



With new TCA Office secretary Dotsie Reed (seated): student UF chairmen (left to right) Gardiner Gay, Diane Macunovich, John Klensin



At UF meeting, Elliot Richardson (left) talks with Dr. Stratton

## MIT HOSTS UNITED FUND

As Chairman for Colleges in the Greater Boston United Fund campaign for 1964, President Stratton invited representatives from 26 neighboring colleges and universities to a meeting at MIT on September 24.

After expressing his own belief in the purposes of the United Fund, Dr. Stratton introduced Elliot Richardson (see photo), Chairman of the Greater Boston United Fund. Mr. Richardson stressed what he feels is the unfortunate choice that the community will face if it fails to make the United Fund a success.

MIT's student UF drive this year will be sponsored in conjunction with the Institute campaign by TCA and APO. Co-chairmen of the undergraduate campaign are Diane Macunovich '66, Gardiner Gay '66 and John Klensin '66. Solicitation will be by student living groups, and there will be a booth in Bldg. 10 lobby during the week of the student drive, October 21-25.

## MIT IN LOWELL INSTITUTE SCHOOL

More than 25 per cent of students taking advantage of tuition-free Lowell Institute School this semester are MIT employees. Held in the evening, Lowell classes lead to a certificate granted upon graduation from the two-year electrical and mechanical courses.

Participating from MIT are, in the first year course: Dennis J. Callahan, Lincoln; Richard A. Carlton, Instrumentation; Anthony G. DiNapoli, Instrumentation; John J. Drobot, Jr., Lincoln; Nathan A. Field, Instrumentation; Gerald D. Galvin, Instrumentation; Beverly R. Gorman, Instrumentation; Wilmer O. Johnson, Instrumentation; Margaret A. Larson, Instrumentation; Ralph J. Lunt, Instrumentation; Ronald X. MacLeod, Instrumentation; Joseph C. Roxborough, Nuclear Science; James M. Watson, Instrumentation; Leonard Wetterberg, Instrumentation;



and Richard L. Williams, Instrumentation.

In the second-year electrical course: Daniel D. Caskin, LNS; Robert C. Coccia, Instrumentation; Robert L. Dovidio, Instrumentation; Dominic A. Fulginiti, Instrumentation; Harvey J. Lander, RLE; Kevin R. Naughton, Instrumentation; William G. Orphanos, Mech. Eng.; Victor A. Otero, Elec. Eng.; Bernard J. Patten, Jr., Instrumentation; Stanley M. Plachowicz, Instrumentation; Joseph L. Rupp, Nuc. Eng.; Matti Soikkeli, Instrumentation; Ivan L. Stokes, Instrumentation; Edward D. Weiner, LNS.

Second year mechanical course: Borislav Bialocki, Magnet Lab.; William J. Buckley, Jr., Lincoln; Norman W. Cutler, Jr., Instrumentation; George L. Diggs, Instrumentation; Walker M. Sloan, III, Mech. Eng.; Charles O. Webber, Physical Plant.

Taking the supplementary course "Transistor Electronics": Henry C. Baldassarri, Instrumentation; Arthur E. Berg, RLE; Eugene L. Buchman, Instrumentation; Benjamin Dores, Instrumentation; Spiros G. Geotis, Meteorology; William M. Hedly, Instrumentation; Fred A. Jones, Instrumentation; Bruce A. MacDonald, Instrumentation; Edward J. McKay, Jr., Electronic Systems; John L. Majkut, Lincoln; Marion A. Munroe, Chemistry; Martin R. O'Connell, Lincoln; D. Cosmo Papa, RLE; Harold D. Schofield, Lincoln; Manuel L. Silva, Aerophysics Lab; and Richard E. Smith, Instrumentation.

Registration for the second supplementary course, "Probability and Random Variables," will take place on October 16.



Capt. Pugh presents award to Virginia Worthington. In center: Capt. Nicholson

#### NAVY AWARD

A Navy Department award for outstanding service was presented recently to Mrs. Virginia Worthington, secretary to Capt. William Nicholson in Naval Arch. Virginia has worked for the Navy at MIT for almost ten years.

A native of Lawrence, Mass., she graduated from the Mackintosh Business School there, and held several jobs before coming to the Institute in 1954. She and her husband live in Pelham, N.H. in a 200-year old house filled with the antiques which she collects. She commutes 70 miles a day to MIT. The drive, she says, is only bad in winter, and the worst is in Boston.

The Navy's award to Virginia is for sustained outstanding performance, including "breadth of knowledge."

#### CREDIT UNION ACCOUNTS AUDITED

The MIT Credit Union accounts ending in 2 and 3 have been audited and verified as of Sept. 30, 1963. Confirmation notices have been mailed. If there are any discrepancies CU urges that the notices be returned as soon as possible. If your account number ends in 2 or 3, and you have not received a confirmation notice, please contact Joseph Cullinan (Chairman of the CU Supervisory Committee) at 20C-222A or on Ext. 4495. Federal regulations require that CU accounts be audited periodically, and the Supervisory Committee does a group each quarter.

#### LIFE DRAWING CLASSES

MIT life drawing classes, open to students and all members of the Institute, will be given on Wednesday evenings from 7:30 to 9:30 p.m. in Room 5-411. They are sponsored by the Department of Architecture. Fee will be \$1 per evening or \$8 for any ten evenings in the first or second semesters. Instruction will be given on request. For information, call Ext. 4416.





Gene Snieder (left) and head of Naval Arch. H.G. Stever with trophy Gene refinished and mounted.

## NAUTICAL NEWS

Sailors from all departments are invited to enter a new competition. During the week of Oct. 14 the Department of Naval Architecture will hold races from the Sailing Pavilion for the MIT Departmental Sailing Trophy. The new trophy, a mounted model of an M Class Herreshoff, will go to the high point team. Each department may enter any number of teams. Object is to pick the best from each department, then sail a final series of three to five races to pick the winner. A Dutch treat awards dinner will be held on Oct. 21 at 7 p.m. in the Faculty Club. Names of entries for the races may be phoned to Capt. W. M. Nicholson, Ext. 132.

## NEW DIAL TOME

For the first time in 21 years the MIT telephone directory has a new format. It was done by photo offset from lists printed by the IBM 1401. Information itself is stored on magnetic tape from a new programming of the IBM 7090 computer.

Main reason for the new form, says Owen Haselton (Registrar's Office), was time -- the computerized version can be issued and revised much more quickly. Two revisions of the book are planned, the first in November and another near January. Last week IBM cards for individual entries were sent to departments, with office lists and extra cards for new additions. New and corrected cards and lists should be returned to Room 5-221, as soon as possible. Any suggestions for improvements will be welcomed, too.

## SUPERVISORS' COURSE

Starting this month a new group of 21 supervisors are taking "Principles of Supervisory Management," conducted on the MIT campus by members of the faculty and staff of Northeastern University. Meeting every week from 4:15 to 6 p.m., the class will continue from now through December and into January.

Participation is voluntary, and the men come from all over campus. This year's group represents an aggregate of 254 years of service to MIT. They are taking the course to review such topics as the authorities and responsibilities of a supervisor, psychology of human relations, effective communications and job training. Some 160 laboratory, maintenance and office supervisors in Cambridge have completed the two-year-old course. Lincoln Lab has had it too.



Northeastern Prof. D.H. Kuch and MIT supervisors: (foreground table, clockwise:) J. Murphy, R. Driscoll, T. Tibbets, C. Tourtellotte, W. Mosher, S. Mittell, E. Berk, R. Barrieau, R. Balboni, F. Bidwell. (far table, counterclockwise:) K. Spinney, H. Armitstead, G. Adams, A. Sabbag, H. Ohm, J. Lane, J. Loughran, J. Laniefski, K. Simpson. Missing: C. Lothrop, D. Leavitt.



MAIL SERVICE REMINDER: GIVE CORRESPONDENTS YOUR MIT BUILDING & ROOM NUMBERS, FOR FASTER DELIVERY.

FOR SALE ETC.

Thayer crib with Kantwet mattress, \$25. Auto scissors jack, \$2. VO2-5955.  
 Traller with spare tire and stop lights, 4' x 6' metal box, \$75. 941-0821.  
 Skates, boy's size 1, hockey, by Zwicker, \$8. Dick Brown, ext 3966.  
 Parents in Newton area interested in joining babysitting pool. Pat West, LA7-7189.  
 Stereo hi-fi receiver, 30 w Harmon-Kardon stereo recital, \$110. Bill, UN8-7478.  
 Raccoon coat, size 14, street length, good cond, \$35. 438-1056 after 7 p.m.  
 2 Elektrovoice spkrs, 15 TRX-B integrated 3-way spkr system, \$40 ea; 2 Elektrovoice walnut empire enclosures, designed to accommodate 15 TRX-5 spkrs, orig \$110 ea, asking \$30. Andy, ext 5472 Linc.  
 Elec frying pan, \$7; elec percolater, \$5; 50-piece stainless steel flatware set, \$10; 3 prs wooden skis 6'3", 6'6", 6'9", \$20 pair with binding. D. Dupon, 868-8023 evgs.  
 Aristo-Studio slide rule, 24 scales, new, \$13; case of drawing instruments, best quality, very big, \$25. Helmut Hagemann, 24 Harvard St., Camb.  
 Astro telescope, 40 mm object, F=800 mm, 3 eyepieces (3x, 5x, 7x), 3x view finder, sunfilter, mount, inverting prism, case. Orig \$68, asking \$40 or best. Apt. 1110 Westgate, 868-8586 evgs.  
 2 comfortable arm chrs, \$10ea; glass top tray tble, \$5; hi-fi spkr, \$20; record turntable, \$5; pink Bates twin spreads, match curtains, \$10; child's back-seat playpen, \$2; Royal std typewriter, \$5; etc. WA6-0122.  
 Danish rug, reversible, striped, blk, beige, yellow, 9 x 12, almost new, \$40. Wolf, ext 2126 or VO2-3760.  
 Siamese Sealpoint kittens, champion stock, 6 wks, fully trained. IV4-5099.  
 Do you want tutoring in Spanish? call 864-0805.  
 Royal Quiet Deluxe typewriter, port, pica type, gray, \$30 or best offer. Ext. 4737.  
 7-piece D'ette set, 6 chairs, grey Formica-top tble with extra leaf, \$45. 862-0309.  
 Speed Graphic 34, 135 mm lens, film holders, flash, case, \$125. Dr. Bergies, ext 2242.  
 Alum ext ladder, 24', used once, safety feet and plastic bumpers. Eric Spencer, ext 7886 Linc.  
 VM tape recorder, \$40; RCA-fm R, \$12; small tble R, \$4; bkcase, \$5; swivel chair, \$4; lamp, mahog tble, \$12; ironing board, \$3; assorted clothing women's 10-12, men's 40-42, et al. M13-0094.  
 Free: 3 Angora type grey and white kittens. Ext 401 Linc.  
 Restaurant size deep fat fryer, good cond, \$80. TR6-2341.  
 Parts from '57 Austin Healy 6 cyl eng or entire eng: '60 VW for sale, exc cond, \$1,375, sunroof. Dick Harlow, ext 30-310.  
 Baldwin grand piano, 2-yr old, 6', ebony, \$2,600. J. Enyedy, ext 2233.  
 2 Goodyear snow tires, ww's, 8-50-14, very good cond, reasonable price. Joe Di Martino, ext 2428.  
 16' Cruisers, Inc. runabout, 35 hp Johnson long shaft motor; Dexter trailer, many extras, \$750; 10' B step Hydro, Mercury Mark 20h motor, \$350. JUno 1-0311.  
 Admiral refrig, 5-yr old, 5', aqua with chrome, \$50. 625-6158.  
 Kenmore deluxe washer, white, fam size, used 2 mos, cost \$359, sell for \$180. Ext 652 Linc or AL6-5492 evgs.  
 Heathkit Williamson amp; specially designed pre-amp, cost \$77, sell \$25. Jim Wagner, ext 2286 or 491-2463.  
 Danish Dux Daybed, walnut, \$30. UN4-2087.  
 Tiger kittens, 7-wks old, free. Ext 30-307 or PA9-7608.  
 Eames design swivel-tilt desk chair by Herman Miller, \$50. Ext 2655 or 926-2182.  
 Apex auto washer, top loading, 9 lb capacity, Fiberglass top, req small floor space. Ext 530J Linc.  
 Maple bunk beds, thick mattresses, can be used as twin beds, \$40 comp. Claire or Marilyn, 354-7022 evgs.  
 Portacrib with fitted sheets, net, foam mattress; crib and matt; 35 mm projector; men's ice skates, 9; lg refrig, Kelvinator. 894-9242.  
 Rolodex cab 5x8", capacity 1100 cards, 4x2 1/4, ideal for address file or cross index, 4000 cards, assorted colors, \$50 val, \$35 for the lot. Mrs. Howe, ext 737.  
 Dble bed, matt, \$30; 3 lounge chrs, \$5-10 ea; 9'x12' rug, \$15; K tble, 4 chrs, \$10; 2 bureaus, \$10-12; sm desk, chr, \$6; ironing board, \$4, iron, \$2, mirror, \$2; lamps, \$6. '54 Ford V-8 4-dr sedan, std shift, rebuilt eng, exc tires, good cond, \$150. Loughlin, ext 3703 or 766-5957.  
 Elec hammer, \$25; coffee tble, \$15; fluorescent desk lamp, \$8; summer suit 40-42. G. Manner, ext 718 or EX6-2976 evgs.  
 AKC std poodle puppies for sale, champion stock, paper trained, shots. PA9-0584.  
 '50 TR3, newly rebuilt eng, good cond, \$550. Bob Hopkins, 864-5219.  
 '53 Lincoln 4-dr sedan, auto trans, good eng, \$75. Ken Fox, ext 3494.  
 '53 Pontiac 4-dr sedan, very good run cond, int like new, 1 owner, auto trans, R&H, bk-up lts, sp side mirror, 76,000 orig mi, \$100. PA9-4652.  
 '55 Dodge, good tires, good run order, \$75 or best offer. VO2-8174.  
 '55 Plymouth Savoy 4-dr sedan, 6 cyl, best offer. EL4-6116 after 7.  
 '55 Olds 88 std shift, exc cond, \$300 or best offer. Jerry Masek, ext 3895 or RE4-2205.  
 '55 Merc, must sell, 2-dr, h.t., lthr int, st belts, \$100 or best. 623-0743 after 6, Lena.  
 '55 Chevy convert, red & white, new top, 6 cyl, power glide trans, \$325 or best offer. Ext 7857 Linc.  
 '56 Victoria Ford, htop convert, 2-dr, blue, good mech cond, new tires, muffler, yr old battery, R&H, asking \$450, wlll bicker, prev owner a mechanic. Maryann, ext 30381.  
 '57 Crown Imperial 4-dr sedan, good mech cond, orig owner, full power equip, R&H, orig \$5,800, sell for \$950. Ann, ext 30-381 or 734-4554 after 5.  
 '57 Buick Century, exc cond, \$550. Prof. Thorson, ext 3200 or IV4-8139 evgs.  
 '58 Plymouth convert, white; new paint job, top, seat covers; tires fairly new, orig mi, 1 car owner, getting company car, \$575 or best offer. 623-1230.  
 '58 Ford Fairlane htop convert. 247-9102.  
 '59 VW blk, R, exc cond, \$1000. Bonnie, ext 3544.  
 '59 Rambler American sedan, fully equipped, \$675. R. Conant, UN4-8050.  
 '59 Jaguar 2.4 sports sedan, std shift, all extras, must sell. Henry, 876-3694.  
 '60 Opel 2-dr sedan, R&H, exc cond, \$600. Bill Laverty, ext 2189 or 547-8131 evgs.  
 '60 VW convert, 18,500 mi, \$1,140. Ext 2203.  
 '60 VW sedan, 1 owner, exc cond. 536-0418 after 6.  
 '60 Dodge 2-dr, low mileage, clean, good run cond, Roy, KE6-8743 after 4:30.  
 '60 Sunbeam Alpine, red, 22,000 mi, 3 tops, overdrive, other extras. Ext 7175 Linc.  
 '60 Hillman station wagon, 27,500 mi, R, seat belts, new muffler, very good cond, \$995. Wilde, ext 5897 or 2960.

'60 VW sedan, sunroof, R&H, seat belts, lt jade green, \$900 or best offer. Ext 2226.  
 '61 VW blue sedan, sunroof, ski rack, 30,000 mi, \$1,190. Ext 3374.  
 '61 BMW R-50 motorcycle, Manta windscreens, exc repair. A. W. England, AL4-8356 evgs.  
 '61 VW sedan, R&H, exc cond, avail Oct 15, asking \$1,280. W. Schaal, ext 4997.  
 '62 Vespa-150, fully equip, very low mileage, exc cond, \$275, priced low. DE2-2224.  
 '62 Plymouth Fury convert, exc cond, white with red int, best offer. Skip, DU7-5145 after 6.  
 '62 VW sedan, white, 17,000 mi, windshield washers, undercoat, \$1,345 or best offer. Ext. 30-365, or 648-8288.  
 '63 VW, red with sunroof, \$1,500. K17-1767.  
 Apt to share with 1 other girl, 51 Sacramento St, attrac, comp new, \$150/mo to be divided according to living arrangements. Elizabeth Fuller, TR6-3267 evgs.  
 4-rm air cond apt, ht, ht water, pking, res Watertown, avail Oct 15, \$135/mo. T. Berger, 924-8133.  
 Lg sunny studio apt, avail immed, K, B, Linnean St., Camb, \$139.50/mo. Ext 2915.  
 Lexington 6-rm apt for rent immed, newly reded, near busline and stores, approx 4 mi from Linc Lab. VO2-4758 evgs.  
 Apt for rent now, 4 lg rms, \$130, 3 min to Beacon St. MTA. 566-4788.  
 Bedford 4-rm apt in duplex ranch, full base, avail now. Ext 403 Lin or 274-0286 after 5:30.  
 Furn 1-rm apt, elevator bldg, near Symphony Station, handy to everything. Joyce Carr, ext 2186.  
 Apt for rent near Hvd Sq, 4 rms, porch, \$125/mo. 491-0015 evgs.  
 Allston 3-rms, lg reception hall, 1st flr of 2-fam house, oil heat by tenant, avail Oct 1. ST2-1243.  
 Mod apt, 2 BRs, pking, washing mach and drier avail, 1st flr, air cond, \$135/mo incl ht. Katzen, ext 3703.  
 Sublet from now to Dec 1, lease until June, basement apt, 2BRs, LR, mod cab K, heated, pking, unfurn, tile B, \$105/mo, off SE expressway at Neponset Circle. 472-4137 evgs.  
 Split entry house, West Peabody, 8 fin rms, 3 BRs, LR, DR, K, fam rm, study, 1 1/2 Bs in the low 20's. 535-2605.  
 House for rent for 6 mos, 3BR ranch, furn. Mr. Deverill, ext 30-244.  
 Arlington Morning side area, new 9-rm single hse, split ent, 5 BRs, 3 Bs, 2 fps in 40's. Owner, M18-5647.  
 Waltham 3 BR ranch, lg lot, full base-gar under, 5 min to Rte 128, \$21,500. TW4-7507.  
 Winchester 7-rm split level, 1 1/2 Bs, flagstoned DR, foyer, ww carpeting, gar. PA9-4942.  
 Burlington 3BR ranch, fp LR, walkout cellar, \$16,500. BR2-1063.  
 Berkeley, Calif, house for rent Jan-end summer '64, 11-rm Spanish style furn for 6, 8 min drive to Berkeley campus, 2 cars, \$350/mo, will consider trade for hse or apt, 2BRs, yd, pref car, near Hvd Sq. Ext 4286 or ext 4248.  
 Winchester unfurn 9-rm 1/2 duplex avail Nov. 15-Aug 15 or longer. \$150/mo plus utils. 729-7072.  
 Furn mod hse, lease Feb-Aug '64, 4 BRs, 3 Bs, study, wash mach, dryer, freezer, swimming pool membership. Six Moon Hill, Lexington. VO2-2287 or Ext. 189.  
 Ride wanted: 1 way from Hvd Sq to Acton-Concord area Mon-Fri, 6:45 p.m. Col Bavaro, ext 671 Linc.  
 Wanted: ride from either Westwood or Needham. Nancy, ext 2204.  
 Ride wanted: vicinity of Lewis St., Lynn to MIT, 9-5. Jane, ext 2135.  
 Wanted: to join a car pool from Watertown, between Watertown Ctr. and Waltham to MIT. Contact Dr. Habicht or Dr. Pellett, ext 2817.  
 Wanted: bookcases, wood boxes, wood dining tble, chrs, desk (any kind), Also free or inex piano in decent cond. Didi, ext 5671 or MB-9519 after 6.  
 Wanted: ride to and from vic Westwood Rd, Lexington to 68 Albany St, 8-5. Charlie Perez, ext 2371.  
 Wanted: scooters beyond repair. BE2-9736.  
 Wanted: used elec cement mixer, 1 or 1/2 bag size. Chaklos, ext 748 or Turner 4-1264.  
 Wanted: regulation pool tble. Howard Wong, ext 4009.  
 Roommate wanted to share 4-rm apt, 257 Marlborough St. Camille Gaudette, ext 5683 or CO6-4461 evgs.  
 Wanted: ride from Lexington to MIT Flight Facility in Concord, 8:30-4:30 Mon-Fri. Ext 82-201 or 275-7430 evgs.  
 Wanted: oscilloscope and multimeter. J. Sadowski, ext 7320 Linc.  
 Wanted: auto wash mach; dble bed. R. Schmid, ext 3357 or 782-9349.  
 Want to rent garage in the Cambridge vicinity. IV4-8378 after 6.  
 Wanted: babysitting position for working mother. WA4-7914  
 Wanted: homes for 3 kittens, 8 wks old. UN8-6268.  
 Wanted: man's bike 2nd hand. Ostrea, ext 3300.  
 Need typist with IBM Exec for spare time work, interesting non-tech. Ext 3212, Tues (5-6), Thurs (4-5).  
 Wanted: rider to MIT from Arlington Pk Circle area or Belmont, 9-5. Ext 2371.  
 Wanted: typewriter tble for IBM typewriter. Leonard Coris, ext 2110 or 491-3577.  
 Ride wanted soon, vic state Teachers College, Salem, must be at work at 8:30. Suzanne, ext 30-216.  
 Wanted: typing to be done at home by exp'd secretary, reas rates. Mrs. Cheeseman, 245-4846.  
 Wanted: ride to and from Arlington Heights to MIT, Mon-Frid, 9-5. Suzanne Solis, ext 2981.  
 Wanted: fem rmmate to share Commonwealth Ave. apt with 3 others. Brenda, ext 4461 or 266-7285 evgs.  
 Wanted: boy's English style bike. ST2-4452.  
 Wanted: 2 used snow tires 6.70-15 or 7.10-15, Blackwall, tube or tubeless. C. Wade, ext 2380.  
 Wanted: rides and riders to Billerica. P. Ralph, 663-6864.  
 Wanted: apt in Camb, 11/1 to 12/15, prefer 2 BRs. 254-0276.  
 Wanted: very cheap, used bicycle. 354-5528 after 6 p.m.  
 Wanted: girl 23-28 to share Back Bay apt with 2 others, \$63.33/mo, pking avail. CO2-1217.  
 Wanted: typing. Diane, ext 3494.  
 Urgently wanted: lady's bicycle, max. \$25. Ext 3647 or 876-9578, Waardenburg.  
 Wanted: used man's bicycle. Frank Yin, C17-8275.  
 Wanted: good fam for highly personable fem cat, yr old, interesting markings. Keith, ext 2524 or KE6-9022.  
 Wanted: roommate, female. CO2-0055 after 5.



## RESEARCHERS' NO. 1 FIRE HAZARD . . .

The Factory Mutual Bulletin points out why flammable liquids are more hazardous than ordinary combustibles.

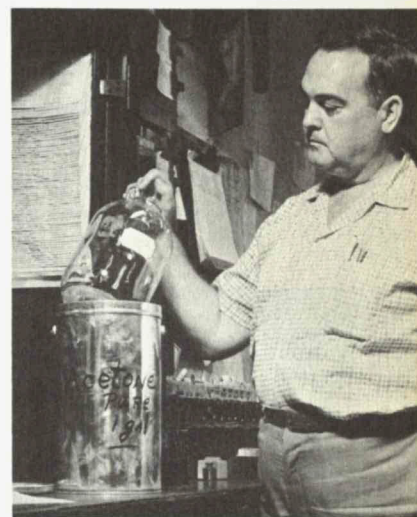
Being volatile, they are easier to ignite since the ignition source need not be utilized to distill off flammable vapor. Once burning, pound for pound, they give off approximately 2 1/2 times as much heat (about 20,000 BTU's per pound) as wood, and liberate this heat 3 to 10 times as fast. Flammable liquids tend to flow, spreading fire over large areas. Due to high vapor pressures, they will develop vapor concentrations that will burn even at low temperatures, making fire extinguishing more difficult.

Confined vapors mixed with the proper proportion of air can result in explosions. Atomized flammable liquids which may develop from flaws in pressurized systems will burn like a torch, if ignited, possibly releasing as much as 120,000 BTU's of heat per gallon.

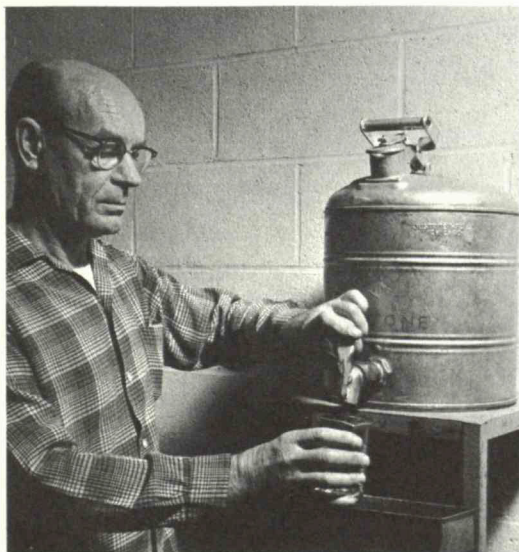
## . . . AND SAFETY CANS

For storing flammable solvents, safety cans are a must. Ordinary metal containers are susceptible to leaks, should they be dropped or knocked around in any way. Glass containers are easily broken, and plastic ones will melt in fire, spreading their contents. If exposed to heat from the sun, fire, steam pipes, etc., these containers may burst from internal buildup of pressure. Vapor escaping from loose fitting or missing caps may find its way to an ignition source, and the resulting fire will flash back to the container.

Safety cans, approved by the Underwriters Laboratories for storing and dispensing flammable solvents, have features engineered to reduce these potential hazards. Each can must be able to stand a hydrostatic test of not less than 25 lbs. per square inch without rupturing at any seam. It must be stable when filled with liquid and placed, facing in any direction, on a surface at an angle of 30° with horizontal. Spring action type automatic closing covers minimize evaporation, sealing the container against leakage or spillage even if the can is held upside down. Leakage rate for the cover has to be less than 4 drops per minute as observed over a 5 minute period. A cover must be capable of withstanding 10,000 operations without failing or increasing the leakage rate. It should not open when the



Don Callahan (Lab Supplies) uses safety pail for acetone. Larger amounts require safety cans.



In RLE Molecular Beam Lab, John McLean draws acetone from approved 5 gal. safety can.



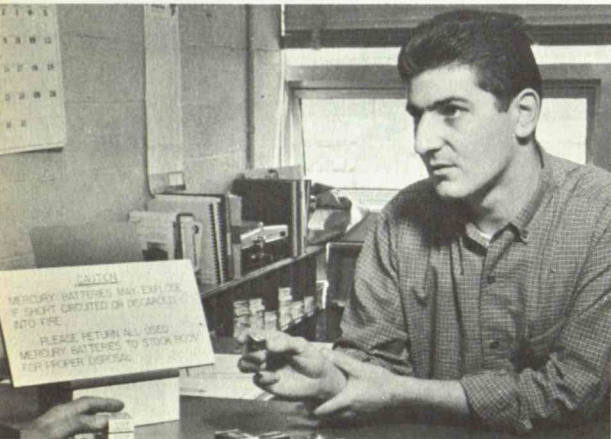
safety can is laid on its side in any position on a plane surface.

A flash arrester, locked in place to prevent its removal, is in the pouring spout to prevent propagation of flame into the can. Vacuum reliefs also equipped with flash arresters are provided to insure a steady flow when pouring, as well as to prevent an implosion of the container due to sudden cooling.

For quality control laboratory work the containers are available in stainless steel or may be purchased with a lining of teflon or glass.

### "COOL" BABYSITTER -- "MAD" ON FIRES

In teenage jargon, if you want your babysitter to be "cool," "way-out," "wicked," "crazy," "gone," "the most," or "bad," in case of fire, you should supply her with the following instructions: Get the children out of the house, call the fire department and notify you, in that order -- advises the National Board of Fire Underwriters. Familiarize her with all exits, supply her with a flashlight, in case the lights should fail, and telephone numbers for you, a neighbor or relative, the fire department, police department, hospital and doctor.



Tom DeChicco (LNS) discusses mercury battery hazards, as explained in sign.

### MERCURY BATTERIES -- EXPLOSION HAZARD

Mercury dry cell batteries, the type often found in portable radios, flashlights, camera flash attachments, pen lights and in research laboratories, can create an explosion hazard if misused or improperly discarded. Various sources have reported explosions of such terrific force that fragments imbedded themselves in concrete walls, when these batteries were exposed to flames. At least one manufacturer now prints on each cell a warning that it may explode if discarded in a fire.

Prolonged short circuits are also reported to be a cause of explosions. The cell, while being shorted, increases its internal temperature, vaporizing the mercury and building up enough pressure to rupture the cell.

Care should be taken not to discard spent mercury cells where they may be exposed to flame. They will rupture, and expose persons to flying shrapnel and toxic mercury vapors. Cells should be stacked in such a manner that short circuiting across the positive and negative terminals is prevented. After removing batteries from equipment, place tape across the end terminal to prevent accidental short circuits.

Unwanted mercury batteries that have been taped to prevent shorting may be handled through the hazardous waste chemical disposal service.

### IS TRICHLOROETHYLENE FLAMMABLE?

Yes, states the U.S. Bureau of Mines which conducted investigations after several explosions involving trichloroethylene were reported. Sold under various trade names, this powerful solvent and degreaser has generally been regarded by fire authorities as being non-flammable. These recent tests conclude that its vapors can form flammable mixtures with air at atmospheric pressure, and at temperatures above 30°C (86°F). The lower limit of flammability in air of about 12.5 volume-percent corresponds with this temperature. The highest upper limit observed by the Bureau of Mines was 90 volume-percent at 82°C (180°F). Thermal calculations of the heat of reaction for the decomposition of trichloroethylene indicate that an upper limit of 100 percent trichloroethylene may be possible. (U.S. Bureau of Mines Report No. 6190)