

TECH TALK TECH TALK TECH TALK TECH TALK

MASSACHUSETTS INSTITUTE OF TECHNOLOGY December 11, 1969



"Number 366," says Amy. "What's your problem?"

DRAFTSWOMAN EXTRAORDINAIRE

Easily the most popular room on campus last week--and still continuing--was the Selective Service Advisory, where pert Mrs. Amy Metcalfe opened almost every conversation with "What's your number?" The ensuing conversations ranged from the quite common "Just let your 2-S run out," for those with high numbers in the lottery, to specific advice on occupational deferments or how to go about getting classified as a conscientious objector for those with low numbers.

Part of the office's popularity is no doubt due to its possession of what may be the most beloved reference book at MIT--"Medical Standards for Service." It took Amy close to six months of paper work to get a copy, but it is an invaluable resource to students and others threatened by the draft. One boy happily exclaimed "Oh, boy, number 43 and a deferrable illness--this is too much!"

Amy, who holds a master's degree in counseling, came into the draft business cold two years ago, but after a summer of hounding the regional Selective Service headquarters, was quite knowledgeable about draft law. Now she can quote chapter and verse. Though the office is mainly intended to be a counseling service for undergraduates, Amy gets many visits from other draft-eligible men around the Institute and even some walk-in trade from the street.

The new lottery, she explains, is not a change in the draft law, merely a new way of selecting those who will be called into military service. But, if you have any questions, drop by Room 7-105 and add them to the thousands Amy can answer.

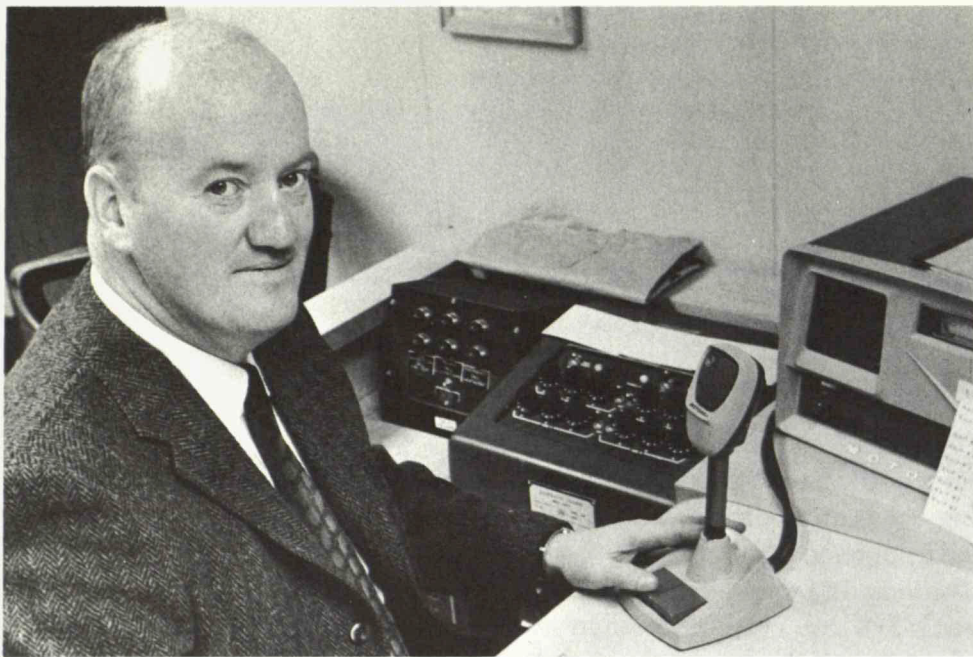
LOOKING AHEAD

With preparations for the hectic and happy holiday season engulfing most of us now, here are a couple of notes to jot down on your January calendars.

Beginning with the second term, there will be a number of openings in the Technology Nursery School and, as of now, there is almost no waiting list. The Nursery School wants to emphasize that enrollment is open to all MIT children, not just those of faculty and students. For further information, call Mrs. Stolzenbach at 491-6597.

The Credit Union has scheduled its annual meeting and banquet. The meeting will be held in the Bush Room (10-105) at 5:30 p.m. on Thursday, January 15, with the banquet to follow Saturday evening, January 17. The banquet will again be held at the Montvale Plaza in Stoneham, with cocktails at 7 and dinner at 8 and dancing throughout

the evening. Tickets are \$7 per person for the sumptuous feast--no inflation here, it's the same price as last year--and can be bought at the Credit Union offices on campus and at Lincoln.



Connie Murphy prepares to dispatch the fleet.

FLEETING GLIMPSE

In a community the size of MIT, things and people are always on the move. Most of the task of moving them falls into the hands of Physical Plant and its fleet of nearly fifty various vehicles (other internal organizations, like RLE, IL and Graphic Arts, have their own wheels). Altogether there are 19 trucks, ten tractors, some sweepers, a bulldozer, fork lift, Galion roller and four buggies or putt-putts--not to mention the hero of last winter, the snow melter which everyone hopes can stay in the garage this year.

Most vehicles are general purpose ones, used for carrying carpenters and their supplies, for instance, or cylinders of gases. But some are very specialized, like the snow melter or the generator truck which speeds, when necessary to the scene of power failures to restore electricity. One truck can be outfitted to carry racing shells from MIT to other schools for meets. Shells are too awkward and much too delicate to trust to conventional shipping methods. New this year is a large, powerful lawn sweeper which can sweep up and mulch nearly five times as many leaves as its predecessors.

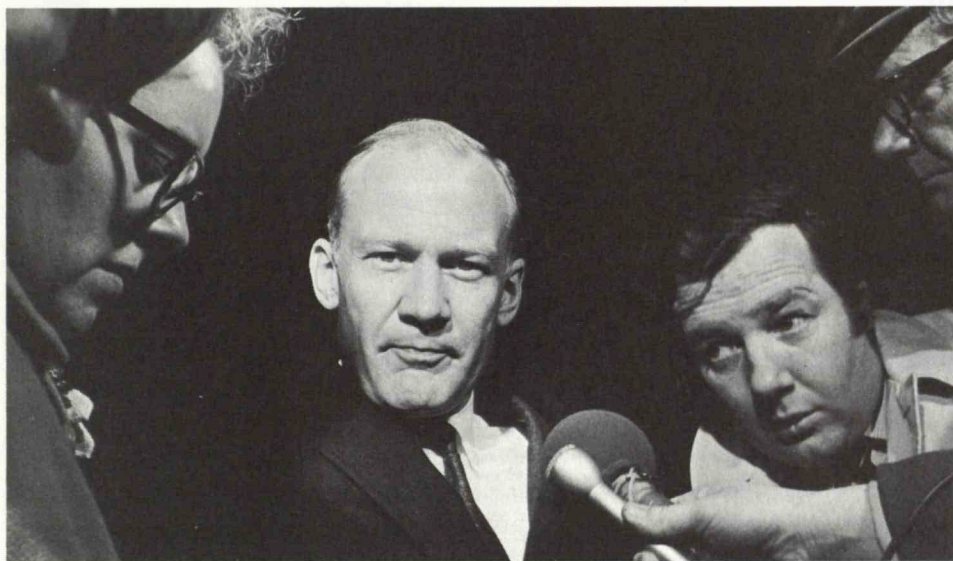
As frequently happens, the fleet has just grown according to the Institute's needs, but now a couple of changes will make it more responsive and efficient. Chief is the appointment of long-time groundsman Connie Murphy as dispatcher. Several of the vehicles are already radio equipped, but more radios will be added to increase productivity.

The other new operation is a maintenance shop for the vehicles. Up until recently, trucks and putt-putts alike mostly got serviced only when they were in dire need. Preventive maintenance, Connie feels, will have beneficial results both in reduced down time and in longer life for the vehicles. On long and loyal service, though, we really can't complain. Still working regularly are a 20-year-old tractor and a 15-year-old truck.

SEASONAL NOTES

The annual Children's Christmas Party, sponsored by the RD&T Union, will be held Sunday afternoon (December 14) in the Lexington Armory for all Institute children. Host for the happy occasion will be Millstone's Phil Bohunicky in his role as Fleepo the Clown, who will introduce games, cartoons and entertainment. As always, there will be popcorn and candy as the afternoon's suspense builds for the arrival of Santa Claus who will distribute presents to all children under 12.

The Christmas Convocation will be held next Tuesday (December 16) at 11 a.m. in Kresge. Main speaker this year will be the Reverend William Sloane Coffin, Jr., chaplain of Yale University. Everyone in the community is invited to attend, and classes will be suspended from 11 a.m. until noon. As is traditional, there will be refreshments and caroling will follow the convocation in the lobby.



Aldrin was greeted by newsmen as he arrived at Logan Airport.



Doc and Maggie cavort after splashdown.

OF APOLLO AND ASTRONAUTS

Though the voyage of Apollo 12 did not demand our attention in the same measure as the history-making flight of Apollo 11, it nevertheless represented a major accomplishment in space exploration. It proved, most importantly, that it was possible for the on-board guidance system to make a pinpoint landing using computer programs developed a quarter of a million miles away and several months in advance. Those programs were written right here at MIT in Margaret Hamilton's guidance programming group at Instrumentation, and will pave the way for further specific exploration of the moon.

The same superb programming went into the entire mission, perhaps best typified by the splashdown exactly on target. Splashdown as usual, was cause for celebration, not only in Houston but at the Institute as well. We were well prepared for it this time with the mock-up of the command module still sitting serenely outside Hayden Library--a perfect foil for the jubilation of Doc Draper and Margaret Hamilton.

And, while Apollo 12's Conrad, Gordon and Bean were reposing in quarantine, Apollo 11's Armstrong, Aldrin and Collins were completing their round-the-world tour. Big Air Force One swooped briefly into Logan Airport last week to drop off Buzz Aldrin for a day at the Institute--his alma mater--as a member of the visiting committee in earth sciences.



James Leverone of LNS demonstrates safe jumping techniques.

BATTERY BLAST

Jumping car batteries is becoming very common and is usually done under rushed conditions and in extreme cold. Few people realize how dangerous this can be, as is shown by an off-the-job-accident which happened last winter.

Booster cables were used to start a car while the temperature was about 15° below zero. The cables were being properly connected electrically. But as the last connection was being made the battery exploded. Battery debris and acid flew in every direction. The exposed skin of the operator was washed immediately so that there was no injury from the acid, although clothing was damaged by it. The only injury was a cut nose caused by the flying debris.

Hydrogen gas buildup inside the battery sets the stage for an explosion. This is especially true if the battery water is low and the cap vents are clogged, allowing space for the hydrogen gas to be trapped. Whenever a battery is being charged, hydrogen is being generated. Any spark in or near the outside of the battery may explode the gas.

To minimize the hazard of a car battery exploding, use the following procedure.

1. Remove the cell caps from both batteries to vent the trapped gas, and leave them off during the jumping process.
2. Most American cars built since 1963 have a negative grounded system due to the use of alternators and transistorized radios. Because of the use of alternators it is very important not to reverse the polarity while jumping batteries. A good rule to remember is always to connect the jumpers negative to negative and positive to positive, regardless of the polarity of either car. If this is done properly, you eliminate the possibility of damaging the alternator or exploding the battery.
3. Connect booster cables one at a time to prevent shorting the live battery with the booster cables or either car.
4. As an added precaution, cover the battery with heavy material, such as a piece of carpeting, while connections are being made.

HOT TIPS

A prominent manufacturer of book matches has pointed out that the consumer is usually at fault in instances when a book of matches spontaneously bursts into flame. These matches are manufactured in accordance with federal specifications and "quality [is] assured

by unannounced visits from government inspectors." The manufacturer goes on to say that there are three main causes of spontaneous ignition.

First, of course, is failure to close the cover completely. This would allow a loose particle to break from the matchhead as it was struck and fly up and light the remaining matches. Matches can be damaged in transit between the manufacturer and the distributor, or by rough handling by the consumer himself, causing the possibility of loose particles.

Second, when the striking motion is prematurely halted, the flame of the lit match can come into contact with the wide end of a closed book, causing ignition. This is most likely to happen when one is cupping the hand to shield the match from air currents.

Finally, when several matchbooks are carried in a pocket or purse, the friction edge of one book may come to lodge against the matchhead of another. Then, only a slight movement can cause enough friction to cause ignition.

Note: Matches that have been wet or damp have been known to sputter and jump when struck.

GFCI IS HERE!

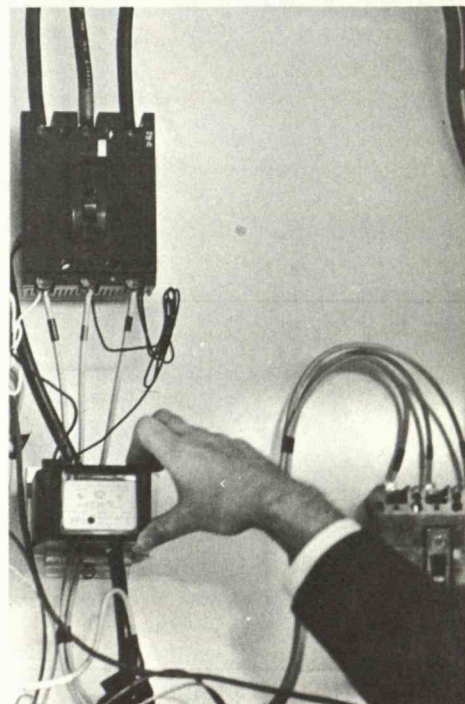
Because we are all familiar with radios, toasters, electric tools and other appliances, they appear harmless, yet they cause approximately 30,000 injuries and 1,000 deaths through electric shock annually in the United States and Canada. A number of reliable companies are now marketing products known as Ground Fault Circuit Interrupters, which, when properly selected and installed, can be adjusted to limit electrical shock to voltages less than likely to produce dangerous injuries or fatalities.

Unlike the normally fused circuit which operates to cut off the current only when the current exceeds the rating of the device or circuit, the GFCI can rapidly cut off power when it detects the leaking current of a ground fault. In this case rapidly means approximately 1/40th of a second faster than a heartbeat. When a person inadvertently gets into an electric circuit, the FFCI shuts off the power almost instantly, preventing severe shocks.

In household terms, for instance, the GFCI would protect a housewife who accidentally touches the kitchen faucet while using a defective electric can opener, or the youngster who sticks a paper clip into an electrical outlet. Ordinary fuse or circuit breaker type protection would probably not operate at all in these instances.

The GFCI protects not only people, but valuable equipment as well, and is now available at a price within the reach of the small laboratory or average homeowner. They can be installed either at the original power source or on an individual circuit, depending on the intended use. In combination with good electrical practices, GFCIs may be of special interest in activities ranging from lighted backyard swimming pools to recreational shops, experimental laboratories and hospitals.

Tom Shepherd, staff electrical engineer in Physical Plant, Ext. 6358, is available to discuss the applications and installations of these devices with Institute personnel who may be interested in this type of protection.



A GFCI in operation at MIT.