



A. M. Zarem

Strained Relations—

Relations between the United States and Japan, which never have been exactly fraternal, were recently strained to an alarming degree when news of the bombing and subsequent sinking of the Panay—an American gunboat on rescue duty in the orient—was received. For a while it seemed that grave consequences would appear—and they have. Although the State Department has accepted the Japanese "apology for the incident" the matter has by no means been considered as forgotten.

As Japanese aggression continues in China, more and more Americans are beginning to realize that Japan will sooner or later run amuck and that something must be done about it before the world is set aflame again as it was in 1914. This worry has kept our State Department working overtime.

In answer to a Senate resolution requesting information on the amount of American trade with China, Secretary of State Mr. Cordell Hull recently stated: "Referring expressly to the situation in the Far East, an area which contains approximately one half the population of the world, the United States is deeply interested in supporting by peaceful means influences contributory to the preservation and encouragement of orderly processes. This interest far transcends in importance the value of American trade with China or American investments in China, it transcends even the question of safeguarding the immediate welfare of American citizens in China."

Hitler and Mussolini had better pay good attention to that note for the warning it carries is aimed directly at dictatorships in general. Should the dictators force the hand of democracy we be unto them. A combination of the British and French fleets could maintain an upper hand in the Mediterranean and North Seas—while the American Navy could successfully quarantine Japan and keep her isolated for as long as is necessary.

Whether or not such an event will ever arise means little. The fact is: if it does arise it can be handled.

Marriage Licenses—

Last Wednesday, the Indiana State Supreme Court handed down a decision which is bound to have far-reaching effects in the future. The decision upheld a statute eighty-six years old. This statute, enacted so many years ago, specifically forbids the issue of marriage licenses "to women who are not residents of the county in which the license is issued."

Some six months ago when Illinois' new hygienic marriage law (which requires that couples submit to medical examinations for venereal diseases before a license can be issued to them) was put into effect, marrying justices of the neighboring state of Indiana found that they were doing a much greater business than ever before. At Crown Point alone, the marriage rate rose from nearly 500 couples a month in 1936 and for the first six months of 1937, to the amazing number of 1910 couples in the month of July. For a while it seemed as if the immediate effect of Illinois' attempt to raise its marital standards, was an increase in business for Crown Point "marrying justices." This abnormal condition has at last been remedied.

Justice James P. Hughes, who wrote the opinion in the decision, said: "One of the great evils in the country today is the loose marriage and divorce laws. Adjoining states, during the last few years, have enacted strict laws concerning the issuance of marriage licenses and because of this fact, in order to evade the law, thousands have come to Indiana and secured marriage licenses, and by so doing have not only evaded the laws of their respective states but also have been parties to the violation of the laws of our state."

"Courts of justice in one state should out of comity help to enforce the laws of another state when by such enforcement they will not violate their own laws or inflict an injury on some one of their own citizens." Thus the first step is taken toward aiding Illinois enforce her new marriage law. It would be well if more states followed her example.

Professor Freeman Speaker on Second of New Radio Talks

As a sequel to the discussion by Professor Freeman on the "Contribution of Things Electrical to Our Civilization," the electrical engineering department presented the second of its series of radio talks last Saturday evening at 7:15 p.m. over station WCFL. This program, as were previous programs, was under the direction of A. P. Schreiber, publicity director.

Professor Freeman discussed the third principal application of electricity: power. He compared the amount of power required to light an electric light bulb with the amount of power required to run large machinery using the horse as his unit of comparison. The two other principal applications of electricity mentioned by Prof. Freeman were communication and lighting.

To illustrate the tremendous amount of electrical power developed Professor Freeman stated, "... If our entire population of one hundred and thirty million people were all trying to perform the work that is now done electrically, they could do only a very small part, perhaps less than a tenth of it, with little or no time left for other things ..."

In addition to time saved by electricity Prof. Freeman pointed out the economic value of electricity by calling attention to the fact "that in the supplying of electricity there is invested about twelve billions of dollars, and over three hundred millions of dollars are paid to about two hundred and fifty thousand workers in this service which serves twenty-four million customers."

This program, which was the second of the third series of radio programs sponsored by the Institute, will be continued next Saturday evening over WCFL at 7:15 p.m.

Second Annual Radio Script Contest Opened by Drake

Drake University's department of radio announces its second annual radio playwriting competition. Scripts may be submitted at any time until the close of the contest on March 15, 1938. Fifty dollars in cash prizes are offered for the best original radio plays submitted.

First prize is thirty-five dollars, with a second prize of ten dollars and a third of five dollars. The competition is open to both amateur and professional writers of the United States. Scripts should play either 13 or 26 minutes.

Movies on Steel Heard by A.I.Ch.E.

A sound movie, with "Steel" as its subject, was shown to the Armour chapter of the A. I. Ch. E. last Friday. The first part of the picture showed vividly how coke, limestone, and iron ore are turned into pig iron. This, as molten metal, is poured into a large vat, where it is kept molten until called for, to be made into steel.

Steel can be made in three principal ways: by the Bessemer converter, which does it cheaply, and effectively for certain steels, but is not easily controlled; by the electric furnace, which costs more to run, but can be controlled with precision (It is used only for highly specialized steels because of the cost); and by the open hearth furnace, which can be cheaply run, and well controlled. The glowing steel was shown "blowing" in a Bessemer converter, spilling from an electric furnace, and "cooking" in one open hearth furnace. Numerous tons of metal are handled at one time.

The analyzing laboratory plays an important role in the steel industry. As soon as a sample from a furnace has shown that the steel has come up to specifications, the furnace is tapped and the liquid flows into molds to freeze into "pigs." "Soaking pits" then keep these billets at a constant temperature throughout until they are ready for the rolling mill.

Rolling steel in the automatic rolling mills seems to put the steel to life as it goes into one end of the mill, crawls out the other, and then reverses the process, almost voluntarily. The apparatus that turns it over seems equally human in its actions.

All operations of machinery in the mills is carried on from remote "towers" and behind windows.

A. I. E. E. Will Honor Graduating Member

To the most outstanding of the graduating members of the Armour branch AIEE will go a one year fully paid associate membership in the national AIEE, given by the Chicago section of the AIEE. The branch members are to select the student from a group of candidates to be chosen by the student papers committee headed by E. Brown. The committee will base their selections on the scholarship, extra-curricular activities, and AIEE activities of the student. The final selection of the recipient of the award is to be made by vote of the branch members. Similar awards are to be made to outstanding men at Northwestern University and Lewis Institute.

A prize of one hundred dollars is offered by the national AIEE for the best paper submitted by a student member. Papers entered in this national contest will be judged mainly on their composition, originality, and technical aspect.

A technical discussion of television difficulties was given by G. M. Ives at last week's AIEE meeting. A drawn out business discussion made it necessary for him to curtail his talk.

Armour Alumnus Talks to A.S.M.E.

Lectures on Efficiency of Centralized Steam Plants

Mr. John C. Segeler, assistant chief engineer at the University of Chicago, spoke at the A. S. M. E. meeting last Friday. Mr. Segeler, who is a mechanical engineering graduate of the class of '28, discussed the relative advantages of central heating plants over small individual units.

The present U. of C. power plant, which consists of four coal fired, 1200 H.P. boilers is located over a mile from the university campus. The steam is delivered to the various buildings via a system of underground tunnels. The university, since its beginning in 1892, has had several plants each of which have supplied power from a centrally located plant.

The efficiency of the Chicago plant can be determined, it was pointed out, by steam flow meters located at the boiler, at the taps from the main line, and at the buildings. The meters are read bi-monthly and checked against each other. Of 397 million pounds of steam generated at the boiler last year, a total of 334 million pounds were delivered to the buildings. Thus 16 per cent of the power was lost in the tunnel system. In spite of this loss the overall efficiency still compares favorably with other plants in the country.

Low fuel and labor costs are other advantages of a central plant. It was pointed out that coal for small individual units would cost \$4.50 per ton due to the hauling expenses. The cost per ton for the university plant for last year was less than \$3.00 per ton. The plant requires seventeen men to operate it. Individual plants for equivalent output would require more than 89 men to operate satisfactorily. The total cost of the steam, including fuel, labor, and depreciation, amounted to 72 cents per 1000 pounds.

The senior members of the society made a tour of the plant after the talk.

Co-ops Visit Tractor Plant of International Harvester

Visiting the tractor works of the International Harvester Company, the Co-op Club spent the entire morning last Wednesday going through the foundry, forge, heat-treating, machining, and assembly departments.

Tractors in the making were subjects of interest to the groups as they toured the large plant. The more spectacular sights included the steam hammers in the forge room mounted on a concrete base sixty-five feet thick, and welding steel ties fourteen inches wide which produced a fan of sparks fifteen to twenty feet high.

Among the future trips scheduled is a trip to the R. R. Donnelly & Sons printing plant next Friday, January 21.

Other activities planned by the Co-ops are a buffet supper and dance at a downtown hotel on February 5 with the attention also centering on a skating party Sunday, January 23.

Sophomore 'Winter Frolics' Year's First Social Success

Approximately six hundred Tech-hawks danced to the rhythm of Emil Flindt last Friday evening at the "Winter Frolics," the annual sophomore social event.

The dancers found ample room for their pleasure in the Grand Ballroom of the Medinah Athletic club. The low price of the bids helped attract the large attendance at Armour's 1938 social debut.

The balcony lounges proved popular to the less energetic of the merry-makers. The private elevators and ample parking facilities added the finishing touch to an excellent arrangement.

The dance was ably handled by the sophomore social chairman, Gene Worcester, who made the affair both a financial and social success.

Graduate Division to Award Scholarships

Grinter Releases List for 1938-1939

Announcement has been made of scholarships, fellowships, and assistantships which will be available in the graduate division for the year 1938-1939. Graduate study and research may lead to advanced degrees in civil, electrical, mechanical or chemical engineering, physics, or mathematics.

The graduate student will be given an unusual opportunity for contact with both pure and industrial research in the Research Foundation. Departmental laboratories are also available to the graduate student.

Applications for appointments are to be made before February 20, 1938, although delayed applications may be considered later. The announcement of appointments will be made March 10. The scholarships, available to students of good scholastic qualifications, carry a stipend of from \$300 to \$400 per year, while the fellowships carry from \$400 to \$900. The recipients of teaching and research fellowships or of industrial fellowships and assistantships will be students who show unusual promise in graduate or industrial research work. The usual stipends for these appointments are from \$800 to \$900 and from \$1000 to \$1200 respectively.

A post-doctorate fellowship in the Research Foundation is available with a stipend of from \$1600 to \$2000. Those desiring to be considered in the first list of appointments are requested to apply to Dr. L. E. Grinter, dean of the graduate division, before February 20, 1938.

Tribune Plant Visited by Tech News Staff

Printing presses, engraving processes, scores of linotype machines—newspaper work on the large scale of *The Chicago Tribune*—were seen on Monday evening of last week by members of the Tech News.

A movie, entitled "Trees to Tribunes," was shown before the beginning of the tour through the huge plant. This was taken at Shelter Bay, a town erected by *The Tribune* on the St. Lawrence River in Canada.

The morgue proved to be interesting as it contained filed stories and pictures of everybody, notable and obscure, which for one reason or another have been in the news during the last thirty years. More than three million clippings and over seven hundred thousand photographs are available.

One room is devoted to the photograph department where photographs are taken of photographs. Reproductions of these photographs in metal are known as line engravings and are mounted on a metal base and sent to the composing room. The composing room contains seventy-two linotype machines and many makeup banks.

The group then saw the making of the stereotype which is used on the large presses. There are eighty-eight news printing units in the Tribune pressroom. A combination of seven of the new high speed press units recently installed by the Tribune can print 50,000 fifty-six page papers in an hour.

After the tour, tickets to a radio broadcast were given out to the visitors. The program given by the WGN concert orchestra concluded a very enjoyable evening.

Final Examinations

First Semester 1937-1938
MONDAY, JANUARY 24

Time	Instructor	Place
8:30-10:20		
Higher Algebra, Math. 10	Math. Instructors	Gymnasium
College Alg. & Elem. of Trig., Math. 101 A-L*	Math. Instructors	Drafting Room, Main Building
College Alg. & Elem. of Trig., Math. 101 MC-Z	Math. Instructors	Gymnasium
Elementary German, German 101	Hammer	Science Hall
Elements of Heat Power, M.E. 412	Libby	211 Chapin Hall
Elementary French, French 101	Hammer	Science Hall
Electricity, E.E. 414 (Civils)	Kent	214 Chapin Hall
Metallurgy, Ch.E. 405	Carpenter	Drafting Room, Mission Bldg.
10:30-12:20		
Engineering Mech., Mech. 201, 202	Mech. Instructors	Gymnasium
Applied Mechanics, Mech. 203, 204	Mech. Instructors	Gymnasium
Electricity, E.E. 414	Nash	Science Hall
Alternating Current Machinery, E.E. 401	Freeman	Drafting Room, Main Building
Architectural Practice, Arch. 401	Harper	Art Institute
1:10-3:00		
Engineering, M.E. 308, 310, 407	Lab. Instructors	Gymnasium
3:40-5:00		
Logic and Argumentation, English 201 A-E*	English Instructors	Gymnasium
Logic and Argumentation, English 201 F-Z	English Instructors	Drafting Room, Main Building
Soil Mechanics (Civils)	Ensz	211 Chapin Hall
Differential Equations, Math. 301	Ford	214 Chapin Hall
Theory of the Complex Variable, Math. 503	Ford	214 Chapin Hall

TUESDAY, JANUARY 25

8:30-10:20		
General Physics, Physics 201	Physics Instructors	Gymnasium
General Physics, Physics 202	Physics Instructors	Drafting Room, Main Building
General Physics, Physics 203	Physics Instructors	Drafting Room, Main Building
Electric Power Plants, E.E. 406	Freeman	Science Hall
10:30-12:20		
General Chemistry, Ch.E. 101	Chem. Instructors	Gymnasium
Mechanics of Materials, Mech. 301 A-G*	Mech. Instructors	Drafting Room, Main Building
Mechanics of Materials, Mech. 301 H-Z	Mech. Instructors	Drafting Room, Mission Building
Flow of Fluids, Mech. 303	Mech. Instructors	Drafting Room, Main Building
Graphic Statics, C.E. 314	Spears	211 Chapin Hall
Heat Power Engineering, M.E. 411 (Civils)	Libby	214 Chapin Hall
1:10-3:00		
Business Organization & Control, Soc.Sc. 201	Hansen	Science Hall
Descriptive Geometry, Arch. 101	Harper	Art Institute
Structural Design, C.E. 413 (Arch.)	Spears	211 Chapin Hall
3:10-5:00		
Engineering Shop, M.E. 318, 418	Pearl	Science Hall
Astronomy, C.E. 401	Penn	211 Chapin Hall
Electricity, E.E. 415 (Ch.E.) (F.P.E.)	Ahern	Drafting Room, Main Building

WEDNESDAY, JANUARY 26

8:30-10:20		
Thermodynamics, M.E. 305	{Nachman Winston}	Science Hall
Elementary Thermodynamics, M.E. 316	Peebles	211 Chapin Hall
Railway & Highway Const., C.E. 302	Stevens	214 Chapin Hall
Machine Design, M.E. 205	{Swineford Hammett}	Drafting Room, Main Building
10:30-12:20		
Industrial Chemistry, Ch.E. 312	Schommer	211 Chapin Hall
Architectural Const., Arch. 201	Harper	Art Institute
Business Policy, Soc. Sc. 401	Soc. Sc. Instructors	Science Hall
Solid Geometry, Math. 11		Drafting Room, Main Building

*Names beginning with these letters (Inclusive)
(Continued on page four)