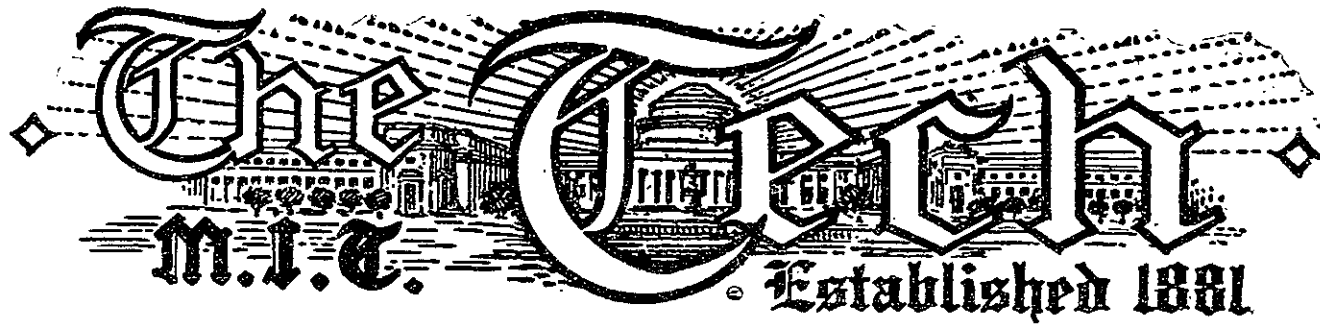


WELCOME, CLASS OF 1935



Official Undergraduate
News Organ of
Massachusetts Institute
of Technology

A Record of
Continuous News Service
... for ...
Over Fifty Years

Vol. LI. No. 43

CAMBRIDGE, MASS., MONDAY, SEPTEMBER 28, 1931

Complimentary

68TH REGISTRATION OFFICIALLY OPENS TECHNOLOGY TODAY

Freshmen Prey to Many Forms of Pressure Selling While in Line

MEETING IN AFTERNOON

High pressure student salesmen of the various student publications at Technology launched their attack on the incoming class as it waited in line to register throughout the morning. Resistance due to the depression melted away as the first-year men entered into the spirit of the activities and heartily supported all the publications.

Sales on freshman ties shot heavily upward after the rumors of the dire punishment that awaited all freshmen seen on the Campus not wearing the regulation cardinal and red tie. These ties were being sold at the registration line as well as at the Coop. Many men were seen to purchase more than one.

Registration is slowly progressing, with many of the freshmen, wisely proceeding to the basement of Building One directly after registering to draw their R.O.T.C. uniforms. A few freshmen, acting on advice of upperclassmen waited until the afternoon to register and experienced no delay.

The Coop did a brisk business throughout, with the hustle and bustle in the crowded store at some times approaching confusion as students sought to get the necessary books and materials for tomorrow's classes. Bargain-hunters thronged the T.C.A. office in the basement of Walker Memorial seeking second-hand books at large discounts.

As usual, most freshmen seemed a bit bewildered by all the rush and confusion as they bought their books and began studying for tomorrow's classes. Frater-

SCHOLARSHIP RATINGS

Ratings for the last term are given from the average MacKinnon System Rating for each chapter as are the comparative standings of the fraternity and dormitory groups. The standing of the chapters over the previous five-year period is made on a comparative basis.

Last Term		1926 to Date	
1. Sigma Omega Psi	3.33	1. Sigma Omega Psi	3.33
2. Phi Beta Delta	3.27	2. Phi Beta Delta	3.27
3. Sigma Alpha Mu	3.23	3. Alpha Kappa Pi	3.23
4. Sigma Chi	3.19	4. Sigma Nu	3.19
5. Phi Mu Delta	3.13	5. Sigma Alpha Mu	3.13
6. Sigma Alpha Epsilon	3.09	6. Phi Gamma Delta	3.09
7. Kappa Sigma	3.08	7. Sigma Chi	3.08
8. Delta Kappa Epsilon	3.07	8. Theta Chi	3.07
9. Sigma Nu	3.05	9. Delta Upsilon	3.05
10. Alpha Kappa Pi	3.04	10. Chi Phi	3.04
11. Lambda Chi Alpha	3.01	11. Psi Delta	3.01
12. Phi Beta Epsilon	3.00	12. Lambda Chi Alpha	3.00
13. Chi Phi	2.98	13. Kappa Sigma	2.98
14. Delta Upsilon	2.971	14. Sigma Alpha Epsilon	2.971
15. Delta Tau Delta	2.970	15. Phi Mu Delta	2.970
16. Phi Gamma Delta	2.96	16. Alpha Tau Omega	2.96
17. Beta Theta Pi	2.842	17. Phi Beta Epsilon	2.842
18. Alpha Tau Omega	2.841	18. Beta Theta Pi	2.841
19. Theta Delta Chi	2.840	19. Delta Kappa Epsilon	2.840
20. Psi Delta	2.79	20. Theta Delta Chi	2.79
21. Phi Kappa Sigma	2.77	21. Phi Sigma Kappa	2.77
22. Theta Chi	2.76	22. Phi Kappa Sigma	2.76
23. Phi Kappa	2.68	23. Theta Xi	2.68
24. Phi Lambda Alpha	2.66	24. Delta Tau Delta	2.66
25. Delta Psi	2.64	25. Phi Kappa	2.64
26. Phi Sigma Kappa	2.58	26. Delta Psi	2.58
27. Theta Xi	2.42	27. Alpha Phi Delta	2.42
28. Alpha Phi Delta	2.39	28. Phi Lambda Alpha	2.39

COMPARATIVE MACKINNON SYSTEM AVERAGE OF DORMITORY AND FRATERNITY UNDERGRADUATE GROUPS (Based on June, 1930-31 Marks)

	Dormitories	Fraternities
Freshmen	3.12	2.77
Sophomores	2.99	2.72
Juniors	3.12	2.91
Seniors	3.30	3.26
Average Rating	3.15	2.93

PRESIDENT SPEAKS TO FRESHMEN TODAY

Chairman Stratton Absent as Institute Officials Greet Freshmen

Pres. Karl T. Compton will address the first assembly of the Class of 1935 as a whole, this afternoon at three o'clock in Room 10-250. Dr. Samuel W. Stratton, chairman of the Corporation, will not be on hand today to greet the freshman class as has been his custom in past years, since he is at present in Europe, but members of that group will hear words of welcome from Prof. Frederick S. Woods, chairman of the Faculty; Mr. Bradley Dewey '09, president of the Alumni Association, and Dean Harold E. Lobdell.

The nature of President Compton's address is not known, but it is expected that he will offer a word of welcome to the incoming class and acquaint them with some of the features of Technology unknown to the newcomer, as well as give counsel on common problems which confront the freshman on his first year of college. Every member of the Class of 1935 is expected to attend this meeting. The assembly hall is entered from the right side of the second-floor lobby, overlooking the main entrance.

WILL GIVE CLASS '35 FREE TURKEY DINNER

All freshmen are requested to keep in mind the free turkey dinner which will be given them the night of the All-Technology Smoker in the Main Dining Room of Walker Memorial. Tickets for this meal may be obtained in the Main Lobby a day or so previous to the Smoker, which will be held October 10. Obie Denison, who created a lot of amusement at freshman Camp, will be present as well as representatives of all the activities. Movies, music, gymnastics and smokes will be the order of the evening.

Freshmen Frolic Despite Rain and Enjoy Week-End as Guests of T.C.A. at Lake Massapoag

Complimentary Issues

THE TECH will be distributed free to the students and Faculty of the Institute for the first three issues. Next week the newspapers will be sold by salesmen only for subscription tickets or cash. Subscriptions can be purchased for \$2.50 in cash, or charged to one's school account, to be paid when it is convenient, and are obtainable from all members of THE TECH staff and at the News and Business offices of the newspaper in Walker.

Single copies sell for five cents. **SUBSCRIBE NOW AND SAVE MONEY!**

European Expert Joins Hydraulics Staff of School

Prof. W. Spannake to Supervise Graduate Research on Model Turbines

Prof. W. Spannake, professor of Hydraulic Machinery at the Technische Hochschule in Karlsruhe, Germany, and one of the leading hydraulic engineers in Europe, has joined the instructing staff of the Institute, where he will give courses in various phases of hydraulic engineering.

Professor Spannake has been at the Technische Hochschule in Karlsruhe for ten years, during which time he has established an excellent experimental laboratory for the study of the design of hydraulic turbines and pumps by the use of models. Studies made in his laboratory included a series of model tests for the huge Ryburg-Schworstadt hydro-electric plant on the Rhine.

Designed Föttinger Transformer

Previous to his work at the Hochschule he was for fourteen years with the Vulkan Ship Yard in Hamburg, ultimately being in charge of the design of much of the hydraulic machinery. While there he designed the Föttinger Transformer. For two years he was chief engineer with Briegleb, Hansen & Company, manufacturers of hydraulic turbines and pumps.

300,000 POUND EMERY MACHINE REMOVED

Many Students Watch Passing Of Thirty-Year-Old Apparatus

During the first week in September the 300,000-lb. Emery testing machine which had been in service thirty years was removed in order to make room for a vertical machine of the same capacity. The new machine is to be an Emery-Tatnall, made by the Baldwin-Southwark Corporation of Philadelphia, Pa.

The old Emery machine made by the Wm. Sellers Company of Philadelphia, Pa., cost about \$20,000. It was purchased by money donated for the purpose by Mr. O. H. P. Burnham.

The machine was taken out by C. Bowen, a rigger, who makes a specialty of handling heavy machinery. Many students attending the late session of the summer school spent the spare time between lectures in watching the rigger handle pieces, some of which weighed thirty-two tons.

SEMINAR IN APPLIED MECHANICS OFFERED

For the benefit of graduate students, a seminar in Applied Mechanics will be offered on alternate weeks during the first and second terms of the school year. It will be open only to graduate students in the courses of Mechanical Engineering, Civil Engineering, Naval Architecture, Aeronautical Engineering, Architectural Engineering, and Building Construction, who have the requisite preparation.

This work will require six hours outside preparation per exercise and it is expected that each student will present at least one paper per term. For further information men interested are referred to Prof. C. E. Fuller.

Course II Students Are Required to Take G47 "Committee Reports"

Practice in Presentation of Engineering Projects is Aim of Course

At a meeting of the members of the M.I.T. Alumni Association of New York City, at which the curriculum of Course II was discussed, it was evident that there was a strong feeling among the alumni that they as graduates lacked the ability to explain an engineering project to a group of business men in language which the non-technical business man could understand. The alumni urged that an effort be made to meet this difficulty.

With this in mind all Seniors in Course II will be required to register in the second term for G47, "Committee Reports."

The Senior class in Course II will be divided into four sections of approximately fifteen men per section, each section meeting for one two-hour period per week. Three of the men acting as representatives of an engineering office will present to the twelve men (the remainder of the section), who constitute a Board of Directors, some engineering project which the engineering firm desires to have the board pass on and accept. The Board is organized with a chairman and a secretary and the procedure followed is to be the same as that of a board of directors of an industrial concern.

The members of the Board, with the consent of the chairman, may cross-question the engineers who are presenting the project to the Board.

Illustration of One Subject

To illustrate the type of project which the three engineers may present to the Board, one subject will be mentioned.

A large industrial firm has found that after thirty years of use their boilers have

FULL PROGRAM KEPT NEW MEN BUSY WITH SPORTS AND TALKS

Faculty, Alumni, and Upperclass Captains and Managers Are Guests

DENISON LEADS CHEERS

For the first time in the history of the freshman camp rain and general bad weather visited this year's trip for almost the entire three-day stay; but the spirit and activities of the Class of 1935 were not visibly affected by the dampness, for the cheers were just as loud and the ball games and crew practices went on with more than the usual enthusiasm.

Two hundred and twenty freshmen, a larger percentage of the class than last year's record-breaking attendance, enjoyed the hospitality of the Technology Christian Association at the Cambridge Y.M.C.A. summer camp, Massapoag, at Dunstable, Mass., and returned this morning in time to register.

Eight Busses Required

These exuberant frosh, along with thirty upperclassmen, filled eight large busses on Friday afternoon, and at three o'clock all heads were turned toward Dunstable, and arrived in time for a swim in

(Continued on page four)

got to be replaced. The old boilers carried 190 lbs. pressure. There is a demand for 10,000 kw. with but little variation and there is also a demand for 400,000 lbs. of steam at 150 lbs. for industrial use, the demand for the industrial steam being quite steady.

The three engineers work up a proposition requiring boilers of 700 lbs. pressure, 150 degrees superheat, and turbines taking this high pressure steam and exhausting at 150 lbs. directly into the steam lines supplying steam to the mill.

The engineers must convince the Board that this proposition of theirs will pay for itself in two and one-half or three years. The three engineers before going before the Board are to prepare a paper covering the points they desire to make, and as it is felt that these papers will contain material of engineering value, it is planned to mimeograph the papers and give each student in the class a copy. To aid the student in the preparation of the technical part of the paper, members of the instructing staff in Course II will be available for consultation at definite hours, and the department of English will have men available for consultation regarding the English.

At each meeting of the Board one instructor from II and one from the English Department will be present, one to pass on the technical matters presented, and the other to criticize the English and the general proceedings.

Sections Will Have Men From Three Courses

Inasmuch as the Board of Directors being Course II men know as much about engineering as the three classmates who are trying to explain some project to them, it would not seem that such a board could

(Continued on page four)

A Record of Continuous News Service for Over Fifty Years



Official News Organ of the Undergraduates of M. I. T.

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OFFICES OF THE TECH
 Walker Memorial, Cambridge, Mass.
News and Editorial—Room 3, Walker
 Telephone, University 7029
Business—Room 302, Walker
 Telephone, University 7415
Printers' Telephone, University 5650

SUBSCRIPTION PRICE \$2.50 per Year
 Published every Monday, Wednesday and Friday during the College year, except during College vacations

Entered as Second Class Matter at the Boston Post Office
 Member Eastern Intercollegiate Newspaper Association

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THE CARDINAL AND THE GREY

BEGINNING at nine o'clock this morning in the Main Lobby, the Beaver Key Society will offer to the members of the freshman class an opportunity to purchase their freshman ties, for the mere sum of one dollar. According to the rules laid down by the special sub-committee of the Undergraduate Association, each new man must display the herald of the Class of 1935, a cardinal and grey-striped fore-in-hand, at all times during his school hours, and until after the Christmas holiday.

Incorporated in the above paragraph is what should pass as a translation of an official and threatening order. The ties must be worn! No exceptions are to be made, and every effort is to be expended by the members of the freshman Rules Committee to see that the ukase is respected. Why ties? Simply because as a mark of proper humility, as a means of bringing into being a semblance of class unification, and as is befitting a freshman at a school of higher education, some identification must be relied upon. A great many institutions employ small caps; others make various restrictions in the matter of dress; at the Institute a necktie has been chosen.

Freshmen at Technology find themselves under few obligations to the upperclassmen. The freshman rules as a whole are probably as liberal as could be found at any college or university. Therefore it behooves you, freshmen, to inconvenience yourselves to the extent of boasting a standardized neckpiece. Buy your tie today, and wear it!

EN MASSE

THIS column has devoted considerable of its space to matters of interest to the new men, but there are still two events which deserve more than passing comment. We refer to the freshman Mass Meeting this afternoon at three o'clock in Room 10-250, and to the All-Technology Smoker to be held in Walker Memorial on the evening of October the ninth.

Of today's Mass Meeting, little need be said. Pres. Karl T. Compton, Dean Harold E. Lobdell '17, Prof. Frederick S. Woods, Chairman of the Faculty, and Mr. Bradley Dewey '09, president of the Alumni Association, will officially welcome the new men to the Institute. The opportunity to meet, perhaps a bit formally, the men especially interested in the student body is one which should not be passed over by any member of the lowest class. It is your duty to yourselves and to the School itself to attend this meeting.

The All-Technology Smoker is one of the Institute's oldest annual "get-togethers." A meal is served free of charge to the men entering the Institute for the first time, after which addresses on various branches of undergraduate activity are delivered. The remainder of the evening is completely filled with entertainment of all sorts.

We would urge each and every freshman and transfer to plan his attending these two meetings. Technology is not a school where any great amount of school spirit or similar qualities make themselves apparent. However, there is no dearth of common understanding and appreciation of the purposes and ideas behind Technology and the corresponding legends and traditions. The freshman Mass Meeting today and the All-Technology Smoker next week serve to draw new men into the atmosphere of Technology undergraduate life, and therefore should be written in the required schedules of every new man.

REVEALING COMPARISON

OF INTEREST to every undergraduate is the box on the front page of today's issue containing the cumulative scholastic ratings of the various fraternities, and the comparative ratings of the fraternity and dormitory groups. The fact that these men who chose to live in the dormitories have proven themselves the better students, is one which every experienced Technology student expects.

Scholarship seems to be the main weakness of Technology fraternities. Whether it may be laid to their greater social attractions or to the seemingly obvious revelation that the fraternity man is generally the less intelligent, we are in no position to judge. Those who deplore the existence of such organizations will find in the comparative ratings basis for substantial argument. Certainly, however, the Institute's Greek Letter organizations have more than justified their existence, considering all sides of school life, in spite of their combined scholastic inferiority.

Opening Days of Technology Have Changed Very Little in Twenty Years

Information Service Head Says Students Have Changed Very Little

"No, I don't notice any particular change in registration day. There is always the same crowd and the same questions. Everybody is cheerful and ready to begin work. It's been twenty-two years since I saw my first registration day and they have all been just about alike."

Thus did "Willie" Jackson, popular head of the information bureau in Room 10-100, tell of the changes he has observed in registration day during the twenty-two years he has been on the job telling students where this and that professor has his office, passing out catalogues, and mailing out the great quantity of printed information that is continually being requested of the Institute.

Optimism Prevails

The same spirit of optimism prevails every year, he says. The returning students are always cheerful after their summer of vacation and everyone seems ready and willing to get down to the serious work of beginning classes.

The same machinery operates every year to get the large body of students registered. "It's quite fun to stand to one side and see it operate," said this man who is probably asked more questions than any other one person at the Institute.

Mails Information Too

In addition to standing behind the counter in Room 10-100 and answering the questions that are fired at him and passing out the great quantity of printed matter that is asked for, Mr. Jackson has charge of the mailing of all the catalogues and bulletins that are requested for by mail.

Requests for printed matter that come to the Institute may be sent to the department offices, but eventually they find their way to the Information Office and the material mailed from there. Requests for general catalogues of the Institute make up a large portion of the total requests.

Open Forum

Editor's note: Communications to the Editor will be given consideration where they merit it. It is, however, required that all letters be signed by their authors to guarantee their authenticity. Signatures will be held from publication, if so desired.

To the Editor of THE TECH:

Dear Sir: May I enjoy the privilege of your columns to bring a message to the members of the entering class and to the upperclassmen as well. Of the many excellent courses offered the student body in the group of "General Studies" there is one in particular that carries in it both recreational and practical benefits. I refer to the course in choral singing. While it is true, in these dark days, that no longer may the stein be on the table as a bland adjuvant to "the good song ringing clear," there is a lot of real fun to be found in the harmonious exercise of one's vocal powers. Further, under judicious tutelage, a sweetness of tone may be discovered, previously unsuspected by the singer and even more poignantly by his hearers.

But to this esthetic aspect must be added a very practical element. In learning the essentials of theory and practice in tone production the student is deriving a benefit of real value both in the present and in the later years. The nice adjustment of emphasis, the subtleties of expression are treated in the courses in Public Speaking, which are also included in the General Study group. But to give a suitable and effective vehicle for these intellectual exercises one must possess a voice properly trained and placed. The ability to speak well is a big asset to the professional man; lack of it, a potentially serious handicap. There is more than a grain of truth in the old story of the man who turns to a companion after listening patiently to an ineffective speaker with the query, "What's he talking about?" and receives the laconic answer, "He doesn't say!"

Directors and others of like authority are proverbially hard of hearing as well as stony of heart. The young engineer, called upon to present his project, has his battle half won if he can speak clearly and effectively. Choral singing gives you the training that makes the voice a flexible, obedient servant. I recommend you to consider it well in your selection of your curriculum.

Fraternally yours,
 (Signed) ALLEN WINTER ROWE '01.

The descriptions of the different courses also contribute heavily to the daily mail sent from here.

Send 28 Sacks

The largest single day's mail that has been sent out in recent years was dispatched on the day that the general catalogue for the current academic year was distributed. On that day twenty-eight full sacks of catalogues were sent to all parts of the United States.

Of course, the usual mail is not nearly so much, but this record of one day indicates to some degree the amount of material that is handled through this office.

List Students' Classes

An additional feature of the office is the list of student cards showing where each student is every hour he is on class at the Institute, his address both at home and at school and his telephone number during the term. Similar cards are maintained for the members of the instructing staff.

A card index showing in what room every course is being given and the hours of meeting is on the desk and available to those wishing information of this kind.

Physics Department Studies Mercury Arc

Radio and Other Vacuum Tubes And Arc Rectifiers Are Problems Involved

Among the many problems which are being investigated in the department of Physics at Technology are several in the conduction of electricity through gases. In the past few years this field of physics has become increasingly important not only because of the light which it throws upon the constitution and action of matter but also because of the many commercial applications of discoveries in this field.

Radio and other vacuum tubes, photoelectric cells, artificial sunlight lamps, television tubes and arc rectifiers are only a few of the many devices whose operation is fundamentally dependent upon phenomena in this field.

Research at Institute

An investigation of the mercury arc is in progress in the Physics Department.
 (Continued on page four)

Hold Mass Meeting for Candidates for THE TECH

Friday afternoon at five o'clock in the West Lounge of Walker Memorial, the mass meeting and smoker for new men desiring to become candidates for positions on the business and reportorial staffs of THE TECH will be held.

At this time the heads of the various departments of the tri-weekly undergraduate newspaper will explain the work of their divisions and new men will meet the present members of the staff. The competitions for positions will be explained by the general manager and any questions regarding the work of the men on the staff will be answered.

Moving Day Relic Lasts and Is Now Excuse for Story

Fifteen Year Old Fresco Now Hangs In Fraternity Dining Room

Over the door entering into the dining room of the _____ fraternity house hangs a fresco picturing Neptune and a group of mermaids frolicking around in the sea with the fishes, while overhead the seagulls soar. Greek and Italian art flashes through one's mind at the sight and one asks a friend, "What is this?" With a contented smile of one who has a good story to tell he relates how—

One day fifteen years ago Technology moved to its new buildings on the Cambridge shore. All day was spent in bidding the old Rogers Building goodbye and in celebrating the occupancy of the new buildings.

That night a magnificent pageant was held in which a beautiful boat (the "Bucentaur"), designed by Ralph Adams Cram in imitation of the one in which the Doge of Venice set out once every year to wed the Adriatic, was used to carry the faculty and the archives of Technology over the river. A searchlight on top of the Rogers Building was focused on the "Bucentaur" until another searchlight placed on the Dome across the river could shine on it. Then the Rogers light gradually faded out, signifying the passing of the center of Technology to new buildings in Cambridge.

As the faculty landed, carrying the Great Seal and the archives of Technology, a colorful display of fireworks blazed up against the sky. And then the pageant continued in the Great Court while the "Bucentaur" was deserted.

Later—the pageant is over, the great court lies bare and deserted. A cold wind is blowing, driving sheets of rain against Harvard Bridge. A policeman on his beat tramps past the Institute and sees the "Bucentaur" with her delicately wrought stern straining at her moorings and rocking heavily in the waves.

Three shapes appear near the ship's dock, then disappear carrying between them a heavy slab, so it seems. The patrolman whistles, shouts, and runs after them, but they escape in the murky darkness. The next day the "Bucentaur" had disappeared beneath the water. The waves had been too strong for the delicate craft. Seams had opened up and water had poured in.

Over in the _____ house, amid much laughter and talk, the last remaining piece of the "Bucentaur" captured by the three boys was hoisted up over the dining room door. There it has stayed till this day, a treasured prize, and a good excuse for a story.

New and Newly Renovated APARTMENTS

Near Harvard Bridge, Boston side Five minutes' walk to Technology buildings. Two and three rooms, bath and kitchenette.

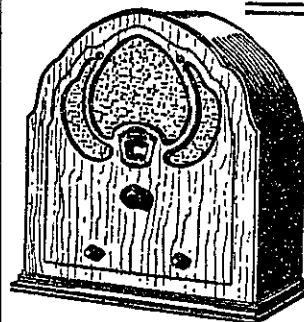
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Telephone E. E. RICE, Liberty 2667, or see WILLIAM JACKSON, Information Office, Room 10-100, Technology.

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Tech Engineering News Makes First Appearance Today

Compton's Message to Students Is Feature Article of October Issue

Featuring the article written by Pres. Karl T. Compton as a greeting to the old as well as the new students at the Institute, the Tech Engineering News, undergraduate technical journal, this morning makes its initial appearance of the academic year when the October issue is placed on the stands at the time of the annual subscription campaign.

In his message to the students, which bears the title, "Taking Stock in 1931," Dr. Compton points out that in times of prosperity there is little incentive for excellence but that in times of adversity competition forces one to extraordinary efforts to achieve success. In a time of unemployment and retarded business it is important that every man plan his course to survive the period of stress and to emerge with a firm basis of success. This particularly applies to the student in that undergraduate achievement is at a premium and the outstanding men usually get the choice positions, a premium is placed on post-graduate work, and a premium is placed on the best schools.

He further points out how periods of unemployment may create engineering positions, regardless of how paradoxical it seems. He concluded with quotations from an argument prepared last spring to show that scientific education and research are not being over-emphasized.

Many Different Subjects

The remainder of the issue contains articles by graduates of the Institute, faculty members and undergraduates, on widely varying subjects. Dr. M. J. Buerger, Associate Professor of Mineralogy and Petrography at the Institute, contributes an article on the Chemical Identification of Solids by Crystallography, which explains the methods followed in identifying solids by optical methods.

"The Engineer's Place in Public Utilities," especially the electric light and power industry, is discussed by Thomas E. Penard '00, and undergraduate articles on "The Hudson River Bridge," and "Glass Bottle Manufacture," written by Donald G. Fink '33 and Charles T. Stewart '34, appear.

Ship Propulsion

Frank V. Smith, of the Federal and Marine Department of the General Electric Company, contributes an article entitled "Turbine Electric Ship Propulsion." A complete page is devoted to diagrams explaining the operation of a water expansion engine which in small sizes is more efficient than steam.

Staff changes are announced on the editorial page as follows: Wilbur B. Huston '33 is appointed to the position of advertising manager, a position left vacant by the resignation of Edmund H. Lloyd '33. Edward L. Jones '33, former features editor, has been appointed associate editor.

Is Good Issue

In looking over the issue, the reviewer finds the message from Doctor Compton the best feature, with the article on identification by crystallography closely following it in interest, although it is somewhat technical for an undergraduate unacquainted with the subject. Articles on the new George Washington Bridge have appeared in too many technical journals for this particular one to have any attraction.

The "Manufacture of Glass Bottles" holds little attraction, and the position of the lead editorial hardly seems the proper place in which to make an appeal for new men to join the staff of a publication.

The article by Mr. Penard offers a detailed explanation of the positions which engineers occupy in the electric light and power industry, and gives men interested in this field a definite view of their opportunities and will be of value to them. "Turbine Electric Ship Propulsion" explains to one unacquainted with such matters some of the features of this method of propulsion.

The October issue of T. E. N. indicates that the staff has been at work over the summer, and they have published a magazine that deserves praise, particularly as most of the work was done during the vacation period.

At the Wellesley alumni parade last June the different classes wore the clothes in vogue at the time of their graduation.

Freshman Rules

1. All freshmen should wear regulation ties, four-in-hand, with cardinal and gray stripes. These should be worn when on the Institute grounds from the day classes begin until the beginning of Christmas vacation. These ties are sold on Registration Day by the freshman Rules Committee, and after that by the Coop.

2. Freshmen are expected to speak to all members of the faculty and to tip their hats to the president of the Institute and the dean.

3. Freshmen should not loiter around the Main Lobby, nor sit on the benches in the Lobby. If the freshmen win Field Day, this restriction shall be abandoned.

SPORTS DESK

It might be well to emphasize the fact for the benefit of the incoming freshmen, that indicating one's desire to take up a sport at this time will not lessen one's chances to take part in the events which make up Field Day competition. Practices for most of the winter sports are not begun with any great degree of regularity until after Field Day.

Don Gilman will be very much in the foreground for the next few weeks, if indications evidenced by his track work of the past three years are to be any indication of this, his last season, here. He was captain of his freshman cross-country team and also of his freshman track team, is the holder of several "straight T's" and has broken many of the Institute records for track events. He was elected as captain for this year's cross-country team at the cross-country banquet, which took place at the end of last year's season.

The varsity wrestling season, which starts about the middle of December and ends with the Intercollegiate in the middle of March, will be singularly successful, if the number of letter men returning is to be a criterion. Ex-Captain Pittblado will be about the only man from last year's varsity who was graduated. He leaves his post as captain to Lou Vassalotti, who wrestled the 165-pound class last year. In addition to men who were on last year's varsity, there will be several men coming up from the freshman team who will add materially to the strength of the varsity.

Johnny Jewett is to captain the track team this year. He is a member of the relay team, a wearer of the "T," as well as being the holder of the Institute record in the 600-yard run. At the Penn relays, last year, he was the only man to show really exceptional form or ability in his event. There were plenty of good men on the team, but under the strain of the trip, the unusual competition, and other unfavorable conditions, they didn't show their stuff the way this man did. If the rest of the relay team had turned in performances equal to his, there would have been a different story to tell.

Only a few of the track stars of last year graduated, among them being the ex-captain, Bror Grondal, holder of several Institute records in the weight events. Ben Hazeltine, the pole-vaulter and hockey player-captain, graduated. His place will be contested for by several men who showed much promise last year.

If Dick Bell continues in the pace he set for himself last year, he will break into the ranks of the ten-second men. At several times last year, there seemed to be a chance of his running the century in ten flat, but each trial was marred by some unfavorable factor, and it still remains to be done. When he does, he will, incidentally, set a new Institute record for the event. To date, Technology has never been able to produce a man who could get down to ten seconds.

Charlie deFazio, the two-mile runner, who paced Don Gilman so many times, graduated along with Ross, Dick Baltzer and Allbright. Robertson, who made a new Institute record in the javelin throw last year, is returning, and will be a sure counter. The material coming from last year's freshman team will be a tremendous help to Coach Hedlund in planning his meets. There was interest almost equaling that in the varsity in the doings of the 1934 freshmen middle-distance men, particularly. In addition to these, there will be a new supply of broad jumpers of sterling qualities, already holders of records which had never before been surpassed in the Institute.

225 Students Have Had Physical Exams Made For This Year

Staff of Eight Doctors Ready To Examine 300 Undergraduates Today

By Saturday noon more than 225 members of the undergraduate student body of the Institute had been given their annual physical examinations and more than 300 appointments for examinations had been made for Monday when a staff of eight doctors will be on hand to continue the work.

The number of examinations that have been given far surpasses the number that had been given at a corresponding time last year, stated Miss E. M. Broderick of the Infirmary staff. "There has been a great cooperation among the students in passing around the news and in making appointments," she said.

Examinations for All

Included in the registration material which is distributed today is a sheet attached to the class roll cards containing an excerpt from the General Regulations of the Institute stating that every undergraduate must report to the medical director for a complete physical examination during the first term of each year and that every graduate student must report for such an examination during the first term of his residence as a graduate student at the Institute.

Beneath this extract and over the name of H. E. Lobbell, Dean, appears the following: "Arrangements have been made by the medical director to give physical examinations without charge providing an immediate appointment is made at the Homberg Infirmary. A fee of \$5 will be charged to defray the cost of each appointment made after November 1.

Usual Infirmary List

In response to the question of whether there were more or fewer patients at the Infirmary at the opening of the Institute this year than last, Miss Broderick said that there was about the same number. Five men were on the Infirmary list Saturday. These included:

Prof. Edward E. Bugbee, Associate Professor of Mining Engineering and Metallurgy; Ivan Cliff, instructor; Guerrero D. Lobo, graduate student; M. Maeser, instructor in the Department of Mechanical Engineering; Richard Shaw, employee.

68TH REGISTRATION OFFICIALLY OPENS

(Continued from page one)

nities continued their active "rushing," and added to the headaches and bewildering of the new men. Many first-year men were unable to locate their T.C.A. advisors for much-needed consultation on their action for the next few days.

At three o'clock this afternoon all the new students will gather in Room 10-250 for a short meeting. They will be addressed by Pres. K. T. Compton, the Chairman of the Faculty, Prof. F. S. Woods; the President of the Alumni Association, Mr. Bradley Dewey, and by Dean H. E. Lobbell '17. It behooves all first-year men to attend this meeting.

NOTICE

All men interested in the managerial competition for Track and Cross-Country Managers should report at the Track office in the Track House at 4 o'clock Tuesday, September 29.

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44 Scollay Square
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19 School Street
437 Boylston Street
1080 Boylston Street
34 Bromfield Street
540 Commonwealth Avenue
204 Dartmouth Street

ALLSTON

1215 Commonwealth Avenue

CAMBRIDGE

78 Massachusetts Avenue

Field Day is One Week Earlier Than Announced

Field Day will be held on Friday, October 30, this year instead of Friday, November 6, as was announced on the blotter distributed by the Technology Christian Association. Announcement of the mistake is made to avoid any confusion in regard to preparations.

Faculty Briefs

Prof. Norbert Wiener of the department of Mathematics has been granted leave of absence for next year, and will carry on study and investigations in mathematics abroad. Professor Wiener plans to conduct most of his work in Germany, where two years ago he attended the University of Gottingen as a Guggenheim Fellow.

Prof. John T. Norton of the department of Mining and Metallurgy at the Institute has been granted a Scandinavian-American Fellowship for study in Sweden next year. He has been given leave of absence for the fall term, and will attend the University of Stockholm, where he plans to carry on work under the general direction of Dr. Arne Westgren, one of the world's greatest authorities on physical metallurgy.

Prof. Tenney L. Davis of the department of Chemistry sailed with Mrs. Davis on August 12 for an extended European trip. As a delegate of the American Academy of Arts and Sciences, he attended the Faraday Celebration at London in September, an occasion sponsored by the Royal Institution of Great Britain in centenary honor of Faraday's discovery of electromagnetic induction.

Following this, Professor Davis plans to visit chemical centers of Europe and to meet chemists of various countries. He is particularly interested in places important in the history of chemistry, and in scientists who are making a study of that subject.

Prior to his European trip, Professor Davis gave graduate courses at the summer school of Western Reserve University, Cleveland, on the subjects of "The Mechanism of Organic Reactions" and "The History of Chemistry."

Dr. G. B. Waterhouse, professor of Metallurgy at the Institute, lectured before a meeting of the Springfield Chapter of the American Society for Steel Treating on May 11. The subject of his address was "The Relation of Metallurgical Education to Industry."

Under the 1932 Olympic rules for sailing events, officers in the navy or merchant marine will be considered amateurs and eligible to compete.

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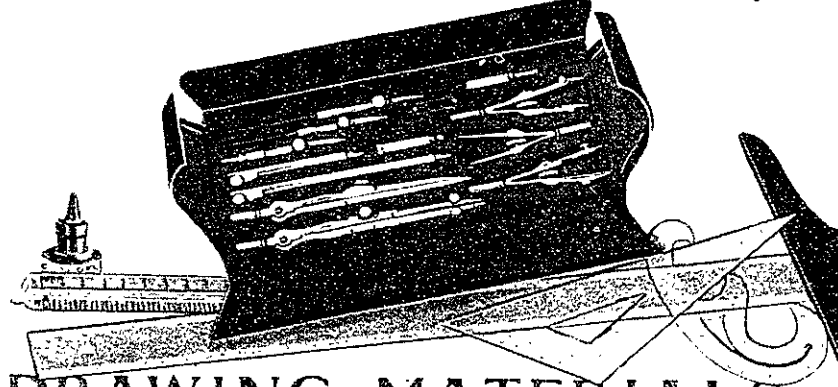
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CALENDAR

Monday, September 28

9.00-4.00 — Registration and Physical exams.
3.00 — Address by Dr. Karl T. Compton to freshmen, 10-250
4.00 — Soccer mass meeting in Hangar Gym.

Tuesday, September 29

5.00 — Crew mass meeting in Room 10-250.

Wednesday, September 30

First track practice for all men.
5.00 — Freshmen desiring to be crew managers meet at boat house.

As We See the MOVIES

The Fine Arts Theatre

"Jean de la Lune" was first written as a comedy of three acts, and was produced for the first time in Paris at the theatre of the Champs Elysees in April, 1929. To date it has had more than 345 performances.

"Jean de la Lune," or "Moondreaming Jean," is a good fellow of not too much practical sense. A botanist, he is constantly dreaming of producing a new species of flower of incredible loveliness. The story is roughly as follows: Jean loves Marceline, the girl friend of his pal Richard, and invites her to visit him, planning to tell her of his love. She does, and in the midst of Jean's ardent lovmaking, Richard appears, having overheard a telephone conversation between Marceline and one of her girl friends, and having seen some rather incriminating love letters showing Marceline in her true light. Richard then definitely terminates his affair with the girl and, despite her and Jean's pleas, leaves them. Jean marries Marceline, and they live together happily for four years, despite the fact that Jean's new brother-in-law, Clotair, makes himself annoying by constantly borrowing money. This happy married life is cut short, however, by Marceline's proving herself unfaithful to her husband in favor of a man named Gaston. But Gaston is an inconstant lover, and soon fades from sight, leaving for abroad. Another, Alexander, comes into her life. This man entices her to leave with him, deserting her husband, Jean. She does, and on the train just as it is to leave the station she begins to think and to regard herself in her true light. Comparing her reliable old Jean with the present lover, she decides on the part of her husband, and hastens to alight from the train just as it is starting, leaving Alexander staring open-mouthed. Going home, she finds Jean just as adoring as ever, never having believed that she had momentarily deserted him for another.

Physics Department Studies Mercury Arc

(Continued from page two)

This arc finds application in the mercury arc rectifier and the thyatron. Until recently only the steady state operation had been probed.

Since the mechanisms involved in all arcs are very similar, it is important to know the transient characteristics of the mercury arc. Such knowledge would be a great help in clearing up some of the present problems in striping and extinguishing arcs as well as their operation on alternating current.

By means of small probe wires and electrodes placed at various points in the arc it is possible to determine the electric fields, the electron and positive ion densities and energies, and other variables in the arc. It is hoped that the work will aid in the design of power rectifiers.

The vacuum tube industry, which now is worth hundreds of millions, is based on the early discovery that electrons were boiled out of a heated metal.

PROF. W. SPANNHAKE JOINS SCHOOL STAFF

(Continued from page one)

during which time he was in charge of the design of the turbines at the Aufkirchen and Eitting hydro-electric plants on the Isar River near Munich.

While at the Institute Professor Spannhake will give graduate courses on the general theory and practical design of hydraulic turbines and pumps and will also supervise graduate research work on model turbines and pumps.

Professor Spannhake is accompanied by his son, who will be a special student at the Institute.

REQUIRE COURSE II MEN TO TAKE G47

(Continued from page one)

hardly be taken as a fair sample. Arrangements have been made, however, with the Chemical Engineering Department and with the Architectural Department, both of which require G47, whereby the Course II engineers meet a board of directors made up of Chemical Engineering students or of Architectural students from these departments who come before a board of Mechanical Engineering students.

The subjects which the Course II engineers will take up with the boards from the other departments will be of engineering value to the men constituting the Board, and similarly the subjects presented before the boards made up of Mechanical Engineering students will be selected so as to be of value to them.

The department of English has offered G47 for some time, the Chemical Engineers and the Architectural students having taken it as a general study.

Although the scheme as outlined above will throw extra work onto the English Department and some additional work onto the professors in the departments, it is felt that the advantage to the students is worth the extra work.

Each student in II will appear three times before a board and will prepare three papers, ten hours being allowed per paper; he will also serve either as chairman or as secretary of a board for one period.

A list of subjects for presentation before a board of directors will be posted during the first term so that a student may select such subjects as he desires for the three meetings at which he functions.

Intercollegiates

Students at Kansas City College have voted to comply with the faculty wish that there be no stags at dances. Members of the instructing staff have decided that by following such a rule and by employing programs the co-eds will be given a greater opportunity to poplarity.

An oration in Latin was delivered at the commencement exercises held at the College of New Jersey in 1748.

The U. S. Government is receiving 500 applications a day for Federal positions.

Freshmen Leave Camp Massapoag for Registration

Sports, Addresses and Activity Meetings Divide Hours of Pleasure

(Continued from page one)

the lake. Following the supper, Camp Director John Lawrence '32, spoke for a short time welcoming the new men and pointing out the aims of the encampment. John Walters, of the Cambridge Y.M.C.A., was introduced and he gave the history of Camp Massapoag.

Friendship Lodge, the large assembly hall, has this year been enlarged, and a stage and footlights have been added, and the evening meeting was held with much more comfort and less crowding than last year. Donald B. Gilman '32, president of the Senior class, took charge of this meeting and introduced Walter Humphreys '97, secretary of the Corporation, who gave an illustrated talk on the history of Technology, showing many slides illustrating the life at the Institute.

"Obie" Denison Leads Songs and Cheers

Orville B. Denison '11, or better known as "Obie," one time alumni secretary, returned again to lead the new men in the old Technology songs and cheers, and entertained with his comic favorites till he was hoarse.

Col. Frank Locke, Personnel Director at the Institute, spoke on his work and was followed by J. Cobham Noyes '32, chairman of the Walker Memorial Committee, who told of the things to find in Walker Memorial and how it could be used.

Game of Hare and Hound Follows

After waiting at the tent of Henry Humphreys, the president of the Sophomore class, for some time, the frosh decided that he would spend the night out and started out in search, but the diminutive Sophomore found some safe hiding-place and spent the night without the usual ducking. In fact they were still hunting when the reporter left to write his story.

The main feature of Saturday was the discussion which was led by Walter J. Kitchen. Problems of school and social life connected with the Institute were talked over and many took part.

President Visits Camp

Pres. Karl T. Compton arrived at noon and remained long enough to speak to the freshmen about his trip to the Pacific Coast and watch the rowing and baseball. Dean Harold E. Lobdell '17, Col. Samuel C. Vestal, and several of the faculty and alumni spoke to the freshmen, giving them advice and getting acquainted.

At the evening campfire in the Lodge many others of the faculty and alumni gave their welcomes to the new class and saw a demonstration of sleight-of-hand by Robert W. Tripp '33 and Lyman H. Allen, Jr. '34.

Hedlund Holds Track Meet

Coach Oscar Hedlund held a track meet Sunday morning and was well pleased with

New Type of Integrating Machine Developed by Dr. Truman S. Gray

E. E. Instructor Employs Two Photo-Electric Cells in Calculator

A new type of calculating machine which turns involved mathematical problems into a beam of light and analyzes the light to find the answer was developed this summer by Dr. Truman S. Gray in the department of Electrical Engineering at the Massachusetts Institute of Technology. The new machine, which has been named the Photo-Electric Integrator, is said to mark a notable step in the advancement of machine methods of computation in science and engineering.

The versatile photo-electric cell finds a new field of usefulness in this new calculating instrument. With it the solution of extremely intricate mathematical problems is accomplished with astounding rapidity and accuracy. It depends for its operation on the modification of a beam of light in accordance with the particular mathematical problem. Measurement of this beam of light gives the solution of the problem.

Use Photo-Electric Cell

The heart of the machine, as in many talking movie devices, is a photo-electric cell. However, not one, but two of those cells are used, and they are connected in an electrical circuit which enables the operator to make a comparison between two light beams. One of these beams of known quantity is changed until it is shown by the machine to be equal to the other beam which is of unknown quantity. Thus a measurement of the light representing the answer to the problem is obtained in somewhat the same way that the grocer, by adding a known weight to one side of his scales, balances and determines the weight of a purchase.

The light in the beam of unknown quantity passes through screens which are cut out in the shape of the graphs which make up the problem, and the amount of light in the beam depends upon the product of the two curves. As the operator moves one of the screens by turning a crank, he turns with the other hand a second crank in such a manner that the light in the two beams is maintained equal at all times. The number of times he has turned the

results, finding much promising material in the Class of 1935. Following the meet another discussion was led by Mr. Kitchen. The afternoon service was led by Rev. Robert Bull of the Trinity Church of Boston.

Coach Hedlund took the floor again at the evening campfire and showed pictures of the past track meets and also several comedies.

Three Lap Streaks Busy

Coach Haines was busy on Saturday and Sunday, along with four or five varsity men and two coxes, giving all the new men a chance at an oar. The faculty had a fine time watching the beginners trying to feather and pull in time with various results.

latter crank is an indication of the result of the problem and is recorded by the machine in the form of a final curve automatically drawn by a moving pencil.

Several Years in Development

Dr. Gray, at the suggestion of Dr. Vannevar Bush of the department of Electrical Engineering, began work on the photo-electric integrator several years ago and only recently perfected it.

The machine has a broad field of application in the mathematical sciences, and in particular to the problems of physics, electrical engineering, aeronautics, and business statistical correlation. Students have made use of it in the examination of the flow of the Ohio and Susquehanna rivers. The flow of the Ohio River was analyzed in order to find the hidden regular variations which would give information regarding its future behavior. Statistical correlation, a method of finding the effect of one thing upon the behavior of another, was used to study the flow of the Susquehanna River.

INSTITUTE NAMES NEW ECONOMICS PROFESSOR

Technology has drawn another disciple from the field of business into its faculty with the appointment of Ralph Evans Freeman as associate professor of Economics at the Institute. Mr. Freeman was formerly research assistant to Cyrus S. Eaton, noted industrialist of Cleveland, Ohio.

Mr. Freeman's early education was gained in England. In 1914 he was graduated from McMaster University in Canada, and in 1916 he was awarded a Rhodes Scholarship. He carried on graduate studies at Balliol College, Oxford, and for two years at the University of Chicago, where he was granted a fellowship in the department of Economics. He has specialized in economics, history and philosophy, and for six years was head of the department of Economics and Political Science at the University of Western Ontario. He is the author of "Economics for Canadians," published in 1928.

In addition to his teaching, Mr. Freeman has had valuable experience in business. In 1921 and 1922 he was financial representative of the Mauthner-Rawnsley Syndicate in Czecho-Slovakia. He joined Otis and Company in 1929.

Mr. Freeman saw active service on the western front in the World War from 1916 to 1918. As an officer of the Royal Field Artillery he was in the fighting at Ypres in 1916, and later was acting adjutant, and finally divisional artillery reconnaissance officer.

Co-eds at the University of North Carolina now number 205, the Daily Tar Heel risks the comment: One would be safe in saying that the place for the modern woman is not in the home.

A. B.'s. are a drug on the market said an editorial appearing in the Williams Record.

IMPORTANT ANNOUNCEMENT

To Freshmen:

The TECH-COOP is the official distributor of all your supplies. The material required for all freshmen has been passed upon by the Faculty and approved by them.

Every TECH Man should become a member without delay. The membership fee is one dollar.

Last year the dividends paid on purchases was 10 per cent on cash and 8 per cent on charge.

Every purchase of 25 cents or over is credited toward your dividend.

All memberships start July 1 and expire June 30.

Join before making a purchase, for dividends cannot be credited on purchases made previous to taking out a membership.

Checks not exceeding fifty dollars are cashed for members between the hours of 9 a.m. and 12 noon except Saturdays.

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