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Selective Service Folly

The recent changes in Selective Service rulings reveal an almost incredible lack of foresightedness on the part of United States manpower officials. When this war began, our country was woefully short of many things. Most of these shortages have now been eliminated, and our production lines turn out vast quantities of war materials. But there is one vital commodity, essential to the conduct of modern war, of which America still does not have a sufficient supply. We refer of course to trained engineers and scientists.

Now, the many technical training programs which have been set up have turned out immense numbers of technicians who are being used to fill the posts of engineers. The results of this have not always been helpful to the war effort, and the huge waste of materials, manpower, and time consequent upon the use of these ersatz engineers has often reached large proportions. In the month of February, one of the largest magnesium firms in the country scrapped 100% of its castings. And yet the research men who were working on ways and means to prevent this waste have been drafted. Perhaps they can do their country more good toting a gun or swabbing decks, but it seems doubtful.

In one respect, there is certainly no reason why engineering and science students should be allowed to continue their schooling, when all other young fellows are in the armed forces. And we can see that to a person unaware of the facts involved, deferment of technical students must seem like unwarranted partiality.

But the opinion of the layman, or any social or political pressure must not be allowed to cloud the issue. For every young man who is qualified to receive a technical education there are thousands who cannot. This is no slur upon these latter. Chances are they will make as good, if not better, fighters than the others. But the fact remains that this country must have engineers (and not 10-week-wonder technicans), and there is no choice but to use for that purpose those men who are best capable of receiving an engineering training.

That this is the case has been recognized by both our allies and our enemies. In Russia hundreds of thousands of men are sent to engineering schools, while Germany allots a proportionate number of men for this purpose. Of course, it is scarcely likely that America's war effort will be immediately crippled by the drafting of engineers. But it seems more than probable that this will not be a short war, and before it is over, the shortage of trained men will have its tragic effect.

—FRIED

It's Election Year

Research Reports—

Lufcy Times 15,000 Mercury Arcs In Research Project

Carroll Lufcy must occasionally have dreams in which he is pursued by a huge mercury arc. For in a recent research project of his, Lufcy struck a mercury arc some 15,000 times and determined, for each of those trials, how much time elapsed before the arc went out.

Lufcy, a research assistant in physics, spends most of his time working with the electron microscope. However, last summer he spent about five weeks investigating the stability of a mercury arc as a function of the area of the cathode pool.

According to classical theory, there is a certain minimum current below which a mercury arc will not operate. However, in 1940, W. H. Sparring, working at IIT under the supervision of Dr. Paul L. Copeland, found that for currents below this critical one, there was a finite chance of the arc's lighting and staying lit. The results of his work will not be given here, but one aspect of it, which came about accidentally, led to the research which Lufcy has carried out.

Like Lufcy, Sparring used a tube in which a pool of mercury served as the cathode of the arc. During the course of his experiments, he accidentally allowed the arc to jump to a piece of tungsten in the tube. The tungsten was vaporized, and part of it deposited on the glass near the surface of the mercury. As a result of this, the cathode spot became "anchored." (The "cathode spot" is a well-localized, small area of the mercury surface on which the arc terminates).

Normally, the cathode spot dances about erratically on the surface of the cathode pool, but in this case the presence of the tungsten held the cathode spot fast in one point. As a result of this, it was found that the average life of the arc was increased tremendously for a given current. (The "life" of the arc is the length of time it remains lit; this will vary from one trial to another, and it was the average of a number of such trials which was considered.)

The reason for this increase in life with the anchoring of the cathode spot was not known, but it was thought that perhaps it might be due to the fact that the anchoring had the effect of greatly reducing the effective size of the cathode pool surface. This would suggest a dependance of the arc life on the pool area, and it was Lufcy's purpose to investigate this possibility.

In the apparatus he used, the part of the tube containing the pool of mercury was roughly conical in shape, so that by adding more mercury, the surface area of the pool was increased. The arc was struck by a small Tesla coil, and the tube was then immersed in a constant temperature bath until it went out. The duration of the arc was timed with a stop-watch.

The results obtained show that there is a marked increase in arc life with a decrease in pool area. The pool areas he worked with ranged from 5 to 0.05 sq. cm. With the latter, the arc became so stable that measurements on its life were impractical. However, it was found that its average life did approach that of Sparring's anchored-spot arc.

The large number of observations was necessary in order that the data might be analyzed in a statistical manner. For each given current, a plot is made of the logarithm of the number of arc lives longer than a certain time against that time. The result is a straight line, whose slope measures the average arc life.

Such is Life

Yup, mathematics is certainly wonderful stuff. People who know what's what in the realms of existence theorems and reductio ad absurdums can prove just about anything they want to—or so it would seem.

F'rinstance, do we mere mortals who cast our lot with those who live beyond the hallowed gate of the land of existence and rigor know what a googol is? Or even a googolplex? No! But the digit diggers do. Do we ken the inner workings of Langevin functions, space matrices, or even such an apparently simple thing as the brachistochrone problem? Again, no! But the theorem theologians do.

Still with all their erudition and apparent dignity, life among the number nabobs has its lighter side. In their searches for terminology they occasionally sink to the level of the mere street gamin. To those of us who know—the time derivative or rate of change of acceleration, (more explicitly the third derivative of displacement with respect to time) has been aptly termed the JERK.

You don't believe it? Look in Mechanical Vibrations by the well known prince of oscillators, Ali Ben den Hartog, along near the bottom of page 143 and see for yourself.

Yup, such is life amongst the mathematicians.

Hovel

When Dr. Victor L. Streeter wished to raise a motion picture screen hanging over the blackboard in his Fluid Mech. class, Gedaliah Katz offered to do the job. Katz gave a lusty pull; the result: one movie screen ripped half-way off its roller. Katz has planned to take a day off and repair the screen.

Jack (Firebug) Suriano has taken a maniacal delight in giving everyone the "Hot foot". Only a few of his associates have been lucky enough to escape his initiation into the "Order of the Smoking Shoe."

Milton Oran has been officially named into the Polar Bear's Club recently, as he played golf on one of the coldest days in March. Not only did he undertake such a feat but after twelve holes he decided that it was too warm and went for a swim in the thirteenth hole.

Jerry Lettvin's married life with Adele seems to be a favorite topic of conversation among the Civil Aeros. A band of the lads led by Mort Paul are learning plenty from Lettvin, who is kind enough to answer all their furtive questions. In return for this vital knowledge the boys make many suggestions which Lettvin proceeds to try out at home.

If Alan Simon, Jr. Mech., doesn't stop wearing that "shrewd skypiece" of his, he will soon have every woman in the city running, (the other way).

One new freshman remarking to another after seeing the headline of the April Fool issue, "Gee when I picked this school I guess I really got into a questionable atmosphere."

First prize for original artistry goes to Elia Sternberg, instructor in mechanics, who has found it necessary to illustrate his lectures with pictures of carving knives, flags, airplanes, autos, shoes, and hanging men. His motive for this no doubt is to either interest or scare the students.

John Basich, Jr. Mech., paid a visit to the Arx at the Art Institute last week to learn a bit about the Architects but somehow or other it turned out that he taught them plenty about the Engineering Wolfing Technique. After all with his experience with actresses and models he should be the Grand Llama of Women.

Phillip Browne, math instructor, had a very embarrassing moment recently. After working up a fever trying to explain a theory in calculus he turned proudly to ask the class if they understood. With a resounding "NO," the class answered him. He then turned back to the board, mumbles to himself, and then said "Well, we'll try again tomorrow."

Barton Malina appears to be developing the sure signs of the Royal Order of Wolves. Reports are that his last few Monday evenings have been spent dancing (?) in the company of some student nurses. His temperature will bear watching.

Marshall Newcome is going about flashing a mysterious letter that ends with "Love, and pools of purple passion" and is signed "Rickey," but don't let him kid you fellows, the little girl friend was only reminding him to get her a perfume that has just come out.

The flame that seems to attract all the moths, or should we say wolves, is none other than that gay Lewis freshman Henrietta Ferrara. Is it a good luck horseshoe, S.A. or that cheap perfume that she wears.

Harold Leftwich recently became a bedridden Chem major due to his haphazard use of silver nitrate in the Quant. Lab., which he claims made him very ill due to oral contact. Four days' absence and a temperature of one hundred and four were the price of an extremely curious and experimental element ever present in Leftwich's scientific character.

Dick Flaskemp has slipped recently from MTO to a position on the STO in that he has dated Wanda, the west campus switchboard operator, only once. For those who wish to dispel the lonely moments for the young lady, she can be reached during school hours at Chesapeake 3000.

An example of worship from afar is that shown by Joe Algino, the 3-A treasurer, for Maurine Roberson, News Bureau chick. Maurine has never seen Joe and probably won't until the gray haired lad musters up enough courage. If we judge from past performances we could only classify Joe as a SSTO because of his dateless nights.

—BROTHER ALOYSIUS