohio Wesleyan University	2	Univ. of New Hampshire	1
Colby College	3	Oklahoma A. & M. College	1	Univ. of North Carolina	1
Colgate University	1	Pacific Union College	1	University of Oklahoma	2
College of the City of N. Y.	1	Polytechnic Inst. of Brooklyn	1	University of Pennsylvania	1
College of the Holy Cross	1	Pomona College	1	University of Pittsburgh	1
College of William & Mary	2	Pratt Institute	1	University of Rochester	1
College of Wooster	1	Princeton University	5	University of Scranton	1
Colorado College	2	Purdue University	5	University of Texas	2
Colorado School of Mines	1	Queens College	1	University of Utah	2
Columbia University (N. Y.)	2	Radcliffe College	4	University of Vermont	1
Cornell University	4	Reed College	2	University of Virginia	2
Dartmouth College	3	Regis College	1	University of Washington	2
DePauw University	1	Rensselaer Poly. Inst.	4	University of Wisconsin	2
Dickinson College	1	Rhode Island State College	1	Ursinus College	1
Emmanuel College	1	Rice Institute	1	Vassar College	2
Emory University	1	St. Francis College	1	Villanova College	1
George Washington Univ.	1	St. Lawrence University	1	Virginia Polytechnic Inst.	1
Gettysburg College	1	Simmons College	1	Virginia Union University	1
Hampton Institute	1	Smith College	2	Washington & Jefferson Coll.	3
Harvard University	15	Southwestern	2	Wellesley College	2
Hobart College	1	Springfield College	1	W. Virginia Wesleyan Coll.	1
Howard University	1	Stanford University	1	Wheaton College (Illinois)	1
Illinois Inst. of Tech.	1	State College of Washington	1	William Jewell College	1
Iowa State College of A. & M. A.	5	State University of Iowa	2	Williams College	1
Iowa Wesleyan College	1	Swarthmore College	2	Worcester Polytech. Inst.	2
James Millikin University	1	Syracuse University	1	Yale University	2
Jamestown College	1	Teachers College of the City of Boston	1	Total	395
Juniata College	1	Temple University	3	Number of American Colleges Represented	140
Kalamazoo College	1	Texas College of Arts and Industries	2	Number of Foreign Colleges Represented (Not Listed)	52
Knox College	1	Trinity College (Hartford, Conn.)	1	Total	192
Lawrence Institute Tech.	1	Tufts College	3		
Lehigh University	2	Union College (N. Y.)	2		
Linfield College	1	U. S. Coast Guard Academy	10		
Louisiana State Univ. & Agric. & Mech. College	1	U. S. Naval Academy	56		
Lowell Textile Inst.	1				

TABLE 11

Regular Civilian Students from Colleges Classified by Courses

COURSE	No Previous Degree			Graduates of Other Colleges					Graduates of M. I. T. Taking Graduate Work		
	Entered			Entered							
				July 1943		Previous Years					
	July 1943	Previous Years	Total	Undergrad.	Grad.	Undergrad.	Grad.	Total	S.B. Degree 1943	Other Graduates	Total
Aeronautical Engineering XVI	5	19	24	1	2	9	16	28	—	—	—
Architecture IV, IV-B	—	4	4	—	1	—	4	5	1	2	3
Biology and Public Health VII, VII-T	—	1	1	—	10	1	11	22	—	—	—
Business and Engineering Administration XV	1	6	7	—	—	—	2	2	—	—	—
Chemical Engineering X, X-A, X-B, X-C	7	11	18	—	6	4	27	37	12	3	15
Chemistry V	3	1	4	1	3	1	23	28	6	9	15
Civil Engineering I	1	8	9	—	7	—	6	13	1	1	2
Electrical Engineering VI, VI-A	9	18	27	5	10	3	15	33	8	2	10
General Engineering IX-B	—	5	5	—	—	—	—	—	—	—	—
General Science IX-A	—	—	—	—	—	1	—	1	—	—	—
Geology XII	—	—	—	—	—	—	4	4	—	1	1
Industrial Economics	—	—	—	—	2	—	6	8	—	—	—
Mathematics XVIII	—	1	1	—	1	—	2	3	—	1	1
Mechanical Engineering II	4	19	23	—	6	4	17	27	2	6	8
Metallurgy III	1	6	7	—	3	—	6	9	—	6	6
Meteorology XIV	—	—	—	—	—	—	15	15	—	—	—
Naval Architecture XIII, XIII-C	1	5	6	—	1	—	—	1	—	—	—
Naval Construction and Engineering XIII-A	—	15	15	21	—	26	17	64	—	—	—
Physics VIII	4	6	10	—	8	—	21	29	—	7	7
Sanitary Engineering XI	—	—	—	—	—	1	1	2	—	—	—
Total	36	125	161	28	60	50	193	331	30	38	68

TABLE 12. Number of Degrees Awarded in December 1943, February 1944, and June 1944

Name of Course	S.B.			B.Arch. and B.Arch.C.P.			S.M.			M.Arch. and M.C.P.			Ph.D.			Sc.D.			Total		
	Dec. 1943	Feb.* 1944	June* 1944	Dec. 1943	Feb. 1944	June 1944	Dec. 1943	Feb. 1944	June 1944	Dec. 1943	Feb. 1944	June 1944	Dec. 1943	Feb. 1944	June 1944	Dec. 1943	Feb. 1944	June 1944	Dec. 1943	Feb. 1944	June 1944
ical Engineering	1	32	3	—	—	—	3	3	13	—	—	—	—	—	—	—	—	1	4	35	17
ure	—	—	—	—	6	1	—	—	—	3	1	—	—	—	—	—	—	—	3	7	1
Engineering and Construction	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
and Engineering Adminis.	—	13	4	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	14	4
	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
l Engineering	1	15	14	—	—	—	8	1	1	—	—	—	—	—	—	5	1	3	14	17	18
l Engineering Practice	7	18	2	—	—	—	14	5	2	—	—	—	—	—	—	—	—	—	21	23	4
y	—	6	2	—	—	—	1	—	1	—	—	—	4	6	2	—	—	—	5	12	5
nning	—	—	—	—	—	—	—	—	—	4	3	—	—	—	—	—	—	—	4	3	—
gineering	1	5	3	—	—	—	1	4	4	—	—	—	—	—	—	—	—	—	2	9	7
l Engineering (Inc. VI-A)	17	27	8	—	—	—	9	3	5	—	—	—	—	—	—	—	—	1	26	30	14
ch. and Industrial Biology	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	1
Engineering	2	9	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	9	2
Science	—	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2
	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	2	—	1	2	—
Engineering	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Transportation	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—
atics	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	1	—
cal Engineering (Inc. II-A)	9	41	18	—	—	—	4	6	2	—	—	—	—	—	—	—	—	1	13	47	21
gy	5	4	3	—	—	—	2	3	—	—	—	—	—	—	—	2	2	2	9	9	5
ogy	—	—	—	—	—	—	9	—	8	—	—	—	—	—	—	—	—	—	9	—	8
rch. and Marine Engineering	—	16	2	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	17	2
onstruction and Engineering	—	—	—	—	—	—	—	17	—	—	—	—	—	—	—	—	—	—	—	17	—
Biology (Inc. VII-A)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	—	10	5	—	—	—	—	—	—	—	—	—	2	4	3	—	1	—	2	15	8
ealth	—	—	—	—	—	—	1‡	3‡	4‡	—	—	—	—	1†	2†	—	—	—	1	4	6
tive Biology (Inc. VII-A)	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—
Engineering	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—
echnology	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Course Classification	—	—	—	—	—	—	2	1	3	—	—	—	—	—	—	—	—	—	2	1	3
l	44	206	70	—	6	1	56	48	44	7	4	—	7	11	7	7	6	8	121	281	130

ncludes 36 Navy V-12 students in February and five in June.
Doctor of Public Health.
Master in Public Health.

TABLE 13

Degrees of Bachelor of Science According to Class in Which They Were Awarded

Class	Aeronautical Eng.	Architectural Eng.‡	Architecture	Biology or Natural Hist. (Inc. VII-A)	Bldg. Eng. & Constr.	Business and Eng. Admin.	Chemical Eng.	Chemical Eng. Practice X-B	Chemistry	Civil Engineering	Electrical Eng. (Inc. VI-A)	Electrochemical Engineering*	General Eng.	General Science or General Course	Geology	Mathematics	Mechanical Eng. (Inc. II-A)	Metallurgy**	Military Eng.	Mining Eng. and Metallurgy	Naval Arch.	Physics	Sanitary Eng.	Total	Total by Decades
1868									1	6				1			1			6				14	
1869									1	2							2							5	
1870									1	4				1			2			2				10	29
1871									2	8							2			5				17	
1872									3	3							1			5				12	
1873			1						7	12				1			2			3				26	
1874			1							10				2			4			1				18	
1875			1						1	10				2			7			6		1		28	
1876			1	2					5	12				4			8			8		3		43	
1877			4						2	12							6			8				32	
1878			3						3	8				1			2			2				19	
1879			1	1					3	6							8			3		1		23	
1880									1	3				1						3				8	226
1881			3	1					8	3				2			5			6				28	
1882			3	1					6	2				1			5			5		1		24	
1883			1						3	3							7			5				19	
1884									12	5							6			13				36	
1885			2						4	4	2			1			7			8				28	
1886			1	1					7	9	10			1			23			7				59	
1887			1	1					9	10	8			3			17			8		1		58	
1888			5	3					10	11	17			1			25			4		1		77	
1889			3	1					8	14	17			2			24			5		1		75	
1890			5	3					13	25	18			6	1		28			3		2		103	507
1891			6	3			7		11	18	23			1	1		26			4		3		103	
1892			13	6			4		7	22	36			7	1		26			4		1	6	133	
1893			2	2			8		8	25	41			6	2		30			5				129	
1894			14	1			12		11	21	33			5			31			4		3	3	138	
1895			15				11		14	25	33			4			30			3	5	2	4	146	
1896			24	3			7		17	26	48			7	3		34			10	5	3	4	191	
1897			16	2			12		20	25	33			7	1		40			7	9	3	4	179	
1898			29	3			9		25	32	33			6			41			7	7	4	3	199	
1899			22	2			10		22	30	32			1			37			9	8	2	1	176	
1900			21	3			11		19	32	23			5			34			21	9	3	4	185	1,579
1901			21	1			14		17	37	25			6	1		39			18	16	1	4	200	
1902			18	5			9		14	24	35			3			46			14	14	3	7	192	
1903			15	1			10		13	26	39	1		1	1		37			27	12	3	4	190	
1904			24	3			7		15	34	34	8		5	1		45			32	17	5	2	232	
1905			12	3			13		23	46	31	3		3	1		54			26	24		5	244	
1906			22	2			10		21	47	37	3					69			38	19	4	6	278	
1907			21				14		10	37	32	5		2			52			22	10		3	208	
1908			19	4			15		16	48	38	2					62			19	5		2	230	
1909			18	5			13		12	51	42	3					41			30	5	3	9	232	
1910			18	3			18		10	57	36	3		2			57			24	11		12	251	2,257

(Continued on page 81)

TABLE 13 — (*Continued*)

Degrees of Bachelor of Science According to Class in Which They Were Awarded

Class	Aeronautical Eng.	Architectural Eng.‡	Architecture	Biology or Natural Hist. (Inc. VII-A)	Bldg. Eng. & Constr.	Business and Eng. Admin.	Chemical Eng.	Chemical Eng. Practice X-B	Chemistry	Civil Engineering	Electrical Eng. (Inc. VI-A)	Electrochemical Engineering*	General Eng.	General Science or General Course	Geology	Mathematics	Mechanical Eng. (Inc. II-A)	Metallurgy**	Military Eng.	Mining Eng. and Metallurgy	Naval Arch.	Physics	Sanitary Eng.	Total	Total by Decades
1911 . .	—	—	10	1	—	—	19	—	12	46	49	5	—	2	—	—	49	—	—	17	6	1	15	232	
1912 . .	—	—	21	4	—	—	31	—	7	55	52	3	—	1	—	—	47	—	—	21	3	2	14	261	
1913 . .	—	—	26	2	—	—	30	—	12	58	43	8	—	—	—	—	50	—	—	20	4	1	15	269	
1914 . .	—	—	19	6	—	—	37	—	9	60	51	8	—	4	—	—	65	—	—	17	8	1	19	304	
1915 . .	—	—	30	3	—	—	33	—	23	49	42	10	—	3	—	—	69	—	—	5	7	3	12	289	
1916 . .	—	—	37	5	—	—	32	—	11	45	56	14	—	2	—	—	84	—	—	5	9†	3	18	321	
1917 . .	—	—	27	10	—	37	43	—	13	49	45	10	—	5	2	—	63	—	—	14	9†	1	17	345	
1918 . .	—	—	28	7	—	29	40	—	10	45	50	11	2	4	1	—	75	—	—	10	4	3	5	324	
1919 . .	—	—	16	9	—	28	44	—	8	45	50	6	3	1	—	—	66	—	—	7	7	4	6	299	
1920 . .	—	—	19	2	—	48	63	—	6	52	30	9	1	4	—	—	55	—	—	13	12	2	2	319	2,963
1921 . .	—	—	11	3	—	70	92	—	9	98	75	15	15	—	3	—	128	—	—	24	18	1	3	565	
1922 . .	—	—	32	8	—	126	98	15	11	65	109	25	25	1	8	—	56	—	—	27	16	8	7	637	
1923 . .	—	13	18	6	—	115	73	19	16	64	78	16	23	2	8	3	106	—	—	23	13	9	3	608	
1924 . .	—	6	15	6	—	82	57	8	13	69	125	17	36	4	2	1	82	—	—	19	11	3	1	557	
1925 . .	—	6	18	2	—	94	53	8	18	57	110	9	37	2	3	2	98	—	—	23	10	5	—	555	
1926 . .	—	9	24	5	—	95	45	13	19	76	108	14	33	2	4	1	76	—	—	20	14	1	2	561	
1927 . .	2	15	19	6	—	89	39	6	13	73	121	8	22	2	3	3	72	1	—	9	4	4	3	514	
1928 . .	8	19	16	5	—	73	38	7	13	59	114	11	12	2	1	3	67	—	—	12	3	3	5	471	
1929 . .	29	25	26	7	9	69	37	11	18	46	84	10	14	1	2	5	64	—	—	11	5	4	6	483	
1930 . .	29	15	44	9	23	59	39	12	11	46	76	8	9	1	2	1	48	—	—	6	6	11	4	459	5,410
1931 . .	39	10	18	16	15	68	32	10	12	49	83	6	22	5	3	4	70	—	—	12	13	7	2	496	
1932 . .	27	16	5	15	18	70	45	7	15	38	74	4	29	3	2	3	68	—	4	21	16	21	4	505	
1933 . .	27	9	—	13	9	56	38	3	18	47	86	8	16	3	2	7	86	—	—	14	13	14	2	471	
1934 . .	26	10	—	16	13	78	48	6	15	35	82	7	8	9	1	8	50	—	—	26	25	28	5	496	
1935 . .	27	8	—	18	8	74	43	5	15	18	57	8	19	4	1	3	45	—	—	14	14	19	1	401	
1936 . .	27	3	—	13	12	63	31	20	16	23	68	5	25	6	2	8	47	—	—	10	18	11	2	410	
1937 . .	30	3	—	9	4	61	34	9	13	15	67	5	20	4	—	4	46	—	—	19	19	17	1	380	
1938 . .	25	3	—	11	4	56	51	6	14	22	62	4	28	6	1	2	50	10	—	5	23	14	2	399	
1939 . .	30	2	—	6	7	56	53	12	25	23	67	7	19	13	4	2	72	20	—	9	8	17	1	453	
1940 . .	29	—	—	12	9	59	59	12	23	14	73	2	36	20	6	7	68	22	—	7	24	22	—	504	4,515
1941 . .	36	—	—	6	7	59	54	8	28	22	79	—	23	5	8	6	90	29	—	—	18	23	—	501	
1942 . .	39	—	—	17	3	61	60	8	34	16	66	—	20	11	5	4	98	34	—	—	29	25	1	531	
1943 . .	38	—	—	10	5	49	49	14	21	14	83	—	18	11	2	6	80	24	—	—	33	14	1	472	
§1944 . .	35	—	—	4	1	17	29	20	8	8	35	—	11	4	—	1	59	7	—	—	20	15	2	276	
Total . .	503	172	865	338	147	1,841	1,783	239	923	2,346	3,206	301	526	246	90	84	3,372	146	5	880	618	371	264	19,266	

* Prior to 1909 this Course was designated as Option 3 (Electrochemistry) of Course VIII.
† Two received the degree in Naval Architecture, Course XIII-B, in 1916 and three in 1917.
‡ Prior to 1923 degrees were awarded in Architecture.
** Prior to 1938 included in Mining Engineering and Metallurgy.
§ Includes only February and June degrees awarded in Class 2-44.

TABLE 14

Degrees of Master of Science Awarded

	Aeronautical Engineering	Architecture	Biol. & P. H. (Inc. VII-A)	Business and Eng. Admin.	Ceramics	Chemical Engineering	Chem. Eng. Practice X-A	Chemistry	Civil Engineering	Economics and Engineering	Electrical Eng. (Inc. VI-A)	Geology	Marine Engineering	Mathematics	Mech. Eng. (Inc. II-A)	Metallurgy	Meteorology	Naval Architecture	Naval Construction and Eng.	Petroleum Engineering	Physics	Sanitary Engineering	Without Course Classification	Total
1886	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
1887	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
1888	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1889	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1890	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1891	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1892	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1893	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
1894	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
1895	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	3
1896	—	2	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
1897	—	2	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	4
1898	—	1	—	—	—	2	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	—	5
1899	—	1	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
1900	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1901	—	2	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	4
1902	—	3	—	—	—	—	—	3	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	8
1903	—	5	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	7
1904	—	4	—	—	—	—	—	1	—	—	2	—	—	—	1	—	—	—	3	—	1	—	—	12
1905	—	9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8	—	—	1	—	18
1906	—	3	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	2	3	—	—	—	—	9
1907	—	6	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	8	—	—	—	—	15
1908	—	1	—	—	—	—	—	1	—	—	3	—	—	—	—	—	—	—	7	—	—	—	—	12
1909	—	6	—	—	—	1	—	1	2	—	1	1	—	—	1	—	—	—	3	—	1	—	—	17
1910	—	6	1	—	—	—	—	1	2	—	1	—	—	—	1	—	—	—	7	—	—	—	—	19
1911	—	5	2	—	—	—	—	2	2	—	4	—	—	—	2	—	—	—	3	—	—	—	—	20
1912	—	4	2	—	—	—	—	3	3	—	2	—	—	—	—	—	—	—	4	—	—	2	—	20
1913	—	4	1	—	—	7	—	—	1	—	1	1	—	—	2	—	—	—	2	—	—	—	—	19
1914	—	3	2	—	—	3	—	5	3	—	2	1	—	—	1	—	—	—	2	—	—	3	—	25
1915	1	4	—	—	—	2	—	2	1	—	10	—	—	—	4	—	—	1	2	—	—	—	—	27
1916	5	7	1	—	—	1	—	3	5	—	6	—	—	—	4	—	—	—	2	—	—	1	—	35
1917	4	3	—	—	—	1	—	1	3	—	5	—	—	—	1	—	—	—	9	—	1	2	—	30
1918	5	1	1	—	—	1	—	1	1	—	2	—	—	—	2	—	—	—	—	—	—	—	1	15
1919	2	—	—	—	—	—	—	3	4	—	4	—	—	1	1	—	—	—	—	—	—	—	—	15
1920	—	—	1	—	—	3	—	2	4	—	7	3	—	1	5	—	—	—	19	—	1	—	4	50
1921	3	—	—	—	—	29	—	6	2	—	4	2	—	—	10	—	—	—	20	—	—	—	17	93
1922	5	—	—	—	—	6	32	4	5	—	37	2	—	2	4	—	—	—	10	—	1	—	18	126
1923	10	—	—	—	—	3	34	1	5	—	45	2	—	—	15	1	—	4	21	—	3	—	26	170
1924	4	—	—	—	—	6	41	1	5	—	34	1	—	—	8	1	—	—	12	—	5	—	28	146
1925	5	—	—	1	—	3	35	3	5	—	35	—	—	—	10	2	—	—	—	—	2	1	21	123
1926	6	—	—	—	—	5	20	2	2	—	60	3	—	—	6	1	—	—	12	—	—	—	25	142
1927	9	—	1	—	—	2	26	4	6	—	54	6	—	1	13	—	—	—	6	—	1	—	32	161
1928	9	—	—	—	—	5	14	2	8	—	63	—	—	2	13	—	—	—	9	—	1	—	43	169
1929	5	—	—	2	—	3	21	4	6	—	79	4	—	2	16	—	—	—	6	—	2	1	45	196
1930	3	—	—	1	—	7	22	5	9	—	51	1	—	2	5	3	—	1	5	—	1	1	53	170
1931	4	—	2	5	—	15	34	5	12	—	57	2	—	5	10	4	4	—	8	—	2	—	20	189
1932	5	—	5	9	—	25	33	8	17	—	56	2	—	3	16	1	4	—	7	—	6	—	40	237
1933	10	—	1	5	—	14	26	7	12	—	46	—	—	1	18	2	—	1	13	—	4	2	20	182
1934	7	—	5	5	—	16	19	11	9	—	46	3	—	3	20	5	1	—	11	—	3	1	21	186
1935	3	—	1	2	—	16	14	4	13	—	55	—	—	3	16	6	—	—	10	—	7	2	21	173
1936	5	—	—	4	2	7	30	3	19	—	22	2	—	2	14	—	4	1	7	1	5	—	23	151
1937	12	—	1	5	1	12	29	8	17	7	35	—	—	1	15	4	4	—	8	1	2	1	23	186
1938	13	—	—	8	—	11	28	1	29	2	58	—	—	1	24	1	4	—	7	1	3	—	30	221
1939	8	—	3	8	—	20	34	1	31	3	45	2	—	1	21	6	6	—	8	—	5	2	28	232
1940	9	—	1	9	—	16	37	3	20	—	54	4	—	5	22	7	8	18	10	2	3	2	37	267
1941	16	—	1	12	—	15	42	3	10	3	35	3	1	2	25	7	18	14	22	—	4	1	25	259
1942	9	—	2	16	1	12	23	2	5	1	24	2	15	1	24	8	11	—	9	—	—	1	7	173
1943	21	—	1	—	—	15	36	3	9	—	30	2	7	—	26	5	14	—	18	—	2	1	4	194
1944	16	—	—	1	1	2	7	1	8	—	8	—	—	—	8	3	8	1	17	—	—	—	4	85
Total	214	84	36	93	5	288	637	127	296	16	1,083	49	23	39	390	67	86	43	338	5	69	26	616	4,630

Total of degrees in discontinued courses, Architectural Engineering, Electrochemical Engineering, Fuel and Gas Engineering, General Science, Mining Engineering, Naval Construction, Foreign Students, and Railroad Operation (see 1940–41 Report)	126
Grand Total.	4,756

* Includes only February and June degrees [illegible]

TABLE 15

Degrees Awarded in Architecture and City Planning

Year	Bachelor in Architecture	Bachelor of Architecture in City Planning	Master in Architecture	Master in City Planning
1921	—	—	3	—
1922	—	—	2	—
1923	—	—	7	—
1924	—	—	8	—
1925	—	—	5	—
1926	—	—	9	—
1927	—	—	7	—
1928	—	—	6	—
1929	—	—	9	—
1930	—	—	7	—
1931	—	—	9	—
1932	11	—	5	—
1933	24	—	7	—
1934	27	—	—	—
1935	17	4	11	—
1936	14	4	4	2
1937	9	2	11	3
1938	19	1	3	3
1939	14	1	10	3
1940	11	2	21	7
1941	17	2	6	1
1942	15	1	4	4
1943	10	—	3	6
*1944	7	—	1	3
Total	195	17	158	32

.* Includes only February and June degrees.

TABLE 16

Degrees of Master in Public Health Awarded

Year	Number
1941	3
1942	11
1943	10
*1944	7
Total	31

* Includes only February and June degrees.

TABLE 17

Degrees of Doctor of Philosophy Awarded

Year	Biology	Chemistry	Geology	Mathematics	Physics	Total
1907	—	3	—	—	—	3
1908	—	3	—	—	—	3
1909	—	—	—	—	—	—
1910	—	1	1	—	—	2
1911	1	—	—	—	—	1
1912	—	3	3	—	—	6
1913	—	1	—	—	—	1
1914	—	2	—	—	—	2
1915	—	2	—	—	—	2
1916	—	1	1	—	1	3
1917	—	3	1	—	—	4
1918	—	3	1	—	—	4
1919	—	—	—	—	1	1
1920	—	4	1	—	—	5
1921	1	3	—	—	3	7
1922	—	4	1	—	—	5
1923	—	5	1	—	—	6
1924	2	10	—	—	2	14
1925	—	11	—	—	—	11
1926	—	2	2	—	—	4
1927	2	6	1	1	1	11
1928	1	5	1	1	—	8
1929	4	8	2	1	—	15
1930	—	5	2	3	—	10
1931	—	9	—	1	—	10
1932	1	12	—	1	2	16
1933	2	10	3	3	—	18
1934	2	10	2	2	1	17
1935	4	15	2	3	7	31
1936	—	15	—	3	12	30
1937	2	11	4	1	10	28
1938	2	12	2	4	7	27
1939	1	33	4	3	4	45
1940	3	19	5	4	5	36
1941	1	18	1	3	5	28
1942	1	19	5	1	8	34
1943	2	8	2	3	8	23
*1944	—	8	—	—	7	15
Total	32	284	48	38	84	486

* Includes only February and June degrees.

TABLE 18. DEGREES OF DOCTOR OF SCIENCE AWARDED

Year	Aero. Eng.	Ceramics	Chem. Eng.	Chemistry	Civil Eng.	Elec. Eng.	Electrochem. Eng.	Geology	Mathematics	Mech. Eng.	Metallurgy	Meteorology	Min. Eng.	Naval Arch.	Petroleum Eng.	Physics	San. Eng.	Total
1911	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
1912	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1913	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1914	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1915	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
1916	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
1917	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
1918	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1919	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1920	1	—	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	3
1921	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1922	1	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	3
1923	1	—	—	—	—	—	—	1	—	—	1	—	—	—	—	2	—	5
1924	—	—	2	—	—	1	—	1	—	—	1	—	—	—	—	1	—	6
1925	1	—	3	—	—	—	—	—	—	—	3	—	—	—	—	—	—	7
1926	—	—	1	1	1	1	1	—	—	—	4	—	—	—	—	—	—	9
1927	—	—	—	—	—	1	—	—	1	1	2	—	—	—	—	1	—	6
1928	1	—	5	—	1	2	—	—	—	—	1	—	—	—	—	—	—	10
1929	—	—	3	—	—	—	—	—	—	—	1	—	—	1	—	1	—	6
1930	—	—	9	—	—	6	—	—	1	3	1	—	—	—	—	—	—	20
1931	—	—	3	2	—	3	—	—	—	—	1	—	—	—	—	—	—	9
1932	—	—	5	—	1	2	—	1	—	2	1	—	—	—	—	2	—	14
1933	—	—	10	1	2	3	—	—	1	—	6	—	1	—	—	—	—	24
1934	—	—	3	—	—	2	1	1	—	3	2	1	—	—	—	—	—	13
1935	—	1	2	1	—	4	—	—	2	—	1	1	—	—	—	1	1	14
1936	2	1	12	—	—	1	—	—	—	2	3	—	1	—	—	2	—	24
1937	1	1	9	1	1	6	—	—	—	2	—	—	—	—	1	1	—	23
1938	—	1	12	—	2	7	—	1	—	2	5	3	—	—	—	5	—	38
1939	2	1	10	—	3	1	—	—	—	—	4	1	1	—	—	3	—	26
1940	—	2	12	—	3	1	—	1	—	2	2	—	1	—	—	4	1	29
1941	1	1	15	3	—	3	—	—	—	3	8	3	—	—	—	3	1	41
1942	1	2	14	—	2	—	—	—	—	1	3	1	—	—	—	2	—	26
1943	—	2	10	—	—	1	—	—	—	—	5	—	—	—	—	2	—	20
*1944	1	—	4	—	—	1	—	2	—	1	4	—	—	—	—	1	—	14
Total	14	12	144	10	16	50	2	9	5	22	59	10	5	1	1	31	3	394

*Includes only February and June degrees.

TABLE 19

DEGREES OF DOCTOR OF PUBLIC HEALTH AWARDED

Year	Number
1924	1
1927	1
1928	1
1930	1
1939	1
1942	1
1944	3
Total	9

TABLE 20

DEGREES OF DOCTOR OF ENGINEERING AWARDED (*Discontinued after 1918*)

Year	Electrical Engineering	Electrochemical Engineering	Total
1910	1	—	1
1914	1	—	1
1916	1	—	1
1917	—	1	1
Total	3	1	4

TABLE 21

SUMMARY OF DEGREES AWARDED (1868–1944)

Bachelor of Science	19,266
Bachelor in Architecture	195
Bachelor of Architecture in City Planning	17
Master of Science	4,756
Master in Architecture	158
Master in City Planning	32
Master in Public Health	31
Doctor of Philosophy	486
Doctor of Science	394
Doctor of Public Health	9
Doctor of Engineering (Discontinued after 1918)	4
Grand Total	25,348

Director of Admissions

The Institute, unlike most colleges and universities, has made no change in its academic standards of admission under the stress of war conditions. Formal subject-matter requirements were made very flexible by the revisions of 1936, so that no further changes have been necessary. Furthermore, since the number of applicants has undergone only a moderate reduction, it has been possible to maintain a high standard of selectivity in choosing the limited group accepted for admission.

In 1944, for the first time in many years, the First Year class entered at two separate dates. A class of 106 First Year civilian students entered on March 6, and 478 entered on July 10. The March class was accepted in order to accommodate a considerable number of students who had attended school throughout the summer of 1943. Being thus able to graduate from secondary school a half-year earlier than usual, they would for the most part have been unwilling to defer entrance until July. These March and July classes together constitute the 1944 entering group and form a total comparable in size with the June 1943 class, and with September classes of earlier years. In 1944, as in 1943, no entering class was accepted in the fall term since, with the exception of a very few off-schedule cases, all available applicants had been considered at one of the earlier dates.

The following comparisons summarize the first year applications in the past two years:

	March, 1944	*July, 1944*	*Total, 1944*	*June, 1943*
Total Applications.....	349	1356	1705	2059
Admissions Granted....	144	701	845	922
Actually Registered....	106	478	584	583
Registrations as % of Admissions.....	73.7%	68.1%	69.0%	63.2%

These figures may be interpreted in the light of the accompanying war conditions. During the months in which 1943 applications were being received, considerable uncertainty existed as to the extent of possible deferment for technical students under the Selective Service regulations. In the

corresponding period in 1944, however, it was certain that deferments would not be granted. The number of applications accordingly dropped from 2,059 to 1,705, but the shrinkage between number admitted and number actually registered grew less.

As might be expected under the operation of the Selective Service Act, the age of the entering group has progressively decreased. In the class which entered in 1942, 38.2 per cent had reached age 18 by July 1; for the 1943 class the corresponding figure was 13.8 per cent, and for 1944, 10.7 per cent. These figures measure the "absolute" difference in age composition among the three groups. The difference is, however, further accentuated by the earlier date of entrance now prevailing, as shown by the fact that for the 1942 class (the last which entered in September), 54.8 per cent had reached 18 by the date of entrance. At present, therefore, in round numbers, only one-tenth of the class is over 18 at entrance, as compared with over one-half under normal conditions.

College transfer applications, as might be expected, sank to a very low level, only 28 admissions being granted in March, and 35 in July.

The number of inquiries from men in the armed forces, as well as from relatives on their behalf, regarding post-war admission, has grown rapidly and continues to increase. To meet this situation an explanatory statement has been prepared, together with a special "post-war" preliminary application. Both are on air-weight paper suitable for overseas mailing, and the application is designed to be filled out in the field without reference to records. This makes it possible to provide the applicant with a rough evaluation of his status, as a guide for future action. The policy of the Admissions Office has been (1) to provide assistance and information wherever possible, but (2) to defer any final action on post-war applications until such time as they can be expressed in terms of definite numbers and for specified dates of entrance. Correspondence of this type indicates that the morale value of information and discussion about post-war educational plans is considerable.

Attention is likewise being given to procedures for veterans' education now being developed under the Service Men's

Readjustment Act (G. I. Bill), and to the problem of evaluation of credits for the wide variety of service courses, both in colleges and elsewhere, and under the Armed Forces Institute.

Special problems have arisen with reference to the admission of foreign students. The drop in total registration, combined with an extraordinary increase in applications from certain countries, notably China and India, has threatened to bring about an unbalance in the proportions of the various elements of the student body. Admissions from some countries have therefore been restricted. Failure to take such measures well in advance might easily have resulted in a situation in which men returning from the war, encountering a rush of post-war applicants, might feel that their places had been preëmpted in their absence by students from other countries.

Contacts with secondary schools, Honorary Secretaries and alumni groups were maintained on a considerably reduced scale. The Honorary Secretaries have continued to perform an invaluable service in interviewing and counselling applicants for admission. This work, carried on frequently under difficult conditions of wartime pressure, has greatly contributed to the effectiveness of our policy of selective admission.

B. A. THRESHER.

LIBRARIAN

For another year the work of the Library has been profoundly affected by war conditions. Student patronage diminished greatly because there were fewer civilian students, both graduate and undergraduate, and the A.S.T.P. and V-12 students had only limited need or time to make use of the Library. On the other hand, the use of the Library by research men, both from within and without the Institute, increased notably and their borrowings accounted for one-fifth the entire home use of the libraries. Such users have been made welcome in all the libraries, and have been given essentially the same service as our own men.

Net accessions, owing in part to the foreign book and periodical situation and in part to the absence of so many faculty members on war work, fell off to 6,692, bringing the

total contents of the Library on June 30 to 377,962. Current or recent issues of the more important German periodicals were obtained in reprint form through the publishing program of the Alien Property Custodian, and about 60 German technical books in the same way. Copies of 1941 and 1942 issues and some of 1943 were still being received on microfilm from the Edwards establishment at Ann Arbor.

The Library Growth Fund continued to play an important part in building up the collections; from it ten appropriations, totalling $2,128, were granted to eight departments. On June 30 the fund had reached a total of slightly over $15,000.

The outstanding event of the year was the advancement of plans for the erection of a new main library building after the war. Members of the administration, the Faculty Committee on the Library, Professor L. B. Anderson, and the Library Staff Council, made preliminary studies of the problem and Mr. Welles Bosworth, architect of the original group of buildings, was called into consultation. The Library Staff Council is a newly-organized group consisting of the heads of Library departments and branches, whose main activity will consist of advising the Librarian in matters of internal policy and method. Its principal contribution was a revision of the Staff Association's study of 1941 under the new title "Supplementary Data About a New Library Building," dated June 15, 1944.

The circulation of one- and two-week books showed a moderate increase in Central, Aeronautics, Dewey and Walker, and a decrease in Arthur Rotch, Eastman and Lindgren, with a net increase from last year's total of 87,080 to 90,875 (Central 31,972, science and engineering branches 29,236, Walker Memorial 29,667). Overnight circulation, reflecting decreased student use, fell off in all libraries except Aeronautics and Dewey, to a total of 29,129. It was still true, however, that even in the libraries reporting decreased circulation there was abundant or even increased attendance by readers using material within the room.

The growth of our service to industrial firms has been felt in all the branches other than Walker, but especially in the Central Reference Department. Here the number of inter-library loans to firms increased over 38 per cent, to a total of

2,137; these were in addition to loans to individual members of such firms made at the Circulation Desk in the usual way. The total of interlibrary loans by this department to all libraries and firms was 4,478. The largest industrial users of the Library were Arthur D. Little, Inc., Polaroid Corporation, and Sylvania Electric Products, Inc., and the largest government borrowers were the Boston Navy Yard, Watertown Arsenal, Boston Ordnance District and the Marine Biological Laboratory at Woods Hole. Harvard University borrowed 421 items; Brown University and the universities of New Hampshire, Chicago and California were large borrowers.

Books, periodicals and theses borrowed from other libraries for M. I. T. men totalled 484 items. The Library filled 618 orders for photostats and 104 for microfilms; and it was necessary to obtain from other libraries, for M. I. T. men, 51 photostats and 13 microfilms. Twenty-four bibliographies were prepared in response to requests received by letter, and telephone calls to this department rose from 4,756 to 5,192. One project of the department was the reorganizing of the trade catalog collection.

The Associate Reference Librarian prepared seven exhibits, two of which were displayed in the first floor main lobby, and she donated considerable time to the Museum Committee's exhibit work in the absence of Mr. Arthur C. Watson. She prepared also the *Technology Bookshelf*, and the *List of Periodical Publications, Books and Reviews by Members of the Staff.*

The volume and variety of the work done by the Reference Department is impressive; it would make a sizeable report by itself, but space allows only the above brief summary.

The annual budget having been reduced by one-tenth to help the Institute meet an expected deficit owing to Army and Navy requirements, all libraries were closed at five o'clock beginning July 1; very soon, however, it was necessary to reopen evenings, at the request of the Navy. Subsequent evening attendance seemed to justify this change.

The small civilian enrolment resulted in a shortage of student assistants, making it most difficult to maintain satisfactory desk service in the various libraries during necessary absences of the librarians. This situation also reacted severely

upon the Catalog Department, whose members were obliged to give over 11 weeks' time to substituting in the various libraries. Counting other outside work this department lent over 39 weeks' time to other departments. The important task of cataloging was thus seriously hampered throughout the year. This unfortunate situation will continue until additional help can be provided.

The process of disposing of our surplus duplicate periodicals continued, under the handicap of inadequate help; it was even necessary at one time to make use of high school boys. Nevertheless, a large number of duplicates were sold, many were given to the A.L.A. Committee on Aid to Libraries in War Areas, and large donations went to the Committee on Inter-American Scientific Publication to help establish libraries for the Instituto Matematico and Instituto de Química of Mexico. Several tons of printed matter that had lost its original value were contributed to the drive for waste paper salvage.

A welcome sign of growing student interest in the Library appeared along two lines: first, the revival of interest in religion resulting from the war led the Religious Action Division of the T.C.A. to prepare a list of religious books of varying lines of thought, many of which were purchased and put on open shelves in the main reading-room; second, officers of the M. I. T. Nautical Association prepared a list of books on sailing, seamanship, and shipbuilding on the basis of which the nautical collection at Walker Memorial Library was strengthened.

Vail Library service felt keenly the effects of wartime conditions. Emphasis on the needs of Army and Navy students reduced the use of Vail material. Graduate student registration was less than half of normal, and largely of foreign students. The temporary absence of many Electrical Engineering staff members on special work continued. All these conditions caused definite changes in Vail service, 30 per cent of which was rendered to the war activities both of inside laboratories and outside firms. Progress was made on the development of a trade catalog collection, but other projects await the end of the war. A reading list on Engineering Teaching, selected to show trends in engineering education, was prepared by Mrs. Lane and appeared in the *Journal of Engineering Education* for June,

1944. An exhibit illustrating the Vail Library experimental program in technical reading was prepared by the Vail Library Assistant.

The Aeronautics Librarian records a larger registration of borrowers and an increase in circulation of 27.6 per cent; this is attributed largely to the systematic addition of many new books to build up weak spots in the aeronautical collection. The meteorology collection is still weak, owing to inadequate funds. A card index of material in British aeronautical periodicals has been begun, also an index to helicopter material; and the principal exhibit of the year, the Evolution of the Helicopter, met enthusiastic response. The deposit in the Sloan Automotive Laboratory continued to be actively used.

In the Dewey Library there was a notable increase in reference work. Thirty bibliographies were prepared for alumni, other individuals and firms. There was a steady increase in the use of both engineering and economics material by war research laboratories and firms. A Statistics Reserve Collection of over 100 volumes was set aside at the request of Professor H. A. Freeman, and a list of the books made for distribution. At the request of Admiral Pellian T. Mar of the Chinese Navy, a selected list of books recommended for a library of naval architecture was prepared by Mr. McNay, to be used in building up a library for a newly organized Naval Institute in China.

The Eastman Librarian reports the emphasis on war research ever increasing, with especially large use by members of the Division of Industrial Coöperation and the Radiation Laboratory; the branch was also used extensively by many other departments of the Institute than those of Physics, Chemistry and Mathematics for which it was established. The drop in circulation is ascribed to the fact that students at the present time are more dependent on their texts and have less time for collateral reading.

In Lindgren the circulation drop was due to decreased enrolment, fewer courses given, less assigned reading, and less research being done by faculty members and graduate students. The use of geological books fell off but there was some increase in metallurgy and a great deal in ceramics. There was extensive

use of the library by Army and Navy men and the war laboratories, and large use of the map room.

At Walker Library, Mrs. Flint was absent on leave for a second year and Miss Barbara Davis continued as Acting Librarian. Even in this branch the increase in circulation was largely due to use by special personnel, especially war laboratory men and women and Army and Navy students. There was considerable loss of reserved books from the English and History room, which will necessitate restrictive measures never necessary heretofore.

The Library Committee, consisting of Professors W. L. Barrow (to September 20) and D. V. Brown, successively Chairman, and Professors Burchard, Weber, Chapman, Keenan, Huntress, and the Librarian *ex officio*, held four meetings. At the April meeting it discussed problems connected with planning the new Library building and later canvassed the heads of all departments regarding their requirements in such a building.

The Friends of the Library committee held a luncheon meeting on May 10. On June 22, a letter was sent out to industrial firms and others inviting financial support. This met with a very generous response.

The Staff Association held meetings monthly from September to June. At two meetings the need of a staff manual of procedure was discussed and Miss Hazen was asked to head a committee to gather material for it. Among the speakers at other meetings were Professor D. D. Durrell, Dean of Boston University School of Education, Miss Florence Whitehead, Dr. Karl W. Deutsch, Mr. Clarence E. Walton of the Harvard College Library, and Mrs. May Lamberton Becker.

Various members of the staff attended the meeting of the Engineering Librarians' Committee of S.P.E.E., New England Section, held here in October, 1943, and the meeting of New England College Librarians held at Wellesley in June, 1944. The Librarian attended the Eastern Conference of College Librarians at Columbia University in January and Mrs. Lane the national conferences of Special Libraries Association at Philadelphia and of S.P.E.E. at Cincinnati, both in June.

The Librarian was appointed by the Engineering School

Libraries Section of the Association of College and Reference Libraries to represent it on the Board of Directors of the association. Mrs. Lane continued to serve on Committee Z–39 of the American Standards Association and as Chairman of the Engineering School Librarians' Committee of S.P.E.E.

Gifts were not numerous. Probably the most interesting one consisted of 63 finely-bound editions of the works of great writers and public men which had belonged to President Walker, given by his daughters, Miss Lucy Walker, '89, and Miss Evelyn Walker. Included were the writings of Washington, Jefferson, Daniel Webster, Montaigne, Macaulay, and Bancroft.

An extensive collection of the musical compositions of the late Arthur W. Thayer, '77, was presented by Mrs. Thayer, and several alumni and members of the faculty presented copies of their works for the Technology Collection.

To Harvard College Library, to Kalamazoo Public Library, to Watertown Arsenal, and to Raytheon, Inc., we are indebted for useful files of their surplus periodicals.

It will be seen from the early portion of this report that the war has brought decided changes in the Institute Library's activities, with the major emphasis shifting from coöperation with the teaching program to coöperation with research. This period has been a valuable rehearsal for the post-war years, when a restored and strengthened teaching program and widening fields of research, both academic and industrial, will make equal and increasing demands upon the Library. A future of great usefulness, both within and without the Institute walls, lies before it and must be planned for with vision.

W. N. SEAVER.

DIRECTOR OF DIVISION OF INDUSTRIAL COOPERATION

The work of the Division shows continued increase over last year. A major crisis was precipitated in the spring through the threatened refusal of deferment of all men below the age of 26. It was only through the efforts of Dr. Vannevar Bush and the Office of Scientific Research and Development, with Army and Navy coöperation, that a method was set up so that

continued deferments for essential men in this age group were obtained. Enforcement of the dictum denying deferment to all men under 26 would have made impossible the completion of many major war research projects because certain types of problems can be solved only by recent graduates trained in the latest scientific techniques.

Placement Officer

Alumni Placement. During the year ending June 30, 1944 continued war conditions in industry seriously aggravated the manpower shortage. Requests for men outnumbered men wanting placement help by 599. Only 40 of the men who registered for employment met the age requirements (less than 10 years' experience) of 422 of the job specifications.

Throughout the year industry's greatest need was for machine designers and electronics engineers, a demand we found impossible to meet.

Comparative placement statistics are given in the following table:

	1943–44	*1942–43*
Number of Jobs	986	916
Men who went on Available List	387	502
Men who came off Available List	233	559
Placements	107	167

In late July a questionnaire was sent to all Alumni of the classes between 1920 and 1944 (21,000), designed to obtain information to guide the Institute in two of its post-war problems:

(*a*) Organization of a reorientation program for Alumni, and,

(*b*) Organization of a Post-War Placement program to help men now in temporary jobs or in the services.

As of September 15, 5,600 men had returned their questionnaires. Of these, approximately 1,800 are interested in more education; 1,275 in placement immediately after the war; and 2,175 have indicated that they are satisfied with their employment. Of the 1,800 who want more education, at least

three-fourths also indicate a desire for placement assistance, but we are assuming that such assistance will not be needed until after the men have completed additional schooling.

Undergraduate Placement. A report on the placement of the February graduating class of 281 follows:

	Number of Graduates	*Number Placed*	*Per Cent Placed* 1944	1943	1942
Bachelors	208	201	96.6	98.5	96.5
Masters	52	51	98.1	96.7	98.0
Doctors	17	17	100.0	96.6	91.9
C.P.H.	4	4	100.0	90.0	...
	281	273	97.2	97.9	96.7

Eighty-nine graduates went directly to the Armed Services, with an additional 11 who have applied for commissions but who are currently employed in essential industry. Of the others, 27 were employed in the aircraft industry, 24 in chemical manufacture, 28 in electrical equipment. The rest accepted positions in a wide range of professional activities.

Recruiting was vigorously continued by companies whose priority on draft seemed to warrant hope that deferments could be obtained.

N. McL. Sage.

Personnel Officer

This marks the first full year of operation of the Personnel Office. Some progress has been made in completing the personal history data on the current employee group, assembling material for an employee handbook, and otherwise developing the internal procedures necessary to the efficient operation of such a service department. Of necessity, however, the major emphasis has been to maintain and implement the non-staff force in the regular Institute departments and the D.I.C. war research projects. This has been a trying job in the face of increasingly stringent labor conditions, with resulting restrictive government regulations concerning the employment of personnel. I am glad to report, however, that, as shown by

the statistical summary below, the office has been successful in this major task.

One of the most important functions fulfilled during the year has been to effect the transfer of personnel from one department to another, where the qualifications of the persons involved better fitted the new positions or where the need for help on one project was greater than on another. This will continue to be an effective means of rewarding competent employees, keeping the organization alive, and serving to improve general morale of non-staff personnel.

The effects of government regulation, viewed broadly, have been fairly satisfactory. The labor "freeze" particularly has been effective considering what could have happened in an uncontrolled labor market. The disagreeable and at times disheartening aspects of such regulations lie primarily in the interminable paper work and the inordinate amount of time needed to keep posted on the constantly changing procedures. The three largest war research projects at the Institute have been given authority by the War Manpower Commission to "hire at the gate," the remaining units have been given a sufficiently high priority to permit a fair amount of freedom in hiring personnel.

Deficiencies in personnel have been compensated for largely through overtime work. Our regular maintenance division, normally on a 44-hour week, has averaged 50 hours or more for the last several months. A similar situation exists to a greater or lesser degree in the cases of our laboratory service and office groups.

The M. I. T. Wage Board, appointed a year ago by the President, has continued to meet regularly to review wage rates and consider other matters related to non-staff personnel. Under Mr. Ford's chairmanship the Board has served most effectively in providing an opportunity for discussion of personnel problems and in exercising control of wage rates throughout all divisions of the Institute.

The War Labor Board announced early in the year that non-profit institutions such as Technology need not secure W.L.B. approval for wage rate ranges, but must abide by the spirit of the law. Having submitted rate schedules and received

approval of the W.L.B. in the early summer of 1943, the M. I. T. Wage Board has adhered almost completely to the original schedules.

By vote of the Executive Committee of the Corporation in the spring of 1944, the special cost-of-food allowance given to certain non-staff groups in regular Institute departments was increased to $10 a month effective July 1. A special allowance of $5 a month was authorized by the Executive Committee in November, 1941, and in October, 1942 was increased to $8.

Largely through the efforts of the Director of Personnel Relations at Harvard, several informal meetings have been held during the year with representatives of other college personnel officers in the New England area. The exchange of ideas on problems of common concern has proved most advantageous. Plans have been made to continue periodic meetings of the group and eventually perhaps to affiliate formally with the Eastern Association of College and University Business Officers.

The normal pre-war non-staff group numbered approximately 600. With this in mind the following tabulation shows the effect of expanding war-time operation:

NUMBER OF NON-STAFF EMPLOYEES

	Regular Institute Departments	*War Research and Training Projects*	*Total*
Number July 1, 1943	617	2,037	2,654
Accessions July 1, 1943 to June 30, 1944	329	1,579	1,908
Terminations	268	944	1,212
Number June 30, 1944	678	2,672	3,350
Net Increase	61	635	696

Since November 1, Miss Ruth C. Glynn has assumed full time active management of the Office and has been appointed Assistant Personnel Officer. Mr. P. N. Aborn, Employment Secretary of the T.C.A., has been on loan from the T.C.A., devoting his time chiefly to the procurement of male personnel. The Office staff has been further supplemented to take care of the increased activity.

One of the greatest needs is for an employee manual out-

lining the major policies and procedures affecting non-staff personnel. During the current year further data have been compiled, but the pressure of day-to-day work has made it impossible to collate and edit the material.

ROBERT M. KIMBALL.

MEDICAL DIRECTOR

The outstanding event of the year was the remodeling of the quarters occupied by the Department. We now occupy the entire wing on all floors, making possible an increase to 39 in our bed capacity. The new arrangement of the first floor has resulted in better working conditions and improved facilities for taking care of clinic patients.

Through the generosity of the family of the late William R. Kales '92, life member of the Corporation for many years, we have been able to provide for an Eye Clinic, which will be ready for operation as soon as the equipment is received.

While the structural changes were being made the clinics functioned for a period of about five months in the Emma Rogers Room. Although these quarters were crowded the work was carried on without interruption. Largely due to the epidemic of respiratory infection during the winter months, 158 patients requiring bed treatment were sent to outside hospitals and treated by our staff.

During the year, 38,538 visits were made to the Department; of these, 14,604 were for medical and 8,511 for surgical treatment. Although it does not appear on our records, large numbers of A.S.T.P. students came in for advice and for appointments with oculists and opticians to secure glasses. There were only 37 contagious cases this year, a marked decrease compared to 1942–43 when there were 154 cases.

While the decrease in civilian student enrolment resulted in a reduction in the number of physical examinations and X-rays taken, the increase in the professional and accessory personnel at the Institute resulted in greater use of our other services, notably the Psychiatric and Dental Clinics.

Defective vision is the most common defect found at physical examinations, comprising more than half of the total number of defects. Of the 10 cases of Pulmonary Tuberculosis

observations, two were receiving Pneumothorax treatments and there was one active case.

In addition to the medical service rendered at the Infirmary, a clinic with a nurse in charge has been established at the Harbor Building School in Boston.

GEORGE W. MORSE, M.D.

CHAIRMAN OF COMMITTEE
ON SPECIAL WAR TRAINING PROGRAMS

During the past year 21 courses, with an enrolment of 679, were offered under the Engineering, Science, Management War Training Program. This is a considerable reduction in numbers from the previous two years but compares favorably with the program offered during the first year of operation. The reason for the decrease is quite obvious since the demand in this area for men and women with this type of training has in general been fulfilled. Training needs in war production plants in this area are continually checked and special programs arranged accordingly. However, men and women trained in Engineering Drawing and Tool Design are still urgently needed, but the field of available candidates is fast becoming exhausted.

All courses for Army and Navy personnel are now being continued under separate contract with the Institute with the exception of Fire Protection Engineering which has been repeated four times during the past year with an enrolment of 131.

The separate courses, together with the number enrolled, are listed below:

Course	*Number Enrolled*
Timber Design	19
Work Simplification (two courses)	44
Engineering Statistics in Quality Control	33
Teachers' Conference in Servo-Mechanisms	81
Industrial Chemistry and Applications of Plastics	69
Advanced Engineering Drawing (two courses)	44
Applications of Metallography	18
Applied Photoelasticity (two courses)	46
Mass Production Methods	22
Applications of X-Ray or Radiographic Inspection	22
Fire Protection Engineering (four courses)	131
Statistical Methods for Experimentalists (two courses)	84
Statistical Methods of Inspection (two courses)	66

The following table shows the comparison of the number of courses, full-time and part-time, the number enrolled and the distribution of Army and Navy personnel and civilians for the four years during which this program has been in operation.

Period	*Feb.–Oct. 1941*	*Oct. 1941–42*	*Oct. 1942–43*	*Oct. 1943–44*
Number of Full-Time Courses	13	18	30	5
Number of Part-Time Courses	14	32	28	16
Total Number of Courses	27	50	58	21
Number of Army and Navy Personnel	314	680	2827	212
Number of Civilian Personnel	615	1203	1317	467
Total Number Enrolled	929	1883	4144	679

The Chairman of this Committee continues to serve on the Training Council War Manpower Commission, Region I; and also on the War Job Information Committee under the War Manpower Commission.

R. D. DOUGLASS.

SCHOOL OF ENGINEERING

AERONAUTICAL ENGINEERING

There is nothing to report as to changes in policy or equipment that was not covered in the report for 1943. The Wright Brothers Wind Tunnel continues to operate with two shifts on aerodynamic studies for the industry. The male wind tunnel staff has been held intact by deferment, at the request of the War and Navy Departments, and has been augmented by the employment and training of a number of women. The special war research projects supervised by Professor Draper and by Professor Rauscher have continued through the year and are not likely to terminate during the war.

The staff is seriously handicapped by lack of assistants due to the operation of Selective Service.

J. C. HUNSAKER.

Building Engineering and Construction

The Department has carried on with the curriculum practically unchanged. The staff has continued its share in the teaching of classes in other departments where the pressure was great. Professor Dietz, who is on leave for special work with the O.S.R.D., was absent during the second and third terms of the year. Mr. Peter Johnson resigned from the staff early in the year and Mr. Albert J. O'Neill was appointed to take his place.

The National Lime Association's support of departmental research in masonry materials was continued during the year. The work on the sedimentation characteristics of limes was continued and mathematical relations have been devised to define these properties. The acquisition of the nitrogen adsorption equipment, made possible through a grant from the Research Corporation, will make it possible to obtain much more significant data regarding the surface areas of cementitious materials. Measurements so far made show that the surface area is some ten times that which has so far been measured by other methods. Considerable initial work has been done in order to improve the characteristics and performance of plaster coatings and the work on the flow properties of mortars has been continued. Professor Staley and Professor Voss have been asked to serve on a special masonry mortar committee of the Association, whose members include representatives of the cement and clay products industry and representatives of the Bureau of Standards. Professor Staley presented his annual report to the Association at its convention held in May at Hot Springs, Virginia.

The D.I.C. project for the Cummer Lime and Manufacturing Company was continued and is progressing toward a satisfactory conclusion dealing with the investigation of limestones for structural and chemical work, under the supervision of Professor Staley. The D.I.C. project for the Resinous Products and Chemical Company, under the supervision of Professor Dietz, was brought to a conclusion. Reports on the behavior of synthetic resins, both phenolic and urea, as adhesives in plywood and laminated wood under vibrating loads were made. The effects of weathering and of high and

low temperatures and the fatigue behavior of compressed resin-treated wood of various compositions were also studied and reported.

The work on the plastic flow and shrinkage of plain and prestressed concrete, now in its second year, was continued as a part of the five-year program. This work is under the supervision of Professor Staley and was done by Messrs. R. B. Snow and A. J. O'Neill. It has resulted in a reasonable separation of data on shrinkage, plastic flow and thermal and elastic recovery for prestressed specimens.

The report on the stresses on thin-shelled domes under concentrated loads has been completely finished and a paper for presentation to the A.S.C.E. is now being prepared. Dr. Eric Reissner of the Mathematics Department is also preparing a paper based on the mathematical analyses used in this work for the A.S.M.E.

Under an Institute grant of funds, preparation of panels to study demountability in housing construction were further analyzed. Panels are now being built for demonstration purposes and for further study.

Professor Dietz spoke to the Savings Bank Forum on "The House — Construction and Materials" and Professor Voss spoke on "Legal Restraints and the Organization of the House Building Industry" and on "Government versus Private Construction," as a part of a program prepared for the Forum by Professor Dietz. Professor Dietz also gave a talk on modern developments in wood and plastics to the Boston Society of Architects. Professor Voss spoke to the Conference of the Mayors' Club of Massachusetts and to the Building Officials Conference of America at their convention in Boston in June.

The activities of staff members in professional society work has continued to increase. Professor Peabody has been appointed a member of the Steering Committee of the A.C.I. and since its reorganization, has been appointed on Subcommittees 1, 6 and 8 of this body. He has also been active on the "Committee on Research" of the American Iron and Steel Institute. Professor Staley has been made Chairman of Subcommittee II of Committee C-7 of the A.S.T.M. In this capacity his subcommittee has formulated specifications for

Structural Lime. Professor Dietz has been appointed to Committee D-14 of the A.S.T.M., and to the A.S.C.E. Committee on Structural Timber. Professor Voss has been reëlected Chairman of Committee C-7 of the A.S.T.M.; he is still Chairman of Subcommittee V and has been appointed on Subcommittee III of Committee C-12. He has been made Chairman of the Executive Committee of the "Citizens Committee on Uniform Safety Law" and the first steps to clarify and improve the state building law will be presented to the 1945 Legislature. Professor Voss was recently appointed a member of the National Panel of Arbitrators of the American Arbitration Association.

W. C. Voss.

Business and Engineering Administration

A constructive accomplishment in the Department has been the completion by Richard Muther of a text on *Production Line Technique* which will be published during the year. Based upon field investigations covering a period of two years and incorporating tested case problems resulting from three courses presented to undergraduate students and industrial executives, Mr. Muther's book aims to contribute to a wider knowledge of an industrial procedure which has greatly influenced the successful conduct of war production.

A new educational activity has been the Puerto Rico Development Fellowship program in which eight graduate Puerto Rican engineers have spent a twelve-month period of training in preparation for their return to Puerto Rico, where they will assist in the organization and operation of new industrial establishments. Funds for this program have been made available from the Puerto Rican Development Corporation. Professor Schaefer has acted as Director of the program, with Dr. Herman P. Meissner of the Department of Chemical Engineering as Assistant Director. In addition to fundamental training in business administration, the group received the benefit of special courses relating to technical procedures in specific fields such as biochemistry, textiles, ceramics, and paper manufacture. An unusual feature of the curriculum has been

the preliminary period of study in residence in coöperating industrial establishments which offered students a factual basis of familiarity upon which formalized teaching was superimposed. The third and final term was characteristically spent in industry where a working knowledge of engineering applications was obtained. The recipients of these fellowships were selected from a group of over 200 applicants. They are guaranteed at least a year's employment after their return to Puerto Rico.

We are indebted to the several professors in other departments who have collaborated in an important way in the presentation of specialized subjects, and to the industrial establishments who have given of their time and hospitality in order that these young men might have the benefit of practical familiarity with production processes.

As a result of a seminar in production for naval officers in naval construction given last year, an enlarged program of fifteen lectures, case discussions, and industrial visits, extending over a period of five weeks, was arranged and presented in collaboration with Professor Freeman's course in economics. In this subject, comparisons were drawn between war production techniques in manufacturing and shipbuilding establishments, and emphasis was laid upon the newer methods of mass production wherein machine building and ship construction have many features in common.

As a result of a grant of funds from Newman M. Marsilius of the Class of 1917, the Department was enabled to develop a new service for its graduates. Heretofore, departmental graduate records have been chiefly made up of undergraduate data, answers to questionnaires, and miscellaneous correspondence with each graduate. During the year, a comprehensive folder has been sent each past student upon which he may record his biographical history in such detail that all pertinent information concerning his career may be on file at Technology. The record permits of the addition of current data each five years. The Department is thus becoming the permanent repository of graduate career records of the completest nature. Although this development is barely under way, its value in

assisting graduates in dealing with current adjustments has already been demonstrated.

A further contact with graduates in active service has been maintained through the medium of a monthly overseas letter which carries word from various members of the departmental teaching staff and from faculty members in other departments who have had close contact with Course XV men. Responses from these past students, as well as from others in the service, attest their interest in Technology's welfare and their desire to maintain alumni contacts with the Institute.

During the past year, the more prosaic activities of the Department have been of unusual significance. Never in departmental history have the scheduling problems of the individual student been of such great complexity. Departmental registration officers have given inordinately of their time to establish individual programs yielding normal classroom loads, as well as formalized credit for work accomplished. The appreciation of such efforts by one group of young men was indicated by the presentation to their registration officer, Professor Porter, of a capacious brief-case.

Members of the Department have continued to contribute in a major way to the war effort. Professors Fernstrom, Fiske, Robnett, and Cunningham have been granted leaves of absence. Professor Fernstrom was first called upon to organize and subsequently to operate one of the largest shipbuilding yards on the Atlantic Coast; next to assume charge of our national stocks of rubber in the Office of the Rubber Director. From this post he was drafted by the Maritime Commission to further the production of a machinery company producing a critical component. More recently he has accepted the responsibilities of vice-president in charge of production at the Cramp Shipbuilding Company. Professor Fiske has undertaken special duties in connection with the war program of the Corning Glass Company. Professor Robnett is carrying on the responsibilities of Fiscal Officer in connection with war contracts entered into by the Institute's Division of Industrial Coöperation, and Professor Cunningham has been appointed Assistant Fiscal Officer. Professor Cunningham and Professor Tallman have been consultants to the Office of Civilian

Requirements of the War Production Board. Professor Goodwin undertook during the year a special assignment in relation to the application of work simplification procedures to war-zone activities which carried him beyond the borders of the country and which brought especial commendation from military officials. Mr. Muther enlisted in the Navy for service in the Procurement Division of the Bureau of Ordnance. Mr. Boyan joined the staff of the Radiation Laboratory where he has been giving attention to the planning and scheduling of high-priority projects. Professor Schell has given some time to duties in connection with his appointment as Consultant on Administration to the Department of State.

Members of the Department also collaborated with other agencies and institutions in the presentation of special courses in the field of management. Professor Goodwin conducted evening courses in work simplification in the War Training Program given under the auspices of the E.S.M.W.T. Professor Tallman presented a course in marketing to fourth-year civilian and Navy V-12 students at Tufts College. Professors Schaefer, Robnett, Cunningham, and Schell, in collaboration with Mr. Boyan and Professor Paul Pigors of the Department of Economics and Social Science, offered an evening course of 60 two-hour periods, in War Production Methods, to Lowell Institute graduate students and industrial executives, under the auspices of the Lowell Institute School.

The Department has always viewed the furtherance of the professions with which its teaching deals, as an important opportunity for contribution. These activities have assumed unusual significance during the war years when competence in the administration of professional societies is of such marked service to stability and effectiveness in concerted war effort. In this connection, Professor Fiske, who is past National President of the National Association of Cost Accountants, continued as a member of the Executive Committee, while Professor Robnett was elected President of the Boston Chapter of that Association. Professor Cunningham served as National Secretary of the American Marketing Association, and Professor Tallman as President of its New England Chapter, as well as a member of the Executive Committee of the Sales

Managers Club of Boston. Professor Schell was elected Vice-President in Charge of Production of the American Management Association.

A final word of real appreciation should be extended to the executives of the many industrial establishments who, during the year, extended the hospitality of their plants to our undergraduate students for visits and thesis investigations. This is a type of gratuitous coöperation involving especial difficulties during these years of stress, and the helpfulness extended by our good friends in industry has been of the greatest value to our educational activities.

E. H. SCHELL.

CHEMICAL ENGINEERING

The staff of the Department has again suffered serious losses to war research activities. Professor McNitt resigned and Professor Stokes was given leave of absence to go into industrial research. Professors Hottel, Sherwood, Vivian, and Williams, while still nominally at the Institute, are putting full time on war problems. The five faculty members still teaching are all devoting considerable time to emergency problems. Almost the whole junior staff was transferred to war work, but it has fortunately been possible to replace them to the extent required by present instructional activities. The instructional load has been heavy, despite reduction in student numbers, particularly because of the modifications in course content made necessary by the emergency. The most important changes were those made to meet the needs of the Navy undergraduate program. An illustration is the expansion of the subject matter covered in the courses in colloid chemistry and high molecular weight synthetic materials.

Although the School of Chemical Engineering Practice has always emphasized the importance of human relations in the plant, because these problems have become more critical than usual in recent years, the School has directed an increasing percentage of its effort to their study. The results have been so gratifying that even more attention will be devoted to the work after the war. There is no matter of greater importance to the

engineer than his relations as a professional man with the organization with which he is associated.

The work of the Practice School was discontinued in the spring because of scheduling difficulties in connection with the war program. Facilities and skeleton organization are being retained in stand-by condition, to meet such problems as may come up from time to time and to provide for reopening as soon as the situation warrants. Its staff is engaged in other work at the Institute.

Research Program. While the research effort of the Department has been devoted almost exclusively to war problems, certain developments in the Department's own program can be reported. A testing technique for determination of local heat flux densities on the cylinders of air cooled engines was completed, making possible analysis of the factors governing fin and baffle design for elimination of local hot-spots on the cylinder walls. There was progress in the experimental study of the effect of the ratio of length to diameter in heat transmission in tubes, with particular reference to airplane inter-cooler design in the intermediate region between streamline and turbulent flow. This work is being continued with determination of local variations in heat flux.

The activities in the colloid field reported last year have been continued. In addition, a study of the structural differences between natural rubbers and the various synthetic rubbers has been undertaken jointly with the Department of Biology, using the electron microscope. Work on guayule and cryptostegia rubbers, including deresinification studies, was prosecuted. Further work on the development of a mica substitute in collaboration with the Department of Electrical Engineering was also carried out. A determination of the reactivity of various available forms of carbon in conversion to carbon bisulfide was completed. The program on the use of fluidized powder in gas reactions is still under way but has been greatly curtailed because of deflection of personnel to more pressing war problems.

W. K. Lewis.

Civil and Sanitary Engineering

The past year has been marked by constantly shifting demands on the staff, resulting from war conditions and from the loss of several senior staff members.

During the fall, courses of the Army Specialized Training Program created a peak teaching load, which continued until these courses were discontinued in the spring. Although many of our regular undergraduate students were taken by Selective Service, the remaining students, augmented by Navy students, have kept our undergraduate courses in a fairly normal condition. Registration in graduate courses has been lower than in the pre-war years, but the number has been sufficient to justify a continuation of most of the graduate curriculum.

The Department loaned some of its younger members to the Departments of Mathematics and Physics to aid in the teaching of undergraduate courses in those fields. Other members were engaged in war research. Professor Gifford devoted full time to a war project, while Professors Wilbur, Fife and Norris, aided by Messrs. Peck and Platt, spent half of their time on special war research. Professor Ruge continued on leave of absence for special war work, but gave a course in Vibrations to a group of Aeronautical Engineering students.

Since all of the members of the staff were required at Cambridge to teach courses throughout the summer, the Summer Surveying Camp at East Machias, Maine, was not operated.

During the year, Dr. Reynolds resigned to become Head of the Civil Engineering Department at Cooper Union, and Professor Camp resigned to enter private practice. To fill the vacancy caused by Professor Camp's resignation, Professor William E. Stanley, formerly Professor of Sanitary Engineering at Cornell University, was brought into the Department. Professor Stanley has had extensive experience in teaching and consulting work, and in military service.

The depleted staff available for teaching within the Department has been kept busy, even though the teaching load was materially lessened when the Army courses were discontinued.

In the Soil Mechanics Laboratory, coöperative research

on the shearing strength of soils for the United States Engineers has continued under the direction of Professor Taylor. The tenth progress report on this project has been submitted. Research dealing with the pressure distribution below pavements has been carried out for the United States Engineers by Mr. Lowe, who submitted his final report in March.

Professor Babcock has continued to serve as a member of the American Railway Engineering Association's Committee on Coöperative Relations with Universities. Professor Breed has continued as a Director of the American Society of Civil Engineers, and Professor Wilbur as a Director of the Boston Society of Civil Engineers.

Professor Breed has carried out extensive research on air transportation, having been assisted in this work by Professor Bone. Professor Wilbur has continued as Consultant on the Smith-Putnam Wind Turbine Project. Professor Russell has continued his activities as a member of the Advisory Board of the United States Coast Guard Academy.

By the death of Professor John W. Howard in February of this year, the Department suffered a great loss. He had been associated with the Department almost continuously since his graduation and for some years had been Associate Professor of Topographical Engineering. He will be long remembered by his former students and colleagues for his superior teaching ability, his friendliness, and for the interest he always displayed in their work.

In April, the death of Professor Theodore B. Parker, after a long illness, was another severe loss to the Department. Although he had been head of the Department less than a year, he had impressed his colleagues with his quiet friendliness and his wealth of professional experience, both of which held great promise for the future development of the Department.

Upon Professor Parker's death, Professor Breed was appointed Executive Officer of the Department, which position he filled until the end of the current year, when Professor Wilbur was appointed Acting Head of the Department. Dr. Wilbur has been with the Department for the past fifteen years, during which time he has been progressive as a teacher and active in both research and consulting. He enters upon

this new assignment with the loyalty of his colleagues and I am confident that he will also enjoy the support of the Alumni.

C. B. BREED.

ELECTRICAL ENGINEERING

The present war-time conditions have continued to prevent any approach to normal operation of the Department, with very little publishable research but, it is hoped, with no substantial lowering of our former teaching standards. As was the case last year, the Department has operated with the equivalent of 20 of the 34 faculty members engaged in some activity directly connected with the war effort, entirely apart from their normal teaching or research duties. In addition to those listed in last year's report who continue on leave-of-absence, Professor L. F. Woodruff has been appointed civilian consultant of the United States Army Ordnance Department.

The Department has had the responsibility of teaching large numbers of Army Specialized Training Program (A.S.T.P.) students. This program began in April, 1943 and continued to April, 1944, when it terminated suddenly. The subject matter offered in the Army program was similar to that in our regular course, though somewhat abridged in many instances. Professor Frazier was largely responsible for the administration of this program.

The Navy V-12 program, which began in July, 1943, is continuing and is becoming an increasing proportion of the teaching load of the Department. These men meet in classes with the civilian students, who still are about 40 per cent of the normal number. The new electronic option continues to attract students, with approximately 30 per cent of the Electrical Engineering students so enrolled.

While graduate enrolment has further decreased, it has been possible to offer substantially the same program as last year under the general direction of Professor Gardner, with the classes being limited mainly to graduate students engaged in teaching or war research, to officers of the United States and foreign Services, and to foreign civilian students.

In the Coöperative Course, junior and senior students are now carrying out their regular assignments (on war work) in

the plants of three of the coöperating companies: the General Electric Company, the Boston Edison Company, and the General Radio Company. The numbers are small, however, consisting of men not qualified for general military service.

One new subject, Servomechanisms and Control Devices, was introduced in the curriculum of the A.S.T. program. While Professor G. S. Brown has offered substantially the same subject at graduate level for the past five years, it is now planned to continue this subject as a fourth-year professional elective.

Because this work apparently had not been taught elsewhere, arrangements were made for holding last October at the Institute a one-week conference of prospective teachers of Servomechanisms, similar to the ultra-high-frequency conferences of the two preceding years. This conference, under the direction of Professor G. S. Brown and several of his associates in the Servomechanisms Laboratory, was attended by 78 teachers from 50 universities, and by 11 Army officers. Representatives from the General Electric Company, The Westinghouse Electric and Manufacturing Company, and the Sperry Gyroscope Company assisted with certain phases of the laboratory program. After a presentation of the underlying theory of the field by members of the Servomechanisms Laboratory staff, conference committees prepared a recommended syllabus and laboratory program. Comments of those attending expressed real appreciation of the effectiveness of the conference.

Development of the subjects offered for nonelectrical students is being continued under the direction of Professor A. E. Fitzgerald with a comprehensive treatment of electronics and measurements now included as a part of a full-year subject for Mechanical Engineering students. This material is also to be included in the curricula of one of the options of Business and Engineering Administration during the forthcoming academic year.

It is apparent that the importance of electrical techniques in fighting equipment has increased tremendously during the present war. These are sufficiently advanced and complicated so that both the Army and Navy will need a substantial number

of really competent men with advanced training in the electrical field after the war. It is therefore reasonable to expect that selected institutions will have an appreciable number of officers for graduate work in the future. For this Department, graduate work for Army and Navy officers is nothing new. For many years the Army has had officers here each year. Five years ago a Fire Control curriculum was set up in the Department by the Navy, which has sent four officers to us each year to the present, when we have six. Last summer a graduate Navy program in Ordnance Electronics was worked out jointly with the Navy Postgraduate School at Annapolis, to begin in November, 1944. Discussions relating to other such courses for the Navy and for the Army Air Forces have been held, and definite curricula prepared and submitted to these Services.

The Harbor Building School, at 470 Atlantic Avenue, Boston, is operated as a special war-training project for Army and Navy officers. While administratively separate, the School is closely related to the Department, having drawn largely on it for leadership, technical background and methods. During the past year, the activities of the School have continued to expand, particularly with regard to the number of kinds of specialized instruction offered. The School now occupies five floors in the Harbor Building and also has branches in Boston and on the M. I. T. campus. It is operated by the Institute under government contract for the benefit of officer students of the Army Electronics Training Center at Harvard and M. I. T., and of the Naval Training School (Radar), M. I. T. The School is a self-contained unit, complete with laboratories, classrooms, shops, printing facilities, guard force, clinic, gymnasium, and all the appurtenances needed in operating a specialized college-level technical program which emphasizes laboratory instruction.

The regular staff of the Harbor Building School includes five members of the faculty of the Department, Professor C. E. Tucker as Director; Professor W. H. Radford as Associate Director in charge of instruction; Professor M. S. McIlroy as Assistant Director in charge of registration, records and statistical studies; Professor J. A. Wood as Assistant Director and supervisor of Navy Laboratories, and Professor L. M.

Dawes in charge of power engineering on a part-time basis. The teaching staff of the School comprises Army and Navy Officers as well as civilians. Most of the civilians have been members of the teaching staffs of other colleges and many have obtained leaves of absence to permit their work at the Harbor Building School. The students are largely graduates of colleges and universities throughout the country. The Institute administration is responsible for general policies of the School. A fine atmosphere of collaboration exists among Army, Navy, and civilian staff members providing an excellent example of working together for the common cause of the war.

Local administration is the responsibility of Colonel John K. Stotz, Commanding Officer of the Army Electronics Training Center for the Army, and of Lieutenant Commander Julius L. Hornung for the Navy, under the general supervision of Captain Charles S. Joyce, Senior Naval Officer at M. I. T. Personnel administration for the civilian staff is handled by Mr. Parke D. Appel, '22, Assistant Director, who is on leave of absence from the New England Telephone and Telegraph Company. Mr. Arthur E. Mitsch is Accountant and Purchasing Agent.

Because of the large diversion of the department staff to war-research activity, and because of the heavy loads on the undergraduate laboratories, it was necessary for a time to change the teaching methods in the laboratories to a somewhat more routine basis. During the current summer term, however, it has been possible to resume the conference system of instruction in the laboratories, which we feel gives much better results. The relatively large number of assistants on the teaching staff during the past academic year, together with the large fraction of the staff at the Harbor Building School without previous teaching experience, necessitated special attention to teaching methods and arrangements were made for the assistance of Dean D. D. Durrell of Boston University School of Education.

The Department's three texts have continued to have extraordinary sale, considering their relatively advanced nature, and each has had a number of reprints. Professor Guillemin is now completing a reference volume on *The*

Mathematics of Circuit Analysis. Comments show an unexpected appreciation of this series.

The Vail Library has continued to render valuable service in the Department of a nature and importance comparable to that rendered by our laboratories. When readjustments are made after the war, space even nearer the offices and laboratories of the Department for a well-equipped working Electrical Engineering library facility would increase its value to the Department. Mr. C. R. Mills, '38, who was a Reference Librarian for two years prior to his entry into the service as a Captain in the Corps of Engineers, was killed in action in Africa on July 8, 1943. His loss is deeply regretted.

The staff has continued a reasonable activity in the affairs of the professional societies with a small number of papers being presented. Most of these papers have been limited to teaching problems, since war-time restrictions make the discussion of research projects practically impossible.

The Institute of Radio Engineers honored Professor W. L. Barrow by the award of the Morris Liebmann Memorial Prize on January 28, 1944.

In the field of research, the Department's activities have been almost exclusively related to the war effort. The Laboratory for Insulation Research, under the direction of Professor A. R. von Hippel, has procured facilities, developed methods, and attained results which hold great promise for the post-war period.

In the Laboratory for Dielectric Research under the direction of Professor J. C. Balsbaugh, a new electrical insulation material, Alsifilm, developed by Professor E. A. Hauser of the Department of Chemical Engineering, has been modified and applied to particular industrial needs. This is an organic-inorganic material characterized by very good dielectric strength and electrical and chemical stability at relatively high temperatures. Considerable improvement has also been made in this laboratory in the application of solderless terminals for electrical equipment.

In the Center of Analysis, through careful coördination of our differential analyzers, punched-card machinery, and computing staff, we have been able to handle efficiently a wide

variety of intricate research and engineering problems, many of which would have been beyond the capabilities of the machines, or of the computers, if all were operating independently. Some time is being spent in research to effect improvements in speed, accuracy and operation of the differential analyzer. In the absence of Professor S. H. Caldwell, the Center is under the direction of Mr. Richard Taylor.

Research has been continued during the year by Professor Moon on various phases of illuminating engineering. These theoretical investigations have led to the publication of a number of papers on visual adaptation and on color harmony.

The Servomechanisms Laboratory under the direction of Professor G. S. Brown continues to carry a heavy load of development work for the Army, O.S.R.D. and commercial companies.

War-time restrictions have made it impossible to obtain much new equipment for instructional purposes. Recently, however, we have obtained representative industrial electronics equipment especially designed and selected by a large manufacturer for educational use. Included is equipment for power rectification, dust precipitation, high-frequency heating, X-ray inspection of materials, speed control of motors, resistance-welding control, and other applications in the broad and growing field of applications of electronics, apart from communications. Considerable attention is being given by Professors T. S. Gray and R. H. Frazier to the development of laboratory instruction in this field of electronic applications.

Some preliminary attention has been given to desirable post-war objectives. The staff considers that the following subjects or activities should receive careful consideration as soon as practicable: electronics and electronic applications in both the communications and noncommunications fields; materials,—from the fundamental physics point of view; a more general outlook in the field of electromagnetic and ferro-electromagnetic apparatus; "systems" as a synthesis and correlation of elementary principles; a broadened base of coöperative work; more emphasis on the underlying sciences of mathematics and physics; unification of research program; an increased interdepartmental coöperation. Major effort on

these objectives and other forward-looking projects and activities will, of necessity, have to await the end of the war.

C. E. TUCKER.

SECTION OF GRAPHICS

Minor changes were made in the courses in Drawing and Descriptive Geometry to conform to the slightly reduced civilian program of study. The courses offered in the V-12 and E.S.M.W.T. programs remained unaltered.

Development work was at a minimum due to the pressure of regular class work. Spare time was in general devoted to teaching sections in other departments.

JOHN T. RULE.

MECHANICAL ENGINEERING

The normal activities of the Department have continued, as in the preceding year, with emphasis on special training programs for the Army and Navy and on research projects sponsored by government agencies and war industries. A number of staff members continue on leave to serve the war effort. Further simplification of the curriculum has been accomplished by omission for the duration of a number of graduate subjects of instruction.

The operation of Selective Service removed assistants and junior instructors to such a degree that in several laboratories a lecture-demonstration system has been adopted in lieu of having students themselves conduct the experiment or test. While this change was forced only by shortage of manpower, there appear to be some educational advantages including a saving of time formerly spent on unessential details of set-up and adjustment of instrumentation.

J. C. HUNSAKER.

METALLURGY

The principal activity of the Department during the past year has been research and development work on problems related to the war effort. As a result, the undergraduate and graduate course schedules have been curtailed, but a program

sufficient to meet degree requirements for the limited number of students enrolled is still offered.

In the Mineral Dressing Division, Professor Gaudin and Professor Schuhmann have continued their work on beneficiation of Bolivian tin ores, a project designed to increase our tin resources by developing new methods of treatment. A new Division of Industrial Coöperation project under the direction of Professor Gaudin is concerned with the production of aluminum from West Indies bauxite. After a period of recuperation from illness in the summer of 1943, Professor Locke returned to teach not only his ore dressing courses, but also courses in mining engineering formerly taught by Professor Parks. Aside from the industrial research, the Mineral Dressing Division has pursued several scientific investigations which are embodied in papers by Mr. Eugene Poncelet, Dr. R. T. Hukki, Mr. S. C. Sun and Professor Gaudin. These papers deal primarily with the mechanism of comminution and the relationship of flotation behavior to surface composition in disperse systems. The laboratory facilities were improved by the gift of a pilot-size heavy media plant from Louis S. Gates and also by the gift of a Humphrey spiral concentrator from the Humphrey Investment Company of Denver, Colorado.

The Ceramics laboratory has been largely taken over by government research projects. As a result, it has been necessary to suspend graduate work in this Division for the duration of the war. Professor F. H. Norton and Dr. Johnson are spending a very large portion of their time on these projects. A considerable amount of research work, financed by the Clay Research Fund, has also been carried out on fundamental clay problems. Several papers have been published.

In the Process Metallurgy Division, Professor Hayward has continued his extensive research in the extraction of nickel and chromium from certain iron ores. For several months, the Fire Metallurgy laboratory was operating twenty-four hours per day on this work. Professor Chipman is devoting all of his time to war research. His normal Institute duties are being carried out by Dr. M. B. Bever. A part of the Ferrous Process Metallurgy laboratory is being used for special research on heat resisting alloys under the direction of Dr. N. J. Grant.

In the Physical Metallurgy Division, Professor Homerberg has been active in research and consulting work on nitrided materials for aircraft and ordnance. He also made an extensive lecture tour to the Pacific Coast, where he spoke before five chapters of the American Society for Metals. Professor Cohen has devoted most of his time as project supervisor of a special government research program. However, he has continued to supervise the work on dimensional stability of metals, which is being conducted by Dr. S. G. Fletcher under a grant from the Sheffield Foundation, and has also supervised special research work on transformations in high speed steel. The latter work is sponsored by the Vanadium Alloys Steel Company as a research fellowship which at the present time is held by Dr. P. K. Koh. Dr. Koh returned to the Institute from China to accept the fellowship. At the present time subatmospheric treatment of high speed steel is being investigated. This type of treatment originated from the early Vanadium fellowship work by Gordon and Cohen and warrants detailed research because of the strikingly beneficial improvement in tool performance that has been reported by industry. During the year Professor Cohen and his associates published five papers dealing principally with structural changes in the heat treatment of steel. Professor Cohen also delivered three lectures, two before the Pittsburgh chapter and one before the Boston chapter of the American Society for Metals. Professor Wulff is devoting most of his time to an N. D. R. C. project on erosion-resistant materials. In addition, he has been very active on the American Society for Testing Materials and American Institute of Mining and Metallurgical Engineers committees on powder metallurgy, and is preparing a revision of his book on powder metallurgy. He and his associates are continuing work on the fundamental principles involved in production of powder metallurgy materials.

The increased industrial use of X-rays has been reflected in the increased activity of the X-ray laboratories under the direction of Professor J. T. Norton. The equipment of the radiographic laboratory was greatly improved by the purchase of a mobile 150 KV industrial X-ray unit. This has been particularly useful for the inspection of a considerable quantity

of aircraft castings of aluminum and magnesium. In the Diffraction laboratory the principal interest has been in the field of X-ray measurement of residual stresses in metals. Several theses have been completed, and three papers by Professor Norton and Professor Rosenthal have been published by the Society for Experimental Stress Analysis. Outside interest in this field is growing rapidly and the laboratory staff has acted as consultant for several other war projects.

Professor Williams continued in his capacity as Deputy Dean of Engineering and also is in charge of all special Army training programs. He is a member of the War Metallurgy Committee and metallurgical advisor to the Quartermaster General. Professor Floe has continued his work as Executive Officer for the Department and has also been actively engaged in various war problems. Among these may be included work for the Quartermaster's Department, advice in connection with the production of steel shell cases and the many uses of Nitralloy in the aircraft industry.

C. F. Floe.

Meteorology

During the past year the numbers of students in the special Army and Navy training programs have begun to decline, reflecting the approach to planned strength of the weather services of the armed forces. What is expected to be the last Army group started on October 4, 1943 and completed the course on June 5, 1944. The Aviation Cadets in this class were graduates of the Meteorology "B" programs at M. I. T. and Brown University. These men were found to be particularly well prepared in mathematics and physics. A group of Naval officers and a small number of Navy V-12 students were also included in this course.

A new training program for Naval officers was started on July 10, 1944, which will be completed in February, 1945. A group of Navy V-12 students is pursuing essentially the same curriculum and will complete the work at the same time as the officer group. There is still another group of Navy V-12 men who are not scheduled to complete their meteorological training until February, 1946.

A small number of regular students, principally at the graduate level, has been in attendance, and several advanced courses have been offered for them.

During the past year the faculty approved the offering of an undergraduate program in meteorology leading to the degree of Bachelor of Science in Meteorology. This program is effective for the freshmen class which entered in July, 1944. It is anticipated that a number of the men who took the Meteorology "A" program as members of the armed services will be interested in the new Bachelor's degree in meteorology. The initiation of the undergraduate program will require many revisions in the content of the subjects of instruction and this will receive careful consideration from the staff of the Department during the coming year.

Several research projects, most of which bear directly on the war effort, have been continued throughout the year. Among these are two projects on extended weather forecasting and one on the de-icing of aircraft. The Army Weather Station, which was installed here primarily for the instruction of Army students in weather station operating procedures, is still being operated by the Army. It is now being used to advantage for the instruction of Navy students and also as a source of the current weather information needed for certain research work. The Army has also assigned research problems to the Weather Station which are prosecuted by Army personnel under the general technical supervision of members of the staff of the Department.

The Department has continued to coöperate closely with the armed services. A special conference on methods of extended weather forecasting was conducted here by Professor Willett for a period of four weeks for the benefit of a selected group of Army Weather Officers. The Department also served as host to a three-day technical meeting of Army weather personnel from this region.

Professor Austin has been on leave since March, 1944 and is serving as a Consultant to the Army Air Forces in an active theatre of operations. Professor Willett left on a similar assignment in August, 1944.

H. G. HOUGHTON.

Naval Architecture and Marine Engineering

The curricula for the courses in Naval Architecture and Marine Engineering and Naval Construction and Engineering have become fairly well stabilized under the Institute's present three-term program. The adoption of this program, however, has necessitated some revision of the curriculum of Course XIII-A. A group of Chinese Naval Officers reported in July, 1944, for instruction leading to the degree of Master of Science in Naval Construction and Engineering. A number of Latin American student Naval Officers are now resident at the Institute, taking a refresher course as special students. They will start the regular XIII-A curriculum at the beginning of the fall term 1944. A group of Turkish Naval Officers and a group of Brazilian Naval Officers will graduate in October, 1944.

Starting in July, 1943, two groups of Army students were given an intensive course of 12 weeks' duration in the field of Marine Transportation. Upon completing the course at the Institute, the men were sent to Officers Candidate School. At the request of the Supply Corps of the Navy Department, a similar course of training of 10 weeks' duration in Marine Transportation was inaugurated at the Institute for officers of the Supply Corps. The third and last of these groups will finish on October 28, 1944. Both of these courses have dealt largely with port facilities, cargo handling and stowage.

A study of the present occupations of the 78 graduates of the course in Marine Transportation, XIII-C, shows that most of these men are now with the Army or Navy, the Maritime Commission, American steamship companies, or in ship construction.

During the past year a limited amount of testing has been undertaken in the Propeller Tunnel for private accounts and for the Division of Industrial Coöperation. Special attention has been paid to fundamental research in the design of propellers.

H. H. W. Keith.

SCHOOL OF SCIENCE

Biology and Biological Engineering

The work of the Department continued along lines similar to those of the preceding war year, with further transfer of staff members to war projects and reduction in teaching activities.

During the year most of the Navy V-12 pre-medical and pre-dental transfer students completed their required courses and were assigned elsewhere. Navy V-12 pre-medical students who completed their first year of basic training at M. I. T. began their biological studies in the spring term and more students entered in the summer term. Until the return of civilian students, subjects in Food Technology and advanced subjects in the Department have been cancelled, except for those required by the few remaining graduate students.

On leave for war research were the following: Professors Horton (Div. C, N.D.R.C.), Loofbourow (Div. 14, N.D.R.C.), Proctor (Chief of Subsistence and Research, Office of the Quartermaster General), Dunn (Lt.-Col., Q.M.C.), and Blake (Office of Field Service).

Professors Bear, Gould, Lion, Schmitt, Sizer and Waugh, Dr. Duggan and Dr. Salo have been occupied full or part-time with research on medical war problems under contract with C.M.R. Professor Jennison was on part-time leave for research on problems pertaining to penicillin. A promising program of research on methods of accelerating the production of this important substance is being developed by Professors Gould and Lion. Professor Sizer has collaborated in the development of a diagnostic serum test for cancer. During the summer term Professor Bear began a comprehensive survey of starch chemistry under the auspices of the Corn Products Research Foundation. Professor Horwood established a Sanitation Service supervising the sanitation of food supplies and utensils for the Institute dining facilities. He continues to serve on a committee on serum substitutes and acted as a referee in the standardization of methods for the American Public Health Association.

The year has seen the fruition of carefully planned research

having economic and international importance, in the laboratories of Nutritional Biochemistry under the direction of Professor Harris. Under the auspices of the Kellogg Foundation and in collaboration with the Mexican government, a large scale experiment on nutrition has been initiated. To participate in the program, three Mexican doctors and two chemists were trained in these laboratories. Analyses of many native Mexican foodstuffs were made; some of these foodstuffs, which had not been previously analyzed, proved of superior nutritive value. Dr. Lockhart and two other staff members are in Mexico City, supervising the feeding, under careful medical control, of 1000 school children on a dietary formulated here. The results will be of great value not only scientifically, but also to governmental authorities in problems of mass feeding. Professor Harris is Consultant with the Foreign Economic Administration on Emergency Feeding Problems. In addition, he is supervising research at the Pentagon Building, sponsored by the Army and N.D.R.C., on treatment of foods in large scale restaurant operations. In addition, research on fats and proteins in nutrition is being pursued with the aid of grants from Lever Brothers Company and General Baking Company.

Work in the Food Technology Laboratories has continued on the development of new products and processes, under contract with the Quartermaster General's Office and in close collaboration with Colonel Doriot's Division of Military Planning. In the absence of Professor Proctor, the work is under the supervision of Professor Sluder. Professor Prescott continues as a Special Consultant to the Secretary of War on Quartermaster problems and is author of an important *Report on Troop Feeding in the United States Army.*

Electron microscope studies of the submicroscopic structure of materials have resulted in important advances, largely through the efforts of Mr. Hall. In collaboration with Professor Hauser, a survey has been made of the structure of natural and synthetic rubber fibers. This work was generously aided by Godfrey L. Cabot, Inc. Remarkable electron micrographs have also been obtained of certain protein fibers which, together with small angle X-ray diffraction evidence secured by Professor Bear, have materially advanced our knowledge of the

molecular architecture of this important biological material. For aid in this work a grant by the A. C. Lawrence Leather Company is gratefully acknowledged.

Despite the press of war activities, the staff has devoted considerable time to conferences and planning for the organization of the teaching and research programs after the war. Seldom have such opportunities presented themselves as are now available in the fields of experimental biology and biological engineering. Every effort is being made to meet the challenge.

F. O. SCHMITT.

CHEMISTRY

The teaching program of the undergraduate division of the Department of Chemistry has been on a continuous basis during the past year with temporary modification in the curriculum in chemistry. Professional work normally required in the summer school under a two-term academic year has of necessity been substituted for the important cultural subjects of the upper years. Teaching service by the staff to large groups of civilian and Navy students registered in other courses, to those enrolled in the prescribed Navy V-12 curriculum, and to those in the Army Specialized Training Program, required an adjustment whereby most of the undergraduate subjects of the first three years were offered every term. Special arrangements were made to accommodate returning R.O.T.C. students on an accelerated 12-week term basis. The R.O.T.C. and A.S.T.P. students have now been withdrawn.

On the graduate level, subjects have been scheduled as required to provide complete instruction for candidates for the degree of Doctor of Philosophy. Graduate registrations in June, 1943, November, 1943, and March, 1944 were 43, 44, and 29 respectively against a normal stabilized enrolment of 85. For many of these students, progress toward the degree has been limited by participation in war research, and by Selective Service restrictions, but without exception they have gained valuable research experience and their educational advantages have not been curtailed. Their performance has been exceptional. Some of the candidates who were assisting in teaching,

were placed in more essential work in the Department and elsewhere, or were commissioned in the armed forces early in March and will return post war to complete their requirements.

Doctor Keyes continued to devote his entire time to war research. Professors Beattie, Collins, and Thompson have been on leave of absence, the latter with a commission as Major in the Army of the United States. Professors, Schumb, Scatchard, Morton, Huntress, Harris, Young, Dietrichson, Milas, Gamble, Marvin, Amdur, Heidt, Stephenson, Irvine, and Stockmayer have been directly connected with Government research projects at the Institute on either a full-time or part-time basis. Fortunately, however, they have also been able to participate in the teaching program and to direct the research of graduate students at such times throughout the year as their services were required. The numerous and diversified war problems in which the staff has been engaged include research in the fields of synthetic rubber, plasma fractionation, anti-malarials, vitamins, germicides, fungicides, organic peroxides, plastic insulating materials, ceramics, refractories, metallurgical materials, infra-red measurements, effects of electrical fields on chemical reactions, development of crystals, radioactive tracers, piezoelectric crystals, the chemistry of the halogens and their compounds, as well as the chemistry of certain of the less familiar elements.

Dr. Huntress has continued to serve as Technical Adviser to the Chemical Warfare Service and recently was honored by his professional colleagues by being selected as one of forty-five American chemists to receive special distinction in *American Men of Science*. Professors Millard, Ashdown, Simpson, Davis, Wareham, Gibb and an equal number of experienced junior members of the staff devoted their full attention to administration and teaching. In spite of their many duties and the complications of an accelerated and irregular program, they taught continuously, effectively, and enthusiastically; undoubtedly they have sacrificed personal professional gain in contributing to the work of the Department. Appreciation is extended to them and to the members of the laboratory service and secretarial staffs of the Department for their loyalty and willingness to assume added responsibility during this war period.

During the year the Department announced with regret the resignation of Professor Purves, who accepted an appointment to the E. B. Eddy Chair of Industrial and Cellulose Chemistry at McGill University, Montreal, Canada, a position of importance for which he is preëminently qualified.

The Department also granted leave of absence to Dr. Robert C. Hockett to serve as Scientific Director for a five-year period for the Sugar Research Foundation, Inc. of New York. In this connection, however, the Institute entered into an agreement for coöperative maintenance at the Institute (within its Research Laboratory of Organic Chemistry) of a laboratory for the development of fundamental knowledge in the field of carbohydrate chemistry, particularly as related to sucrose. The laboratory, with others throughout the country, is under the active direction of Professor Hockett, who is continuing on a more extensive scale at the Institute research in the field of his interest. The Department was fortunate in securing the services of Dr. Allen Scattergood as Assistant Director. This program of research is also in the interest of education and funds are used in part to support research programs of candidates for higher degrees. The personnel under this grant now numbers eleven.

Professor Sherrill retired in February but has been retained as Professor Emeritus lecturer. Professor Sherrill joined the staff of the Department in 1903 and has been active in its development during his many years of faithful service.

The Department has recently appointed to its staff two new members of faculty rank. Dr. Arthur C. Cope, of Columbia University, has been appointed Professor of Organic Chemistry but has been granted leave of absence to continue his important war work. When available he will assume the duties of a newly created position; Head of the Division of Organic Chemistry. Dr. William H. Hearon has been appointed Assistant Professor and also granted leave of absence; Captain Hearon is now attached to the United States Engineer Office. His research interest is in the fundamental chemistry of cellulose and its derivatives and he will continue the work formerly directed by Professor Purves.

Dr. Stockmayer, who was granted leave of absence to

Columbia University for war work, returned in September and has since taken an active part in teaching and war research.

In addition to war work, Dr. Milas has directed the program on Vitamin Synthesis under a grant from the Research Corporation. As evidence of the progress made in this research, 10 patents based on his work and that of his colleagues have been allowed during the past year. Funds have been available to Dr. Morton for research in the field of sodium polymerization under a grant from the Research Corporation. This program, which has now been in operation for a full year, gives promise of results of importance to the synthetic rubber industry and is being continued under federal auspices. The Department gratefully acknowledges a substantial grant from Swift and Company, Chicago, for post-war research in Organic Chemistry. The grant is in the interest of higher education.

One of the most pressing problems of the Department at present is to find adequate space for the expansion of its undergraduate laboratories to accommodate the large number of students who are at present on leave of absence, whose education has been interrupted, and who will undoubtedly return. Plans have been formulated for alterations which will increase accommodations and provide equipment for the proper instruction in Inorganic Chemistry of a maximum of 896 first-year students. If materials and labor are available, it is hoped to modernize these laboratories by July, 1945. Similar plans are in process for increasing the facilities of the Qualitative, Quantitative and Organic laboratories where instruction is normally given simultaneously to approximately one-half the entire second-year class and one-third the entire third-year class. Space reallocation to increase the facilities of the graduate school in chemistry is also under consideration.

While the number of published papers has been restricted by necessary limitations on researches of confidential nature, contributions by members of the Department to professional journals have numbered 32. Two widely used textbooks written by members of the staff have been rewritten and revised for post-war publication. It is also gratifying that even under the stress of war-time conditions, Dr. Huntress has completed for publication a new volume entitled *The Preparation, Properties,*

Reactions and Identification of Organic Chlorine Compounds, and Dr. Morton has similarly completed a book on *The Chemistry of Heterocyclic Compounds*. Both are the result of original research on these subjects over a period of years.

L. F. HAMILTON.

GEOLOGY

During the past year the instructional and research activities of the Department of Geology have been greatly curtailed by war conditions as they were during the preceding year. There has been one undergraduate student majoring in Course XII. One graduate student, a citizen of India, completed his work for the doctorate during the year and received his degree. Two graduate students under Professor Buerger have continued work in residence during the year.

Professors Slichter, Newhouse, Shrock, Whitehead, Parks, and Dr. Pekeris have been on leave of absence in connection with essential war activities.

Professors Morris, Buerger, and Fairbairn have been in residence — Professor Fairbairn rendering full-time services teaching physics, and Professor Buerger teaching physics part-time.

Service courses (Mineralogy for Course III, Engineering Geology for Course I) have been given by Professors Buerger and Morris. Professor Morris has also given several General Studies.

W. J. MEAD.

MATHEMATICS

During the year war research continued to be the major department activity. Professors Crout and Hildebrand were employed by the Radiation Laboratory. Professors Wadsworth, Thomas, and the staff of the statistics laboratory continued on work for the Army Air Forces. Professors Phillips, Franklin, Wiener, Cameron, Levinson, Reissner, and Mr. Loud were employed on war projects at the Institute, Harvard University, and New York University.

The A.S.T.P. program was brought to an end in March, but the consequent reduction in teaching was more than

balanced by the additional war research and the greater number of hours per week required by some of the Navy V-12 sections. It was therefore necessary to borrow teachers from the Graphics, Economics, Civil Engineering, Electrical Engineering, and Architecture Departments. During the summer, two instructors from nearby high schools assisted with the teaching.

There were very few full-time graduate students and so graduate subjects were cut to the few for which there was greatest demand.

Professor Franklin received the Townsend Harris Medal for Notable Achievement, awarded annually by the Alumni of College of the City of New York. Professor Levinson was appointed Associate Editor of the American Journal of Mathematics. Professor Reissner was put on the editorial committee of the Journal of Aeronautical Sciences.

H. B. PHILLIPS.

PHYSICS DEPARTMENT

During the last year over half of the Physics Department staff has been engaged full-time or part-time on war projects. Professor Slater has been on leave of absence and devoting full time to war work away from Cambridge. Professor Harrison's duties as Dean of Science and Chief of the Optics Division of the N.D.R.C., together with a four months' trip out of the country on a war mission for the O.F.S., have required his full time. Professor Hardy has devoted half time to his work as a Section Chief of the N.D.R.C. Professors Stratton, Frank, Boyce, Allis, Livingston, Harvey, Lamar, Albertson, Squire, and Dr. Deutsch are now away on full-time leaves of absence engaged in war work. Professors Morse, Van de Graaff, and Buechner are working on projects in Cambridge with full relief from teaching duties. Professors Nottingham, Evans, and Duntley have carried part-time teaching loads with the major part of their time devoted to war work. Professors Mueller and Stockbarger have finished the war projects which they were directing and are now carrying full teaching loads.

The unusually heavy teaching load in elementary physics which existed in the summer of 1943 has gradually decreased due to the termination of the A.S.T.P., the passing of the first

big V-12 group into the upper years, and the decrease in civilian students. Professors Buerger and Fairbairn of the Geology Department have spent full time or part time in teaching physics during the year, and Professor Hyatt Head, of the Physics Department at Simmons College, has done full-time teaching during the summer term of 1944.

The undergraduate enrolment in Course VIII has averaged about two-thirds of normal, and the graduate enrolment a little less than half. All required undergraduate subjects have been given during the year, and enough of the graduate subjects to enable a student to continue work towards the doctor's degree. Except for work connected directly with the war effort, there has been no time for research during the year.

B. E. WARREN.

PUBLIC HEALTH

In accordance with previous plans, the work of all students registered in the Department of Public Health was completed and the activities of the Department were officially terminated on July 1. Degrees granted during the past year were as follows: Doctor of Public Health — 3. Master in Public Health — 7. Certificate in Public Health — 5.

C. E. TURNER.

SCHOOL OF ARCHITECTURE

ARCHITECTURE

The conditions in the architectural profession, which includes the practicing architects and the schools of architecture, have reached the lowest ebb since the founding of the profession and the schools about 75 years ago. The attendance in the schools is extremely low and a majority of the members of the faculties is engaged in the war effort and scattered throughout the world. There is practically no construction, normally assigned to the architectural profession, now going on. What effect the war will have on the practice of architecture is not yet clear.

It is recommended that the schools of architecture, the

Architectural Registration Boards, the National Architectural Accrediting Board, and The American Institute of Architects join in a movement to study the important problem of the education, training, and practice of architecture. There has never been an over-all appraisal of this problem since the schools of architecture and the profession came into being over three-quarters of a century ago. It is quite obvious from the condition of our cities that the practice of architecture has been on too narrow a basis and, in all probability, the same can be said of the schools. The proper way to attack this problem, since the schools of architecture must now be practically reorganized for the great programs which lie ahead, is to proceed on the assumption that the problem is a new one. There has never been proper coördination between the profession, the schools, the Architectural Registration Boards, and the National Accrediting Board, and no study of a main objective toward which the entire profession is working.

It is not possible to construct a proper curriculum and proper methods of teaching unless there is an objective. The School of Architecture of the Massachusetts Institute of Technology, with its enviable position in the public mind and in the minds of the profession, has not only a great responsibility, but a great opportunity to do great work for the profession and for the public.

The recently adopted curriculum has some fundamental objectives that have not been included previously, one of which is the attempt to give the architectural students a general background of planning. The other points are those dealing with the fundamentals of construction, materials, and the economics of the building industry.

W. R. MacCornack.

DIVISION OF HUMANITIES

Economics and Social Science

The activities of the Department for the past year have been on a reduced wartime scale. The decline in our graduate enrolment permitted us to lend the services of Professor

Samuelson to the Radiation Laboratory, and in spite of the loss of some of the junior members of our staff, we have been able to handle the undergraduate work without impairment of efficiency.

In anticipation of the Institute's new undergraduate program which is to come into operation after the war, we have been revising our undergraduate subjects. Economic Principles has been condensed into one term and a new subject, Industrial Economics, has been introduced. Our psychologists, who are now engaged in teaching four different courses in the V-12 program, are preparing the third-year psychology option for the post-war curriculum.

Steady progress has been made during the year by those members of the Department who are taking part in the research project on the economics of technological change under the direction of Professor Maclaurin. It consists of a series of investigations of the factors which have conditioned the rates of technical progress observed in several selected industries. The case study on the introduction of the fluorescent lamp, completed last year, has been followed by a related study of the introduction and improvement of the incandescent lamp. Other work in progress concerns the glass, radio, and paper industries.

As during the preceding year, most of our staff have spent a part of their time in outside activity, either industrial or governmental. Those associated with the Industrial Relations Section have been acting as public panel members in connection with disputes coming up for settlement before the War Labor Board, and have been called in as consultants on personnel problems by companies engaged in war work. Professor Brown has been acting as private arbitrator in disputes between labor and management in several important industries and has developed a considerable reputation for competence in this field. He is now a public member of the New England Regional War Labor Board. Professors Tucker and R. E. Freeman have also been engaged in labor arbitration activities.

Professor Pigors has been conducting a special course in Labor Relations for men in the Navy Supply Corps who are studying marine transportation. Professor H. A. Freeman, in

addition to statistical studies for the Quartermaster branch of the Army, has been carrying on E.S.M.W.T. courses for inspection engineers. Professor Myers is a member of the research staff of the Committee for Economic Development and has prepared a study (shortly to be published) of personnel problems of the post-war transition period. Mr. Malm is investigating the history of collective bargaining at the Lynn plants of the General Electric Company and has been teaching a course in Public Speaking and Labor Relations to members of one of the local electrical unions.

R. E. FREEMAN.

ENGLISH AND HISTORY

This year the Department has felt the full effects of the Army and Navy training programs. Our list of courses has been extended to include one in Communication, Oral and Written, for the Army Specialized Training Program, and a slightly different one in English Composition for the Navy V-12 program. Three new courses in history have been organized: one for A.S.T.P. students called American History, and two for V-12 students called Historical Background of the Present World War, and Naval History and Elementary Strategy.

The enrolment in our subjects has fluctuated widely from term to term. In October, 1943, the Department was conducting a total of 86 recitation sections with a combined registration of 2,015 students. By March, 1944, the number of sections had dropped to 48 and the number of students to 906. During the present term the enrolment has been slightly over 1,100.

Even though the regular members of the Department have assumed very heavy teaching loads, outside assistance has been necessary. Professor Henry L. Seaver of the School of Architecture and Professors F. M. Currier and R. F. Koch of the Department of Modern Languages have helped us generously. Professor Koch has given much time to the foreign students who needed aid in English. Professor Everett Getchell, head of the Department of English at Boston University School of Education before his retirement, has been a visiting member of the Department.

In July Mr. Glenn H. Leggett, Coach of Debating, volun-

teered for service in the Navy, and Professor Karl Deutsch was granted leave of absence at the request of the Office of Strategic Services. He is in Washington for an indefinite period.

The new four-year program in the humanities, although not yet in effect, has necessitated changes in our courses. The first task, that of organizing a suitable course in history to be required in the sophomore year, is nearly completed. This course, The United States in World History, is planned to give the student not only a knowledge of the significant developments in his own country, but also an understanding of how those developments have been influenced by and in turn have influenced developments in the rest of the world. It will be taught for the first time next semester.

Revisions of our courses in History of Thought and Western World Literature are in progress in order to make them suitable options for the senior year.

H. R. BARTLETT.

GENERAL STUDIES

During the present transitional period, which covers three terms, the system of electives known as "General Studies" has been maintained. Enrolments, which before the war averaged about 700 students, have naturally been reduced, but have continued to be substantial.

In the fall term of 1943–44, the General Studies Committee offered 17 elective subjects, with an enrolment of 368 students; in the winter 18 subjects, with 478 students; and in the present summer term 16 subjects in which 342 students enrolled. Among the larger electives in the present term, the History of Science has an enrolment of 37. Other subjects with large registration are the History of Philosophy, Introductory Psychology, and Human Relations. In every case, the enrolment showed that the subject offered met a substantial student demand.

The chief event of the year has been the adoption by the Faculty, on the recommendation of a special committee under the chairmanship of Professor Millard, of a revised undergraduate curriculum. The coördinated four-year program in the humanities and social sciences, which is a part of that report,

was adopted after consultation with a large number of educators, both within and outside the Faculty, who had given attention to the subject. The details were carefully discussed at a special meeting of the Visiting Committee on English and History.

The objectives of the new program remain the same as those of the older period; namely to provide, so far as the limitations of time make possible, a sound general education parallel to engineering and scientific studies.

It is not expected that the revised program, especially the humanistic options of the senior year, can be undertaken until next year. In the meantime, however, plans are being made to give the new subjects as effectively as possible. Thus, for example, our present staff in International Relations has been supplemented by the recent appointment of Professor Norman J. Padelford, formerly of the Fletcher School of Law and Diplomacy, and at the present time a special consultant to the State Department, to take charge of the senior option in that subject. The other options will be planned with equal care.

R. G. CALDWELL.

MILITARY SCIENCE AND TACTICS

Instruction of the Reserve Officers Training Corps Unit was given during the year in accordance with the Military Training Schedule which was set up for the Army Specialized Training Program. Since the senior division of the Reserve Officers Training Corps has been discontinued, instruction is limited to the Basic Course, branch immaterial.

The average number of students taking R.O.T.C. training is 570. This is the largest R.O.T.C. training unit in New England. At present the unit is organized as a regiment, the first battalion consisting of Companies "A" and "B" and the second battalion of Companies "C" and "D."

The general policy of the Military Department in effect in previous years has been continued. The rules of the Department have been set forth in booklet form, a copy of which has been furnished each student enrolled in the Military Science course.

Since the last report, four officers have been relieved from

duty at this station and two have been replaced. During the year five line officers were assigned by the War Department for the instruction of the First Year Advanced R.O.T.C. students and departed upon completion of this duty. Lt.-Col. Joseph F. Cook, Jr., C.A.C. was relieved of duty as Professor of Military Science and Tactics on April 22, 1944 and Maj. Augustus A. Wagner, Ord. Dept. was assigned as Professor of Military Science and Tactics on June 6, 1944. Three noncommissioned officers were transferred from the Institute and no replacements ordered.

The Massachusetts Institute of Technology R.O.T.C. Unit was rated as "Excellent" by the inspector of the First Service Command.

The R.O.T.C. Rifle Teams had a successful season. The two teams won second and third place Hearst Trophies in the National R.O.T.C. Rifle Match among universities and colleges in the First Service Command.

A. A. WAGNER.

MODERN LANGUAGES

In the three-term period November, 1943 to September, 1944, the Department has devoted most of its time to the teaching of foreign languages, but a small fraction of the staff's schedule has been assigned to the teaching of English and Geography under the management of other departments. Though some classes have been small, numbers in general have held up very well, owing in part to the language requirements for the Navy men in V-12, who have represented almost 50 per cent of our classes. The majority of these Navy men have taken German, a moderate number French, and a few Spanish. The figures for the three terms in foreign language subjects (not counting English and Geography) are:

November, 1943–March, 1944	82 Navy	123 civilians
March–June, 1944	96 Navy	117 civilians
July–October, 1944	88 Navy	84 civilians

Grand total for all three terms: 266 Navy, 324 civilians, making 590 in both groups. Comparing the first term of the academic year March–June, 1944 with the first term of the

preceding academic year July–October, 1943, the former had a total of 213 students, the latter a total of 197. The increase this year was due to the new groups of Navy men sent to us in the second term for whom repeated sections had to be provided.

The small number in the Spanish classes is very regrettable, but is easily understood in view of the restrictions of time, schedule, and limited general study credits (maximum of 8 units) allowed.

Russian, owing to the lack of demand for it, was not given this academic year (March to October) but will be offered again in November.

During the year, Professor Currier served as President of the New England Modern Language Association, served in January on the Connecticut Panel discussing problems of language teaching at Hartford, Connecticut and gave the main address in May before the Rhode Island group of the N.E.M.L.A. In the Institute, part of his teaching time was devoted to English.

Professor Koch has given part of his time to the teaching of English, devoting special attention to the problem of teaching our language to foreign students. During the year he served as Vice-Chairman of the Program Committee, Massachusetts Group N.E.M.L.A.

Professor Langley acted as Chairman at the annual meeting of the French Group, N.E.M.L.A., in May. In June of this year he retired after serving in the Department as Professor of French in charge of Romance Languages 1910 to 1930, and as Head of the Modern Language Department 1930 to 1944.

E. F. LANGLEY.

REPORT OF THE TREASURER

AUDITORS' CERTIFICATE

To the Auditing Committee of the Massachusetts Institute of Technology:

We have made an examination of the books and accounts of the Treasurer and the Bursar of the Massachusetts Institute of Technology for the year ended June 30, 1944, and the accompanying balance sheet at that date and statements of operating income and expense and current surplus for the year. We have reviewed the accounting procedures of the Institute, and without making a detailed audit of the transactions, have examined or tested accounting records of the Institute and other supporting evidence by methods and to the extent we deemed appropriate.

We checked the investment accounts at June 30, 1944, with lists of securities at that date, certified by the Old Colony Trust Company of Boston, Massachusetts, custodian. We obtained independent confirmations of a substantial proportion of student loans, accounts receivable and accounts payable (including receivables from and advances by the United States Government) and made physical tests of the quantities included in the inventory of supplies.

The Treasurer's report shows a condensed summary of the operations on war research and other contracts with the United States Government and certain large industrial corporations, carried on under the direction of the Division of Industrial Coöperation, of which the aggregates only are shown in the accompanying financial statements. However, as indicated above, the accounts relating to the war and other research contracts have been included in our examination of the Institute's transactions for the year. Reserves aggregating $810,856.02 (Reserve for Restoration, $396,186.50, Special War Reserve 1941–1942, $324,993.61, Army and Navy Training Programs Reserve, $73,954.52 and Radar School, $15,721.39, included in endowment and other funds), have been provided for rehabilitation of buildings and equipment and for contingencies and adjustments which may result from possible renegotiation or termination of war contracts, but the adequacy of such reserves cannot now be determined.

In our opinion, the accompanying balance sheet and statements of operating income and expense and current surplus, with supporting schedules and footnotes, and with the explanation in the preceding paragraph relating to war contracts, present fairly, on the basis indicated, the financial condition of the Institute at June 30, 1944, and the results of its operations for the year ended at that date.

We satisfied ourselves by examination of the transactions for the year of the Joseph Hewett and the George S. Witmer Funds, of which the Massachusetts Institute of Technology acts as trustee, that the provisions of the trust agreements had been fulfilled. Our examination embraced also the accounts of the Massachusetts Institute of Technology Pension Association for the same period, which, in our opinion, have been correctly stated.

September 25, 1944. PATTERSON, TEELE AND DENNIS

REPORT OF THE AUDITING COMMITTEE

To the Corporation of the Massachusetts Institute of Technology:

The Auditing Committee reports that the firm of Patterson, Teele and Dennis was employed to make an audit of the books and accounts of the Institute for the fiscal year ended June 30, 1944, and their certificate is submitted herewith. Respectfully,

VICTOR M. CUTTER
PHILLIPS KETCHUM
HENRY E. WORCESTER, *Chairman*

October 1, 1944.

TREASURER'S STATEMENT

To the Corporation:

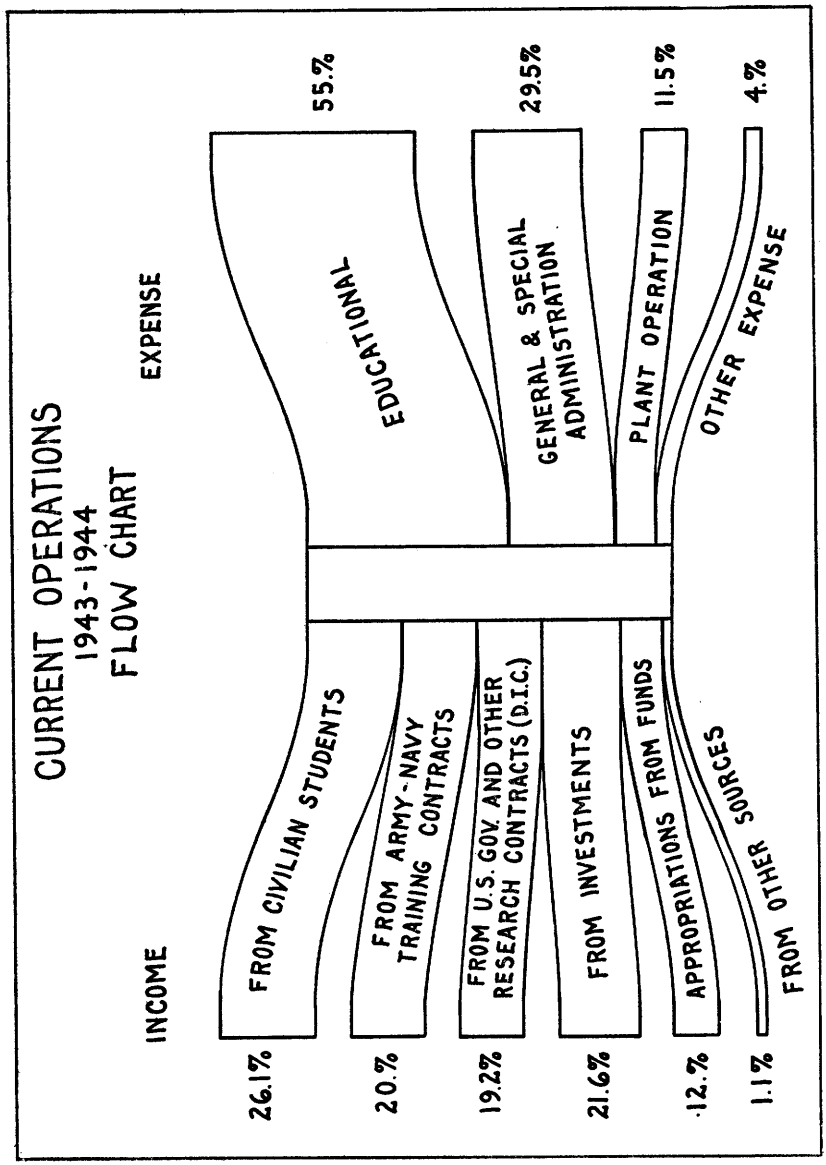
The financial condition of the Institute as of June 30, 1944, also the financial transactions during the year ended on that date are shown by the statements and schedules submitted herewith in accordance with Section VI of the By-Laws of the Corporation.

There are three major schedules presented, (A) BALANCE SHEET, (B) OPERATING INCOME AND EXPENSE FOR THE YEAR and (C) CURRENT SURPLUS, in the order named. The first two are broken down into supporting schedules designated A-1, B-1, etc.

EDUCATIONAL PLANT

The only addition to the Educational Plant during the year was the purchase of the storage building on Vassar Street adjoining Building No. 35. The total plant assets are $17,109,000. This amount does not include buildings (temporary or otherwise) erected for War Research purposes with funds provided by United States Government contracts, totaling in excess of $1,700,000.

The sources of the greater part of this plant capital are indicated in Schedule A-9, Principal Gifts and Appropriations for the Educational Plant.


CURRENT OPERATIONS
1943-1944
FLOW CHART
INCOME
EXPENSE
FROM CIVILIAN STUDENTS
26.1%
FROM ARMY-NAVY TRAINING CONTRACTS
20.7%
FROM U.S. GOV. AND OTHER RESEARCH CONTRACTS (D.I.C.)
19.2%
FROM INVESTMENTS
21.6%
APPROPRIATIONS FROM FUNDS
12.7%
FROM OTHER SOURCES
1.1%
EDUCATIONAL
55.7%
GENERAL & SPECIAL ADMINISTRATION
29.5%
PLANT OPERATION
11.5%
OTHER EXPENSE
4.%

Current Operations

The flow chart on page 143 shows the sources of budgeted income and the expenses of the operation of the Institute for the year ended June 30, 1944. It excludes all income and expenses of Dining Services, Dormitories and of Current Funds, in which latter are included overall figures of war research projects.

Income from civilian students, including loans and scholarship awards, $1,108,000, was $706,000 less than last year, but the income from the Government on account of Army and Navy training programs was $851,000, an increase of $752,000 over 1943.

Income from investments fell off $40,000 to $921,000, while income from other sources increased $292,000, largely appropriations from available funds and from contracts.

Educational expenses, $2,372,000, were up $71,000, General Administrative Expenses were down $25,000, but Special Administrative Expenses, due to War Training and Contract Activities, were up $361,000. Similarly, plant operation was $511,000, an increase of $74,000.

Expenses exceeded income received by $39,000, and the all-time surplus resulting from current operations now stands at $6,725.37 (see Schedule C, page 160).

War Research and Other Contract Operations

For the first time there is included in this report a financial summary of the more than two hundred contracts operated under the direction of the Division of Industrial Coöperation.

For the fiscal year ended June 30, 1944:

Total Volume D. I. C. Projects		$25,461,261.16
Direct Expenditures:		
Salaries and Wages	$9,412,054.25	
Materials and Services	12,507,534.63	
Travel	798,751.74	
Communications and Shipping	316,983.88	
New Building Construction	1,094,140.86	
Other direct charges	189,283.80	
		24,318,749.16
Gross Overhead		$1,142,512.00
Less — Non-reimbursable items and Contract Losses		46,008.16
Net Overhead (before direct expenses)		$1,096,503.84
Less — D. I. C. Direct Expenses:		
Salaries and Wages	$134,469.12	
Materials and Service	13,207.52	
Travel	2,368.84	
Insurance	16,401.60	
Auditing and Special Services	19,799.79	
Miscellaneous	28,472.15	
		214,719.02
Net Overhead (after direct expenses)		$881,784.82

Excluding the setting aside of a modest reserve for deferred maintenance and/or restoration, from this amount, and with necessary adjustments to cover handling of industrially sponsored projects, the balance is turned in to the Institute's general income (Schedule B — page 158) to meet the D. I. C. Contracts' proportional share of the General and Special Administrative Expenses, the costs of light, heat, power, water, gas and other services supplied and of the costs of maintenance and repair of facilities.

The aggregate of these combined expenses of the Institute for the past year was in excess of $1,750,000. Thus it is apparent that the share carried by the D. I. C. Contracts is less than one-half of the whole Institute overhead, that the Army and Navy and other Training Contracts, along with the usual civilian courses, carried the balance, and that the Institute, by reason of this income, is left "neither better nor worse" financially as a result.

ENDOWMENT FUNDS

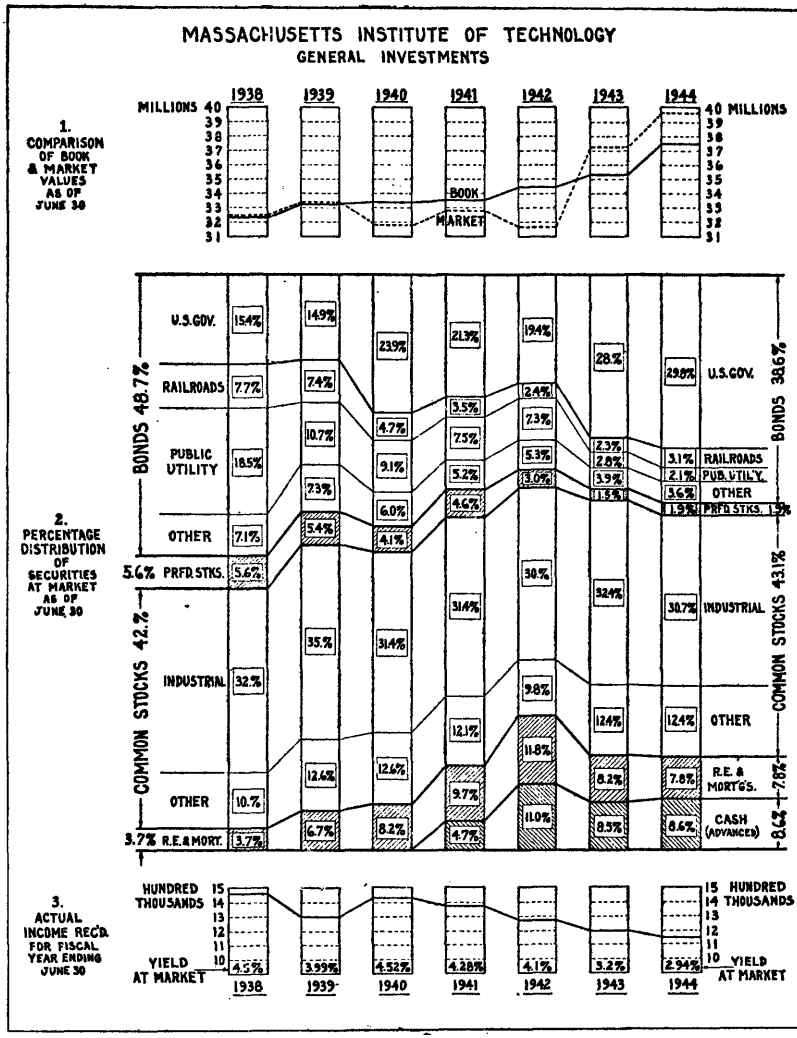
The book value of the Endowment and other funds is now $40,174,000 — an increase of $2,231,000 over last year. Of this, $1,133,000 is provided by capital gift additions. The balance is made up largely of additional reserve funds established for postwar maintenance and restoration.

INVESTMENTS

SUMMARY OF INVESTMENTS AS OF JUNE 30, 1944

General Investments	*Book*	*Market*	*Per Cent at Market*
Bonds —			
United States Government	$12,000,000	$11,815,990	29.8
Canadian (all issues)	558,254	568,610	1.4
Public Utility	815,638	847,260	2.1
Railroad	1,124,172	1,205,450	3.1
Other	856,471	896,514	2.2
	$15,354,535	$15,333,824	38.6
Preferred Stocks	$735,821	$761,000	1.5
Common Stocks —			
Industrial	$10,030,391	$12,241,801	30.7
Public Utility	1,464,728	1,358,308	3.4
Railroad	131.923	146,700	0.4
Bank, Insurance and Other	3,460,577	3,396,699	8.6
	$15,087,619	$17,143,508	43.1
Mortgages and Real Estate	$3,107,805	$3,107,805	7.8
Cash — Advanced (Schedule A)	$3,307,550	$3,307,550	8.6
Total General Investments	$37,593,330	$39,653,687	100
Special Investments	$2,580,913	$2,580,913	...
TOTAL INVESTMENTS	$40,174,243	$42,234,600	...

Trends in the pooled or general investments during the past seven years are shown in the one hundred per cent component bar graph presented on page 148.


MASSACHUSETTS INSTITUTE OF TECHNOLOGY
GENERAL INVESTMENTS
1. COMPARISON OF BOOK & MARKET VALUES AS OF JUNE 30
MILLIONS
1938
1939
1940
1941
1942
1943
1944
BOOK
MARKET
2. PERCENTAGE DISTRIBUTION OF SECURITIES AT MARKET AS OF JUNE 30
BONDS 48.7%
U.S.GOV.
RAILROADS
PUBLIC UTILITY
OTHER
5.6% PRFD.STKS.
COMMON STOCKS 42.7%
INDUSTRIAL
OTHER
3.7% R.E.& MORT.
BONDS 38.6%
COMMON STOCKS 43.1%
R.E. & MORT'GS.
CASH (ADVANCES)
3. ACTUAL INCOME REC'D FOR FISCAL YEAR ENDING JUNE 30
HUNDRED THOUSANDS
YIELD AT MARKET
4.5%
3.99%
4.52%
4.28%
4.1%
3.2%
2.94%

Investments

As is indicated in the summary (page 147), the book value of the Institute's investments — including cash advanced for war research and training programs — increased $2,231,000 to $40,174,000. The market value of all investments increased somewhat less, but stands at $42,235,000 — or $2,060,000 in excess of book. The market value of the general (pooled) investments was 105 per cent of book — 106 per cent last year.

Investment Income

The income distributed to the funds sharing the investment pool was at the rate of 3.25 per cent — an all-time low — 3.60 per cent in 1943, 3.93 per cent in 1942. The high percentage of United States Government Bonds held in the account (29.8 per cent) yielding less than 2½ per cent, and the substantial cash advances for war purposes, 8.6 per cent—with no direct yield — explains the low rate.

The Institute has been able to operate under a reduced investment income for the past two years — and may be obliged to continue this policy during the coming year — but the general position of the investment account is one of desirable liquidity with capacity for taking advantage of any sharp or continued rise or fall in market prices during the year.

General

On the pages immediately following, will be found (1) a record of the gifts and bequests received by the Institute during the year, (2) a report of the operation of the Technology Loan Fund Committee, (3) a report of the Trustees of the M. I. T. Pension Association.

Respectfully submitted,

Horace S. Ford, *Treasurer.*

September 1, 1944

GIFTS AND BEQUESTS RECEIVED DURING YEAR ENDED JUNE 30, 1944

CAPITAL

Contributions to M. I. T. Alumni Fund, 1942–43	$1,219.11
Contributions to M. I. T. Alumni Fund, 1943–44	37,979.64
Contributions to M. I. T. Alumni Fund, 1944–45	81,151.24
Contributions to Class of 1919 Fund	166.50
Contributions to Class of 1922 Scholarship Fund	170.00
All American Aviation, Inc. for R. C. du Pont Memorial	5,000.00
Anonymous (additional)	400,000.00
Anonymous for Class of 1919 Fund	5,000.00
Samuel Berkovitz for Samuel Berkovitz Fund	10,000.00
Clara H. Briggs Estate for C. H. Briggs Fund (additional)	2.30
James A. Carney Estate for James A. Carney Fund	13,000.00
Maria T. Catlin Estate for Nino T. Catlin Scholarship Fund	1,265.07
W. A. Conant Estate for W. A. Conant Scholarship Fund	69,126.38
Arthur J. Conner for Arthur J. Conner Fund (additional)	7,000.00
Mary T. Conro Estate for Albert Conro Scholarship Fund	25,000.00
Carbon P. Dubbs for Carbon P. Dubbs Fund	5,000.00
Matilda A. Fraser Estate for Matilda A. Fraser Fund (additional)	4.29
E. C. Gaffield Estate for Erastus C. Gaffield Fund	180,000.00
Nathan R. George Estate for Nathan R. George Loan Fund.	29,197.37
Barnett D. Gordon for B. D. Gordon Scholarship Fund	5,000.00
Joseph A. Guerrieri for John Felt Osgood Fund	245.25
Joseph A. Guerrieri for Morrill Wyman Fund	280.00
William T. Henry Estate for William T. Henry Fund	10,140.00
Louise Bruce Hills Estate for John Marshall Hills Fund (additional)	249.86
Mrs. William R. Kales for William R. Kales Fund	71,001.48
Mrs. Robert G. Hartwick for William R. Kales Fund	1,000.00
Mrs. Hugo G. Huettig, Jr. for William R. Kales Fund	1,000.00
Robert G. Kales for William R. Kales Fund	1,000.00
Mrs. Neil McMath for William R. Kales Fund	1,000.00
A. E. Kennelly Trust for A. E. Kennelly Fund (additional)	441.63
Hiram H. Logan Estate for H. H. Logan Fund (additional)	24,500.00
Edward H. Lorenz for A. Norton Kent Fund	100.00
George S. May for G. S. May Scholarship Fund	2,000.00
Alexander G. Mercer Estate for Hall-Mercer Scholarship Fund (additional)	1,768.82
Charles E. Merrill for Charles E. Merrill Fund	2,300.00
C. Lillian Moore Trust for J. A. Grimmons Fund (additional)	1,789.59
Francis Ward Paine Estate for Francis Ward Paine Fund	10,000.00
Florence E. Prince Estate for Florence E. Prince Fund	7,537.50
E. L. Quinn for Educational Endowment Fund (additional)	21.00
Ralph J. Slutz for Technology Loan Fund — Capital	50.00
Elizabeth R. Stevens Estate for A. G. Boyden Fund (additional)	18.95
Tech Club of Chicago for Tech Club of Chicago Scholarship Fund	5,000.00

N. Florence Treat Estate for Nellie Florence Treat Fund	$609.00
Grant Walker Estate for Grant Walker Fund	60,000.00
Grant Walker Estate for Grant Walker Scholarship Fund	5,000.00
Mabel S. Walker Estate for Grant Walker Scholarship Fund	50,000.00
Marion Westcott Estate for Marion Westcott Fund (additional)	500.00
TOTAL CAPITAL GIFTS	$1,132,834.98

MISCELLANEOUS

Contributions to Faculty Flower Fund	$450.50
Contributions to Friends of the Library Fund	2,105.00
Contributions to Industrial Economics Graduate Program Fund	3,000.00
Contributions to Industrial Relations Fund	39,762.41
Abington Sanitary Manufacturing Company for Clay Research	100.00
Allied Chemical and Dye Corporation for Allied Chemical and Dye Corporation Fellowship Fund	375.00
Anonymous for Albert Fund	6,000.00
Anonymous for Cosmic Terrestrial Research Fund	991.73
Anonymous for Dean's Special Fund	1,000.00
Anonymous for Graduate Scholarship Fund	500.00
Anonymous for Special Purpose	5,000.00
Burroughs Williams & Company for Radioactivity Center — Physics Department	2,000.00
Godfrey L. Cabot, Inc. for Cabot Electric Microscope Fund —Biology Department	16,000.00
Louis S. Cates for Cates Equipment Special — Metallurgy Department	2,500.00
M. H. Compton for Emma Rogers Room Social Account	50.00
Corn Industries Research Foundation for Corn Industries Research Foundation Fund	1,500.00
G. T. Cotter for Alumni Fund — Special Gifts	1,000.00
Charles G. Dawes for Cosmic Terrestrial Research Fund	500.00
E. I. du Pont de Nemours Company for du Pont Fellowship	750.00
E. I. du Pont de Nemours Company for du Pont Cellulose Research Fund — Biology Department	2,500.00
Eastman Kodak Company for Chemical Engineering Department	1,000.00
Electronic Industries for Cosmic Terrestrial Research Fund	100.00
General Baking Company for Nutrition Foundation Research Fund	540.00
Morris H. Gens for Class of 1922 Scholarship Fund "Special"	4,800.00
Georgia Kaolin Company for Clay Research Fund — Metallurgy Department	250.00
Gulf Oil Corporation for Gulf Oil Corporation Special Research — Physics Department	1,100.00
W. J. Hamburger for M. E. Textiles Equipment Fund	500.00
H. B. Harvey for M. E. Harvey Non-Ferrous Account	5,000.00
A. C. Lawrence Leather Company for A. C. Lawrence Fund — Biology Department	5,000.00
Lever Brothers for Lever Brothers Scholarship	750.00

Lever Brothers for Lever Brothers Fellowship — Biology Department	$750.00
Lever Brothers for Nutrition Fund — Biology Department	2,500.00
Arthur D. Little, Inc. for Arthur D. Little Special Fellowship	1,500.00
E. A. Lufkin for E. A. Lufkin Trust	50.00
N. M. Marsilius for Newman M. Marsilius Fund	500.00
Samuel A. Marx for President's Fund Special	500.00
James C. Melvin Trust for Melvin Trust Scholarships	4,800.00
National Lime Association for Building Engineering and Construction	5,300.00
Nutrition Foundation, Inc. for Biology and Biological Engineering Nutrition Foundation Research Fund	2,400.00
Radio Corporation of America for Cosmic Terrestrial Research Fund	5,000.00
Research Corporation for Bolsbaugh Research Special	2,750.00
Research Corporation for Building Engineering and Construction Research	3,300.00
Research Corporation for Vitamin A and D Research — Chemistry Department	2,500.00
Research Corporation for Vitamin Synthesis A and D	2,500.00
Revere Copper and Brass, Inc. for Revere Copper and Brass Research — Metallurgy Department	1,600.00
Rockefeller Foundation for Rockefeller Fund No. 41042	10,000.00
Rockefeller Foundation for Rockefeller Foundation Biological Engineering	1,589.30
Rockefeller Foundation for Rockefeller Foundation Emergency Expense Account	5,000.00
Sheffield Corporation for Sheffield Foundation — Metallurgy Department	5,000.00
S. Slater & Sons, Inc. for M. E.-S. Slater & Sons, Inc. Fund.	20,000.00
G. H. Sloan for E. A. Lufkin Trust	50.00
Sugar Research Foundation, Inc. for Sugar Research Fund	25,000.00
Swift & Company for Swift Protein Fund	20,000.00
Towle Manufacturing Company for Towle Fund	4,000.00
William Underwood Company for William Underwood Fellowship — Biology Department	500.00
Vanadium Alloys Steel Company for Vanadium Alloys Fellowship — Metallurgy Department	1,725.00
Vitreous China Plumbing Fixture Association for Special Clay Research — Metallurgy Department	500.00
Edwin S. Webster for Special Account	33.52
Mrs. Granger Whitney for Granger-Whitney Scholarship Fund	200.00
TOTAL, MISCELLANEOUS GIFTS	$234,672.46
TOTAL CAPITAL AND MISCELLANEOUS GIFTS	$1,367,507.44

REPORT OF THE TECHNOLOGY LOAN FUND COMMITTEE

COMPARATIVE BALANCE SHEET

ASSETS

	June 30, 1943		*June 30, 1944*	
Cash	$99,525.05		$89,448.91	
Investments (Schedule A-1)	799,025.57	$898,550.62	a 962,748.02	$1,052,196.93
Student Notes Receivable (Schedule A-3):				
Loans 1930 to date	$1,835,075.75		$1,874,300.75	
Less Repayments (including Write-Offs, $2,397.35) 1930 to date	1,034,096.17	800,979.58	1,206,472.80	667,827.95
TOTAL ASSETS		$1,699,530.20		$1,720,024.88

a Market Value June 30, 1944, $975,781.25.

LIABILITIES

Technology Loan Fund (1930 to date):				
Total Subscriptions		$1,450,735.18		$1,450,785.18
Add:				
Investment Income (net)	$324,258.56		$347,898.60	
Interest from Loans	164,778.79	489,037.35	180,963.95	528,862.55
		$1,939,772.53		$1,979,647.73
Deduct:				
Net Loss on Securities	$204,953.50		$204,633.96	
Write-Offs, Deceased Borrowers	2,397.35		2,397.35	
Life Insurance Premiums	32,891.48	240,242.33	52,591.54	259,622.85
		$1,699,530.20		$1,720,024.88

RECEIPTS AND EXPENDITURES FOR 1943–44

RECEIPTS

Income (Investments)		$23,640.04
Interest (Loans)		16,185.16
Net Gain on Sales of Securities		319.54
Gift		50.00
Repayments on Loans	$172,376.63	
Less: Loans Made	39,225.00	133,151.63
		$173,346.37

EXPENDITURES

John Hancock Mutual Life Insurance Company Premium (net)	19,700.06
NET INCREASE IN CASH AND INVESTMENTS	$153,646.31

TECHNOLOGY LOAN FUND COMMITTEE

Karl T. Compton, *Chairman*

Gerard Swope — Pierre S. du Pont — John E. Aldred

Edwin S. Webster — Horace S. Ford

REPORT OF THE TRUSTEES OF THE M. I. T. PENSION ASSOCIATION COMPARATIVE BALANCE SHEET

ASSETS

	June 30, 1943	*June 30, 1944*
Cash	$57,636.70	$37,203.04
Investments (Schedule A-1)	1,671,880.13	[1]1,786,547.87
Total	$1,729,516.83	$1,823,750.91

[1] Market Value June 30, 1944 $1,841,535.00.

LIABILITIES

Teachers' Annuity Fund (5% salary deduction, plus interest)	$1,001,289.20	$1,065,357.86
*M. I. T. Pension Fund (3% appropriation, plus interest)	636,195.83	678,416.94
Special Reserves for Annuity Payments	55,733.70	46,188.61
Total Liabilities	$1,693,218.73	$1,789,963.41
Reserve Fund	36,298.10	33,787.50
Total	$1,729,516.83	$1,823,750.91

*The Institute appropriates annually the equivalent of the 5% salary deduction, using 2% for payment of group insurance premiums.

RECEIPTS AND EXPENDITURES FOR 1943–1944

RECEIPTS

5% salary deductions added to Teachers' Annuity Fund	$81,392.09
3% appropriations added to M. I. T. Pension Fund	48,980.77
Income from investments	60,035.43
Net profits on sales of securities	2,995.91
Contribution by M. I. T. to Reserve Fund	10,969.34
Total Receipts	$204,373.54

EXPENDITURES

Paid on account of withdrawal or decease of members	$26,223.57
Used to purchase annuities for retiring members	73,244.84
Pensions paid directly to former retired members	7,678.24
Losses on Sales of Securities	7.81
Amortization of Bond Premiums	2,985.00
Total Expenditures	$110,139.46
Net Increase of Ledger Assets	$94,234.08

TRUSTEES OF THE M. I. T. PENSION ASSOCIATION

Karl T. Compton — Horace S. Ford — Ralph E. Freeman
Charles B. Breed — John R. Macomber

BURSAR'S STATEMENT

To the Treasurer:

The following principal Schedules

BALANCE SHEET	(A)
OPERATING INCOME AND EXPENSE	(B)
CURRENT SURPLUS	(C)

together with their respective supporting schedules (A-1, B-1, etc.) have been drawn from the Institute's books of account. These summarize the financial condition of the Institute as of June 30, 1944, as well as the transactions during the year.

D. L. RHIND, *Bursar.*

W. A. HOKANSON, *Assistant Bursar.*

September 1, 1944

SCHEDULE A

BALANCE SHEET

JUNE 30, 1944

ENDOWMENT FUNDS, ASSETS

Securities and Real Estate	(A-1)	$36,866,693.40
Cash: Advanced for Current Purposes (per contra)		3,258,549.89
Advanced for Plant Construction (per contra)		49,000.00
Total		$40,174,243.29

STUDENT LOANS, ASSETS

Notes Receivable	(A-3)	$684,575.69

CURRENT AND DEFERRED ASSETS

Cash: For General Purposes			$2,335,547.97
For U. S. Government Research (per contra)			2,005,000.00
Accounts Receivable (less advances)	(A-4)		1,164,425.67
Expenditures on U. S. Government Contracts in Progress (less advances), Other Contracts in Progress, Other Uncompleted Projects, Inventories, and Advances	(A-6)		1,078,503.67
Unallocated Expenditures:			
Government and Other Contracts		$750,831.81	
1944–1945 Purchases and Expenses		24,404.38	
			775,236.19
Total			$7,358,713.50

EDUCATIONAL PLANT ASSETS

Land, Buildings and Equipment	(A-8)	$17,109,369.55
Total		$17,109,369.55
Total Assets		$65,326,902.03

AGENCY FUNDS, ASSETS

Joseph Hewett Fund:			
Securities	(A-1)	$210,395.85	
Cash		1,789.15	
			$212,185.00
M. I. T. Pension Association:			
Securities	(A-1)	$1,786,547.87	
Cash		37,203.04	
			1,823,750.91
George S. Witmer Fund:			
Securities	(A-1)	$54,238.08	
Cash		3,851.81	
			58,089.89
[1]Students' Deposits:			
Cash			32,171.47
Total			$2,126,197.27

[1] Held for safe-keeping only.

SCHEDULE A

BALANCE SHEET

JUNE 30, 1944

ENDOWMENT FUNDS, CAPITAL

Endowment and Other Funds	(A-2)	$40,174,243.29
Total		$40,174,243.29

STUDENT LOANS, CAPITAL

Total	(A-3)	$684,575.69

CURRENT LIABILITIES AND SURPLUS

Advance on O.S.R.D. Contract for July, 1944 (per contra)		$2,005,000.00
Accounts Payable		794,773.50
Students' Fees and Deposits	(A-5)	119,848.35
United States Withholding Tax Payable	(A-7)	162,882.03
War Savings Bond Deposits	(A-7)	28,362.38
Current Funds	(A-7)	982,571.98
Borrowed from Investment Cash (per contra)		3,258,549.89
Current Surplus	(Schedule C)	6,725.37
Total		$7,358,713.50

EDUCATIONAL PLANT CAPITAL

Endowment for Educational Plant	(A-9)	$17,060,369.55
Borrowed from Investment Cash (per contra)		49,000.00
Total		$17,109,369.55
Total Capital, Liabilities and Surplus		$65,326,902.03

AGENCY FUNDS, CAPITAL

Joseph Hewett Fund	$212,185.00
M. I. T. Pension Association	1,823,750.91
George S. Witmer Fund	58,089.89
[1]Students' Deposits	32,171.47
[1]Total	$2,126,197.27

[1] Held for safe-keeping only.

SCHEDULE B

†OPERATING INCOME FOR YEAR 1943–44

	Supporting Schedules		
EDUCATIONAL AND GENERAL			
FROM STUDENTS			
Fees — Cash		$928,308.17	
Fees Receivable		126.01	
Scholarship Awards		141,316.00	
Student Loans		33,735.00	
Total, Tuition Fees		$1,103,485.18	
Locker, Examination and Other Fees		4,918.99	
			$1,108,404.17
FROM INVESTMENTS			
Income — General and Special Investments	(A-1)	$1,245,906.04	
Less: Income Added to Funds	(A-2)	324,215.52	
			921,690.52
FROM OTHER SOURCES			
Federal Aid — Acts 1862 and 1890		$22,088.35	
Appropriations from Funds, etc.	(B-1)	507,376.08	
U. S. Government Contracts		815,038.10	
Rentals and Other Income	(B-2)	23,520.74	
Army and Navy Training Programs ($906,614.31 less Reserve $55,000)		851,614.31	2,219,637.58
Total, Educational and General			$4,249,732.27
AUXILIARY ACTIVITIES			
Dormitories (*excl. Graduate House)	(B-11)	$165,113.41	
Dining Service, Walker Memorial	(B-13)	378,262.11	
Dining Service, Graduate House	(B-14)	365,390.73	
Total, Auxiliary Activities			908,766.25
Total Operating Income			$5,158,498.52

* See Investments (A-1), also (B-12).
† Not including receipts for Major and Current Funds.

SCHEDULE B
†OPERATING EXPENSE FOR YEAR 1943–1944

	Supporting Schedules		
EDUCATIONAL AND GENERAL			
EDUCATIONAL EXPENSES			
Salaries	(B-3)	$2,144,534.52	
Departmental Expenses	(B-4)	142,570.22	
Library and Museum	(B-5)	85,239.76	
			$2,372,344.50
GENERAL EXPENSES			
Salaries of Officers		$162,696.68	
Clerical and Office Expense, Administration	(B-6)	179,061.72	
General Administration Expense	(B-7)	358,940.56	
Special Administration Expense	(B-7a)	549,733.71	
			1,250,432.67
PLANT OPERATION			
Department of Buildings and Power	(B-8)	$506,774.25	
Fire Insurance		4,431.61	
			511,205.86
OTHER EXPENSES			
Medical Department	(B-9)	$67,856.83	
Undergraduate Budget Board	(B-10)	103,227.78	
			171,084.61
Total, Educational and General			$4,305,067.64
AUXILIARY ACTIVITIES			
Dormitories (*excl. Graduate House)	(B-11)	$149,331.45	
Dining Service, Walker Memorial	(B-13)	378,262.11	
Dining Service, Graduate House	(B-14)	365,390.73	
Total Auxiliary Activities			892,984.29
Total Operating Expenses			$5,198,051.93
Excess Expense over Income (Schedule C)			*39,553.41*
Total			$5,158,498.52

† Not including disbursements for Major and Current Funds.
* See Investments (A-1), also (B-12).

SCHEDULE C

CURRENT SURPLUS

BALANCE, June 30, 1943			$210,444.81
Add:			
Adjustment of Previous Years' Operations:			
D. I. C. Equipment purchased 1940–43		$32,724.00	
Appropriations unexpended (net)		2,299.08	
Loan Fund Collection Exp. Recovery		207.88	
Equipment Sales		3,727.00	
Salary Adjustments (net)		536.37	
Recoveries of Student Fees (net)		317.26	
E. & I. Co-op. Dividends		137.11	
Royalties received		614.01	
Forest Fire Research Project Completed		1,053.52	
			41,616.23
			$252,061.04
Deduct:			
Adjustment of Previous Years' Operations:			
D. I. C. Reserve for Restoration 1940–43	$103,952.00		
Refund to U. S. Treasurer a/c O.S.R.D. 1942–43	100,000.00		
Uncollectible Items (net)	1,830.26		
		$205,782.26	
Excess Expense 1943–44 (Schedule B)		39,553.41	
			245,335.67
BALANCE, June 30, 1944			$6,725.37

SCHEDULE A-1

INVESTMENTS — GENERAL

U. S. GOVERNMENT BONDS AND NOTES

Par Value				*Book Value*	*Net Income*
$500,000	U. S. Treasury "C" .	7/8s	1945	$500,000.00	.....
1,000,000	U. S. Treasury "B" .	1¼s	1947	1,000,000.00	.....
1,000,000	U. S. Treasury	1¾s	1948	1,010,000.00	$6,168.03
1,500,000	U. S. Treasury	2s	1949–51	1,520,000.00	*2,119.56*
1,000,000	U. S. Treasury	2s	1951	1,012,500.00	3,579.23
1,000,000	U. S. Treasury	2s	1951	1,013,000.00	7,213.11
1,000,000	U. S. Treasury	2s	1952	1,007,000.00	2,197.80
1,500,000	U. S. Treasury	2s	1952	1,516,000.00	*2,119.56*
1,000,000	U. S. Treasury	2s	1951–53	1,000,000.00	9,230.00
1,000,000	U. S. Treasury	2s	1952–54	1,000,000.00	.....
50,000	U. S. Savings "G" ..	2½s	1953	50,000.00	1,250.00
1,000,000	U. S. Treasury	2½s	1954	1,004,500.00	25,000.00
25,000	U. S. Savings "G" ..	2½s	1954	25,000.00	625.00
67,000	U. S. Treasury "G" .	2½s	1954	67,000.00	1,675.00
50,000	U. S. Savings "G" ..	2½s	1954	50,000.00	1,250.00
125,000	U. S. Savings "G" ..	2½s	1955	125,000.00	3,125.00
100,000	U. S. Savings "G" ..	2½s	1956	100,000.00	.....
	Income from bonds sold.....				139,966.73
	Total U. S. Govt. Bonds and Notes ..			$12,000,000.00	$197,040.78

CANADIAN GOVERNMENT AND OTHER BONDS

$100,000	Canadian Nat.Ry.Co.	4½s	1956	$117,000.00	*$1,500.00*
100,000	Canadian Nat.Ry.Co.	4½s	1957	116,500.00	*1,275.00*
35,000	Ottawa.....	5s	1945	35,000.00	1,750.00
24,325	Toronto.....	4s	1948	22,622.25	973.32
67,000	Gatineau Power	3¾s	1969	65,831.60	1,823.74
200,000	Shawinigan W. & P..	4½s	1967	201,300.00	9,000.00
	Income from bonds called.....				3,296.88
	Total Canadian and Other Bonds ...			$558,253.85	$14,068.94

INDUSTRIAL AND OTHER BONDS

$200,000	Adams Express Co...	4¼s	1946	$199,388.81	$8,500.00
100,000	Consol. Cigar Corp. .	3¼s	1953	100,900.00	1,444.44
200,000	Eastern Gas and Fuel	4s	1956	176,382.02	8,000.00
99,000	National Dairy Prod.	3¼s	1960	101,000.00	3,217.50
55,000	National Oil Prod. ..	3¼s	1955	55,000.00	1,811.88
36,000	National Oil Prod. ..	3¼s	1957	36,600.00	1,183.54
96,000	Ry. and Light Sec. Co.	3¼s	1955	96,200.00	2,874.90
91,000	Schenley Distillers ..	4s	1952	91,000.00	3,820.00
	Income from bonds sold or called				5,838.34
	Total Industrial Bonds.....			$856,470.83	$36,690.60

SCHEDULE A-1 — (Continued)

Shares		*Book Value*	*Net Income*
	INDUSTRIAL PREFERRED STOCKS		
1,000	Cornell-Dubilier Electric	$100,000.00	*$189.58*
1,000	Crane Conv.	105,351.50	4,362.50
500	Poor & Co. A	9,965.00	1,250.00
500	U. S. Steel	51,706.42	3,500.00
	Income from stocks sold		750.00
	Total Industrial Preferred Stocks	$267,022.92	$9,672.92
	INDUSTRIAL COMMON STOCKS		
3,130	American Can	$319,353.40	$9,390.00
5,000	Borg Warner	178,181.68	8,456.00
2,000	Caterpillar Tractor	92,194.13	4,000.00
5,200	Central Aguirre Associates	134,514.33	13,000.00
100	Christiana Securities	250,000.00	8,570.00
3,000	Chrysler Corp.	162,997.30	9,000.00
100	Decca Records	2,300.00	60.00
2,040	Dewey & Almy Chemical	55,000.00	2,020.00
1,500	Diamond Alkali	87,750.00	3,000.00
3,000	Dow Chemical	380,418.76	9,000.00
2,200	Draper Corp.	101,780.20	6,600.00
2,879	du Pont de Nemours	353,398.65	13,675.25
12,000	Eastman Kodak	1,053,505.96	60,000.00
12,280	General Electric	291,349.00	17,192.00
5,250	General Motors	186,170.67	13,125.00
900	Hazel Atlas Glass	97,273.12	4,500.00
2,000	Hercules Powder	146,973.25	5,000.00
15,000	Humble Oil & Refining	486,789.80	21,562.50
2,000	Inland Steel	214,296.56	9,000.00
796	International Business Machines	89,721.22	4,662.00
3,100	International Harvester	123,863.98	7,750.00
7,240	International Nickel, Canada	261,895.60	11,077.21
2,000	Johns Manville	175,691.60	4,500.00
6,000	Kennecott Copper	253,773.59	18,000.00
4,000	Kroger Grocery and Baking	132,053.95	8,000.00
1,500	Liggett & Myers Tobacco	103,445.82	4,875.00
2,500	Liquid Carbonic	37,825.90	3,750.00
805	Merck & Co.	33,540.94	.....
4,137	Monsanto Chemical	300,309.15	9,308.25
2,000	National Lead	65,726.17	1,500.00
2,500	National Steel	192,305.99	7,500.00
5,100	Owens Illinois Glass	298,685.89	10,200.00
2,400	J. C. Penney	216,229.29	12,000.00

SCHEDULE A-1 — (Continued)

Shares				*Book Value*	*Net Income*
	INDUSTRIAL COMMON STOCKS (*Continued*)				
3,000	Phillips Petroleum			$115,193.57	$6,000.00
2,500	Pittsburgh Plate Glass			138,661.89	10,000.00
5,753	Procter & Gamble			265,767.26	12,944.25
5,000	St. Joseph Lead			219,990.15	10,000.00
2,500	Sears Roebuck			192,877.83	10,625.00
200	Shell Union Oil			5,000.00	170.00
1,000	Sherwin Williams			100,988.10	3,000.00
4,165	Standard Oil, Cal.			140,714.83	8,954.75
3,000	Standard Oil, Ind.			89,606.25	4,500.00
12,200	Standard Oil, N. J.			509,174.24	27,450.00
1,500	Timken Roller Bearing			106,312.70	3,000.00
5,200	Tybor Stores, Inc.			2,600.00	.....
6,620	Union Carbide & Carbon			382,569.12	19,860.00
700	United Aircraft			28,341.79	2,100.00
2,000	United Carbon			137,565.94	6,000.00
5,000	United Fruit			228,928.70	12,500.00
3,944	United Shoe Machinery			271,128.53	12,325.00
3,000	Westinghouse Electric			215,654.30	12,000.00
	Income from stocks sold				2,100.00
	Total Industrial Common Stocks			$10,030,391.10	$483,802.21

Par Value					
	PUBLIC UTILITY BONDS				
$50,000	Am. Tel. & Tel.	3¼s	1961	$50,800.00	$1,625.00
26,000	Conn. Light & Power	7s	1951	24,487.71	1,890.00
100,000	Florida Power & Light	3½s	1974	105,300.00	*155.58*
100,000	Florida Power & Light	4⅛s	1979	100,400.00	*178.18*
150,000	Illinois Power	4s	1973	151,450.00	650.00
13,000	Mississippi River Power	5s	1951	13,000.00	650.00
100,000	Panhandle Eastern Pipe Line	2¾s	1953	100,900.00	4,063.89
200,000	Puget Sound Pwr. & Lt.	4¼s	1972	207,800.00	8,500.00
50,000	Syracuse Lighting	5s	1951	51,500.00	2,500.00
10,000	Texas Power & Light	5s	1956	10,000.00	500.00
	Income from bonds sold or called				14,964.72
	Total Public Utility Bonds			$815,637.71	$35,009.85

SCHEDULE A-1 — (Continued)

Shares				*Book Value*	*Net Income*
	PUBLIC UTILITY PREFERRED STOCKS				
1,000	Cons. Edison N. Y.			$100,725.47	$5,000.00
1,000	Public Service N. J., $5.00			101,926.84	5,000.00
1,002	United Corp., Pref.			46,493.59	1,250.00
	Income from stocks sold				16.50
	Total Public Utility Preferred Stocks			$249,145.90	$11,266.50
	PUBLIC UTILITY COMMON STOCKS				
5,000	Am. Gas & Elec.			$203,626.96	$9,000.00
2,125	American Tel. & Tel.			277,250.68	19,125.00
10,000	Boston Edison			361,529.79	20,000.00
10,000	Commonwealth Edison			285,340.24	14,000.00
2,414	Cons. Natural Gas			64,194.98	2,414.00
5,152	Detroit Edison			150,463.09	6,182.40
1,000	Lynn Gas & Electric			90,000.00	5,000.00
1,000	Western Mass.			32,322.00	1,600.00
	Income from stocks sold				775.00
	Total Public Utility Common Stocks			$1,464,727.74	$78,096.40
Par Value	RAILROAD BONDS				
$50,000	Atch. Top. & Santa Fe.	4s	1995	$48,235.00	$2,000.00
15,000	Baltimore & Ohio	4s	1948	15,000.00	600.00
50,000	B.&O., P., L.E.& W.Va.	4s	1951	48,668.75	2,000.00
100,000	Boston & Maine	5s	1955	90,000.00	5,000.00
100,000	Northern Pacific	4s	1997	90,003.29	3,494.44
100,000	Oreg.R.R.& Navigation	4s	1946	99,410.83	4,000.00
100,000	Pennsylvania	4½s	1960	111,200.00	4,500.00
100,000	Penn.Ohio & Detroit	3¾s	1968	101,600.00	1,535.41
50,000	Pere Marquette	5s	1956	44,410.34	2,500.00
100,000	Southern Pacific	4s	1955	97,007.73	1,395.11
110,000	Union Pacific	4s	1947	110,000.00	4,400.00
100,000	Virginian Corp.	5s	1952	100,440.00	2,041.67
75,000	Washington Term	3½s	1945	68,196.37	2,625.00
100,000	Washington Term	4s	1945	100,000.00	4,000.00
	Income from bonds sold				1,360.00
	Total Railroad Bonds			$1,124,172.31	$41,451.63
Shares	RAILROAD PREFERRED STOCKS				
2,000	Atch., Top. & Santa Fe			$139,627.30	$10,000.00
1,000	Pere Marquette, Pr. Pref.			80,024.40	.....
	Total Railroad Preferred Stocks			$219,651.70	$10,000.00

SCHEDULE A-1 — (Continued)

Shares		*Book Value*	*Net Income*
	RAILROAD COMMON STOCKS		
1,500	Chesapeake & Ohio	$73,380.45	$5,250.00
400	Norfolk & Western	58,542.78	4,000.00
	Total Railroad Common Stocks	$131,923.23	$9,250.00
	BANK AND FINANCE STOCKS		
2,845	Amerex Holding Corp.	$65,041.47	$1,908.76
3,125	Bankers Trust, N. Y.	189,613.75	4,375.00
2,000	Central Hanover Bk. & Tr., N. Y.	233,650.00	8,000.00
5,000	Chase National, N.Y.	261,212.50	7,000.00
3,000	Chemical Bank & Trust, N. Y.	190,618.75	5,400.00
1,000	Commercial Credit Corp.	39,764.74	2,250.00
200	Commercial Investment Trust	8,245.70	2,370.00
2,400	Cont. Ill. Nat. Bank, Chicago	172,201.50	8,800.00
4,936	First National, Boston	297,874.96	9,872.00
1,025	Guaranty Trust, N. Y.	318,443.04	12,300.00
500	Harris Trust & Savings, Chicago	146,450.00	6,000.00
6,000	National City, N. Y.	260,712.50	6,000.00
100	New England Trust, Boston	40,000.00	3,000.00
	Income from stocks sold		2,450.00
	Total Bank and Finance Stocks	$2,223,828.91	$79,725.76
	INSURANCE AND OTHER STOCKS		
275	Boston	$180,786.00	$5,775.00
1,700	Continental	68,383.05	3,400.00
1,500	Firemans Fund	102,950.00	4,500.00
1,000	Glens Falls	42,750.00	1,050.00
2,600	Hartford	164,725.01	6,500.00
3,000	Ins. Co. of North America	197,300.00	10,500.00
500	National Union	80,000.00	2,500.00
2,500	Phoenix	192,724.50	7,500.00
1,000	Springfield Fire & Marine	116,500.00	4,750.00
1,000	Stone & Webster, Inc.	29,507.65	750.00
580	Boston R. E. Trust	61,123.16	580.00
	Total Insurance and Other Stocks	$1,236,749.37	$47,805.00

SCHEDULE A-1 — (Continued)

	Book Value	*Net Income*
MORTGAGE NOTES		
Edward Babb & Co.	$46,500.00	$2,148.75
Bigelow	4,200.00	213.75
Common St.	9,250.00	430.32
McKenzie	2,250.00	84.40
Mt. Vernon Street	6,300.00	325.93
Palfrey, J. G.	11,625.00	537.24
Walton Trust	44,000.00	1,861.39
M. I. T. Dormitory	120,000.00	6,000.00
Alpha Tau Omega	16,100.00	820.00
Beta Theta Pi	13,500.00	675.00
Delta Kappa Epsilon	27,000.00	1,350.00
Delta Tau Delta	3,000.00	225.00
Kappa Sigma	9,000.00	481.26
Phi Beta Delta	5,168.65	270.40
Phi Beta Epsilon	1,150.00	72.33
Phi Delta Theta	4,500.00	253.23
Phi Gamma Delta	5,125.00	272.31
Phi Kappa Sigma	5,000.00	316.34
Phi Mu Delta	4,990.00	249.53
Sigma Chi	3,500.00	17.02
Theta Chi	8,500.00	443.48
Total Mortgage Notes	$350,658.65	$17,047.68
REAL ESTATE		
111 Bay State Road, Boston	$20,000.00	$800.00
Broad and High Streets, Boston (40%)	100,000.00	4,369.49
Franklin Street, Boston	289,750.00	4,205.98
Memorial Drive, Cambridge	130,512.45	*5,777.27*
Memorial Drive, Cambridge	40,000.00	*1,376.55*
Graduate House, Cambridge	674,790.98	6,000.00
Bexley Hall, Cambridge	179,979.30	8,304.70
*Gloversville, N. Y.	116,219.53	5,711.43
Harrisonburg, Va.	30,814.12	1,500.00
New Bedford, Mass.	89,098.00	3,851.49
New London, Conn.	262,405.77	12,600.20
Plattsburgh, N. Y.	220,602.38	10,125.00
Taunton, Mass.	215,224.94	9,800.00
Willimantic, Conn.	174,968.26	7,965.00
Worcester, Mass.	212,780.20	9,500.00
Income from Real Estate sold		867.00
Total Real Estate	$2,757,145.93	$78,446.47

*Not including first mortgage of $29,450.00 with Connecticut Mutual Life Insurance Co. of Hartford, Conn.

SCHEDULE A-1 — (Continued)

	Book Value	*Net Income*
RECAPITULATION, GENERAL INVESTMENTS		
U. S. Treasury and Other Bonds ..	$12,000,000.00	$197,040.78
Canadian Gov. and Other Bonds ..	558,253.85	14,068.94
Industrial Bonds.....	856,470.83	36,690.60
Industrial Preferred Stocks.....	267,022.92	9,672.92
Industrial Common Stocks	10,030,391.10	483,802.21
Public Utility Bonds.....	815,637.71	35,009.85
Public Utility Preferred Stocks....	249,145.90	11,266.50
Public Utility Common Stocks....	1,464,727.74	78,096.40
Railroad Bonds.....	1,124,172.31	41,451.63
Railroad Preferred Stocks.....	219,651.70	10,000.00
Railroad Common Stocks.....	131,923.23	9,250.00
Bank and Finance Stocks.....	2,223,828.91	79,725.76
Insurance and Other Stocks.....	1,236,749.37	47,805.00
Mortgage Notes.....	350,658.65	17,047.68
Real Estate.....	2,757,145.93	78,446.47
Total General Investments.....	$34,285,780.15	$1,149,374.74

INVESTMENTS — SPECIAL

Par Value or Shares					
	INVESTMENTS, BABSON FUND				
950	American Public Welfare Trust			$10,000.00	$237.50
	INVESTMENTS (Real Estate), ALBERT FARWELL BEMIS				
	Miscellaneous building lots and land in Wellesley and Weston carried at			$36,466.56	.....
	INVESTMENTS, MALCOLM COTTON BROWN FUND				
$2,500	United States G.....	2½s	1954	$2,500.00	$62.50
30	General Electric.....			1,019.70	47.25
	Total Brown Fund.....			$3,519.70	$109.75
	INVESTMENTS, CLASS OF 1919 FUND				
$225	United States Savings F.....			$166.50	.....

SCHEDULE A-1 — (Continued)

Par Value or Shares				*Book Value*	[1] *Net Income*
	INVESTMENTS, DRAPER FUND				
$29,900	United States G.....	2½s	1954	$29,900.00	$747.50
24,000	United States G.....	2½s	1955	24,000.00	600.00
10,000	Ontario.....	5s	1959	9,950.00	500.00
5,000	Central Pacific.....	4s	1949	4,866.66	39.22
5,000	Northern Pacific.....	4s	1997	4,598.31	85.00
20,000	Montana Power.....	3¾s	1966	19,852.49	750.00
10,000	Texas Power & Light	5s	1956	10,120.00	480.00
	Income from bonds called.....			.....	162.86
	Total Draper Fund.....			$103,287.46	$3,364.58
	INVESTMENTS, ARTHUR D. LITTLE MEMORIAL FUND				
466	Arthur D. Little, Inc. Pfd.....			$46,600.00	$2,796.00
5,543	Arthur D. Little, Inc., Com.....			110,860.00	27,715.00
53,000	U. S. Treasury.....	2s	1951–53	53,000.00	530.00
	Total Little Fund.....			$210,460.00	$31,041.00
	INVESTMENTS, RICHARD LEE RUSSEL FUND				
3,600	Mortgage Note (participation).....			$3,600.00	$165.17
	INVESTMENTS, SOLAR ENERGY FUND				
100	Godfrey L. Cabot, Inc.....			$647,700.00	$20,000.00
13,000	U. S. Treasury.....	2s	1949–51	13,000.00	*226.97*
	Income from bonds sold.....			.....	56.01
				$660,700.00	$19,829.04
	INVESTMENTS, FRANCES E. AND SAMUEL M. WESTON FUNDS				
$8,950	Mortgage Note, Bartlett.....			$8,950.00	$357.96
	INVESTMENTS, JONATHAN WHITNEY FUND				
$100,000	United States G.....	2½s	1954	$100,000.00	$2,500.00
100,000	United States G.....	2½s	1955	100,000.00	2,500.00
100,000	United States G.....	2½s	1956	100,000.00	.....
20,000	Canada.....	3s	1953	20,000.00	500.00
25,000	Montana Power.....	3¾s	1966	24,826.99	937.50
25,000	Pacific Gas & Elec....	3¾s	1961	25,240.00	877.50

[1]Net after Premium Amortization.

SCHEDULE A-1 — (Continued)

Par Value or Shares				*Book Value*	[1] *Net Income*
	INVESTMENTS, JONATHAN WHITNEY FUND (*Continued*)				
$50,000	Kansas City Term...	4s	1960	$42,750.00	$2,000.00
30,000	Southern Pacific.....	4s	1955	28,822.77	1,073.33
25,000	Virginian Ry.....	3¾s	1966	25,240.00	877.50
250	Boston Edison.....			8,250.00	500.00
250	Bankers Trust, N. Y.....			14,187.50	350.00
100	du Pont.....			15,279.10	475.00
250	First National, Boston.....			11,525.00	500.00
500	General Electric.....			13,188.05	700.00
50	Guaranty Trust, N. Y.....			14,850.00	600.00
300	Standard Oil, N. J.....			12,277.35	675.00
200	Union Carbide & Carbon.....			13,888.00	600.00
150	United Fruit.....			10,690.25	375.00
	Income from bonds sold.....				1,745.43
	Total Whitney Fund.....			$581,015.01	$17,786.26
	INVESTMENTS, TECHNOLOGY LOAN FUND				
$100,000	United States G.....	2½s	1954	$100,000.00	$2,500.00
100,000	United States G.....	2½s	1955	100,000.00	2,500.00
100,000	United States G.....	2½s	1956	100,000.00	.....
100,000	U. S. Treasury.....	2s	1950–52	101,000.00	*433.42*
100,000	U. S. Treasury.....	2s	1953	100,000.00	1,000.00
80,000	U. S. Treasury.....	2½s	1958	80,000.00	2,000.00
80,000	U. S. Treasury.....	2½s	1954	82,000.00	1,650.00
20,000	U. S. Treasury.....	2¾s	1954	20,400.00	216.65
14,000	Pac. Gas & Elec.....	3¾s	1961	14,000.00	525.00
300	American Can.....			22,935.23	900.00
200	du Pont.....			29,304.00	950.00
1,000	General Electric.....			25,813.25	1,400.00
50	Guaranty Trust, N. Y.....			12,825.00	600.00
500	National City, N. Y.....			12,375.00	500.00
207	Engineers Pub. Service.....			15,000.00	1,138.52
1,000	North American.....			36,447.80	1,175.04
600	Standard Oil, N. J.....			24,862.79	1,350.00
1,250	Stone & Webster, Inc.....			36,698.75	937.50
400	Union Carbide and Carbon.....			27,726.00	1,200.00
300	United Fruit.....			21,360.20	750.00
	Income from bonds sold or called....				2,780.75
	Total Technology Loan Fund.....			$962,748.02	$23,640.04
	Grand Total, General and Special Investments.			$36,866,693.40	$1,245,906.04
				(Schedule A)	(Schedule B)

[1] Net after Premium Amortization.

SCHEDULE A-1 — (Continued)

Par Value or Shares				*Book Value*	*Net Income*
	AGENCY FUNDS				
	INVESTMENTS, JOSEPH HEWETT FUND				
$50,000	United States, G.....	2½s	1954	$50,000.00	$1,250.00
9,000	Dom. of Canada.....	2½s	1948	9,000.00	225.00
10,000	Dom. of Canada.....	3s	1953	10,000.00	260.00
12,000	Adams Express.....	4¼s	1946	12,000.00	510.00
15,000	Cent. N. Y. Power	3¾s	1962	15,000.00	562.50
15,000	Puget Sound Pr. & Lt...	4¼s	1972	15,500.00	537.50
15,000	Alabama Power.....	3½s	1972	15,100.00	475.00
23,500	Texas Power & Light ...	5s	1956	23,750.00	1,125.00
4,000	Can. Pac. Ry.....	5s	1944	4,000.00	200.00
100	Bankers Trust, N. Y.....			4,775.00	140.90
20	Guaranty Trust, N. Y.....			5,130.00	240.00
100	American Can.....			7,520.00	300.00
50	du Pont de Nemours.....			8,271.55	237.50
300	General Electric.....			8,107.50	420.00
200	Standard Oil, N. J.....			8,177.60	450.00
100	Union Carbide and Carbon.....			6,944.20	300.00
100	United Fruit.....			7,120.00	250.00
	Income from bonds sold or called.....				
	Total Hewett Fund.....			$210,395.85	$7,482.50
				(Schedule A)	
	INVESTMENTS, M. I. T. PENSION ASSOCIATION				
$125,000	U. S. Treasury.....	2s	1951–53	$125,000.00	$1,250.00
40,000	U. S. Treasury.....	2½s	1958	40,000.00	1,000.00
90,000	U. S. Treasury.....	2½s	1968	90,000.00	2,250.00
75,000	U. S. Treasury.....	2½s	1964–69	75,000.00	1,569,98
10,000	U. S. Treasury.....	4s	1954	10,000.00	400.00
100,000	United States, G	2½s	1954	100,000.00	2,500.00
100,000	United States, G	2½s	1955	100,000.00	2,500.00
100,000	United States, G	2½s	1956	100,000.00	.....
9,000	Dom. of Canada	3s	1958	8,865.00	270.00
33,000	Dom. of Canada	2½s	1948	33,000.00	825.00
37,000	Dom. of Canada	3s	1953	37,000.00	1,110.00
35,000	Alabama Power.....	3½s	1972	35,000.00	1,225.00
50,000	Central N. Y. Power..	3¾s	1962	50,000.00	1,875.00
50,000	Detroit Edison.....	4s	1965	51,200.00	2,000.00
50,000	Illinois Power.....	4s	1973	50,503.32	216.67

SCHEDULE A-1 — (Continued)

Par Value or Shares				*Book Value*	*Net Income*
	INVESTMENTS, M. I. T. PENSION ASSOCIATION (*Continued*)				
70,000	Pac. Gas & Elec.....	3¾s	1961	$74,500.00	$2,625.00
25,000	Texas Pr. & Lgt.....	5s	1956	25,000.00	1,250.00
25,000	Balt. & Ohio.....	4s	1948	25,000.00	1,000.00
50,000	Kansas City Term.	4s	1960	51,100.00	2,000.00
50,000	Pennsylvania Co.....	4s	1963	50,000.00	2,000.00
35,000	Southern Pacific.....	4s	1955	33,638.79	1,400.00
200	du Pont.....			29,504.20	950.00
200	Eastman Kodak			28,500.00	1,000.00
1,200	General Electric Co.....			52,597.76	1,680.00
600	General Motors.....			29,332.24	1,500.00
197	Int. Business Machines.....			26,136.19	1,155.00
800	National Biscuit.....			21,220.31	960.00
400	Sears Roebuck.....			29,391.89	1,700.00
800	Standard Oil, N. J.....			39,798.13	1,800.00
500	Union Carbide and Carbon.....			41,575.54	1,500.00
500	United Fruit.....			38,575.21	1,250.00
500	United Shoe Machinery.....			35,910.62	1,562.50
200	Am. Tel. & Tel. Co.....			34,184.26	1,800.00
400	Bankers Trust Co., N. Y.....			23,687.50	560.00
500	Chemical Bank and Trust, N. Y.....			25,187.50	900.00
500	First National Bank, Boston.....			27,500.00	1,000.00
50	Guaranty Trust, N. Y.....			12,550.00	600.00
225	Firemans Fund Insurance.....			15,300.00	675.00
200	Hartford Fire.....			18,300.00	500.00
200	Insurance Co. of N. A.....			14,000.00	700.00
200	Phoenix Insurance.....			16,900.00	600.00
	Real Estate, Albany, N. Y.....			61,589.41	2,790.00
	Income from investments sold or called				5,586.28
	Total Pension Association.....			$1,786,547.87	$60,035.43
				(Schedule A)	

INVESTMENTS, GEORGE S. WITMER FUND

Par Value or Shares					
$5,800	United States, G	2½s	1954-55	$5,800.00	$145.00
5,000	Atlantic Coast Line...	4s	1952	4,854.44	*4.89*
4,000	Central Pacific.....	4s	1949	4,098.88	*22.33*
5,000	Northern Pacific	4s	1997	4,903.79	11.77
5,000	Eastern Gas & Fuel ..	4s	1956	4,743.04	*4.89*
5,000	Florida Power & Light	4⅛s	1979	5,143.75	*39.42*

SCHEDULE A-1 — (Concluded)

Par Value or Shares		*Book Value*	*Net Income*
	INVESTMENTS, GEORGE S. WITMER FUND (*Continued*)		
50	Elec. Power & Light 6% Pfd.....	$3,550.00	$.....
50	General Electric.....	1,718.25	70.00
25	General Motors.....	1,310.96	62.50
40	Standard Oil, N. J.....	1,706.32	90.00
30	Union Carbide and Carbon.....	2,051.85	90.00
30	Bankers Trust, N. Y.....	1,665.00	42.00
15	Cont. Illinois Nat. Bank & Trust, Chicago	1,387.50	30.00
20	Guaranty Trust, N. Y.....	5,980.00	180.00
	Real Estate, Sanford, Fla.....	5,324.30	544.30
	Income from bonds and mortgages sold		831.43
	Total Witmer Fund.....	$54,238.08	$2,025.47
		(Schedule A)	

SCHEDULE A-2
ENDOWMENT FUNDS FOR GENERAL PURPOSES

No.	*Restricted Funds*	*Funds, June 30, 1943*	*Investment Income Added to Principal*	*Other Receipts*	*Expended or Transferred*	*Funds, June 30, 1944*
101	George Robert Armstrong.	$5,000.00	$.....	$.....	$.....	$5,000.00
103	George Blackburn Mem..	961,249.84	.....	.....	.....	961,249.84
104	Clara H. Briggs.....	12,512.25	.....	2.30	.....	12,514.55
105	James A. Carney.....	.....	.....	13,000.00	.....	13,000.00
106	Charles Choate.....	35,858.15	.....	.....	.....	35,858.15
107	Eben S. Draper.....	103,813.36	.....	30.00	.....	103,843.36
109	Coleman du Pont	221,325.48	.....	.....	.....	221,325.48
111	Eastman Contract.....	9,498,869.55	.....	.....	.....	9,498,869.55
113	George Eastman (Building)	169,124.04	.....	30,000.00	80,000.00	119,124.04
115	Charles W. Eaton.....	261,148.19	.....	.....	.....	261,148.19
117	Educational Endowment .	7,573,834.60	.....	21.00	.....	7,573,855.60
119	Martha Ann Edwards....	30,000.00	.....	.....	.....	30,000.00
121	William Endicott.....	25,000.00	.....	.....	.....	25,000.00
123	Francis Appleton Foster..	1,000,000.00	.....	.....	.....	1,000,000.00
125	John W. Foster.....	299,650.64	.....	.....	.....	299,650.64
127	Alexis H. French.....	5,000.00	.....	.....	.....	5,000.00
129	Jonathan French.....	25,212.48	.....	.....	.....	25,212.48
131	Henry C. Frick.....	1,831,053.42	.....	.....	.....	1,831,053.42
133	General Endowment.....	1,527,449.00	.....	.....	.....	1,527,449.00
135	Eliot Granger.....	21,568.43	.....	.....	.....	21,568.43
136	Charles Hayden.....	1,000,000.00	.....	.....	.....	1,000,000.00
137	John Marshall Hills	366,181.10	.....	249.86	.....	366,430.96
138	James Fund.....	163,654.21	.....	.....	.....	163,654.21
139	Katherine B. Lowell.....	5,000.00	.....	.....	.....	5,000.00
141	Thomas McCammon	15,000.00	.....	.....	.....	15,000.00
143	M. I. T. Alumni, Sp. Gifts	.....	6.50	1,000.00	6.50	1,000.00
144	M. I. T. Alumni (1940–44)	161,131.79	5,557.50	45,632.43	34,336.15	177,985.57
145	M. I. T. Alumni (1944–45)	.....	325.00	81,151.24	17,995.35	63,480.89
146	Kate M. Morse.....	25,000.00	.....	.....	.....	25,000.00
147	Everett Morss.....	25,000.00	.....	.....	.....	25,000.00
149	Richard Perkins.....	50,000.00	.....	.....	.....	50,000.00
150	J. W. and B. L. Randall...	83,452.36	.....	.....	.....	83,452.36
151	Wm. Barton Rogers Mem..	250,225.00	.....	.....	.....	250,225.00
152	Saltonstall Fund.....	65,282.51	(1) 530.55	.....	.....	65,813.06
153	Samuel E. Sawyer.....	4,764.40	.....	.....	.....	4,764.40
155	Andrew Hastings Spring..	50,000.00	.....	.....	.....	50,000.00
156	George G. Stone.....	4,677.35	.....	.....	.....	4,677.35
157	Seth K. Sweetser.....	25,061.62	.....	.....	.....	25,061.62
159	William J. Walker.....	23,613.59	.....	.....	.....	23,613.59
161	Horace Herbert Watson..	34,076.69	.....	.....	.....	34,076.69
163	Albion B. K. Welch	5,000,00	.....	.....	.....	5,000.00
165	Everett Westcott	171,394.00	.....	.....	.....	171,394.00
167	Marion Westcott.....	238,452.00	.....	500.00	.....	238,952.00
168	George Wigglesworth	26,296.25	(2) 85.48	.....	.....	26,381.73
169	Edwin A. Wyeth.....	254,703.94	.....	.....	.....	254,703.94
		$26,655,636.24	$6,505.03	$171,586.83	$132,338.00	$26,701,390.10

Note. Where no investment income is indicated the amount allocated has been carried directly to Current Income.
(1) One-fourth net income carried to Fund.
(2) One-tenth net income carried to Fund.

SCHEDULE A-2 — (Continued)

No.	*Unrestricted Funds*	*Funds, June 30, 1943*	*Investment Income Added to Principal*	*Other Receipts*	*Expended or Transferred*	*Funds, June 30, 1944*
170	Anonymous (H)	$5,000.00	.....	$5,000.00	.....	$10,000.00
171	Anonymous (M)	1,500.00	.....	.....	.....	1,500.00
172	Edmund D. Barbour	20,736.94	.....	.....	.....	20,736.94
173	Stephen L. Bartlett	124,425.94	.....	.....	1,822.55	122,603.39
174	Carbon P. Dubbs	.....	.....	5,000.00	.....	5,000.00
175	Erastus C. Gaffield	.....	.....	180,000.00	.....	180.000.00
176	William T. Henry	11,195.00	.....	10,140.00	.....	21,335.00
177	Ellis Hollingsworth	10,000.00	.....	.....	.....	10,000.00
180	Industrial Fund	347,287.46	6,500.00	334,251.90	250,009.71	438,029.65
182	Hiram H. Logan	.....	.....	24,500.00	.....	24,500.00
185	Charles E. Merrill	.....	.....	2,300.00	.....	2,300.00
190	John Wells Morss	50,000.00	.....	.....	.....	50,000.00
191	Christel Orvis	539.42	.....	.....	.....	539.42
192	Emerette O. Patch	2,276.61	.....	.....	.....	2,276.61
193	Towle	.....	.....	4,000.00	.....	4,000.00
194	Charles A. Tripp	100,000.00	.....	.....	.....	100,000.00
196	Grant Walker	.....	.....	60,000.00	.....	60,000.00
197	Frank G. Webster	25,000.00	.....	.....	.....	25,000.00
		$697,961.37	$6,500.00	$625,191.90	$251,832.26	$1,077,821.01

FUNDS FOR DESIGNATED AND SPECIAL PURPOSES

Special Deposit and Agency Funds

201	Army and Navy Training Programs Reserve	$25,000.00	$812.50	$55,000.00	$6,857.98	$73,954.52
202	Special War Reserve1941–42	407,144.61	.....	.....	82,151.00	324,993.61
203	Endowment Reserve	247,744.60	2,183.24	129,910.99	128,439.77	251,399.06
205	Income Equalization Reserve	44,823.64	1,456.00	22,234.33	.....	68,513.97
206	Albert	.....	97.50	6,000.00	.....	6,097.50
208	Alpha Chi Sigma House	3,636.46	113.75	.....	100.00	3,650.21
210	Anonymous (1924)	2,542.77	81.25	.....	.....	2,624.02
211	Anonymous	303,600.00	16,640.00	400,000.00	.....	720,240.00
212	Applied Mathematics	.....	812.50	25,000.00	.....	25,812.50
213	Ass'n of Class Secretaries	2,511.58	81.25	.....	.....	2,592.83
214	Basket Ball	3,626.00	117.00	.....	.....	3,743.00
215	Bess Bigelow	31,758.99	1,030.25	.....	.....	32,789.24
217	Biology-Rockefeller Found.	49,802.03	1,618.50	.....	4,632.10	46,788.43
218	Major Briggs	33,514.92	1,088.75	.....	.....	34,603.67
220	Ednah Dow Cheney	17,205.71	559.00	.....	148.68	17,616.03
221	Class of 1914	856.12	26.00	.....	.....	882.12
222	Class of 1918 (Organ)	1,413.88	45.50	45.00	.....	1,504.38
224	Class of 1919, Special	.....	.....	166.50	.....	166.50
225	Class of 1923	14,067.46	461.50	285.31	142.11	14,672.16
226	Class of 1924	25,542.42	838.50	418.89	115.60	26,684.21
227	Class of 1925	15,853.82	516.75	105.67	115.60	16,360.64
229	Class of 1926	20,473.70	672.75	742.40	28.57	21,860.28
230	Class of 1927	19,837.06	643.50	.....	.....	20,480.56
231	Class of 1928	39,389.40	1,280.50	.....	.....	40,669.90
232	Class of 1929	15,222.56	503.75	764.33	.....	16,490.64

Note. Where no investment income is indicated the amount allocated has been carried directly to Current Income.

SCHEDULE A-2 — (*Continued*)

No.		*Funds, June 30, 1943*	*Investment Income Added to Principal*	*Other Receipts*	*Expended or Transferred*	*Funds, June 30, 1944*
	SPECIAL DEPOSIT AND AGENCY FUNDS (*Continued*)					
233	Class of 1930	$11,649.14	$406.25	$1,200.24	$.....	$13,255.63
237	Class of 1934	512.42	16.25	.22	.....	528.89
238	Class of 1935	419.20	13.00	.....	.....	432.20
239	Class of 1936	578.05	16.25	.....	.....	594.30
240	Class of 1939	860.54	26.00	.....	.....	886.54
241	Arthur J. Conner	12,449.76	513.50	7,000.00	.....	19,963.26
242	Cosmic Terr. Research	8,904.07	214.50	7,636.73	7,500.00	9,255.30
243	Davis R. Dewey Memorial	507.20	16.25	.....	.....	523.45
†244	Drama Club Theatre	483.64	16.25	.....	.....	499.89
245	Electronics, Special	.....	1,625.00	50,000.00	.....	51,625.00
246	Reserve for Restoration	.....	1,462.50	394,724.00	.....	396,186.50
248	Matilda A. Fraser	888.69	29.25	4.29	.....	922.23
249	Friends of the Library	.....	.....	2,105.00	1,755.00	350.00
250	Hayden Fd. (Dental Clinic)	5,408.96	188.50	1,015.00	4.62	6,607.84
251	Industrial Economics	7,804.05	279.50	3,000.00	.....	11,083.55
252	Industrial Relations	177,492.58	6,110.00	39,762.41	1,250.00	222,114.99
253	Instrumentation Fund	.....	4,127.50	237,500.00	26,625.00	215,002.50
255	M. I. T. Employees	85.35	.....	.....	.....	85.35
260	M. I. T. Teachers' Insurance	8,094.20	.....	32,653.82	33,059.32	7,688.70
261	M. I. T. Teachers' Insurance (Special)	95,256.73	3,575.00	26,938.97	22,886.38	102,884.32
†262	M. I. T. Alumni Association Permanent Funds	97,729.03	3,120.00	668.59	1,929.00	99,588.62
263	Mathematics, Statistical Reserve	.....	260.00	8,000.00	.....	8,260.00
264	Henry A. Morss Nautical	2,219.65	71.50	.....	.....	2,291.15
268	Class of 1934, Special	682.00	22.75	.....	.....	704.75
270	Class of 1898 Loan	10,832.08	351.00	.....	.....	11,183.08
272	Class of 1874	249.55	6.50	.....	.....	256.05
273	Class of 1887	2,679.32	87.75	.....	.....	2,767.07
274	President's Fund, Special	10,942.86	357.50	500.00	.....	11,800.36
277	W. P. Ryan, Special	2,373.81	65.00	.....	385.00	2,053.81
279	Sedgwick Memorial Lecture	13,665.38	445.25	145.20	.....	14,255.83
280	Servo-Mechanism Lab.	.....	812.50	25,000.00	.....	25,812.50
281	Lillie C. Smith	5,920.05	191.75	.....	71.50	6,040.30
†283	Walter B. Snow	7,627.04	247.00	6,000.00	.....	13,874.04
284	Swift Protein	.....	325.00	20,000.00	.....	20,325.00
285	Technology Matrons' Teas	9,081.22	295.75	.....	327.60	9,049.37
286	W. B. S. Thomas	2,350.14	78.00	.....	.....	2,428.14
290	Undergraduate Activities Trust	1,544.37	48.75	.....	.....	1,593.12
†292	Undergraduate Publication Trust	16,148.68	455.00	.....	2,800.00	13,803.68
294	Undergraduate Dues, Res. Athletics	13,610.15	474.50	2,500.00	.....	16,584.65
296	Undergraduate Dues, Res. Contingent	17,883.51	581.75	.....	.....	18,465.26
298	Charles Dann Waterbury	14,478.90	471.25	.....	.....	14,950.15
		$1,886,980.05	$59,084.24	$1,507,027.89	$321,324.83	$3,131,767.35

† *Note. Where no investment income is indicated the amount allocated has been carried directly to Current Income.*
Funds deposited with the Institute, for investment purposes only.

SCHEDULE A-2 — (*Continued*)

No.		Funds, June 30, 1943	Investment Income Added to Principal	Other Receipts	Expended or Transferred	Funds, June 30, 1944
	FUNDS FOR SALARIES					
301	Samuel C. Cobb For General Salaries ...	$36,551.31	.....	.....	.....	$36,551.31
303	Sarah H. Forbes For General Salaries ...	500.00	.....	.....	.....	500.00
305	George A. Gardner For General Salaries ...	20,000.00	.....	.....	.....	20,000.00
309	James Hayward Professorship of Engineering	18,800.00	.....	.....	.....	18,800.00
311	William P. Mason Professorship of Geology	18,800.00	.....	.....	.....	18,800.00
313	Henry B. Rogers For General Salaries ...	25,000.00	.....	.....	.....	25,000.00
315	Nathaniel Thayer Professorship of Physics	25,000.00	.....	.....	.....	25,000.00
317	Elihu Thomson Professorship of Elec.Eng.	23,680.87	.....	.....	.....	23,680.87
		$168,332.18	.....	.....	.....	$168,332.18
	FUNDS FOR LIBRARY					
321	Walter S. Barker.....	$10,820.36	$351.00	$.....	$800.00	$10,371.36
322	Samuel Berkowitz.....	.....	162.50	10,000.00	.....	10,162.50
325	Frank Harvey Cilley.....	84,487.55	2,746.25	.....	3,667.00	83,566.80
327	Charles Lewis Flint.....	5,989.24	195.00	.....	425.00	5,759.24
341	William Hall Kerr.....	4,317.02	139.75	.....	35.20	4,421.57
343	George A. Osborne	11,429.64	370.50	.....	43.00	11,757.14
345	Arthur Rotch, Architectural	7,091.14	230.75	.....	232.52	7,089.37
349	John Hume Tod.....	3,544.79	113.75	.....	18.90	3,639.64
351	Theodore N.Vail Mem. Library	71,269.32	2,317.25	.....	3,500.00	70,086.57
		$198,949.06	$6,626.75	$10,000.00	$8,721.62	$206,854.19
	FUNDS FOR DEPARTMENTS					
401	William Parsons Atkinson.	$13,082.20	$.....	$.....	$.....	$13,082.20
402	Frank Walter Boles Memorial	34,496.53	1,121.25	.....	173.26	35,444.52
404	William E. Chamberlain..	7,309.77	.....	.....	.....	7,309.77
405	Chemical Engineering Practice	257,772.97	.....	.....	.....	257,772.97
406	Crosby Honorary Fund...	2,027.29	65.00	.....	.....	2,092.29
407	Susan E. Dorr.....	95,955.67	.....	.....	.....	95,955.67
409	George Eastman.....	400,000.00	.....	.....	.....	400,000.00
410	Harold H. Fletcher.....	10,524.73	341.25	.....	.....	10,865.98
412	William R. Kales.....	.....	390.00	75,001.48	.....	75,391.48
413	Arthur E. Kennelly.....	72,167.58	2,340.00	509.03	.....	75,016.61
414	Arthur Dehon Little Memorial	211,325.72	31,041.00	.....	600.00	241,766.72
416	John Lawrence Mauran...	3,074.99	100.75	.....	.....	3,175.74
417	George Henry May.....	5,000.00	.....	.....	.....	5,000.00
419	Susan Minns.....	40,000.00	.....	.....	.....	40,000.00
420	Forris Jewett Moore.....	26,024.80	845.00	.....	.....	26,869.80

Note. Where no investment income is indicated the amount allocated has been carried directly to Current Income.

SCHEDULE A-2 — (*Continued*)

No.		Funds, June 30, 1943	Investment Income Added to Principal	Other Receipts	Expended or Transferred	Funds, June 30, 1944
	FUNDS FOR DEPARTMENTS (*Continued*)					
421	F. Ward Paine	$.....	$.....	$10,000.00	$.....	$10,000.00
422	Edward D. Peters	6,177.38	201.50	.....	.....	6,378.88
423	Pratt Naval Architectural	394,123.76	2,452.53	.....	900.00	395,676.29
425	Richards Memorial	869.05	29.25	.....	.....	898.30
426	Frances E. Roper	2,000.00	.....	.....	.....	2,000.00
427	Arthur Rotch	25,000.00	.....	.....	.....	25,000.00
428	W. T. Sedgwick	82,049.69	2,665.00	.....	.....	84,714.69
429	Sloan Automotive	12,985.65	390.00	.....	1,400.00	11,975.65
430	Nellie Florence Treat	.....	.....	609.00	.....	609.00
431	Edmund K. Turner	276,004.90	(1) 2,242.50	.....	.....	278,247.40
433	William Lyman Underwood	13,447.92	.....	.....	.....	13,447.92
434	William R. Ware	15,029.68	487.50	.....	173.00	15,344.18
		$2,006,450.28	$44,712.53	$86,119.51	$3,246.26	$2,134,036.06
	FUNDS FOR RESEARCH					
441	Albert Farwell Bemis	$317,449.59	$10,318.75	$293.85	$.....	$328,062.19
442	Albert Farwell Bemis Land Account	36,466.56	.....	.....	.....	36,466.50
443	Samuel Cabot	54,592.70	1,774.50	.....	.....	56,367.20
444	A. Norton Kent	.....	.....	100.00	.....	100.02
449	Ellen H. Richards	24,092.29	783.25	.....	216.72	24,658.82
451	Charlotte B. Richardson	49,484.28	1,608.75	.....	.....	51,093.03
452	William Barton and Emma Savage Rogers	157,337.30	5,112.25	.....	364.48	162,085.07
453	Solar Energy	660,418.34	19,829.04	28.44	6,808.34	673,467.48
454	Henry N. Sweet	10,622.47	344.50	.....	.....	10,966.97
456	Textile Research Fund	1,715.93	55.25	.....	.....	1,771.18
		$1,312,179.46	$39,826.29	$422.29	$7,389.54	$1,345,038.50
	FUNDS FOR FELLOWSHIPS					
460	American Institute of Baking	$74.63	$.....	$.....	$74.63	$.....
461	Anonymous	.....	9.75	500.00	.....	509.75
463	William Sumner Bolles	29,695.27	965.25	.....	800.00	29,860.52
464	Malcolm Cotton Brown	3,514.98	109.75	22.06	.....	3,646.79
465	Francis W. Chandler	11,053.39	360.75	.....	400.00	11,014.14
466	Collamore	14,631.93	474.50	.....	300.00	14,806.43
467	Dalton Graduate Chemical	7,651.54	250.25	.....	300.00	7,601.79
469	du Pont de Nemours	1,083.36	.....	750.00	1,833.36	.....
474	Rebecca R. Joslin	10,810.58	351.00	.....	.....	11,161.58
476	Wilfred Lewis	6,350.76	208.00	.....	.....	6,558.76
478	Moore	34,490.87	1,121.25	.....	.....	35,612.12
477	George S. May	.....	.....	2,000.00	1,333.34	666.66
480	Willard B. Perkins	6,285.88	204.75	.....	.....	6,490.63
484	Proprietors Locks and Canals	1,426.27	45.50	.....	.....	1,471.77
486	Henry Bromfield Rogers	26,263.08	854.75	.....	1,000.00	26,117.83

Note. Where no investment income is indicated the amount allocated has been carried directly to Current Income.
(1) One-fourth net income carried to Fund.

SCHEDULE A-2 — (*Continued*)

No.		Funds, June 30, 1943	Investment Income Added to Principal	Other Receipts	Expended or Transferred	Funds, June 30, 1944
	FUNDS FOR FELLOWSHIPS (*Continued*)					
488	Richard Lee Russel.....	$3,676.35	$165.17	$.....	$.....	$3,841.52
490	Henry Saltonstall.....	11,333.93	367.25	.....	400.00	11,301.16
492	James Savage.....	13,995.71	455.00	.....	500.00	13,950.73
495	Susan H. Swett.....	10,939.30	354.25	.....	400.00	10,893.55
497	Frank Hall Thorp.....	10,832.06	351.00	.....	350.00	10,833.06
498	Luis Francisco Verges....	10,770.97	351.00	.....	400.00	10,721.97
		$214,880.86	$6,999.17	$3,272.06	$8,091.33	$217,060.76
	FUNDS FOR SCHOLARSHIPS					
501	Elisha Atkins.....	$5,056.08	$165.75	$.....	$200.00	$5,021.83
503	Billings Student.....	50,237.74	1,631.50	.....	1,600.00	50,269.24
504	Jonathan Bourne.....	10,061.35	328.25	.....	350.00	10,039.60
505	Albert G. Boyden.....	612,176.56	19,896.50	18.95	11,250.00	620.842.01
506	Harriet L. Brown.....	7,687.00	250.25	.....	1,050.00	6,887.25
508	Nino Tesher Catlin.....	1,033.71	58.50	1,265.07	.....	2,357.28
509	Lucius Clapp.....	4,937.72	159.25	.....	.....	5,096.97
510	Class of 1896.....	†7,872.31	256.75	150.00	.....	†8,279.06
511	Class of 1909.....	3,669.57	120.25	1.58	.....	3,791.40
512	Class of 1917.....	1,032.06	32.50	.....	.....	1,064.56
513	Class of 1922.....	3,271.38	107.25	170.00	.....	3,548.63
513a	Class of 1922 (Special Scholarships).....	.....	104.00	4,800.00	.....	4,904.00
514	Class of 1938.....	776.53	26.00	7.85	.....	810.38
515	William A. Conant	2,886.00	1,040.00	69,126.38	316.80	72,735.58
516	Albert Conro.....	.....	812.50	25,000.00	276.86	25,535.64
517	Lucretia Crocker.....	81,371.08	2,645.50	.....	4,100.00	79,916.58
518	Isaac W. Danforth	5,183.48	169.00	.....	200.00	5,152.48
520	Ann White Dickinson....	40,059.63	1,303.25	.....	1,300.00	40,062.88
521	Thomas M. Drown.....	50,275.09	1,634.75	.....	1,600.00	50,309.84
522	Farnsworth.....	5,272.34	172.25	.....	200.00	5,244.59
523	Charles Lewis Flint.....	5,084.47	165.75	.....	200.00	5,050.22
524	Sarah S. Forbes.....	3,453.87	113.75	.....	100.00	3,467.62
525	Barnett D. Gordon.....	5,090.00	276.25	5,000.00	150.00	10,216.25
527	Hall-Mercer.....	64,625.51	2,145.00	1,768.82	2,000.00	66,539.33
528	Charles Hayden Memorial.	90,394.36	2,938.00	.....	150.00	93,182.36
531	George Hollingsworth....	5,021.98	162.50	.....	150.00	5,034.48
533	T. Sterry Hunt.....	3,039.01	97.50	.....	100.00	3,036.51
534	William F. Huntington...	5,026.33	162.50	.....	.....	5,188.83
536	Joy Scholarships.....	17,552.85	572.00	.....	600.00	17,524.85
538	William Litchfield.....	5,197.41	169.00	.....	200.00	5,166.41

† Exclusive of student notes receivable. (See Schedule A-3.)

SCHEDULE A-2 — (Continued)

No.		*Funds, June 30, 1943*	*Investment Income Added to Principal*	*Other Receipts*	*Expended or Transferred*	*Funds, June 30, 1944*
	FUNDS FOR SCHOLARSHIPS *(Continued)*					
539	Elisha T. Loring	$5,000.38	$162.50	$.....	$100.00	$5,062.88
541	Lowell Institute Scholarship	3,148.40	100.75	.....	.....	3,249.15
542	Rupert A. Marden	2,117.73	68.25	.....	.....	2,185.98
543	George Henry May	†9,413.13	305.50	765.00	.....	†10,483.63
545	James H. Mirrlees	2,547.23	81.25	.....	100.00	2,528.48
546	Fred W. Morrill	2,079.30	68.25	.....	100.00	2,047.55
547	Nichols Scholarship	5,102.52	165.75	.....	200.00	5,068.27
548	Charles C. Nichols	5,180.15	169.00	.....	150.00	5,199.15
550	John Felt Osgood	5,082.88	165.75	245.25	200.00	5,293.88
551	George L. Parmelee	17,147.66	555.75	.....	500.00	17,203.41
552	Richard Perkins	50,144.46	1,628.25	.....	1,600.00	50,172.71
553	Thomas Adelbert Read	21,250.17	689.00	.....	600.00	21,339.17
554	John Roach	6,201.19	201.50	.....	.....	6,402.69
555	William P. Ryan Memorial	†4,538.57	146.25	.....	.....	†4,684.82
556	John P. Schenkl	43,869.63	1,426.75	.....	1,400.00	43,896.38
557	Thomas Sherwin	5,254.73	172.25	.....	375.00	5,051.98
558	Horace T. Smith	33,040.45	1,072.50	.....	850.00	33,262.95
559	Sons and Daughters New England Colony	685.88	22.75	.....	.....	708.63
560	Tech Club of Chicago	.....	39.00	5,000.00	.....	5,039.00
561	Samuel E. Tinkham	2,409.11	78.00	.....	50.00	2,437.11
562	F. B. Tough	774.64	26.00	.....	.....	800.64
563	Susan Upham	1,082.75	35.75	.....	50.00	1,068.50
565	Vermont Scholarship	25,835.05	838.50	.....	800.00	25,873.55
567	Ann White Vose	59,987.27	1,950.00	.....	1,900.00	60,037.27
568	Arthur M. Waitt	9,694.29	315.25	.....	300.00	9,709.54
569	Grant Walker	.....	1,300.00	55,000.00	1,000.00	55,300.00
570	James Watt	13,438.28	435.50	.....	.....	13,873.78
571	Herman E. Weihmiller	832.40	22.75	.....	200.00	655.15
572	Louis Weissbein	4,013.86	130.00	.....	100.00	4,043.86
573	Frances Erving Weston	8,296.95	484.52	.....	300.00	8,481.47
574	Samuel Martin Weston	5,361.80	318.69	.....	200.00	5,480.49
576	Amasa J. Whiting	4,582.77	149.50	.....	200.00	4,532.27
577	Granger Whitney	.....	.....	200.00	200.00	.....
578	Elizabeth Babcock Willmann	5,535.24	178.75	.....	150.00	5,563.99
		$1,460,994.29	$51,220.46	$168,518.90	$37,718.66	$1,643,014.99

† Exclusive of students' notes receivable. (See Schedule A-3.)

SCHEDULE A-2 — (Continued)

No.		*Funds, June 30, 1943*	*Investment Income Added to Principal*	*Other Receipts*	*Expended or Transferred*	*Funds, June 30, 1944*
	FUNDS FOR PRIZES					
580	Babson	$10,356.25	$237.50	.....	$.....	$10,593.75
581	Robert A. Boit	5,810.41	188.50	.....	.....	5,998.91
583	Class of 1904	676.46	22.75	.....	.....	699.21
584	William Emerson	2,339.95	74.75	.....	40.00	2,374.70
585	Roger Defriez Hunneman	983.19	32.50	.....	25.00	990.69
687	James Means	3,588.88	117.00	.....	.....	3,705.88
689	Arthur Rotch	7,818.72	253.50	.....	.....	8,072.22
691	Arthur Rotch, Special	12,741.88	412.75	.....	400.00	12,754.63
692	Henry Webb Salisbury	1,152.89	39.00	.....	.....	1,191.89
693	Samuel W. Stratton	1,746.62	55.25	.....	.....	1,801.87
		$47,215.25	$1,433.50	.....	$465.00	$48,183.75
	FUNDS FOR RELIEF					
600	Louie G. Applebee	$430.12	$13.00	$.....	$.....	$443.12
601	Edward Austin	425,071.79	13,812.50	.....	17,000.00	421,884.29
603	Thomas Wendell Bailey	2,206.88	71.50	.....	50.00	2,228.38
604	Charles Tidd Baker	35,699.86	1,160.25	.....	200.00	36,660.11
606	Levi Boles	10,097.40	328.25	.....	300.00	10,125.65
608	Bursar's Fund	†26,175.64	851.50	741.32	335.00	27,433.46
610	Mabel Blake Case	25,526.84	828.75	.....	800.00	25,555.59
612	Fred L. and Florence L. Coburn	5,198.51	169.00	.....	100.00	5,267.51
614	Coffin Memorial	42,883.23	1,394.25	.....	2,200.00	42,077.48
615	George R. Cooke	3,507.33	113.75	.....	100.00	3,521.08
616	Dean's Fund	†7,145.26	230.75	1,123.95	160.00	†8,339.96
618	Carl P. Dennett	†1,087.58	35.75	1.00	.....	†1,124.33
620	Dormitory Fund	2,701.67	87.75	.....	25.00	2,764.42
621	Frances and William Emerson	101,695.10	3,308.50	110.00	2,855.00	102,258.60
622	Nathan R. George	.....	650.00	29,197.37	.....	29,847.37
623	Norman H. George	94,599.14	3,074.50	.....	3,000.00	94,673.64
625	Arthur B. Gilmore	10,056.50	328.25	.....	300.00	10,084.75
627	John A. Grimmons	†7,978.36	243.75	1,902.16	2,500.00	†7,624.27
629	James H. Haste	192,594.17	6,272.50	.....	6,200.00	192,666.67
631	David L. Jewell	26,978.49	877.50	.....	850.00	27,005.99
633	Llora Culver Krueger	3,639.86	117.00	.....	600.00	3,156.86
635	Edward F. and Mary R. Miller	10,617.40	344.50	.....	.....	10,961.90
638	Robert W. Milne	76,144.47	2,473.25	.....	2,400.00	76,217.72
639	Florence E. Prince	.....	169.00	7,537.50	.....	7,706.50
640	Charles A. Richards	31,759.79	1,036.25	.....	900.00	31,890.04
642	William B. Rogers	†44,492.32	1,446.25	834.97	1,500.00	†45,273.54
644	Anna Spooner	11,038.51	357.50	.....	350.00	11,046.01
646	Summer Surveying Camp	†2,415.95	78.00	.....	.....	2,493.95
648	Teachers' Fund	113,931.38	3,705.00	.....	1,600.00	116,036.38
650	Technology Loan Fund	†898,550.62	23,640.04	189,527.92	59,521.65	†1,052,196.93

† Exclusive of students' notes receivable. (See Schedule A-3.)

SCHEDULE A-2 — (Continued)

FUNDS FOR RELIEF (*Continued*)	*Funds, June 30, 1943*	*Investment Income Added to Principal*	*Other Receipts*	*Expended or Transferred*	*Funds, June 30, 1944*
2 Alice Brown Tyler.....	$1,852.72	$58.50	$.....	$28.89	$1,882.33
4 Thomas Upham.....	427,570.65	13,910.00	.....	.....	441,480.65
5 Samson R. Urbino.....	1,004.35	32.50	.....	.....	1,036.85
3 Jonathan Whitney.....	578,003.97	17,786.26	1,090.00	20,354.37	576,525.86
0 Morrill Wyman.....	70,989.71	2,307.50	280.00	2,325.00	71,252.21
	$3,293,645.57	$101,307.55	$232,346.19	$126,554.91	$3,500,744.40
tals.....	$37,943,224.61	$324,215.52	$2,804,485.57	$897,682.41	$40,174,243.29
		(Schedule B)			(Schedule A)

RECAPITULATION OF FUNDS

	Funds June 30, 1943	*Funds June 30, 1944*
Restricted.....	$26,655,636.24	$26,701,390.10
Unrestricted.....	697,961.37	1,077,821.01
Special Deposit Funds.....	1,886,980.05	3,131,767.35
Salaries.....	168,332.18	168,332.18
Libraries, etc.....	198,949.06	206,854.19
Departments.....	2,006,450.28	2,134,036.06
Research.....	1,312,179.46	1,345,038.50
Fellowships.....	214,880.86	217,060.76
Scholarships.....	1,460,994.29	1,643,014.99
Prizes.....	47,215.25	48,183.75
Relief.....	3,293,645.57	3,500,744.40
	$37,943,224.61	$40,174,243.29

SCHEDULE A-3

STUDENTS NOTES RECEIVABLE

Fund	*Notes Receivable June 30, 1943*	*Loans Made 1943-44*	*Loans Repaid 1943-44*	*Notes Receivable June 30, 1944*	*Interest Received 1943-44*
echnology Loan Fund.....	$800,979.58	$39,225.00	$172,376.63	$667,827.95	$16,185.16
ursar's Fund.....	4,226.60	335.00	670.77	3,890.83	70.55
oger's Fund.....	2,741.55	.....	627.50	2,114.05	207.47
ean's Fund.....	2,493.06	160.00	1,098.00	1,555.06	25.95
. E. Summer Camp Fund.....	100.00	.....	.....	100.00	.....
rimmons Scholarship Loan Fund	100.00	.....	100.00	.....	12.57
ennett Fund.....	652.30	.....	.....	652.30	1.00
. H. May Scholarship Fund....	4,365.00	.....	765.00	3,600.00	.....
[edical Special Fund.....	3,405.36	159.45	285.00	3,279.81	5.54
lass of 1896 Fund.....	1,150.00	.....	150.00	1,000.00	.....
merson Fund.....	300.00	.....	.....	300.00	.....
'illiam P. Ryan Memorial Fund.	205.69	.....	.....	205.69	.....
resident's Fund.....	100.00	.....	50.00	50.00	.....
	$820,819.14	$39,879.45	$176,122.90	$684,575.69	$16,508.24

SCHEDULE A-4

ACCOUNTS RECEIVABLE

United States Government:			
Division of Industrial Coöperation:			
Office of Scientific Research and Development:			
Radiation Laboratory. $10,650,342.69			
Less: Advance Payments thereon 10,650,342.69			
	$ 0.00		
All Other O.S.R.D. Contracts..... 394,802.44		$394,802.44	
United States Army, Navy and N.A.C.A. Contracts..... 215,851.77		*$610,654.21	
Army and Navy Training Programs.....		359,003.90	
Other Government Research Programs.....		80,302.36	
Other Government Programs — Tuition Fees.....		6,070.00	
Total United States Government.....			$1,056,030.47
Division of Industrial Coöperation, Industrial Corporations.....			*60,343.51
Others:			
Aeronautical Engineering Department, Wind Tunnel Accounts.....		$32,067.82	
Physics Department, Cyclotron Rental.....		2,719.30	
Smith House, Inc. (Rentals).....		1,579.73	
Students' Fees and Deposits.....		1,517.94	
Miscellaneous Accounts.....		10,166.90	
Total Others.....			48,051.69
Total (Schedule A).....			$1,164,425.67

* Total Division of Industrial Coöperation $670,997.72.

SCHEDULE A-5

STUDENTS' FEES IN ADVANCE, AND DEPOSITS RETURNABLE

1944 Summer Term:		
Tuition Fees.....	$96,895.00	
Students' Deposits.....	6,654.61	
Dormitory Rentals.....	7,631.00	
		$111,180.61
1943–44 Students' Deposits, Returnable.....		8,367.74
1944–45 Tuition Fees.....		300.00
Total (Schedule A).....		$119,848.35

SCHEDULE A–6

ADVANCES AND INVENTORIES FOR 1944–1945

Advances:			
United States Government:			
Division of Industrial Coöperation:			
Office of Scientific Research and Development:			
Radiation Laboratory..... $1,633,167.73			
Less: Advance Payments thereon. 1,589,360.53			
	$43,807.20		
All other O.S.R.D. Contracts 182,451.77		$226,258.97	
United States Army, Navy and N.A.C.A. Contracts .		406,553.69	
			*$632,812.66
Army and Navy Training Program (Harbor Building)			53,686.75
Weather Bureau Research Program.....			406.06
Total United States Government.....			$686,905.47
Division of Industrial Coöperation:			
Industrial Corporations, Research in Progress.....			*$118,920.38
Equipment Account.....			*33,008.89
Other Uncompleted Research Programs:			
Pan American Research.....		$3,957.68	
Hyams Radiation Research.....		2,445.73	
Oncologic Research.....		335.32	
			6,738.73
Other Uncompleted Projects and Advances:			
Research Building (Adjoining Barbour Field House).....		$37,462.75	
Deposit on Fire Insurance Coverage.....		50,988.59	
Premiums Paid on Unexpired Insurance.....		3,672.99	
Coöperative Foundation Plan.....		551.00	
Fires in Buildings 2, 28, and Walker, Advanced.....		8,946.53	
			101,621.86
			260,289.86
Total Advances.....			$947,195.33
Inventories:			
Department of Buildings and Power:			
General Stock.....		$37,247.59	
Coal.....		21,256.81	
Oil.....		2,225.90	
			$60,730.30
Division of Laboratory and Office Supplies.....			30,716.90
Walker Dining Service, Food.....			11,117.37
Graduate House Dining Service, Food and Supplies.....			9,381.63
Photographic Service.....			7,530.93
Undergraduate Dormitories.....			6,062.03
Graduate Dormitories.....			2,462.80
Letter Shop.....			1,295.03
Walker Games, Candy, etc.....			843.61
Postage Stamps.....			607.75
Lecture Notes.....			452.00
Civil Engineering Department, Summer Camp.....			107.99
Total Inventories.....			131,308.34
Total (Schedule A).....			$1,078,503.67

* Total Division of Industrial Coöperation $784,741.93

SCHEDULE A-7

CURRENT FUNDS

Department Accounts	*Balance June 30, 1943*	*Receipts or Transfers*	*Expenditures or Transfers*	*Balance June 30, 1944*
Aeronautical Engineering:				
Aerodynamic Research	$267.88	$.....	$.....	$267.88
C.A.A. Inter-American Program	.....	19,002.50	19,002.50	.....
C.A.A. Pilot Train. Prog.	16,752.64	.....	131.21	16,621.43
C.A.A. Pilot Train. Prog. 16120D	.....	131.21	131.21	.....
Instrument Lab.—Maintenance	22.60	4,167.68	4,190.28	.....
National Res. Council, Draper	482.24	200.54	682.78	.....
Special 500–762 Acct., Draper	1,468.51	.....	.....	1,468.51
Special Appro. No. 1938	14,957.78	.....	10,331.89	4,625.89
Special Appro. No. 1990	.....	10,000.00	5,638.28	4,361.72
Structural Lab. Equipment	525.34	.....	.....	525.34
Summer Shop Course, Markham	65.67	.....	.....	65.67
Vibration Research No. 1333	169.36	194.35	363.71	.....
Wind Tunnel	107,192.20	145,774.07	66,494.92	186,471.35
Architecture:				
City Planning Conf. Account	.....	1,000.33	123.44	876.89
Housing Res. Special No. 1899	5,488.04	.....	1,428.45	4,059.59
Traveling Fellowship	1,975.00	.....	.....	1,975.00
Bemis Research:				
Expense Account	.....	119.70	119.70	.....
Salary Account	.....	8,950.00	8,950.00	.....
Biology and Biological Engineering:				
Bartlett Arkel Fund	3,218.85	.....	2,595.39	623.46
Biological Shop Account	553.00	1,128.98	293.07	1,388.91
Biological Shop Sp. Appro. 1648	2,517.19	.....	.....	2,517.19
C. E. M. Account	.....	16,000.00	9,980.88	6,019.12
Corn Industries Res. Found.	754.36	1,500.00	162.12	2,092.24
Diversey Corp. Fellowship	852.67	.....	.....	852.67
du Pont Cell. Research Fd.	.....	2,500.00	1,976.67	523.33
Eastman Nutrition Research	.....	1,739.52	1,739.52	.....
Electron Microscope Research	.....	4,632.10	4,632.10	.....
Equipment Special	507.54	899.73	1,407.27	.....
Food Research	759.60	7.98	421.40	346.18
Food Technology Research	.....	1,489.99	1,489.99	.....
Haskins Fellowship	1,666.64	.....	.....	1,666.64
Hoffman La Roche Fund	.....	2,500.00	.....	2,500.00
Kroger Grocery and Baking Co. Fellowship	817.10	.....	.....	817.10
A. C. Lawrence Fund	.....	5,000.00	105.07	4,894.93
Lederle Laboratories Research	831.69	40.93	872.62	.....
Lever Bros. Fellowship	1,402.00	1,510.55	2,167.92	744.63
Moore, Emma B., Ration Res.	1,000.00	.....	.....	1,000.00
Nutrition Foundation Research	.....	2,400.00	486.49	1,913.51

SCHEDULE A-7 — (Continued)

Department Accounts	*Balance June 30, 1943*	*Receipts or Transfers*	*Expenditures or Transfers*	*Balance June 30, 1944*
Biology and Biological Engineering (*Continued*):				
Nutrition Research	$643,42	$3,915.26	$3,827.64	$731.04
Pan American Fund	.....	*20,165.76	20,165.76	.....
Penicillin Special	.....	4,500.00	1,026.77	3,473.23
Proctor Special Fund	67.89	.....	43.05	24.84
Rockefeller Fd., Biological Eng.	18,410.70	3,139.43	21,121.66	428.47
Rockefeller Fd., Nutrition Res.	2,012.94	716.74	2,688.24	41.44
Royalty Receipts Pat. 665135 Sp.	4,895.68	3,225.99	1,613.00	6,508.67
Rubber Research Special 1915	5,224.65	.....	.....	5,224.65
Underwood, William, Fellowship	2,500.00	500.00	2,364.13	635.87
Building Engineering and Construction:				
National Lime Association	499.90	6,072.58	5,767.34	805.14
Research Corp. Build. Material.	.....	3,300.00	572.58	2,727.42
Special Appro. No. 1985	.....	2,000.00	705.80	1,294.20
Timber Engineering Co., Inc.	236.99	.....	236.99	.....
Tucker (Ross Francis) Mem. Fd.	185.77	.....	45.65	140.12
Bus. and Eng. Administration:				
Case Research	29.35	.....	.....	29.35
Graduate Fellowship Account	.....	.....	.....	.....
Human Relationships Account.	69.03	.....	7.50	61.53
John R. Macomber Fund	11.21	.....	.....	11.21
Newman M. Marsilius Fund	1,000.00	500.00	921.69	578.31
Mass Production Study Acct.	.....	.....	.....	.....
Office of Emergency Manage., Special A-35	295.63	.....	.....	295.63
Puerto Rico Fellowships	25,214.26	800.00	25,405.34	608.92
Sloan Book Account	333.47	13.17	3.60	343.04
Special Apropriation No. 1850	.....	385.63	.....	385.63
Special Appropriation 1931	473.51	.....	150.00	323.51
Special Appropriation 1943	453.40	219.25	672.65	.....
Sponsored Fellow., Operating	2,695.97	.....	83.87	2,612.10
Sponsored Fellow., Research	2,199.54	141.00	.....	2,340.54
Chemical Engineering:				
Allied Ch. and Dye Corp. Fellow.	375.00	375.00	750.00	.....
Alsifilm Research	199.86	.....	.....	199.86
Colloid Chemistry Special 1207.	281.28	.....	.....	281.28
Colloid Research Special 1635	36.15	4.96	41.11	.....
Fuels Research	2,354.26	.....	.....	2,354.26
Paint Films Special No. 1992	.....	4,000.00	583.52	3,416.48
Special Research No. 1421	250.00	.....	.....	250.00
Synthetic Rubber Research	.....	551.52	551.52	.....

* Includes balance of work in progress at end of year.

SCHEDULE A-7 — (Continued)

Department Accounts	*Balance June 30, 1943*	*Receipts or Transfers*	*Expenditures or Transfers*	*Balance June 30, 1944*
Chemistry:				
Davis Special Account	$303.96	$255.00	$373.83	$185.13
Hoffman-La Roche Fund	50.00	925.00	975.00	.....
Inorganic Equipment Account	931.30	.....	.....	931.30
Arthur D. Little Spec. Fel'ship	.....	1,720.00	1,500.00	220.00
Oxycellulose Research	695.86	.....	695.86	.....
Physical Chemistry Royalties	3,623.55	789.02	.....	4,412.57
Polymerization Research	1,915.25	.....	.....	1,915.25
Polysodium Research	12,381.11	.....	11,355.96	1,025.15
Research Corp. Vitamins A and D Research	627.55	5,202.73	5,620.54	209.74
Sugar Research Fund	.....	25,051.38	12,883.80	12,167.58
Civil Engineering:				
Cement Research Special 1056	1,392.65	5.00	.21	1,397.44
Equipment Special 1326	338.82	.....	.....	338.82
Freeman Hydraulic Research	800.00	.....	.....	800.00
River Hydraulic Laboratory	945.34	.....	10.20	935.14
Soil Mechanic Laboratory	124.30	1,089.75	594.02	620.03
Special Research No. 1364	2,581.42	.....	.....	2,581.42
Structural Laboratory	118.32	466.42	584.74	.....
Summer Camp Const. Reserve	3,000.00	1,091.07	.....	4,091.07
Economics:				
Rockefeller Fd. Grant 41042	1,820.70	10,201.20	7,426.19	4,595.71
Electrical Engineering:				
Balsbaugh Research	3,361.42	11,868.15	12,113.70	3,115.87
Balsbaugh Research Special	.....	2,750.00	.....	2,750.00
Center of Analysis	4,390.23	76,620.21	44,306.71	36,703.73
Coating Metals Special No. 1946	62.00	536.00	.....	598.00
Communications Laboratory, U.H.F. Research	2,045.97	218.74	389.77	1,874.94
Course Revision Special No. 1250	918.14	261.08	363.53	815.69
Course VI-A Travel Account	1,039.40	.96	25.52	1,014.84
Edgerton Film Research	745.52	433.23	74.95	1,103.80
Electronics Special	.....	2,500.00	.....	2,500.00
Hyams Radiation Research	1,386.03	*5,786.65	7,172.68	.....
Int. Business Mach. Co. Special	.....	.....	.....	.....
Int. Tel. and Tel. Res. 1940–41	399.38	.....	.....	399.38
Int. Tel. and Tel. Research	865.70	.....	.....	865.70
Micro Calibration Research	155.07	.....	34.17	120.90
Micro Wave Research	6,357.06	.....	.....	6,357.06
Network Analyzer	9,894.39	6,131.83	4,420.40	11,605.82
Network Analyzer Special	1,301.93	2,299.18	.....	3,601.11
Notes Account Special 1642	.....	13,919.66	*5,786.14	8,133.52

* Includes balances of work in progress at end and end of year.

SCHEDULE A-7 — (Continued)

Department Accounts	*Balance June 30, 1943*	*Receipts or Transfers*	*Expenditures or Transfers*	*Balance June 30, 1944*
Electrical Engineering (*Continued*):				
Oncologic Research	$.....	*$4,722.32	$4,722.32	$.....
Oscillograph Special 1864	1,331.44	158.01	1,489.45	.....
Photoelectric Cells Research Special 1874A	4,157.98	.....	.....	4,157.98
Radio Research Special 1550	1,724.15	.....	.....	1,724.15
Rapid Selection Research	6,981.62	.....	.....	6,981.62
Research Corp., Arith. Mach. Sp.	432.08	.....	11.80	420.28
Research Corp., High Voltage Research	379.78	5.64	220.72	164.70
Round Hill Research	117.13	.....	.....	117.13
Servos Royalty Account	823.47	.....	.....	823.47
Servos Special, Brown	4,056.31	1,553.04	2,805.01	2,804.34
Shop Equip. Special (Lathe)	800.00	.....	.....	800.00
Special Appro. 1872, Dwight	1.45	.....	1.45	.....
Special Appropriation No. 1986	.....	5,000.00	.....	5,000.00
U. H. F. Dielectrics Research Special 1874B	6,000.00	.....	.....	6,000.00
U. S. Navy Differential Analyzer	.....	.....	.....	.....
U. S. Navy Fire Control Res.	1,298.50	445.90	1,744.40	.....
von Hippel Research Sp. 1219	250.85	.....	131.96	118.89
English and History:				
International Relations Library	91.89	.....	.....	91.89
Geology:				
Geological Research Special 1863	4,551.38	.....	.....	4,551.38
National Res. Council, Research	62.06	448.00	268.05	242.01
Graphics:				
National Res. Council, Grant	184.21	.....	.....	184.21
Industrial Relations Section:				
Special Appropriation No. 1955	.....	1,250.00	692.59	557.41
Mathematics:				
Applied Mathematics Program	11,700.00	.....	.....	11,700.00
Journal of Math. and Physics	2,100.08	1,147.27	2,430.44	816.91
Putnam Fund	343.24	.....	32.72	310.52
Mechanical Engineering:				
A. S. M. E. Research	192.59	.....	.....	192.59
Automotive Lab. Special 1953	5,710.00	1,790.00	7,146.76	353.24
Cavitation Research	1,323.53	800.00	351.73	1,771.80
deForest Research Special 1254	8,321.00	11,009.80	13,043.30	6,287.50
Disc Research	3,623.34	.....	.....	3,623.34
Forstmann Research	2,497.53	.....	2,497.53	.....
Gas Turbine Research	22,143.99	.....	2,375.27	19,768.72
Harvey — Nonferrous Forgings Fund	.....	5,000.00	.....	5,000.00

* Includes balance of work in progress at beginning of year.

SCHEDULE A-7 — (Continued)

Department Accounts	*Balance June 30, 1943*	*Receipts or Transfers*	*Expenditures or Transfers*	*Balance June 30, 1944*
Mechanical Engineering (*Continued*):				
Keenan Research	$8.75	$.....	$.....	$8.75
Shop Maintenance Account	4,061.06	7,597.38	3,717.30	7,941.14
S. Slater & Sons Inc. Fund	1,158.62	21,213.80	11,133.44	11,238.98
Sloan Building Special 1951	6,325.00	.....	6,216.37	108.63
Sloan Building Special 2008	.....	1,400.00	112.79	1,287.21
Special No. 2001	.....	500.00	500.00	.....
Special Research	733.34	32.50	171.09	594.75
Testing Machine Special 1624	89.81	.....	.....	89.81
Testing Machine Special 1963	1,700.00	.....	1,464.51	235.49
Testing Materials Lab. Special	2,679.31	.....	.....	2,679.31
Testing Materials Lab. Sp. 1523	347.22	.....	.....	347.22
Textile Equipment Special	413.00	500.00	444.67	468.33
Textile Foundation Research	3,346.77	210.03	1,001.71	2,555.09
U. S. Navy Torpedo Research	27.65	1,842.98	1,870.63	.....
Medical:				
Homberg Infirmary Alterations	.....	80,000.00	49,012.14	30,987.86
Special — Needy Student Fund	†1,846.07	290.54	159.45	†1,977.16
Metallurgy:				
Cates Equipment Special	.....	2,500.00	284.06	2,215.94
Chipman Research Special 1337	625.27	365.37	990.64	.....
Clay Research	1,120.06	1,350.00	1,092.81	1,377.25
Dust Removal Special 1945	800.00	.....	755.05	44.95
Engineering Foundation Welding Research	3,872.47	.....	575.38	3,297.09
Equipment Special No. 1234	540.06	487.00	.....	1,027.06
Equipment Special No. 1259	.....	3,068.32	581.68	2,486.64
Equipment Special, Hayward	405.00	.....	205.00	200.00
Magnet Generator Purch.Acct.	14,260.00	.....	.....	14,260.00
Magnetic Lab. Special 1222	383.87	.....	20.98	362.89
Mineral Dressing Research	204.60	701.22	905.82	.....
Mineral Dressing Special	.....	.....	.....	.....
Revere Copper and Brass Co. Research	861.95	1,600.00	394.60	2,067.35
Sheffield Foundation Research	949.21	5,000.00	5,229.75	719.46
Special Research No. 1354	512.83	.....	34.30	478.53
Special Research No. 1818	4,017.22	244.20	2,152.44	2,108.98
Vanadium Corp. Fellowship	123.29	1,725.00	1,269.88	578.41
Meteorology:				
Cosmic Ray Research	500.00	.....	.....	500.00
Forest Fire Service Special	1,053.52	.....	1,053.52	.....
Pamphlets Deposit Special	464.00	.....	300.00	164.00
Special Appro. 1817	217.79	.....	217.79	.....
Weather Bureau Research	337.13	7,001.56	7,338.69	.....
Weather Bureau Special	.....	860.81	633.85	226.96

† Exclusive of students' notes receivable. (See Schedule A-3.)

SCHEDULE A-7 — (Continued)

Department Accounts	*Balance June 30, 1943*	*Receipts or Transfers*	*Expenditures or Transfers*	*Balance June 30, 1944*
Military Science:				
Army Enlisted Reserve Corp...	$.....	$.....	$.....	$.....
Freshman Uniform Account...	505.80	1,313.76	1,435.47	384.09
Senior Uniform Upkeep Acct...	134.97	.....	.....	134.97
Naval Architecture:				
Propeller Tunnel Special 1548A.	2,029.33	1,066.94	162.63	2,933.64
Special Fund (Anonymous)....	2,614.92	.....	.....	2,614.92
Physics:				
American Petroleum Inst. Fund	2,375.00	2,780.35	5,155.35	.....
Carnegie Institution of Washington, Boyce.....	1,767.23	.....	.....	1,767.23
Carnegie Institution of Washington, Vallarta.....	860.00	.....	.....	860.00
Crystal Research.....	682.55	.....	144.43	538.12
Evans Research.....	3,145.81	549.75	2,834.58	860.98
G. S. A. Grant — Sheppard....	.....	500.00	231.52	268.48
Glass Industry Fellowship.....	250.00	.....	.....	250.00
Gulf Oil Corp. Research	1,100.00	1,100.00	1,100.00	1,100.00
Nuclear Research.....	9,882.54	14.24	.....	9,896.78
Radioactivity Center.....	16,209.11	40,298.80	29,269.73	27,238.18
Roentgen Ray Research	232.26	.....	.....	232.26
Rumford Grant, Harrison.....	1.68	.....	1.68	.....
Spectroscopy Special.....	10,644.52	.....	.....	10,644.52
Zeeman Effect Program Special 1755.....	660.25	.....	.....	660.25
Public Heath:				
Boston Health Service.....	174.16	.....	174.16	.....
Hood Scholarship.....	.....	.....	.....	.....
Kellogg Foundation Scholarship	1,586.00	.....	1,586.00	.....
Solar Energy Research:				
Chemistry.....	1,284.59	.....	478.63	805.96
Electrical Engineering.....	656.44	.....	.....	656.44
Geology.....	490.82	.....	4.99	485.83
Headquarters Account.....	1,284.64	.....	476.00	808.64
Metallurgy.....	112.91	.....	66.52	46.39
Miscellaneous Accounts				
Additional Group Insurance Fund	.....	13,379.01	13,379.01	.....
All American Aviation, Inc. Richard C. du Pont Memorial .	.....	5,000.00	.....	5,000.00
Alumni Fund, Salaries.....	.....	4,500.00	4,500.00	.....
Alumni Fund, Bulletin Special 1560	845.57	.....	.....	845.57

SCHEDULE A-7 — (Continued)

Miscellaneous Accounts	*Balance June 30, 1943*	*Receipts or Transfers*	*Expenditures or Transfers*	*Balance June 30, 1944*
Anonymous "M"	$.....	$5,000.00	$5,000.00	$.....
Athletics, Cambridge Armory Basket Ball Courts	.....	1,034.30	1,034.30	.....
Bemis Real Estate Reserve	3,361.23	.....	2,186.51	1,174.72
Blue Cross Hospitalization Prog.	1,267.00	33,385.23	30,857.33	3,794.90
Boat House Equipment Account	237.94	348.00	.....	585.94
Building Key Account	3,219.38	1,088.00	1,053.76	3,253.62
Building 8 Electric Lines Special No. 2022	.....	3,000.00	.....	3,000.00
Building 2 Fire Account	.....	722.28	722.28	.....
Building 28 Fire Fund	.....	1,070.98	1,070.98	.....
Building 32, Special 1962	2,000.00	.....	2,000.00	.....
Building 32, Special 1993	.....	1,373.00	1,373.00	.....
Carnegie Foundation Pensions	.....	53,886.52	53,886.52	.....
Coal Conversion Special 1912	3,964.43	1,727.53	5,691.96	.....
Cosmic Terrestrial Research	1,509.24	9,119.99	8,257.86	2,371.37
Dean's Fund Special	.....	600.00	.....	600.00
Division of Industrial Coöperation:				
Industrial, Army, Navy, N.A.C.A. and O.S.R.D. Contracts	26,243.45*	26,254,693.90*	26,246,148.97	34,788.38
Clearing Account	.....	444,787.99	444,787.99	.....
Equipment Account	.....	53,162.89	53,162.89	.....
B. B. R. L. Travel Advance	.....	30,803.51	30,803.51	.....
A. G. R. L. Travel Advance	.....	900.00	900.00	.....
B. B. R. L. Salary Advance	.....	2,338.48	1,495.36	843.12
Radiation Luncheon Club Payroll	.....	3,975.14	3,975.14	.....
A. M. P. Royalty Account	.....	1,531.50	.....	1,531.50
Dormitory Equipment Reserve	19,525.47	3,302.00	4,500.00	18,327.47
Duperial Scholarship	200.00	2,359.00	1,900.00	659.00
Employees Special Allowance	.....	50,480.00	50,480.00	.....
Emma Rogers Room, Social Acct.	.....	301.36	301.36	.....
Faculty Flower Fund	.....	450.50	70.35	380.15
Foreign Travel Insurance	.....	1,523.75	1,523.75	.....
General Radio Co. Fund	2,000.00	.....	.....	2,000.00
Graduate House Dining Service Reserve	322.23	5,282.49	300.00	5,304.72
Graduate House Equip. Reserve	.....	312.00	.....	312.00
Greater Boston United War Fund	.....	3,153.04	3,153.04	.....
Greater Boston United War Fund Radiation	.....	1,872.13	1,872.13	.....
Group Air Insurance	.....	1,473.18	1,473.18	.....
Guard Service	184.24	1,158.22	1,342.46	.....
Guide Service Special 1558	170.80	.....	1.00	169.80
Gymnasium Special	915.53	.....	.....	915.53

* Includes balances of work in progress at beginning and end of year.

SCHEDULE A-7 — (Continued)

Miscellaneous Accounts	*Balance June 30, 1943*	*Receipts or Transfers*	*Expenditures or Transfers*	*Balance June 30, 1944*
Historic Memorials	$82.37	$.....	$25.18	$57.19
Kasch Fellowships	330.00	.....	.....	330.00
Lecture Fund	860.00	.....	.....	860.00
Library Accounts:				
Crafts Library	479.53	.....	.....	479.53
Dewey Library	33.04	.....	8.47	24.57
Humanities Library	184.69	.....	.....	184.69
Library Growth Account	13,236.27	4,617.30	1,403.64	16,449.93
Special No. 1 Account	437.51	575.95	290.68	722.78
Special Appropriation No. 1853	77.61	1,500.00	296.25	1,281.36
Walker Library	1,412.20	3,032.40	1,982.52	2,462.08
Lighting Special, Building 5, Special No. 2016	.....	2,196.73	2,196.73	.....
Lowell Institute School	.....	2,105.00	2,105.00	.....
Lufkin, Elizabeth A., Trust	.....	100.00	100.00	.....
Melvin Trust Scholarships	.....	4,800.00	3,800.00	1,000.00
Museum Committee Account	2,443.49	.....	2,284.03	159.46
Nautical Association	327.00	568.00	586.00	309.00
Patent Committee	77.51	.....	.....	77.51
Pension Asso. 1943–44 Receipts	305.00	.....	305.00	.....
Photographic Service	708.81	117,380.75	116,119.77	1,969.79
Photographic Service Reserve	7,000.00	5,000.00	.....	12,000.00
President's Fund	†1,001.63	50.00	45.00	†1,006.63
President's Portrait Fund	230.40	.....	.....	230.40
Rockefeller Foundation, Emergency Expense Account	.....	5,000.00	.....	5,000.00
Research Associates 1943	3,000.00	.....	.....	3,000.00
Sabotage Insurance	.....	565.00	565.00	.....
Safety Committee Special 1775	1,107.11	34,203.74	35,310.85	.....
Sailing Trophy Fund	3.52	.....	.....	3.52
Servo Mechanism Conf. Account	.....	119.79	119.79	.....
Salvage Fund	811.19	.....	8.74	802.45
S. P. E. E. Conference Account	.....	562.01	562.01	.....
Space Changes Special	.....	4,674.63	4,674.63	.....
Steam and Electric System Special 1879	54,918.21	.....	22,637.20	32,281.01
Storage Space Special 1823	.....	.....	.....	.....
Suspense Account	.....	40,111.57	40,111.57	.....
Swimming Pool Equipment	80.90	.....	.....	80.90
Radar School Harbor Building Account	.....	*760,497.56	*760,497.56	.....
Radar School Harbor Building Reserve	.....	15,732.54	11.15	15,721.39
Technique	67.00	69.90	111.50	25.40
Technology Christian Association	9.00	454.10	462.10	1.00
Technology Club of Philadelphia	100.00	.....	.....	100.00

*Includes balances of work in progress at beginning and end of year.
† Exclusive of students' notes receivable. (See Schedule A-3.)

SCHEDULE A-7 — (Continued)

Miscellaneous Accounts	*Balance June 30, 1943*	*Receipts or Transfers*	*Expenditures or Transfers*	*Balance June 30, 1944*
Technology Press Special 1468	$5,411.24	$.....	$.....	$5,411.24
Technology Press Special 1468A	1,188.23	210.64	.....	1,398.87
Technology Press Special 1494	.....	1,521.22	1,062.77	458.45
Travel Suspense Account....	.....	13,213.58	13,206.15	7.43
Undergraduate Dues	1,326.00	14,749.00	14,696.50	1,378.50
United States Withholding Tax	104,382.48	1,704,900.00	1,646,400.45	162,882.03
United States War Savings Bonds	25,421.21	680,654.21	677,713.04	28,362.38
United States Government Accounts:				
Army and Navy Training Programs:				
Army — A. S. T. P.....	.....	627,548.86	*627,548.86	.....
Army — A. S. T. P. Athletic Clothing Account.....	.....	170.30	170.30	.....
Army — A. S. T. P. Replacement Account.....	.....	75.30	75.30	.....
Army — Meteorology A .	.....	145,079.47	*145,079.47	.....
Army — Meteorology B .	.....	47,744.40	*47,744.40	.....
Harbor Building, Navy.	.....	*87,306.75	*87,306.75	.....
R. O. T. C. Unit.....	.....	101,941.28	101,941.28	.....
Navy — Aero Engineering and Aviation Engines..	.....	26,532.00	26,532.00	.....
Navy — V12.....	.....	957,564.34	*957,564.34	.....
Chemical Warfare Service Development Laboratory	.....	900,290.97	900,290.97	.....
Navy Meteorology "A" .	.....	31,706.38	31,706.38	.....
Engineering Science and Man. War Training No.1	.....	64,993.30	64,993.30	.....
Engineering Science and Man. War Training No. 2	.....	100,000.00	13,842.37	86,157.63
Visiting Committees Reports, Special.....	302.45	.....	155.42	147.03
Walker Building Reserve....	.....	6,000.00	.....	6,000.00
Walker Memorial Fire Account	.....	7,153.27	7,153.27	.....
Walker Memorial Dining Service Reserve.....	32,991.27	28,876.38	6,452.83	55,414.82
War Service Guide Book Acct.	.....	1,298.94	1,298.94	.....
	$829,953.51	$34,227,526.72	$33,883,663.84	$1,173,816.39

Summary

United States Withholding Tax Payable.....	$162,882.03
United States War Savings Bond Deposits.....	28,362.38
Current Funds.....	982,571.98
	$1,173,816.39

(Schedule A)

* Includes balances of work in progress at beginning and/or end of year.

SCHEDULE A-8

[1]EDUCATIONAL PLANT ASSETS

Land in Cambridge:		
Campus — east of Massachusetts Avenue ..	$1,125,766.67	
Campus — west of Massachusetts Avenue..	850,014.82	
		$1,975,781.49
Educational Buildings, Cambridge:		
Main Group	$5,633,419.62	
George Eastman Research Laboratories....	1,225,098.58	
Pratt School of Naval Architecture	674,971.70	
Chemical Engineering Laboratories	536,268.99	
Guggenheim Aeronautical Laboratory	293,637.46	
Wright Brothers Memorial Wind Tunnel...	217,506.25	
Magnetic Substation	76,272.73	
Sloan Automotive Laboratories	208,566.27	
Mechanic Arts Building	83,658.89	
Nuclear Research Laboratory	34,891.27	
Cyclotron Laboratory	20,247.92	
Solar Energy Laboratory	10,500.00	
Hyams Radiation Laboratory	13,500.00	
Research Building	76,835.88	
Hydraulic and Compression Laboratories ..	68,301.88	
		9,173,677.44
Educational Equipment		2,039,953.60
Undergraduate Dormitories		1,338,923.79
Infirmary, Recreational and Athletic Buildings:		
Homberg Memorial Infirmary	$188,441.60	
Walker Memorial	714,587.02	
Alumni Swimming Pool	364,477.21	
Boat House	54,244.13	
Barbour Field House	84,042.54	
Sailing Pavilion	28,849.09	
Briggs Field House and Track	114,440.13	
		1,549,081.72
Summer Camp:		
East Machias, Maine	$120,558.00	
		120,558.00
Miscellaneous:		
Power Plant	$389,064.17	
Steam and Electrical Distribution System..	154,055.24	
Service Building and Garages	55,369.74	
Other Plant Assets	312,904.36	
		911,393.51
Total, June 30, 1944 (Schedule A)		$17,109,369.55

[1]Not including Graduate House (see investments, page 166), nor Buildings 20, 22 and 24, built for and used by U. S. Government Research.

SCHEDULE A-9

PRINCIPAL GIFTS AND APPROPRIATIONS FOR EDUCATIONAL PLANT

For Land:		
T. C .du Pont	$625,000.00	
A. F. and Ida F. Estabrook Funds	105,000.00	
Maria A. Evans	169,080.60	
Edmund D. Barbour Fund	234,634.18	
From Miscellaneous Contributors	277,222.89	
Appropriations from Funds — Blake, $5,000; Lyman, $5,000; Kimball, $10,000; McGregor, $2,500; Philbrick, $2,000; Richards, $1,000; Perkins, $3,252.32; Current Income, $6,500	35,252.32	
		$1,446,189.99
For Educational Buildings (including Homberg Infirmary, President's House, Power Plant and buildings other than Dormitories and those used for Student Recreational and Athletic Purposes):		
*George Eastman	$5,778,222.86	
T. C. and P. S. du Pont, Charles Hayden, Arthur Winslow for Mining Engineering Building	225,000.00	
Maria A. Evans Fund	100,000.00	
C. A. Stone and E. S. Webster	187,500.00	
Sale of Land and Building in Boston (1938)	972,283.33	
Pratt Fund, for School of Naval Architecture	675,150.00	
Guggenheim Fund, for Aeronautical Laboratory	230,000.00	
Appropriations for Aeronautical Laboratory— From Funds: Perkins, $12,508.02; Hayden, $42,700.76; Frisbie, $7,614.98	62,823.76	
Alfred P. Sloan, Jr., for Automotive Laboratory	152,464.35	
Appropriation for Automotive Laboratory— From Current Income	60,000.00	
Edmund D. Barbour Fund for:		
Nuclear Laboratory	32,341.27	
Magnetic Laboratory	40,772.73	
Power Plant	90,006.59	
Miscellaneous Contributions and Appropriations from Funds for: Magnetic Lab., $5,500; Nuclear Research Lab., $2,500; Cyclotron, $20,247.92; Hyams Radiation Lab., $13,500; and Solar Energy Lab., $10,500; Anonymous, $1,000, Bldg. 6	53,247.92	
†Subscriptions to Wright Brothers Memorial Wind Tunnel	95,795.00	
Appropriation for Wind Tunnel — Current Income	9,000.00	

* Includes Mr. Eastman's original gift of $3,500,000 together with appropriations from the Building Fund of $2,500,000 which he established.
† Otherwise paid for from Eastman Building Fund.

SCHEDULE A–9 — (Continued)

For Educational Buildings (*Continued*):		
Miscellaneous Appropriations from Current Income for: Compression Lab., $31,000; Tractor Garage, $6,400	$37,400.00	
Julius Rosenwald and family — Homberg Infirmary	110,225.00	
Appropriations from Funds — Homberg Infirmary — Chase, $4,090.09; A. H. Munsell, $7,908.28; M. A. Munsell, $1,105.32; Industrial, $41,137.61; A. F. Estabrook, $10,000; I.F. Estabrook, $2,157.51; Perkins, $764.66	67,163.47	
Appropriation for Homberg Infirmary from Current Funds	11,500.00	
		$8,990,896.28
For Educational Equipment:		
Emma Rogers Fund	$528,077.06	
F. W. Emery Fund	126,423.80	
C. L. W. French Fund	100,843.34	
Equipment moved from Boston (1916) Est.	500,000.00	
Alumni Fund	82,119.38	
Appropriations from Funds — Drew, $305,171.52; Peabody, $52,238.89; duPont, $12,500; Tuttle, $50,000; Thayer, $25,000; Dorr, $49,573.47	494,483.88	
Appropriations from Current Income — $205,000; $42,945.10; $28,539.31	276,484.41	
Miscellaneous Contributions	14,429.80	
		2,122,861.67
For Summer Camps:		
Appropriations from Current Income — For Civil Engineering Camp, Maine	$73,807.19	
		73,807.19
For Dormitories:		
Maria A. Evans Fund	$261,192.55	
T. C. duPont	100,000.00	
Alumni Dormitory Fund	566,945.66	
Edmund D. Barbour Fund	258,599.40	
Appropriations from Funds — Robb, $28,750; Thorndike, $15,000; Hodges, $57,316.26; Wood, $28,750	129,816.26	
Appropriated, Current Income	47,367.82	
		1,363,921.69
For Recreational and Athletic Buildings:		
Walker Memorial Fund	$167,303.96	
Improvement Fund, for Walker Memorial	24,491.34	
Alumni Fund, for Walker Memorial	490,000.00	

SCHEDULE A–9 — (Continued)

For Recreational and Athletic Buildings (*Continued*):		
Edmund D. Barbour Fund, for Field House.	$55,000.00	
Alumni Fund, for Swimming Pool.....	228,479.15	
Stephen Bartlett Fund, for Swimming Pool.	117,071.64	
Class of 1923, Sun Garden.....	10,000.00	
Alumni Fund, for Briggs Field House and Track.....	156,169.13	
Edmund D. Barbour Fund, Sailing Pavilion.	13,363.89	
Anonymous for Boat House.....	30,000.00	
Appropriations from Current Income for:		
Boat House.....	6,500.00	
Sailing Pavilion.....	15,485.20	
Squash Courts.....	29,042.54	
Rifle Range.....	1,500.00	
		$1,344,406.85
Miscellaneous:		
From Sale of Land and Buildings in Boston 1916.....	$656,919.45	
Other Contributions, Appropriations, etc....	1,061,366.43	
		1,718,285.88
Total June 30, 1944 (Schedule A).....		$17,060,369.55

SCHEDULE B-1

APPROPRIATIONS FROM FUNDS AND OTHER CREDITS FOR TEACHING, RESEARCH AND ADMINISTRATION

Administration				$7,784.09
E. S. M. W. T.	$6,840.75	D. I. C.	$443.34	
Am. Optical Society	500.00			
Aeronautical Engineering				53,432.02
Wind Tunnel	37,484.95	D. I. C.	10,197.07	
Industrial Fund	5,750.00			
Architecture				1,500.00
E. S. M. W. T.	600.00	Special 1899	900.00	
Bemis Research				7,000.00
National Academy of Science	7,000.00			
Biology				46,970.26
Cabot Electronic Microscope	7,496.50	Eastman Nutrition Res.	185.37	
Electron Microscope	3,579.00	Nutrition Res.	1,277.84	
Arkel Fund	549.41	D. I. C.	5,391.75	
Lederle Fund	370.74	Lever Bros. Fell.	1,985.38	
Corn Industries Res.	40.00	Rockefeller Res.	18,116.00	
Pan American Res.	6,080.12	Penicillin Res.	460.65	
		Johnson Res. du Pont Fell.	1,437.50	
Building Construction				4,501.89
National Lime Asso.	4,288.89	E. S. M. W. T.	213.00	
Business and Engineering Administration				2,349.29
D. I. C.	977.76	E. S. M. W. T.	760.00	
Special 1943	611.53			
Chemical Engineering				32,273.82
D. I. C.	11,414.01	C. W. Service	18,833.36	
N. E. Gas Turbine Res.	1,800.00	Paint Films Special	226.45	
Chemical Engineering Practice School				750.70
D. I. C.	750.70			
Chemistry				67,118.18
Polysodium Fund	8,111.45	Liberty Mutual Ins.	85.71	
Richards Fund	216.72	du Pont Fell.	333.36	
Oxy Cellulose Fund	450.00	D. I. C.	34,449.92	
Harvard Univ.	2,355.29	Res.Corp.Vit.Res.	4,652.70	
Radioactivity Res.	3,000.00	C. W. Service	2,282.44	
		Sugar Res.	11,180.59	

SCHEDULE B-1 — (Continued)

Civil Engineering				$18,310.62
D. I. C.	$13,810.62	Oceanographic Institute	$4,500.00	
Economics				6,503.68
Rockefeller Grant	5,866.68	E. S. M. W. T.	637.00	
Division of Industrial Coöperation				35,105.19
Industrial Fund	35,105.19			
Electrical Engineering				78,819.69
Harbor Bldg. Navy	19,968.41	D. I. C.	28,480.42	
Center of Analysis	24,482.76	Special 1864	1,200.00	
Hyams Research	3,455.20	Network Analyzer	1,232.90	
English and History				750.00
Industrial Fund	750.00			
Graphics				426.00
E. S. M. W. T.	426.00			
Library				2,667.00
Vail Fund	2,000.00	Cilley Fund	667.00	
Mathematics				13,071.42
E. S. M. W. T.	540.00	D. I. C.	12,531.42	
Mechanical Engineering				30,942.29
Special No. 1254	6,450.00	E. S. M. W. T.	472.00	
Slater Fund	5,995.00	D. I. C.	16,833.55	
Forstmann Woolen	191.74	Textile Res.	1,000.00	
Metallurgy				23,332.51
Revere Brass and Copper Fellowship	240.00	Special 1818	1,120.11	
		D. I. C.	16,484.90	
Engineering Foundation Welding Research	475.00	Sheffield Fund	3,387.50	
		Clay Research	500.00	
Vanadium Alloys Co. Fund	1,125.00			
Meteorology				12,431.95
D. I. C.	6,064.45	Weather Bur. Res.	6,367.50	
Naval Architecture				2,000.04
D. I. C.	2,000.04			
Physics				52,402.10
Am. Pet. Inst. Res.	2,800.00	D. I. C.	34,083.37	
Radioactivity Res.	14,418.73	Gulf Fell.	1,100.00	
Solar Energy Research				6,933.34
Solar Energy Fund	6,808.34	D. I. C.	125.00	
Total (Schedule B)				$507,376.08

SCHEDULE B-2

RENTALS AND OTHER INCOME

Anonymous for Chemical Engineering	$1,000.00
Photographic Service, Rental	5,000.00
Land Rentals, etc.	6,248.94
General Electric Company for Course VI-A	3,750.00
Eastman Kodak Co. for Chemical Engineering	1,000.00
Trustees of H. C. Frick Estate	4,271.80
United States Navy Fire Control Research	750.00
United States Navy Torpedo Research	1,500.00
Total (Schedule B)	$23,520.74

SCHEDULE B-3

SALARIES OF TEACHERS, ACCESSORY TO TEACHING AND LABORATORY SERVICE

Department	*Teachers Salaries*	*Wages Accessory to Teaching*	*Wages Laboratory Service*	*Total*
Aeronautical Engineering	$89,420.56	$2,697.60	$31,353.93	$123,472.09
Architecture	57,602.57	6,492.78	.....	64,095.35
Bemis Research	8,950.00	.....	.....	8,950.00
Biology and Biological Eng.	72,880.40	6,275.02	14,303.09	93,458.51
Business and Eng. Adminis.	41,394.25	5,649.80	.....	47,044.05
Building Eng. and Construction	23,945.56	1,330.00	1,500.00	26,775.56
Chemical Engineering	99,910.08	4,789.94	6,954.76	111,654.78
Chemical Eng. Practice School	10,540.00	.....	.....	10,540.00
Chemistry	198,722.35	7,554.50	15,618.96	221,895.81
Civil Engineering	112,633.58	2,912.68	5,712.13	121,258.39
Division of Laboratory Supplies	.....	.....	21,489.03	21,489.03
Economics	61,261.10	3,563.19	.....	64,824.29
Electrical Engineering	186,167.10	10,934.80	33,490.63	230,592.53
English and History	78,391.65	2,303.00	.....	80,694.65
Gen. Eng. and General Science	4,000.00	1,140.00	.....	5,140.00
General Studies	500.00	.....	.....	500.00
Geology	28,695.58	2,491.15	2,657.42	33,844.15
Graphics	35,118.23	790.00	.....	35,908.23
Industrial Relations Section	27,190.16	.....	.....	27,190.16
Lantern Operation	.....	.....	2,119.01	2,119.01
Mathematics	97,282.85	2,460.00	.....	99,742.85
Mechanical Engineering	236,074.63	10,475.08	26,000.17	272,549.88
Metallurgy	80,721.94	3,250.79	9,290.68	93,263.41
Meteorology	66,823.05	8,813.08	.....	75,636.13
Military Science	4,464.17	1,140.00	.....	5,604.17
Modern Languages	24,200.00	.....	.....	24,200.00
Naval Architecture	51,263.89	2,160.86	1,999.16	55,423.91
Physics	139,811.12	6,784.95	18,514.01	165,110.08
Public Health	13,277.76	1,346.40	.....	14,624.16
Solar Energy Research	6,933.34	.....	.....	6,933.34
Totals	$1,858,175.92	$95,355.62	$191,002.98	$2,144,534.52

(Schedule B)

SCHEDULE B-4

DEPARTMENT EXPENSES

Aeronautical Engineering				$8,293.62
General	$3,900.77	Aero. Inst. Lab.	$3,998.50	
Staff Scholarships	200.00	Vibration Research	194.35	
Architecture				1,995.01
General	1,695.01	Staff Scholarships	300.00	
Bemis Research				114.38
General	114.38			
Biology and Biological Engineering				4,577.69
General	2,648.96	Biol. Eng. Equip.	899.73	
Staff Scholarships	1,029.00			
Building Engineering and Construction				603.99
General	603.99			
Business and Engineering Administration				3,237.13
General	2,058.13	Puerto Rico Fellow.	800.00	
Staff Scholarships	379.00			
Chemical Engineering				10,230.88
General	5,467.60	Practice School	1,643.28	
Staff Scholarships	3,120.00			
Chemistry				13,882.35
General	7,253.35	Staff Scholarships	6,629.00	
Civil Engineering				7,510.48
General	3,049.72	Structural Laboratory	466.42	
Staff Scholarships	550.00	Summer Camp	3,444.34	
Economics and Social Sciences				3,097.27
General	2,143.27	Staff Scholarships	954.00	
Electrical Engineering				14,172.12
General	11,094.12	von Hippel Sp. 1946	536.00	
Staff Scholarships	2,542.00			
English and History				1,045.56
General	1,045.56			
General Science and Engineering				29.42
General	29.42			
General Studies				168.26
General	168.26			

SCHEDULE B-4 — (Continued)

Geology				$1,142.85
General	$992.85	Staff Scholarships	$150.00	
Graphics				367.11
General	367.11			
Humanics				277.44
General	277.44			
Industrial Relations Section				4,986.66
General	4,686.66	Staff Scholarships	300.00	
Mathematics				5,255.34
General	4,885.34	Staff Scholarships	370.00	
Mechanical Engineering				18,426.04
General	14,561.04	Special 1994	100.00	
Staff Scholarships	1,975.00			
Automotive Lab. Special 1953	1,790.00			
Metallurgy				4,301.51
General	3,006.86	Chipman Research	53.78	
Staff Scholarships	700.00	Mineral Dressing Research	540.87	
Meteorology				23,182.51
General	18,647.51	Staff Scholarships	4,535.00	
Military Science				655.69
General	655.69			
Modern Languages				553.06
General	553.06			
Naval Architecture				860.94
General	860.94			
Physics				13,272.15
General	7,292.15	Staff Scholarships	5,980.00	
Public Health				330.76
General	330.76			
Total (Schedule B)				$142,570.22

Departmental Expenses include certain appropriations carried to Current Funds, not fully expended at June 30, 1944.

SCHEDULE B-5

LIBRARY AND MUSEUM

Library		$78,395.57
Salaries of Officers	$14,944.00	
Wages, Office and Clerical	45,306.57	
Expenses	18,145.00	
Museum		6,844.19
Museum Committee	$291.66	
Dard Hunter Museum	5,000.00	
Pratt Museum	1,552.53	
Total (Schedule B)		$85,239.76

SCHEDULE B-6

CLERICAL AND OFFICE EXPENSE — ADMINISTRATION

	Salaries	*Expense*	*Total*
President	$7,390.91	$2,969.14	$10,360.05
Dean of Engineering	1,800.00	214.18	2,014.18
Dean of Science	3,041.53	254.83	3,296.36
Dean of Humanities	.....	182.15	182.15
Dean of Students	1,978.80	1,134.99	3,113.79
Dean of Graduate School	.....	158.21	158.21
Registrar	33,115.76	12,235.35	45,351.11
Director of Admissions	8,432.06	4,720.37	13,152.43
Treasurer and Bursar	50,007.39	8,905.25	58,912.64
Superintendent	10,034.31	904.61	10,938.92
News Service	1,544.30	725.87	2,270.17
Undergraduate Scholarship and Loan Fund Board	6,230.77	2,650.56	8,881.33
New Student Publicity	.....	1,971.45	1,971.45
Placement Bureau	6,267.16	1,811.00	8,078.16
Register of Former Students	.....	4,640.10	4,640.10
Personnel Office	4,768.89	971.78	5,740.67
Total (Schedule B)	$134,611.88	$44,449.84	$179,061.72

SCHEDULE B-7

GENERAL ADMINISTRATION EXPENSE

Bulletins				$10,362.07
President's Report	$3,007.97	General Catalogue	$5,811.50	
Directory	506.00	Research Reports	494.60	
Undergraduate Schedule	542.00			
Other Publicity				2,643.36
Honoraria	750.00	Tech Review to Tech Clubs	560.00	
Tech Review to Schools	1,333.36			
General Expense				268,622.48
Allowances	5,000.00	Employees' Pensions and Insurance	43,786.41	
Pensions	19,560.10	Graduation, etc.	6,750.64	
[1]Insurance, etc.	32,583.68	Travel	6,545.54	
Taxes, Cambridge	2,239.52	Telephone Service	45,213.76	
[2]Auditing	21,502.88	Dues, Fees, etc.	4,259.81	
Staff Pensions	80,474.41	Services (net)	705.73	
Special Expense				77,312.65
Special Scholarship	600.00	President's Ent. Fd.	2,578.02	
Alumni Fund	2,400.00	Building 5 Special	2,196.73	
New Equipment	9,768.06	Group Air Insurance	1,453.38	
Tech Matrons	400.00	Basket Ball Special	1,034.30	
Space Changes	4,674.63	Employees' Allow.	50,480.00	
		[3]Coal Conversion	1,727.53	
Total (Schedule B)				$358,940.56

[1] Includes Workmen's Compensation, General Liability and all coverages except Fire Insurance (see Schedule B).
[2] Audit Expense includes special accounting to meet expanded operations.
[3] Additional.

SCHEDULE B-7a

SPECIAL ADMINISTRATION EXPENSE

Sabotage Insurance			$565.00
Special Salary			2,000.00
Armed Services Office			100.36
Foreign Travel Insurance			1,465.70
Brimmer School			10,000.00
Guard Service and Safety Committee Expense			34,030.76
War Service Guide Book			1,298.94
Division of Industrial Coöperation:			
Direct Expense		$214,719.02	
Nonreimbursable items (1942–43)	$444.44		
Nonreimbursable items (1943–44)	46,008.16		
		46,452.60	
[4]Use of Facilities		142,042.00	
[5]Interest Loss		22,234.33	
			425,447.95
Training Programs:			
Use of Facilities			74,825.00
Total (Schedule B)			$549,733.71

[4] Carried to Reserve for Restoration.
[5] On advances allowed D. I. C. contracts (excluding O.S.R.D.) carried to Income Equalization Reserve.

SCHEDULE B-8

DEPARTMENT OF BUILDINGS AND POWER

Building Service				$163,341.72
Janitors	$56,978.74	Heat'g and Vent'g	$16,569.84	
Night Cleaners	47,990.14	Shop Foreman (net)	3,797.68	
Watchmen	15,978.08	Mail and Elevators	8,880.27	
Window Clean.	4,356.72	Shipper, Stock Room, Matron, Messenger	8,790.25	
Power Plant and Electric Power (net)				220,599.51
Fuel Oil			$40,859.39	
Coal			75,823.83	
Cambridge Electric Light Co., Power			111,228.85	
Salaries			27,394.48	
Repairs			12,621.92	
Water, Supplies, etc.			6,103.41	
Total Operating Cost			$274,031.88	
[1]Less: Credits — Electric Power		$22,879.87		
Steam		30,552.50	53,432.37	
Repairs, Alterations and Maintenance				122,833.02
Buildings	$51,785.28	Water and Gas	$17,916.44	
President's House	6,803.22	Furniture	5,094.14	
Grounds, Roads, etc.	15,319.52	Elevators	3,602.57	
Mains and Conduits	10,726.66	Miscellaneous(net)	11,585.19	
Total (Schedule B)				$506,774.25

[1] Including Dormitories, Graduate House, Walker Memorial and Bexley Hall.

SCHEDULE B-9

MEDICAL DEPARTMENT

Salaries, Staff				$22,370.26
Expense of Clinic				22,418.73
Salaries	$12,170.73	X-Ray Operation	$1,524.01	
Supplies, etc.	2,579.38	Physical Examinations	6,144.61	
Expense of Infirmary				23,067.84
Salaries	$15,760.39	Food (net)	$3,277.03	
Equipment	1,490.18	Laundry	2,540.24	
Total (Schedule B)				$67,856.83

SCHEDULE B-10

UNDERGRADUATE BUDGET BOARD

Athletic Coaches Salaries	$26,832.59	
Undergraduate Dues	14,749.00	
Walker Memorial (excluding Dining Service) (net)	13,277.13	
Athletic Fields, Maintenance	25,336.56	
Sailing Pavilion and Activities (net)	6,720.73	
Boat House and Launches, Maintenance	6,277.32	
Musical Clubs	250.00	
Swimming Pool	9,309.21	
Publicity and Administration Expense	475.24	
Total (Schedule B)		$103,227.78

SCHEDULE B-11

UNDERGRADUATE DORMITORY OPERATION

Income:			
Rentals		$160,679.15	
Miscellaneous		4,434.26	
Total (Schedule B)			$165,113.41
Expense:			
Salaries	$55,086.29		
Light, Heat, Power, Water	18,052.45		
Repairs	22,713.90		
Supplies (net)	7,509.45		
Equipment	484.76		
Laundry	6,564.07		
Administration	2,920.53		
Mortgage Interest	6,000.00		
		$119,331.45	
Transferred to Educational Plant Capital		30,000.00	
Total (Schedule B)		$149,331.45	
Balance		15,781.96	
Total			$165,113.41

[1]*SCHEDULE B-12*

GRADUATE HOUSE OPERATION

Income:		
Rentals	$104,693.00	
Miscellaneous	1,115.30	
Total		$105,808.30
Expense:		
Salaries	$33,086.97	
Real Estate Tax	9,173.01	
Light, Heat, Power and Water	12,880.00	
Repairs	13,795.38	
Supplies (net)	5,276.49	
Equipment	1,983.12	
Laundry	3,267.66	
Administration	5,486.59	
Depreciation	14,859.08	
Total	$99,808.30	
Balance—Income (Schedule A-1)	6,000.00	
Total		$105,808.30

[1]Not included in Auxiliary Activities — see pp. 158–159.

SCHEDULE B-13

WALKER DINING SERVICE

Income:			
Cash		$378,262.11	
Total (Schedule B)			$378,262.11
Expense:			
Food	$224,279.94		
Salaries	87,411.70		
Light, Heat, Power, Water	7,872.18		
Laundry	2,874.06		
Equipment	11,252.85		
Repairs	6,764.29		
Administration	2,512.21		
Occupancy	12,000.00		
Total Expense		$354,967.23	
Deduct: Increase in Inventory at June 30, 1944		2,728.67	
		$352,238.56	
Balance transferred to Walker Dining Service Reserve		26,023.55	
Total (Schedule B)			$378,262.11

SCHEDULE B-14

GRADUATE HOUSE DINING SERVICE

Income:			
Cash		$365,390.73	
Total (Schedule B)			$365,390.73
Expense:			
Food	$252,937.42		
Salaries	85,544.37		
Light, Heat, Power, Water	3,908.02		
Laundry	1,314.08		
Equipment and Supplies	11,031.65		
Repairs	2,873.42		
Administration	2,271.43		
Total Expense		$359,880.39	
Add: Decrease in Inventory at June 30, 1944		377.85	
		$360,258.24	
Balance transferred to Graduate House Dining Service Reserve		5,132.49	
Total (Schedule B)			$365,390.73

A BRIEF DESCRIPTION OF THE ENDOWMENT AND OTHER FUNDS OF THE INSTITUTE

Including funds which have been wholly expended since 1916 for plant, equipment, facilities and special projects. The reference numbers correspond with the active funds, listed by groups on pp. 173–181, Schedule A-2.

206 ALBERT FUND, 1930–44. Gifts from anonymous donor covering seventeen years rental of M. I. T. Student House on Bay State Road, Boston.

208 ALPHA CHI SIGMA HOUSE FUND (Alpha Zeta Chapter), 1935–1943, $3,500. Deposited for investment purposes only.

460 AMERICAN INSTITUTE OF BAKING FUND, 1939–42. Contributions to provide fellowships in Food Technology on problems relating to baking.

170 ANONYMOUS (H) 1942–43, $10,000. For general purposes of the Institute.

171 ANONYMOUS (M) 1941, $1,500. For general purposes of the Institute.

210 ANONYMOUS, 1924, $1,052.50. Gift of member of Class of 1924 to accumulate until twenty-fifth reunion of Class in 1949.

461 ANONYMOUS, 1944, $500. For fellowship.

600 LOUIE G. APPLEBEE, 1941–42, $400. Bequest for assisting deserving students.

212 APPLIED MATHEMATICS FUND, 1943, $25,000. Appropriated from surplus to provide support for postwar program.

101 GEORGE ROBERT ARMSTRONG FUND, 1902, $5,000. Bequest of George W. Armstrong in honor of son. Income available for general purposes of the Institute.

201 ARMY AND NAVY RESERVE FUND, 1943–44, $73,954.52. Special reserve for renegotiation and possible terminations expenses incidental to war training contracts.

213 ASSOCIATION OF CLASS SECRETARIES FUND, 1940, $2,252.79. Held for investment purposes only.

501 ELISHA ATKINS SCHOLARSHIP FUND, 1894, $5,000. Bequest of Mary E. Atkins.

401 WILLIAM PARSONS ATKINSON FUND, 1918, $13,000. Bequest of Charles F. Atkinson as a memorial to father — for English Department of the Institute.

601 EDWARD AUSTIN FUND, 1899, $400,000. Bequest. Interest paid to needy, meritorious students and teachers to assist in payment of studies.

580 BABSON FUND, 1938, $10,000. Gift of Babson's Statistical Organization, Inc. Income to be applied at intervals of not more than three years as prizes for one or more persons for certain studies and research in Economics.

603 THOMAS WENDELL BAILEY FUND, 1914, $2,200. Bequest. Income used for rendering assistance to needy students in Department of Architecture.

604 CHARLES TIDD BAKER FUND, 1922, $20,000. Bequest. One-half of net income for assistance of poor and worthy students and one-half to principal.

172 EDMUND DANA BARBOUR FUND, 1926, $847,000. Bequest. Principal and income for general purposes of Institute. Over $800,000 used for buildings and equipment.

321 WALTER S. BARKER FUND, 1927, $10,000. Bequest. Income only available for purposes of the Library.

SIDNEY BARTLETT FUND, 1889, $10,000. Bequest. Appropriated for new dormitories, 1924.

173 STEPHEN L. BARTLETT FUND, 1939–41, $369,822.40. Bequest. Principal and income unrestricted—$240,000 appropriated for educational plant including swimming pool and current purposes.

214 BASKET BALL FUND. Excess receipts from Eastern Massachusetts basket ball competitions held for account of M. I. T. A. A. for investment purposes only.

441 ALBERT FARWELL BEMIS FUND, 1938, $270,000. Bequest. To establish and maintain the Albert Farwell Bemis Foundation for research on housing. Increased in 1941 through proceeds of sale of land carried under No. 442.

442 ALBERT FARWELL BEMIS FUND — LAND ACCOUNT, 1938, $119,450. Estimated book value of land in Wellesley, Newton and Dedham received under bequest. Proceeds of sales carried to No. 441.

ALBERT FARWELL BEMIS, 1923. $100,000. Gift. Used for new dormitory unit, 1923.

322 SAMUEL BERKOWITZ FUND, 1943, $10,000. Gift. For general purposes of the Institute Library.

215 BESS BIGELOW FUND, 1936–38, $25,000. Anonymous donation for special purposes subject to approval of President.

503 BILLINGS STUDENT FUND, 1900, $50,000. Bequest of Robert C. Billings. Students receiving benefit are expected to abstain from use of alcohol or tobacco in any form.

217 BIOLOGY—ROCKEFELLER FUND, 1941, $70,000. For purchase of electron microscope and research thereunder.

103 GEORGE BLACKBURN MEMORIAL FUND, 1931–43, $961,249.84. Bequest of Harriette A. Nevins. Income for general purposes.

STANTON BLAKE FUND, 1889, $5,000. Bequest. Used for educational plant, 1926.

581 ROBERT A. BOIT FUND, 1921, $5,000. Bequest. Income to stimulate students' interest in best use of English Language through annual prizes or scholarships.

402 FRANK WALTER BOLES MEMORIAL FUND, 1915, $25,200. Under agreement between Harriet A. Henshaw and M. I. T., income paid to committee of Department of Architecture, to purchase fine arts material and to supplement and strengthen instruction in architectural design.

606 LEVI BOLES FUND, 1915, $10,000. Bequest of Frank W. Boles in memory of father. Income for assistance of needy and deserving students.

463 WILLIAM SUMNER BOLLES FUND, 1924, $9,400. Bequest of William P. Bolles in memory of son, to maintain either fellowship, traveling scholarship or resident scholarship. Recipient to have character, ability or promise.

504 JONATHAN BOURNE FUND, 1915, $10,000. Bequest of Hannah B. Abbe. Income to aid deserving students.

505 ALBERT G. BOYDEN FUND, 1931–41, $602,729.05. Bequest. Estate of Elizabeth R. Stevens. Income for scholarships. Preference to students from Fall River and Swansea, Mass.

104 CLARA H. BRIGGS, 1941, $12,512.25. Bequest. Income for general purposes.

218 MAJOR BRIGGS FUND, 1940–42, $32,969.71. Bequest under will of Frank Harrison Briggs, the principal and/or income to be used as Advisory Council in Athletics may decide. No part of either principal or income to be used to defray living expenses or tuition fees of any student.

506 HARRIET L. BROWN FUND, 1922, $6,000. Bequest. Income to needy and deserving young women students, as would otherwise be unable to attend. In case two or more applicants of equal merit, preference given to native of either Massachusetts or New Hampshire.

464 MALCOLM COTTON BROWN FUND, 1919, $11,000. Under agreement between Caroline Cotton Brown, Charles A. Brown and M. I. T., to establish memorial to son, Lieutenant Brown, R. A. F., for advanced study and research in Physics.

608 BURSAR'S FUND, 1907, $6,000. Bequest of Lyman S. Rhoads. Income and repayments used for loans to students in discretion of Bursar, subject to approval of President and Treasurer.

443 SAMUEL CABOT FUND, 1912, $50,000. Gift of Helen N. Cabot in honor of husband. Income for purchase of apparatus and supplies required in conduct of research in Industrial Chemistry.

105 JAMES A. CARNEY FUND, 1944, $13,000. Bequest. Income for general purposes.

HOWARD A. CARSON FUND, 1932, $1,000. Bequest. Used for new equipment.

610 MABEL BLAKE CASE FUND, 1920, $25,000. Bequest of Caroline S. Freeman. Income to aid deserving students (preferably women) who are in need of assistance.

508 NINO TESHER CATLIN FUND, 1926, $1,000. Gift of Maria T. Catlin in memory of son. Income for needy and deserving students — not a condition but if possible, award to be made to member of Lambda Phi Fraternity.

404 WILLIAM E. CHAMBERLAIN FUND, 1917–19, $6,000. Bequest. Income used for Department of Architecture.

465 FRANCIS W. CHANDLER FUND, 1927–36, $4,511. Originally a gift from Architectural Society and used as a loan fund to be administered by Head of Architectural Department. Increased by $5,000 in 1939, gift of Mr. and Mrs. William Emerson and income to be used for Travelling Fellowship in City Planning.

WILLIAM L. CHASE FUND, 1925, $11,590.09. Bequest, $7,500 appropriated for Homberg Infirmary, 1927. Balance used for educational plant, 1928.

405 CHEMICAL ENGINEERING PRACTICE FUND, 1915–16, $300,000. Gift of George Eastman for Chemical Engineering Stations provided Institute will carry forward this plan of education for a reasonable period.

220 EDNAH DOW CHENEY FUND, 1905–06, $13,900. Bequest. Income for maintenance and care of Margaret Cheney Room for women students.

106 CHARLES CHOATE FUND, 1906–21, $35,800. Bequest. Income for general purposes.

325 FRANK HARVEY CILLEY FUND, 1913, $57,700. Bequest. Income and such part of principal as necessary for purchase of suitable books, photographs, statuary, etc., for library and gymnasium of Walker Memorial.

509 LUCIUS CLAPP FUND, 1905, $4,900. Bequest. Income to worthy students who may not be able to complete their studies without help.

272 CLASS OF 1874 FUND, 1934, $180. Held subject to use by Class of 1874.

273 CLASS OF 1887 FUND, 1941, $2,668.58. Held for use of Class and for final distribution as provided in Declaration of Trust.

510 CLASS OF '96 FUND, 1923–41, $2,397. Gift. Award subject to approval of Class Secretaries. Preference to descendants of members of Class. Scholarships to be considered a loan to be repaid when and if able.

270 CLASS OF 1898 FUND, $5,535. By subscription of certain members of class from 1927–31. Income only for scholarship loans, as authorized by committee of class.

583 CLASS OF 1904 FUND, 1925, $392. Contributions received by Professor Gardner for Architectural Department prizes.

511 CLASS OF 1909 SCHOLARSHIP FUND. Being accumulated through contributions and from proceeds of life insurance policies. Principal to be invested, income available for scholarship aid with preference to direct descendants of members of Class of 1909.

221 CLASS OF 1914 FUND. Held for investment purposes only.

512 CLASS OF 1917 SCHOLARSHIP FUND, 1942, $1,032.06. Established on the twenty-fifth anniversary of the Class, the income and principal to be used to assist deserving students with preference to descendants of members of Class. Scholarships to be repayable without interest.

222 CLASS OF 1918 (ORGAN) FUND. Subscriptions by class members toward purchase of an organ for Walker Memorial.

224 CLASS OF 1919, SPECIAL, $166.50, 1944. Contributions from class members toward gift to M. I. T. account of twenty-fifth reunion of class.

513 CLASS OF 1922 SCHOLARSHIP FUND, 1942. For scholarships.

513A CLASS OF 1922 SPECIAL SCHOLARSHIP FUND, 1944, $4,800. For special scholarships.

268 CLASS OF 1934 FUND, SPECIAL. Held for investment purposes only.

514 CLASS OF 1938 SCHOLARSHIP FUND, 1938–42, $599.14. Gift of Class of 1938. Income for scholarships.

225–240 inc.

CLASS FUNDS

Note: These funds are being accumulated for the several classes whose members took out life insurance toward a gift to the Institute on their Twenty-Fifth Reunions. From certain of these, a portion may be applied in accordance with the terms of the several plans toward keeping alive policies that might lapse on account of non-payment or as otherwise designated. By vote of the Class of 1923, $10,000 was appropriated in 1940 from their Class Fund toward construction of the sun garden adjoining new swimming pool.

301 SAMUEL C. COBB FUND, 1916, $36,000. Bequest. Income for salaries of President and professors.

612 FRED L. AND FLORENCE L. COBURN FUND, 1932, $5,000. Bequest. Income to aid needy and worthy students, preference being given to those residing in Somerville, Mass.

614 COFFIN MEMORIAL FUND, 1929, $35,000. Gift of the Estate of Charles A. Coffin. For loans or other aid to students as determined by Executive Committee.

466 COLLAMORE FUND, 1916, $10,000. Bequest of Helen Collamore. Income primarily to aid women students in post-graduate courses, secondarily, for purchase of instruments for Chemical Laboratory.

HELEN COLLAMORE FUND, 1917, $12,384.97. Bequest. Used for new dormitories, 1924.

SAMUEL P. COLT FUND, 1920–22, $20,000. Bequest. Used for new dormitories, 1924.

515 WILLIAM A. CONANT FUND, 1943–44, $71,976. Bequest. The income to provide for scholarship carrying annual stipend of $800 for New England Protestant boys of Protestant parents, preference to be given to graduates of the public schools of Brookline.

241 ARTHUR J. CONNER, 1941–44, $19,000. Gifts in anticipation of and for ultimate addition to residue of a trust for construction of a dormitory.

516 ALBERT CONRO FUND, 1943, $25,000. Bequest for scholarship.

615 GEORGE R. COOKE, 1939–40, $3,500. Gift of George R. Cooke, Jr. Income to be awarded, preferably in Civil Engineering or related field, to student preparing for Public Service and Government.

242 COSMIC TERRESTRIAL RESEARCH FUND, 1938–44, $68,600. Gifts (anonymous) for special research.

CRANE AUTOMOTIVE FUND, 1928, $5,000. Gift of Henry M. Crane. Used for purchase of equipment for Aeronautical Laboratory, 1928–40.

516 LUCRETIA CROCKER FUND, 1916, $50,000. Bequest of Matilda H. Crocker. Income for establishment of scholarships for women in memory of sister.

406 CROSBY HONORARY FUND, 1916, $1,633. Contributions in honor of William Otis Crosby (Professor Emeritus). Income for upbuilding of the Geological Department, especially its collections.

EDWARD CUNNINGHAM FUND, 1917, $15,000. Gift. For new building and equipment at Civil Engineering Summer Camp, Maine.

467 DALTON GRADUATE CHEMICAL FUND, 1896, $5,000. Gift of Charles H. Dalton. Income for scholarships for American male graduates of M.I.T., for advanced chemical study and research — preference given to chemical research especially applicable to textile industries.

517 ISAAC W. DANFORTH FUND, 1903, $5,000. Bequest of James H. Danforth. Income for scholarship purposes as a memorial to brother.

N. LORING DANFORTH FUND, 1937, $5,000. Bequest. Principal and income for general purposes. Appropriated for educational plant, 1940.

616 DEAN'S FUND, 1924, $3,350. Contributions. To be loaned by Dean to needy students.

618 CARL P. DENNETT FUND, 1926, $500. Gift. To be loaned to students, preferably Freshmen, at discretion of President.

243 DAVIS R. DEWEY MEMORIAL FUND, 1943, $500. To provide a suitable memorial for the late Professor Dewey.

520 ANN WHITE DICKINSON FUND, 1898, $40,000. Bequest. Income used to establish free scholarships. Such persons enjoying benefit shall be worthy young men of American origin.

620 DORMITORY FUND, 1903, $2,700. Contributions. Income for scholarship purposes.

GEORGE B. DORR FUND, 1890, $49,573.47. Bequest. Appropriated for educational plant, 1918.

407 SUSAN E. DORR FUND, 1914, $95,000. Bequest. Income for use and benefit of Rogers Physical Laboratory.

468 DOW CHEMICAL COMPANY FUND, 1939–40. Gift. $1,500 for fellowships.

244 DRAMA CLUB THEATRE FUND, 1938, $400. Deposited by Drama Club of M.I.T. toward future purchase of theatrical equipment.

107 EBEN S. DRAPER FUND, 1915, $100,000. Bequest. Income used for general purposes of the Institute.

CHARLES C. DREW FUND, 1920, $305,171.52. Bequest. Appropriation to educational plant, 1921–24.

521 THOMAS MESSINGER DROWN FUND, 1928, $50,000. Bequest of Mary Frances Drown. Income to establish scholarships for deserving undergraduate students.

174 CARBON P. DUBBS, 1943, $5,000. Gift. For general purposes.

109 COLEMAN DU PONT FUND, 1931–38, $221,325. Bequest. Income for support and maintenance of the Institute.
PIERRE DU PONT FUND, 1938, $25,000. Gift. Used for new equipment.

469 DU PONT DE NEMOURS FUND. For graduate scholarship in Chemical Engineering.

111 EASTMAN CONTRACT FUND, 1924, $9,500,000. Gift of George Eastman. Income for general purposes of the Institute.

113 GEORGE EASTMAN BUILDING FUND, 1916–17, $2,500,000. Gift of George Eastman on condition that $1,500,000 be raised by alumni and others. Balance to be used as needed for new educational buildings. $1,225,000 used for George Eastman Research Laboratories in 1932, $725,000 for Rogers Building and Wind Tunnel in 1939, $268,700 for one-half of building No. 12 in 1943.

409 GEORGE EASTMAN FUND, 1918, $400,000. Gift of George Eastman. Income for Chemistry and Physics. Principal available for addition to EASTMAN BUILDING FUND after latter is exhausted.

The total of the gifts of GEORGE EASTMAN to the Institute for both buildings and endowments was $20,500,000.

115 CHARLES W. EATON FUND, 1929–43, $261,148. Bequest. Income for advancement of general purposes of Institute. (From 1911 to 1923 Mr. Eaton gave $15,501.45 for Civil Engineering Summer Camp in Maine.)

117 EDUCATIONAL ENDOWMENT FUND, 1920–21, $7,574,000. $4,000,000 gift from George Eastman and balance contributed by alumni and others. Income for current educational expenses.

119 MARTHA ANN EDWARDS FUND, 1890, $30,000. Gift. Income for general purposes.

247 ELECTRONICS SPECIAL FUND, 1943, $50,000. Appropriations from surplus for postwar research.

621 FRANCES AND WILLIAM EMERSON FUND, 1930, $100,000. Gift. Income for aid of regular and special students in Department of Architecture.

584 WILLIAM EMERSON PRIZE FUND, 1939, $2,059. Contributed by friends as a fund for prizes to architectural students.

F. W. EMERY FUND, 1916, $120,000. Bequest. Used for buildings and equipment.

121 WILLIAM ENDICOTT FUND, 1916, $25,000. Bequest. Income for general purposes.

205 ENDOWMENT RESERVE FUND, 1924. Created and otherwise increased by gains from sales or maturities of investments and decreased by premium amortization of bonds and losses and charges from sales or maturities. Belongs to all funds sharing general investments.

ARTHUR F. ESTABROOK FUND, 1923–38, $100,800. Bequest. Used for purchase of land and equipment.

IDA F. ESTABROOK FUND, 1926–37, $22,157.51. Bequest. Used for educational plant.

522 FARNSWORTH FUND, 1889, $5,000. Bequest of Mary E. Atkins. Income for scholarships.

HENRIETTA G. FITZ FUND, 1930, $10,000. Bequest. For general purposes. Appropriated for educational plant, 1940.

410 HAROLD H. FLETCHER FUND, 1942, $10,000. Bequest under will of Herbert H. Fletcher. To endow a bed in the Institute's Infirmary.

23 CHARLES LEWIS FLINT FUND, 1889, $5,000. Bequest. Income for support of worthy student, preference given graduate of English High School, Boston.

327 CHARLES LEWIS FLINT FUND, 1889, $5,000. Bequest. Income for purchase of books and scientific publications for library.

303 SARAH H. FORBES FUND, 1901, $500. Gift of Malcolm Forbes as memorial to mother. Income for salaries.

524 SARAH S. FORBES FUND, 1913, $3,400. Gift of Sarah S. Forbes, William B. Rogers and Henry S. Russell. Income for maintenance and education of scholar in M. I. T.

123 FRANCIS APPLETON FOSTER FUND, 1922, $1,000,000. Bequest. Income for purposes of Institute.

125 JOHN W. FOSTER FUND, 1938, $299,650. Bequest. Income for purposes of the Institute.

248 MATILDA A. FRASER FUND, 1942, $859.89. Bequest. Towards construction of a women's dormitory.

127 ALEXIS H. FRENCH FUND, 1930, $5,000. Bequest. Income for general purposes of Institute.

CAROLINE L. W. FRENCH FUND, 1916, $100,843.34. Bequest. Used for new equipment, 1928.

129 JONATHAN FRENCH FUND, 1915–16, $25,000. Bequest of Caroline L. W. French. Income for purposes of the Institute.

131 HENRY CLAY FRICK FUND, 1925–38, $1,831,000. Bequest. Institute received ten shares of a total of one hundred shares of his residuary estate. Income for general purposes.

249 FRIENDS OF THE LIBRARY FUND. Contributions transferred to the Alumni Association for purchase of books and for other purposes of the Institute Library.

WALTER L. FRISBIE FUND, 1923, $7,614.98. Bequest. Used for educational plant, 1928.

175 ERASTUS C. GAFFIELD FUND, 1944, $180,000. Bequest. Principal and income available for general purposes.

305 GEORGE A. GARDNER FUND, 1898, $20,000. Gift. Income for salaries of instructors.

133 GENERAL ENDOWMENT FUND, 1921, $1,527,000. Contributions by alumni and others to meet George Eastman's condition relative to gift of $2,500,000, his building fund (No. 108).

622 NATHAN R. GEORGE FUND, 1943, $29,197.37. Bequest. Income to be loaned to undergraduates under certain administrative conditions.

623 NORMAN H. GEORGE FUND, 1919–25, $93,400. Bequest. Income for assistance of worthy and needy students.

625 ARTHUR B. GILMORE FUND, $10,000, 1941. Bequest. Net income to assist needy students, members of Beta Theta Pi — not more than two students in any one year.

CHARLES W. GOODALE FUND, 1929, $50,000. Bequest. Used for new dormitory, 1930.

525 BARNETT D. GORDON FUND, 1942–44, $10,000. The income to be used as scholarships for deserving students.

135 ELIOT GRANGER FUND, 1936, $20,000. Bequest under will of Mary Granger in memory of deceased son. Income for the general purposes of the Institute.

627 JOHN A. GRIMMONS FUND, 1930–44. Bequest of C. Lillian Moore of Malden. Principal held by Old Colony Trust Co., Trustee. Income for loans to undergraduates in Electrical Engineering. Unused balances available for purchase of apparatus and equipment in Department of Electrical Engineering.

527 HALL-MERCER SCHOLARSHIP FUND, 1940–44, $65,329.72. Bequest under will of Alexander G. Mercer. The income to be used for tuition and other necessary expenses of students.

GEORGE WYMAN HAMILTON FUND, 1935, $54,414.15. Appropriated for new equipment, 1937–39.

629 JAMES H. HASTE FUND, 1930, $181,000. Bequest. Income for aid of deserving students of insufficient means.

136 CHARLES HAYDEN FUND, 1937, $1,000,000. Bequest of Charles Hayden. Income for general educational purposes of the Institute.

CHARLES HAYDEN, 1925, $42,700.76. Gift. Used for educational plant.

CHARLES HAYDEN, 1927, $100,000. Gift for new dormitories.

528 CHARLES HAYDEN MEMORIAL SCHOLARSHIP FUND, 1940–43, $100,000. From the Charles Hayden Foundation. For entrance scholarships. Preference given to students from Boston and New York.

250 CHARLES HAYDEN FOUNDATION DENTAL CLINIC FUND, 1940, $10,000. To assist in establishment of and necessary equipment for a Dental Clinic available to entire student body, faculty and employees.

309 JAMES HAYWARD FUND, 1866, $18,800. Bequest. Income for salaries.

JAMES W. HENRY FUND, 1935, $8,226. Bequest. Used for new equipment.

176 WILLIAM T. HENRY FUND, 1943–44, $21,335. Income from Trust Fund held outside M.I.T. Fund and income for general purposes.

137 JOHN MARSHALL HILLS, 1941–42, $366,181.10. Bequest. Income for general purposes of M. I. T.

FREDERICK S. HODGES FUND, 1928, $57,316.26. Bequest. Appropriated for new dormitories.

177 ELLIS HOLLINGSWORTH FUND, 1940, $10,000. Bequest for unrestricted use.

531 GEORGE HOLLINGSWORTH FUND, 1916, $5,000. Bequest of Rose Hollingsworth. Income used for scholarship.

585 ROGER DEFRIEZ HUNNEMAN PRIZE FUND, 1927, $1,060. Gift of W. C. Hunneman in memory of Roger Defriez Hunneman, '23. Income paid as annual award to most meritorious student in Chemical Engineering who has shown most outstanding originality in his work as determined by that Department.

ABBY W. HUNT FUND, 1936–38, $76,000. Bequest. For general purposes. $60,000 used for alterations, 1937. Balance for new equipment, 1938.

533 T. STERRY HUNT FUND, 1894, $3,000. Bequest. Income to a student in Chemistry.

534 WILLIAM F. HUNTINGTON FUND, 1892, $5,000. Gift of Susan E. Covell. Income to deserving students. Preference to be given to students in Civil Engineering.

205 INCOME EQUALIZATION RESERVE FUND, 1937–44, $68,513.97. Created by appropriation of excess income from general investments for year 1936–37 toward maintenance of income for ensuing years and by appropriation in 1944 of interest on certain D. I. C. contracts.

180 INDUSTRIAL FUND, 1924–44. This fund succeeded "Tech Plan" Contracts, payments under which went to the Educational Endowment Fund. Now receives surplus from industrially sponsored operations of Division of Industrial Coöperation and Research. Used for purchase of new equipment and support of special research.

251 INDUSTRIAL ECONOMICS FUND, 1940–44. Contributions in support of Graduate Program in Economics.

252 INDUSTRIAL RELATIONS FUND, 1938–44. Contributions in support of the Industrial Relations Section of the Department of Economics.

253 INSTRUMENTATION FUND, 1943, $237,500. Appropriation for postwar research.

CHARLES C. JACKSON, 1912, $25,000 Gift. Used for purchase of new site.

138 JAMES FUND, 1898–99, $163,000. Bequest of Julia B. H. James. Income for development of M. I. T.

631 DAVID L. JEWELL FUND, 1928, $25,000. Bequest. Income for tuition of five young men who are worthy of assistance and who, were it not for such assistance, might be unable to pursue their studies at M. I. T.

474 REBECCA R. JOSLIN FUND, 1924–36, $6,540. Gift and Bequest. Income awarded as a loan to advanced student in Chemical Engineering on recommendation of that Department — restricted to native and resident of Massachusetts. Beneficiary to abstain from using tobacco in any form.

536 JOY SCHOLARSHIPS, 1886, $7,500. Gift of Nabby Joy. Income for scholarships for one or more women studying natural science at M. I. T.

412 WILLIAM R. KALES FUND, 1944, $75,001.48. Gift of Mrs. Kales and family. To establish and maintain Eye Clinic in Medical Department.

WILLIAM R. KALES, 1925–27, $11,000. Gift for new dormitories.

413 ARTHUR E. KENNELLY FUND, 1940–44, $66,883.09. Bequest. Income only to be used for the study of mathematics directed toward physics or physical applications.

444 A. NORTON KENT FUND, 1944, $100. Gift. For research in Physics.

341 WILLIAM HALL KERR FUND, 1896, $2,000. Gift of Alice M. Kerr. Income for the annual purchase of books and drawings in machine design.

DAVID P. KIMBALL FUND, 1924, $10,000. Bequest. Used for educational plant, 1926.

633 LLORA CULVER KRUEGER SCHOLARSHIP FUND, 1936, $5,573.75. Bequest. Both principal and income to be available for needy and worthy students from Schenectady and vicinity.

476 WILFRED LEWIS FUND, 1930, $5,000. Gift of Emily Sargent Lewis. Income for maintenance of graduate student in Mechanical Engineering.

538 WILLIAM LITCHFIELD FUND, 1910, $5,000. Bequest. Income for scholarship on competitive examination.

414 ARTHUR DEHON LITTLE MEMORIAL FUND, 1937, $157,460. Bequest under will of Dr. Arthur D. Little. Income to be used in Departments of Chemistry and Chemical Engineering. (The income from 5,543 shares of common stock of Arthur D. Little, Inc., held by Voting Trustees for the benefit of the Institute under declaration of trust dated November 18, 1936 and in force for twenty years is included in this total.)

182 HIRAM H. LOGAN FUND, 1933–44, $43,955. Bequest. Principal and income for general purposes of M. I. T., $19,455. Appropriated for educational plant, 1940.

JOHN M. LONGYEAR, 1915–16, $30,000. Gift. Used for land and equipment, 1916.

539 ELISHA T. LORING FUND, 1890, $5,000. Bequest. Income for assistance of needy and deserving pupils.

541 LOWELL INSTITUTE FUND, 1923, $2,300. Gift from alumni of Lowell Institute to establish scholarship for its graduates.

139 KATHARINE B. LOWELL FUND, 1895, $5,000. Gift of Augustus Lowell in honor of Mrs. Lowell. Income for purchase of books and apparatus for Department of Physics.

ARTHUR T. LYMAN FUND, 1913, $5,000. Bequest. Used for educational plant, 1926.

JAMES MCGREGOR FUND, 1913, $2,500. Bequest. Used for educational plant, 1926.

542 RUPERT A. MARDEN FUND, 1933, $2,000. Gift (anonymous). Income to aid worthy student — Protestant and of American origin — preference to student taking Coöperative Course in Electrical Engineering (Course VI-A).

311 WILLIAM P. MASON FUND, 1868, $18,800. Bequest. Income to support a professorship in the Institute.

M. I. T. ALUMNI FUND, 1907. Total subscriptions of alumni to 1924, $632,500. $632,000 appropriated for new equipment, Walker Memorial, 1916 Reunion and Dormitories.

M. I. T. ALUMNI GYMNASIUM FUND, 1938–42. Total subscription $400,000. Appropriated for Briggs Field House, Athletic Field and for new swimming pool unit of the proposed alumni gymnasium.

143 M. I. T. ALUMNI SPECIAL GIFTS, 1944, $1,000. Gift to provide annual contribution to Alumni Fund from earned income.

144 M. I. T. ALUMNI FUND, 1940–44. First four years of plan adopted by the alumni of the Institute for the annual raising of funds for support of the Alumni Association and the *Technology Review* — the balance to be applied toward specific purposes other than operating expenses of the Institute.

145 M. I. T. ALUMNI FUND, 1944–45. Subscriptions to date of fifth year operation. (See No. 144.)

262 M. I. T. ALUMNI ASSOCIATION PERMANENT FUND, 1929–44. Deposited with M. I. T. for investment purposes only.

255 M. I. T. EMPLOYEES' FUND, 1938. Proceeds of employees' social activities held for benefit and relief purposes.

260 M. I. T. TEACHERS FUND. Balance of two per cent salary deductions under M. I. T. Pension and Insurance Plan in excess of Group Insurance Premiums paid.

261 M. I. T. TEACHERS' INSURANCE FUND, SPECIAL, 1928–44. Refund of premiums paid on Group Insurance under M. I. T. Pension and Insurance Plan held at interest and accumulated. Appropriated for special pension purposes only.

263 MATHEMATICS, STATISTICAL RESEARCH FUND, $8,000.

416 JOHN LAWRENCE MAURAN FUND, 1934, $10,000. Bequest. Principal and income for benefit of Department of Architecture. Used, in part, toward house projects in Wellesley and Wakefield, 1937–40.

417 GEORGE HENRY MAY FUND, 1914, $4,250. Gift. Income for benefit of Chemical Department.

543 GEORGE HENRY MAY FUND, 1914, $5,000. Gift. Income to assist graduates of Newton High School recommended as eligible by superintendent and head masters of Newton High Schools. Beneficiary to issue a note payable without interest.

477 GEORGE S. MAY FUND, 1944, $2,000. Gift. For Fellowship.

141 THOMAS MCCAMMON FUND, 1930, $15,000. Bequest in honor of father, James Elder McCammon. Income available for general purposes.

587 JAMES MEANS FUND, 1925, $2,700. Gift of Dr. James H. Means as a memorial to father. Income for annual prize for essay on an aeronautical subject.

185 CHARLES E. MERRILL FUND, 1943, $2,300. Not restricted but suggested for use of maimed or wounded boys on their return after the war.

METALLURGY, SPECIAL FUND, 1938, $10,000. Subscription (anonymous) used for special equipment for Department of Metallurgy.

HIRAM F. MILLS FUND, 1923, $10,175. Bequest. Appropriated for educational plant, 1937.

635 EDWARD F. and MARY R. MILLER FUND, 1941, $10,000. Bequest. To be used at discretion of Bursar as a fund in assisting needy students who have been found by the medical director to require special medical or surgical treatment.

638 ROBERT W. MILNE, 1943, $70,000. Bequest. Income for assistance of worthy and needy students.

419 SUSAN MINNS FUND, 1930. Gift of Miss Susan Minns — tract of land on Memorial Drive for use in any way deemed best for benefit of plan regarding construction and maintenance of an hydraulic laboratory.

545 JAMES H. MIRRLEES FUND, 1886, $2,500. Gift of James Buchanan Mirrlees. Income to such student in third or fourth year Mechanical Engineering most deserving pecuniary assistance.

420 FORRIS JEWETT MOORE FUND, 1927-31, $32,000. Gift of Mrs. F. Jewett Moore as a memorial to husband. Income or principal expended subject to approval of Executive Committee by a committee of three members of the Department of Chemistry — to make the study of Chemistry more interesting and surroundings of such study more attractive.

478 MOORE FUND, 1914–28–29, $24,200. Gift of Mrs. F. Jewett Moore. Income to help some Institute graduate to continue studies in Europe, especially organic chemistry. Preference to student who has distinguished himself in this subject while an undergraduate.

546 FRED W. MORRILL FUND, 1941, $2,000. Bequest. Income for financial assistance to students.

146 KATE M. MORSE FUND, 1925, $25,000. Bequest. Income for general purposes of M. I. T.

147 EVERETT MORSS FUND, 1934, $25,000. Bequest. Income for general purposes of M. I. T.

EVERETT MORSS, 1916, 1921–25, $35,000. Gifts. For Walker Memorial murals by E. H. Blashfield.

264 HENRY A. MORSS NAUTICAL FUND, 1937, $3,500. Gift for maintenance of sailing activities and sailing pavilion.

190 JOHN WELLS MORSS FUND, 1940, $50,000. Bequest. Principal and income for general purposes.

ALBERT H. MUNSELL FUND, 1920, $7,908.28. Bequest. Used for educational plant, 1928.

MARGARET A. MUNSELL FUND, 1920, $1,105.32. Bequest. Used for educational plant, 1928.

NATHANIEL C. NASH FUND, 1881, $10,000. Bequest. Appropriated for new dormitories, 1924.

547 NICHOLS FUND, 1895, $5,000. Bequest of Betsy F. W. Nichols. Income for scholarship to student in Chemistry.

548 CHARLES C. NICHOLS FUND, 1904, $5,000. Bequest. Income for scholarship.

WILLIAM E. NICKERSON FUND, 1928, $50,000. Gift. Principal and income used to finance chair in Humanics, 1928–40.

MOSES W. OLIVER FUND, 1921, $12,870.49. Used for educational plant, 1938.

191 CHRISTEL ORVIS FUND, 1942, $539.42. Bequest. For general purposes.

343 GEORGE A. OSBORNE FUND, 1928, $10,000. Bequest. Income for benefit of mathematical library.

550 JOHN FELT OSGOOD FUND, 1909, $5,000. Bequest of Elizabeth P. Osgood in memory of husband. Income for scholarship in Electricity.

421 F. WARD PAINE, 1944, $10,000. Bequest. For special research in Geology.

551 GEORGE L. PARMELEE FUND, 1921, $17,000. Bequest. Income for tuition of either special or regular worthy students.

192 EMERETTE O. PATCH FUND, 1935–38, $8,240.84. Bequest. $6,000 used for special expenditures, 1938–1940.

FRANK E. PEABODY FUND, 1920, $51,467.35. Bequest. Used for educational plant, 1921 and 1926.

FRANCES M. PERKINS, 1912, $122,569.67. Bequest. Used for educational plant.

H. B. PERKINS, 1940, $250. Bequest. Used for new equipment, 1940.

149 RICHARD PERKINS FUND, 1887, $50,000. Bequest. Income for general purposes.

552 RICHARD PERKINS FUND, 1887, $50,000. Bequest. Income for scholarships.

480 WILLARD B. PERKINS FUND, 1898, $6,000. Bequest. Income to be expended every fourth year for travelling scholarships in architecture.

422 EDWARD D. PETERS FUND, 1924, $5,000. Bequest of Elizabeth W. Peters. Income for the Department of Mineralogy.
E. S. PHILBRICK FUND, 1922, $36,213.92. Bequest. Used for educational plant, 1926.

PRESTON PLAYER FUND, 1933, $20,000. Bequest. Used for educational plant, 1938.

423 PRATT NAVAL ARCHITECTURAL FUND, 1916, $1,071,000. Bequest of Charles H. Pratt to endow the Department of Naval Architecture and Marine Engineering to be called forever Pratt School of Naval Architecture and Marine Engineering — to erect a building — remainder held in trust. Income to support said school.

274 PRESIDENT'S FUND, SPECIAL, 1941–44, $10,500. Gifts. Principal and/or income to be used by President as desired.

CHARLES O. PRESCOTT, 1935, $30,640.78. Principal and income used for educational plant, 1938.

639 FLORENCE E. PRINCE, 1943, $7,537.50. Bequest. Income for aid to worthy students.

484 PROPRIETORS LOCKS AND CANALS FUND, 1927, $4,000. Gift to finance post-graduate scholarship in Textile Research, mechanical or chemical, to American-born graduate of Lowell Textile School, nominated by the Trustees of that School and approved by Executive Committee of Locks and Canals.

150 J. W. & B. L. RANDALL FUND, 1897, $83,000. Bequest of Belinda L. Randall as a permanent fund or in erecting a building with those names.

553 THOMAS ADELBERT READ FUND, 1934–35, $21,117. Bequest of Julia A. Read to establish scholarship in memory of her brother and their father and mother. Income to be awarded to some worthy and needy student, preferably resident of Fall River, Mass.

246 RESERVE FOR RESTORATION FUND, 1944, $307,783. Appropriated for deferred maintenance and rehabilitation of buildings and equipment.

640 CHARLES A. RICHARDS, 1939, $31,719.32 Bequest. Income only to be used for assistance of poor Protestant students in the Institute.

449 ELLEN H. RICHARDS FUND, 1912, $15,000. Income for promotion of research in Sanitary Chemistry, for fellowships to advanced students, for employment of research assistants and in such other ways as will best promote investigation in that field.

425 RICHARDS MEMORIAL FUND, 1929. Balance of subscriptions from friends for portrait of Professor Richards available for Mining Department.

451 CHARLOTTE B. RICHARDSON FUND, 1891, $30,000. Bequest. Income to support of Industrial Chemical School.

554 JOHN ROACH SCHOLARSHIP FUND, 1937, $3,000. Bequest under will of Emeline Roach, income to provide annual scholarship to needy and deserving student in Naval Architecture and Marine Engineering.

RUSSELL ROBB FUND, 1928, $28,750. Bequest. Appropriated for new dormitories, 1930.

ROCKEFELLER FOUNDATION RESEARCH FUND, 1931–36, $170,000. Contributed and expended for Research in Science Departments over period of five years.

313 HENRY B. ROGERS FUND, 1873, $25,000. Gift. Income for salaries of one or more professors or instructors.

486 HENRY BROMFIELD ROGERS FUND, 1921, $20,000. Bequest of Anna Perkins Rogers. Income to establish fellowship or scholarship for women graduates of M. I. T. or other colleges whose graduate work is carried on at M. I. T.

ROBERT E. ROGERS FUND, 1886, $7,600. Bequest in memory of his brother, William B. Rogers. Used for new equipment, 1940.

642 WILLIAM BARTON ROGERS FUND. Present, $39,000. Established by subscriptions of members of Alumni Association through Prof. R. H. Richards for loans to students. By vote of Executive Committee in March 1935, approved by Alumni Council, the income, not now needed for loans, is made available for special scholarship aid in the discretion of the President and Treasurer.

151 WILLIAM BARTON ROGERS MEMORIAL FUND, 1883–84–85, $250,000. Contributions from 91 persons. Income for support of Institute.

452 WILLIAM BARTON AND EMMA SAVAGE ROGERS FUND, 1937, $102,064.18. Bequest of Dr. Francis H. Williams. Income to be added to principal for twenty years — after which eighty (80) per cent of income may be used for research in pure science — balance to be added to fund.

426 FRANCES E. ROPER FUND, 1936, $2,000. Bequest. Income for use in Department of Mechanical Engineering.

345 ARTHUR ROTCH ARCHITECTURAL FUND, 1895, $5,000. Bequest. Income for Library or collection of Department of Architecture.

427 ARTHUR ROTCH FUND, 1895, $25,000. Bequest. Income for general purposes of Department of Architecture.

589 ARTHUR ROTCH FUND, 1895, $5,000. Bequest. Income for annual prize to student in regular course in Architecture graduating highest in class.

591 ARTHUR ROTCH SPECIAL FUND, 1895, $5,000. Bequest. Income for annual prize to student who shall be ranked highest at end of two years special course in Architecture.

488 RICHARD LEE RUSSEL FUND, 1904, $2,000. Gift of Theodore E. Russel. Income to assist worthy student of high standing in Department of Civil Engineering either undergraduate or post-graduate.

555 WILLIAM PATRICK RYAN MEMORIAL FUND, 1935, $3,637. Contributed by friends of Professor Ryan. Income for scholarship in Chemical Engineering.

277 WILLIAM PATRICK RYAN SPECIAL FUND, 1933, $3,000. Appropriation. Educational fund for three children of late Prof. W. P. Ryan.

592 HENRY WEBB SALISBURY, 1941, $1,100. Gift. Income for award to outstanding student in Aeronautics — initially in form of reference books in Aeronautics. ($100 of gift to be considered as income.)

152 SALTONSTALL FUND, 1901, $4[illegible],000. Bequest of Henry Saltonstall. One-fourth income each year added to principal and remaining three-fourths expended for benefit of Institute.

490 HENRY SALTONSTALL FUND, 1901, $10,000. Bequest. Income to aid one or more needy students.

492 JAMES SAVAGE FUND, 1873, $10,000. Bequest. Income for scholarships in institution "where my son-in-law, William B. Rogers, is President."

153 SAMUEL E. SAWYER FUND, 1895, $4,700. Bequest. Income to be used in such manner as will best promote interests of M. I. T.

556 JOHN P. SCHENKL FUND, 1922, $43,800. Bequest of Johanna Pauline Schenkl in memory of father. Income for scholarships in Department of Mechanical Engineering.

THEODORE EDWARD SCHWARZ MEMORIAL FUND, 1937–38, $4,391.86. Gift. For equipment of a suitable room for proposed map collection.

279 SEDGWICK MEMORIAL LECTURE FUND, 1930–38, $9,500. Bequest of Mary Katrine Sedgwick in memory of husband. All copyrights and interest in copyrights and benefits from contracts with publishers or Department of Biology and Public Health.

428 W. T. SEDGWICK FUND, 1928, $69,500. Received from Trustees of the Estate of W. T. Sedgwick under Agreement and Declaration of Trust following decease of Mary Katrine Sedgwick, for Department of Biology and Public Health.

280 SERVO-MECHANISM LABORATORY FUND, 1943, $25,000. Appropriation for postwar research.

RICHARD B. SEWALL FUND, 1919, $30,000. Bequest. Used for educational plant, 1924.

557 THOMAS SHERWIN FUND, 1871, $5,000. Gift of Committee on Sherwin Memorial Fund for free scholarship to graduate of English High School.

493 SLOAN FUND, 1933–41, $1,000. Annual gift of A. P. Sloan, Jr. for Fellowship in Automotive Engineering.

429 ALFRED P. SLOAN, JR., 1929–41, $165,000. Gift. For automotive laboratory. Balance $12,985.65 held for use of department.

ELLEN VOSE SMITH FUND, 1930, $25,000. Bequest. Used for new equipment.

558 HORACE T. SMITH FUND, 1930, $32,988.76. Bequest. Income for scholarships. Preference to graduates of East Bridgewater (Mass.) and Bridgeport (Conn.) High Schools.

281 LILLIE C. SMITH FUND, 1937, $4,800. Bequest to M. I. T. Women's Association for purposes of the Association.

283 WALTER B. SNOW, 1938–44. Reserve funds of Technology Christian Association. Deposited for investment purposes.

453 SOLAR ENERGY FUND, 1938, $647,700. Gift of Dr. Godfrey L. Cabot. Principal to be held for fifty years — income to be used in development of the art of converting energy of the sun to use of man by mechanical, electrical or chemical means. After fifty years, fund becomes part of general unrestricted endowment of the Institute.

559 SONS AND DAUGHTERS OF NEW ENGLAND PURITAN COLONY SCHOLARSHIP FUND, 1931, $600. Gift. Income for scholarship aid to a boy of New England ancestry.

202 SPECIAL WAR RESERVE FUND, 1942–44. Balance of Excess over O.S.R.D. allowed overhead for 1941–42, held by M. I. T. against possible renegotiation and/or termination expenses, less authorized appropriations.

644 ANNA SPOONER FUND, 1939–41, $10,896.14. Bequest. Income to be used in assisting meritorious students.

155 ANDREW HASTINGS SPRING FUND, 1921, $50,000. Bequest of Charlotte A. Spring in memory of nephew as a permanent fund. Income for general purposes.

CHARLES A. STONE, 1912–24, $15,000. Gift for land. 1928, $25,023.59. Gift for dormitories.

GALEN L. STONE, 1912, $10,000. Gift for land. 1916, $10,000. Gift for Mining Building.

156 GEORGE G. STONE, 1939, $4,677.35. Bequest by will of Eliza A. Stone, as memorial to brother, a graduate in Mining Engineering in 1889. Income to be used in manner most useful to Institute as well as a most fitting memorial.

593 SAMUEL W. STRATTON PRIZE FUND, 1933, $1,680. Contributed by friends of the late Dr. S. W. Stratton for competition prizes in the presentation of scientific papers.

646 SUMMER SURVEYING CAMP LOAN FUND, 1927, $500. Gift of Lammot du Pont as a revolving loan fund to help students in Civil Engineering attend summer surveying camp.

454 HENRY N. SWEET, 1936, $8,036.50. Bequest. For industrial research.

157 SETH K. SWEETSER FUND, 1915, $25,000. Bequest as a permanent fund. Income for general purposes.

495 SUSAN H. SWETT FUND, 1888, $10,000. Bequest. Income to support a graduate scholarship.

284 SWIFT PROTEIN FUND, 1944, $20,000. Gift. For research.

648 TEACHERS' FUND, 1899–1900. Gifts of $50,000 each from Augustus Lowell and A. Lawrence Lowell to establish fund for use in case of retirement, disability or death of members of instructing staff.

560 Tech Club of Chicago, 1944, $5,000. Gift. For scholarships.

650 TECHNOLOGY LOAN FUND, 1930–41, $1,450,735.18. Contributed by eighteen alumni to provide loans for students.

285 TECHNOLOGY MATRONS TEAS FUND, 1916–22–31, $8,500. Gifts of Mrs. F. Jewett Moore. Income for social activities of Technology Matrons.

456 TEXTILE RESEARCH FUND, 1937, $3,065. Gift. For research.

STURGIS H. THORNDIKE FUND, 1928, $15,000. Bequest. Appropriated for new dormitories, 1930.

NATHANIEL THAYER, 1906, $25,000. Gift. Used for educational plant.

315 NATHANIEL THAYER FUND, 1868, $25,000. Gift. Income for professorship of Physics.

286 W. B. S. THOMAS FUND, 1935–37, $2,000. Gift of parents of W. B. S. Thomas '29, the income only to be expended, one-half for the benefit of the M. I. T. Crew and one-half to other activities of the M. I. T. A. A.

317 ELIHU THOMSON FUND, 1933–37, $18,000. Contributed toward fund for Professorship in Electrical Engineering.

ELIHU THOMSON, 1912, $25,000; 1924, $5,000. Gift. Used for purchase of land.

497 FRANK HALL THORP FUND, 1932, $10,000. Anonymous gift. Income for fellowship in Industrial Chemistry.

561 SAMUEL E. TINKHAM FUND, 1924, $2,400. Gift of Boston Society of Civil Engineers. Income to assist worthy student in Civil Engineering.

349 JOHN HUME TOD FUND, 1913, $2,500. Gift of Mrs. F. Jewett Moore. Income for purchase of books of a humanistic character for General Library.

562 F. B. TOUGH FUND, 1924, $465. Gift to extend financial assistance to worthy students in mining or oil production.

193 TOWLE FUND, 1944, $4,000. Gift. For general purposes.

430 NELLIE FLORENCE TREAT, 1944, $609. Bequest. For use in the field of Food Technology.

194 CHARLES A. TRIPP FUND, 1943, $100,000. Bequest. For dormitory construction — or such other use of all or part as may seem advisable.

431 EDMUND K. TURNER FUND, 1915–41, $206,814. Bequest. Income, three-quarters for Department of Civil Engineering and one-quarter to be added annually to principal.

LUCIUS TUTTLE FUND, 1916, $50,000. Bequest. Used for educational plant, 1918.

652 ALICE BROWN TYLER FUND, 1937–41, $1,559.64. Gift of Prof. and Mrs. H. W. Tyler. Income to be used for benefit of women students at the Institute.

290 UNDERGRADUATE ACTIVITIES TRUST FUND, 1935, $1,097.26. Established by 1915 Technique Board from which recognized student activities may borrow if deemed necessary and desirable, at a low rate.

292 UNDERGRADUATE PUBLICATIONS TRUST FUND, 1935, $16,018. Deposited by Alumni Advisory Council on Publications for investment purposes only.

294 UNDERGRADUATE DUES RESERVE FUND, ATHLETICS, 1924–44. Transferred from Undergraduate Dues (current operating account) to secure investment income.

296 UNDERGRADUATE DUES RESERVE FUND, CONTINGENT, 1924–44. Transferred from Undergraduate Dues (current operating account) to secure investment income.

433 WILLIAM LYMAN UNDERWOOD FUND, 1932, $16,252. Bequest. For benefit of Biological Department or otherwise for general purposes.

563 SUSAN UPHAM FUND, 1892, $1,000. Gift. Income to assist students deserving financial aid.

654 THOMAS UPHAM FUND, 1939, $392,000. Bequest of Marcella B. Upham. Principal to be held as a permanent trust fund, the income to be used in assisting poor and deserving students or graduates of the Institute.

656 SAMSON R. URBINO FUND, 1927, $1,000. Bequest. Income for students who need assistance, Germans preferred.

351 THEODORE N. VAIL FUND, 1925–42, $68,800. Bequest. For benefit of Vail Library.

498 LUIS FRANCISCO VERGES FUND, 1924, $10,000. Gift from Caroline A. Verges. Income for graduate students doing research work in sugar industry or if no such candidate, undergraduate student in Civil Engineering.

565 VERMONT SCHOLARSHIP FUND, 1924–37, $25,000, Gift of Redfield Proctor, '02, in memory of Vermonters who, having received their education at the Institute, served as engineers in the armies of the Allies in the World War. Income to students preferably from Vermont. Mr. Proctor reserves right to designate recipients as long as he lives.

567 ANN WHITE VOSE FUND, 1896, $60,000. Bequest. Income for free scholarships for young men of American origin.

HORACE W. WADLEIGH FUND, 1916–20, $22,143.14. Bequest. Appropriated for new buildings, 1924.

568 ARTHUR M. WAITT FUND, 1925, $9,700. Bequest. Income for deserving students in second, third and fourth year classes in Mechanical Engineering.

196 GRANT WALKER, 1943, $60,000. Bequest. For general purposes.

569 GRANT WALKER, 1944. $55,000. Bequest. Income for scholarships.

159 WILLIAM J. WALKER FUND, 1915–17, $23,000. Bequest. Income for general purposes.

434 WILLIAM R. WARE FUND, 1939, $15,000. Gift of Mr. and Mrs. William Emerson, the income to be at the disposal of the Dean of the Architectural School for extra budgetary purposes.

298 CHARLES D. WATERBURY, 1941, $13,407.28. Bequest. For erection of a building as a memorial to above named at such time as M. I. T. shall decide.

161 HORACE HERBERT WATSON FUND, 1930, $34,000. Bequest of Elizabeth Watson Cutter as a permanent fund. Income for general purposes.

570 JAMES WATT SCHOLARSHIP FUND, 1942, $13,259.72. For scholarships in Mechanical Engineering.

EDWIN S. WEBSTER FUND, 1912–24, $15,000. Gift. Used toward purchase of land.

197 FRANK G. WEBSTER FUND, 1931, $25,000. Bequest. For general purposes.

571 HERMAN E. WEIHMILLER, 1942, $1,000. Gift. For assistance to deserving students in aeronautical engineering with approval of Dr. E. P. Warner.

572 LOUIS WEISBEIN FUND, 1915, $4,000. Bequest. Income for scholarship for student in Architectural Department, preference to be given to a Jewish boy.

163 ALBION B. K. WELCH FUND, 1871, $5,000. Bequest as a permanent fund. Income for general purposes.

CHARLES G. WELD FUND, 1907, $15,000. Gift. Used for educational plant, 1924.

165 EVERETT WESTCOTT FUND, 1935–38, $171,394. Bequest as a permanent fund. Income for general purposes.

167 MARION WESTCOTT FUND, 1938–44, $238,952. Bequest for endowment. Income for general purposes.

573 FRANCES ERVING WESTON FUND, 1912–31, $5,000. Bequest. Income to aid a native-born American Protestant girl of Massachusetts.

574 SAMUEL MARTIN WESTON FUND, 1912–31, $5,000. Bequest of Frances E. Weston in memory of husband. Income to aid a native-born American Protestant boy; preference to be given one from Roxbury.

ALEXANDER S. WHEELER FUND, 1907–16, $30,000. Contributed by friends. Used for new dormitories, 1924.

GEORGE R. WHITE FUND, 1912, $10,000. Gift. Used toward purchase of new site.

576 AMASA J. WHITING FUND, 1927, $4,500. Bequest of Mary W. C. Whiting. Income as scholarship to deserving students; preference to students from the Town of Hingham, Massachusetts.

EDWARD WHITNEY FUND, 1910, $37,171. Bequest as a memorial to him and his wife, Caroline. Principal and interest used (1930–38) for conduct of research in geophysics.

577 GRANGER WHITNEY FUND, 1942. For scholarship.

658 JONATHAN WHITNEY FUND, 1912, $525,000. Bequest of Mrs. Francis B. Green. Income to assist poor and deserving young men and women in obtaining an education at M. I. T.

168 GEORGE WIGGLESWORTH FUND, 1931, $25,000. Bequest. Ten (10) per cent of gross annual income to be added to principal, balance of income for general purposes of the Institute.

GEORGE WIGGLESWORTH, 1917–24, $65,000. Gift. Used for additional land purchase, 1924.

578 ELIZABETH BABCOCK WILLMANN FUND, 1935, $5,065. Bequest. Income to be used toward tuition of young women students taking Chemistry courses.

KENNETH F. WOOD FUND, 1926, $25,000. Bequest. Appropriated for new dormitory, 1930.

WRIGHT MEMORIAL WIND TUNNEL, 1937–41, $95,795. Contributed by friends toward construction of new wind tunnel.

169 EDWIN A. WYETH FUND, 1913–35, $269,665. Balance of Trust Fund held by M. I. T. since 1913 for itself and five other beneficiary institutions subject to annuity. Distributed January 1935. Fund separately invested until June 30, 1943. Net income available for general purposes of the Institute.

660 MORRILL WYMAN FUND, 1915–16, $66,000. Bequest. Income to aid deserving and promising students upon understanding that if in after life the person receiving aid shall find it possible, he shall reimburse said fund — not a legal obligation.

LIST OF PERIODICAL PUBLICATIONS, BOOKS AND REVIEWS BY MEMBERS OF THE STAFF

(Persons desiring reprints of articles should apply to the Department concerned.)

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KU, PEI-MOO. Correlation of Engine Output and Air Consumption. *Chinese Inst. Engrs., America Section, J.* 1, pp. 171–186, November, 1943.

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MACCORNACK, WALTER R. America's New Frontier. Concerted Effort Is Essential for the Successful Solution of Problems of Replanning and Reconstruction. *Technology Review* 46, pp. 200–201 +, February, 1944.

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GOULD, BERNARD S., and HARRY SHWACHMAN. A New Method for the Bio-Assay of Anti-Scorbutic Substances. *J. Biol. Chem.* 151, pp. 439–453, December, 1943.

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HARRIS, ROBERT S., and KENNETH V. THIMANN. Vitamins and Hormones. Volume 2. New York: Academic Press, Inc., 1944.

HARRIS, ROBERT S., MARIE CLARK, and ERNEST LOCKHART. Nutritional Value of Bread Containing Soya Flour and Milk Solids. *Archives of Biochemistry* 4, pp. 243–247, May, 1944.

HORWOOD, MURRAY P. A Comparative Study of One Per Cent and Five Per Cent Solutions of 30 to 40 Mesh G elatins for Bacteriological Examination. *Food Research* 8, pp. 429–434, December, 1943.

HORWOOD, MURRAY P. Outline of a Tuberculosis Survey. *Massachusetts Health J.* 25, pp. 13–16, January, 1944.

HORWOOD, MURRAY P. A Proposed Standard Method for the Bacteriological Examination of 30 to 40 Mesh Edible Gelatin. *J. Bacteriology* 47, p. 436, May, 1944.

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