

APOLLO'S APPOINTMENT

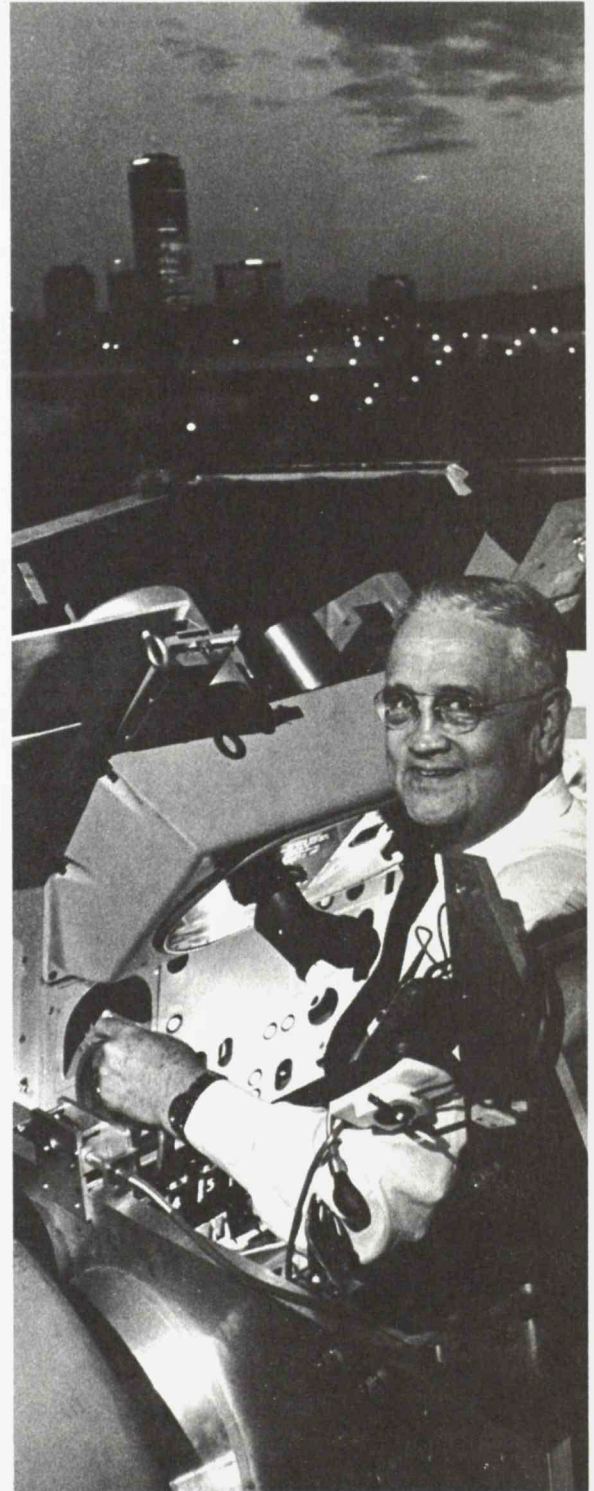
A moment of truth will come for some 500 people at the Instrumentation Lab as Apollo is launched on its first test flight. Since 1961 they have been working on the design of the guidance and navigation system three astronauts will use on their trip to the moon and back sometime before 1970.

Apollo's guidance and navigation system is composed of three major subunits: an inertial measurement unit (IMU), a computer unit and an optical unit. The IMU determines and maintains a stable on-board frame of reference, then measures speed changes in that frame of reference. Its information is fed to the computer which gives out appropriate directing signals. The astronauts will use the optical unit to realign the spacecraft IMU orientation with stars whenever necessary.

Apollo 202 is scheduled to be launched tomorrow on an unmanned suborbital test flight eastward from Cape Kennedy to the mid Pacific ocean. The accuracy of the guidance and navigation system in controlling the attitude of the spacecraft and its angle of entry into the earth's atmosphere is an important test objective. Apollo will be picked up and brought back for examination of the affects of the flight.

The equipment aboard Apollo is what's called Block I design. Block I specifications were frozen more than a year ago so that complete hardware would be available for the start of testing. Many design improvements have already been incorporated into the Block II system, resulting in more sophisticated equipment which also weighs less. Both Block I and Block II systems will be used in manned trial flights in the near future, but only Block II systems will be used on the trip to the moon.

Apollo is only one of many projects in inertial guidance and navigation design undertaken by Instrumentation. Nearly all are an outgrowth of work done by Dr. Charles Stark Draper in the late 1930's on lead-computing gyroscopic gunsights which became an important factor in World War II



Doc Draper, his sights on the moon, with IL's model of Apollo's guidance & navigation system.

gunnery. From this \$5,000 experiment, "Doc" built the Instrumentation Laboratory which has since been responsible for some of the most advanced designs available in guidance and navigation including Thor, Titan and Polaris. Work is now underway on Poseidon, a missile system eight times more effective than the most advanced Polaris.

That Instrumentation is important to the defense and space programs of the nation is undoubtable, but it is also one of the most important teaching labs at the Institute. The research and design of Apollo, for instance, has so far provided material for 45 theses, and no fewer than five of the U.S. astronauts hold advanced degrees from MIT for work done at Instrumentation under Doc's guidance.

Doc himself has always hankered to be an astronaut. He filed an application to join the program just as soon as it was announced and, since he's never been told he was rejected, he claims he is still under consideration. Who knows--maybe Doc will be aboard in a few years when Instrumentation's guidance and navigation system directs Apollo to the moon.

PRESS CONFERENCE

Nearly every office at the MIT Press, from the director right on down, is garnished with piles of computer print-out. The correlation between computer and publishing house became apparent last week as the Press was host to a seminar describing the benefits of electronic data processing in the publishing business. Attending the conference were 55 representatives of commercial publishers as well as other university presses, including Chester Kerr, Director of the Yale University Press and President of the American Association of University Presses.

For almost two years the MIT Press has been in effect a guinea pig in a mutually beneficial arrangement with Technical Impex Corp., of Waltham, who provided the computer and programming in an attempt to open up a new field. The results have been promising. All outgoing functions are computerized so that orders for books are coded into the computer which records them, invoices them, and gives out packaging and postage directions.

Snags in the new system have been very few. One book purchaser who received books he didn't want and invoices for books he didn't get, wrote plaintively to the Press, "If I send the computer a bottle of whisky, will it leave me alone?"

New programs underway now will streamline in-coming records processing, automatically posting charges to proper accounts, providing an accurate and fast accounting of expenses. Still to come is a program which will outline the cost per book of a potential publication, giving an automatic estimate of expenses for any manuscript under consideration.

NUMBERING NOTES

"There is almost no arithmetic," promises Oliver G. Selfridge (Lincoln) in his new book, "Fingers Come in Fives," just published by Houghton Mifflin. Beginning with One and winding up with 31,536,000 (the number of seconds in an ordinary year), the slender volume is filled with facts about numbers to intrigue the beginner and interest the adult. Arithmetic is, indeed, kept to a minimum, but it's there all the same. Under Six, for instance, "Six is probably as



Viewing computer progress are (L to R): Institute Auditor E. L. McCormack, Chester Kerr of Yale, Robert Warren and Carroll Bowen of the MIT Press.

many times as you can fold a piece of paper in half. Your friends will not believe that." Also included are several rueful tidbits to delight grown-ups. "If you win Fifteen points at a game of squash, you win the game. Squash is a kind of tennis played indoors, and the small black hard rubber ball bounces off the floor, the walls, and, when I play, off me too."

Though most of his literary efforts take the form of technical papers and chapters for books, Mr. Selfridge, a math graduate of MIT, has been partially won over by the pleasure of writing children's books. He is now at work on another, to be published next year, outlining the many uses and advantages of sticks.

PILLAR TALK

The sturdy limestone shell of the main complex was designed to withstand the elements for a long, long time, but enduring the oil and dust of its urban surroundings has given the Institute a dirty face. For seven or eight years, whenever the weather is fine, Physical Plant workmen have gone about cleaning up the limestone and re-caulking, or pointing up, the seams.



Face-lifting for the front door.

Right now the Mass. Avenue entrance is crowded with staging which provides the working platform for a crew armed with steam cleaning equipment. For the next couple of weeks, they will be administering the first real bath the main entrance has had since it was completed nearly 30 years ago. The progress already made on the massive columns is easily apparent, and the final effect of the cleansing should be breathtaking.

Most of the rest of the main building has already been gone over--the Great Court portico was brightened up earlier this summer. But there are still several areas waiting to be washed down: the west side of Building 4, the Building 2 court, and several of the pylons facing Memorial Drive. It is a never-ending job, and when finished this time, will start all over again.

As Institute renovations go, the cleaning operation has much to recommend it. For one thing, it's quick, and better still, comparatively quiet. And, for those with naturally curly hair, a quick trip through the steam in the Building 7 entrance will take care of the need for a weekly trip to the beauty parlor.

FIVE LITTLE KITTENS

Though it could hardly be said that Tech Talk was deluged with entries in the kitten contest, there were enough names suggested to make a real selection. Many were highly imaginative--Katsandra and Epsilon, for instance. A couple of students entered, but because they live in dormitories where pets are not allowed, their suggestions were disqualified. The pleased new kitten owners are: Nancy Zimmerman (Nutrition) for "Smitty," Patricia Carlin (CIS) for "Thutmouse," Lee Marland (IL) for "Pug-Ugly," and Phyllis Dillworth (Libraries) for "Mitzi." Ken Gorton (CIS) also won with "Lopa," which "sounds different and interesting, but most of all because it constitutes the first two letters of the names of my daughter, Lori, and my son, Paul. And they are the ones who want a kitten."

Tech Talk's thanks go to all who entered, and to those who may have been disappointed, a suggestion that they look on the back page where there are other deserving kittens.

FOR SALE, ETC.

Two 2 1/2-yr old beaut cats urgently need home, spayed, housebroken, gd disp.
Sm air cond, \$35. Lillian, X3702.
Sm K tbl, 2 ch, exc cond, \$15. X6036 or 899-0642.
Elec hot water htr, 80 gal, stone lined. Boucher, X5757 Linc.
Whirlpool 2-spd washer; formica K cabs; dbl bed, mat, spr, headboard. Call 491-2911.
Snow tires, still good, 7.50x14, pr, \$10. X5853 Linc.
Capehart AM-FM stereo console, 3-spd chgr, 6 spkrs, mod wal cab, \$100. X4718.
Sofa-bed, gd cond, 78", \$30. Tom, X7418 Linc.
Nikon photomic view finder, lt mtr sys, incl case, batt, convert tube, incident
It attach, used less than 1 mo, orig \$107, now \$75. X6601.
Full set fire-place equip, reas. Call 696-6295.
Voigtlander Vito BL 35mm camera w/f2.8, built-in lt mtr, lens shade, flashgun,
range-finder, case. Was \$100, best offer. UN 4-6416 evgs.
Vespa '60, 125cc, new clutch, paint, seats, asking \$150. Bill, TW 4-8616.
Wire wheels, fit Austin Healey, w/ or w/o tires, reg or snow. Scott, X3356.
K tbl, extra leaf, 4 padded ch, exc cond, \$35 or best offer. Call 734-2470.
Lab retriever puppies, exc line, bred litter, great pets, hunters, AKC, shots,
wormed. Marshfield 834-8563.
Honda '65, Super Hawk, 305cc, like new, 5K, \$525. Ron, X6909.
LR furn, crib, carriage, playpen, stroller, hamper, dry-rack. Call 484-1471.
GE rotis, 1500w, new, \$30; infant seat, \$2; car-bed, \$9; infant carry-all bed, \$7,
bike w/training wh, \$2. John Ruth, X3847 or 648-0592.
Corvair snow tires; new ski rack for compact car, best offer. Linda, X5159.
AKC Brittany spaniels, whelped 6/19/66, both colors. Call 655-0605.
German stereo, port, 2 spkrs, compact, 3-spd chgr, extra spkr jack, rarely
used, \$50; steam iron, gd cond, \$3; sm AM-FM R, exc cond, \$25. X2285.
Rek-o-kut stereo trnbl, Shure cart, \$50 or best offer. Gary, x 2927.
Desk & ch, \$15; sofa, \$10; K tbl w/2 ch, \$8; chests, \$10 & \$6; dresser, \$5; odd
tbls, rugs, lamps, dishes. Call 275-7461.
Misc furn: m & f Eng bicycles; mandolin, living country, selling all. KI 7-1223.
Man's Eng bike w/gen light, best offer. Steve, X6185.
Mod desk, \$8; 6'x9' gold rug, \$5; desk lamp, \$1; Numdah rug, \$6; china tbl lamp,
\$2. Marcia, X6728.
K cab ensemble, c.1920, gd cond, \$25 or best offer. X6116.
Harrington console piano, antique wh, gd tone, rec rebuilt, \$375, will negotiate.
X1304 or 876-6535.
Vespa '61, 125cc, just painted, 6K, gd cond. Lit, X854 Haystack.
New mod apt furn 40% off purch price, some free, open house 8/27. X6643.
Living, must sell: dining tbl & 6 ch; rm divider, bkcase; desk, baby furn, sofa,
bed. Call 876-7330.
BR set, LR set, gd cond. Call 536-4229.
Apt size gas stove, \$6; Servel refig, \$10; dbl & 3/4 beds, \$16 ea. Call 862-1943.
Accordions: lady's 120 bass w/case, \$40; new 120 bass, never used, \$200. Tony,
LY 5-1591 evgs.
Kay Spanish guitar, steel str, reinforced neck, case, \$30. X440 Linc.
Twin bed matt; mag rack; wall mirror; lamps; mahog tbl; vanity w/mirror top;
rocking ch; other household items. Wayland 358-2156.
Walnut 4-pc BR set, exc cond, best offer. Carol, X6546 or 623-1085 evgs.
Remington office typwr, exc cond, \$60 or best offer. X4062.
Whirlpool 30" elec stove, exc cond; baby carriage, stroller, tricycle, slightly
used. Maury, X1339 or Natick 655-0566 evgs.
Woman's dresser, 4-drw w/mirror, \$15. Call 876-4160.
Raleigh 26" woman's 3-spd bicycle, gd cond, Ted Julia, X4546.
Young cat, free to good home, all shots. Phyllis, X7052.
Premium tires (4), 8, 25x15 replaces 7.10x15, used only 6 wks; Polaroid camera,
8 yrs old, new insides. Alan, X6861 or 484-6532.
Smith Corona Sterling port typwr, 2 yrs old, exc cond, \$40. Solomon, X6446.
Tropical fish, 10, 5 gal tanks, pumps, filters, lights, htrs, snails, grass, nets,
etc., \$20 or best offer. Tom Harley, X3584.
Sm steel desk, typwr section, drawers each side, gd cond, \$30. X261 Linc.
Engagement ring, exc cond, orig \$125, best offer. Tom X2763.
Westinghouse custom Mobilair air cond, 6,000BTU, top graded by Consumer
Res, used 6 wks, \$105. Parikh, X3147.
MGA supercharger, like new, best offer. Call 698-3926 evgs.
Garrard A 3-spd trnbl, exc cond, best offer. Dehumidifier, hardly used, was
\$70, now \$45 or best offer. Johnson, X1310 or 491-4399 evgs.
K set, \$25. Gail, 266-0261 evgs.
Comb alum screen door, 3'x7', exc cond. Ben Dores, X3531.
Stroller, \$3; training ch, \$2; training seat, \$1; turquoise tufted twin bedspreads,
\$10; 54"x54" green damask tbl cloth, 4 napkins, \$2. Call 862-1935.
Raleigh 10-spd man's racing bike, exc cond, \$60. Call 734-8171.
XLCH '60, chrome & metallic paint, eng stroke to 1012cc, sifton cams, Bates
seat, many extras, will sell or trade for sports car of comp value. IV 9-1727.
Mod sofa, \$15; Canon 518 movie camera, best offer. WA 3-0457.
Sofa, ch, covers for both; end tbls, cof tbl, refig, BR set, K tbl & ch. Call
926-2658.
Singer sewing mach, old port elec, gd cond, \$15. Connie, X3313.
Lafayette mini-duct enc, unfin birch w/crossover network, tweeter, \$15. X6116.
Guitars: Fender Jaguar elec, perf cond, 6 mos old; Harmony classic; Danelectro
Bellzuki 12 str elec. Call 369-2773.
Unbuilt Paco ST25, mltplx FM tuner kit, orig \$74, now \$29.88. Pressman, X4031.
Ivers & Pond piano, exc tone, rec refin ebony, perf choice for limited funds or
space, \$350. Wayland 358-2400.
Holland made baby carriage, \$20. Call 566-7041.
Philco 9,000BTU air cond, gd working cond, \$75. George, X4151.
Port dishwasher, \$75; refig, \$40. Call Jack, X2115.
Admiral 17" TV, \$20. Bob Lapin, X6023.
Sm dresser, dbl bed. John Skodon, X5338 or 332-3218.
Fasco mod 1237 12" attic fan w/mgt plate, \$15; Stephens 80FR 8" spkrs, 8 and 16
ohms, audio net \$33, each \$16. X7202 Linc or 369-6436.
Center board sloop, 18', 3 suits sails, in water in Hingham. RI 9-1173.
'55 Chevy 4-dr, std, exc cond, \$180. X2409 or 536-6675 evgs.
'56 VW, new eng, \$280. Pat Painter, X4507.
'57 VW, new motor, trans & brakes, \$250. Call 862-5584.

'57 Chevy mod 150, std, gd operating cond, \$100. Nick, X323 or 325 Linc.
'58 Karmann Ghia, gd tires, br, new exhaust sys, \$175; new oxyacetylene welding
outfit, 2/3 new price, \$65. Call 734-4236.
'58 VW, rec tires, gd mech cond, orig owner, needs paint, \$250. Ken, X4749.
'59 VW, gd cond, R&H, sunfr, ww's, \$325. Call 926-3080 evgs.
'59 Ply Sports Fury convert, best offer. De Russo, X1334.
'59 Ply wgn, any reas offer, must sell. Lynn, X6023.
'59 Peugeot 403 4-dr sunfr, R&H, reas cond, \$100 or best offer. Call 868-8524.
'59 Ford Fairlane 500, R&H, auto, gd cond, best offer. Call 969-4631.
'60 Anglia, gd cond, best offer. X5647 or 254-6872.
'60 Rambler Amer wgn 2-dr, new batt, \$290 or best offer. Mike Beddoes, X2576.
'60 Dodge 4-dr sedan, auto, white, snow tires, \$400. X3128.
'60 Falcon 2-dr sedan, comp rebuilt, looks, runs like new, best offer over \$350.
Bruce Willard, X642 Linc.
'60 VW, fac rebuilt eng under warranty, R&H, asking \$620. Call 876-9716 evgs.
'61 Corvair Monza, runs but needs work, best offer under \$173. Mrs. Rosenfeld,
X5838 or 547-2030.
'61 Valiant wgn, exc running cond, \$500. Feld, X4235.
'61 Sunbeam Alpine, exc cond in & out. X2871, leave message for Garelick.
'62 VW, leaving area, must sell, best offer. Call 864-6436.
'62 VW, exc cond, R&H, ww's. George Reichenbacher, X5411.
'62 Sunbeam Alpine convert, hrd tp, o.d., 30K, moving. Beverly Pawson, X4558.
'62 VW, one owner, ww's R&H, lugg rack, exc cond, \$675 or best offer. X2946
or 868-4347 evgs.
'62 Corvair Monza, gd cond, R&H, ww's, 4-spd, \$500 or offer. Bergstrom, X2961.
'63 Alfa Romeo 1300 Giulietta Spyder, 22K, best sensible offer. Frances, X1258.
'63 VW variant wgn, 45K, leaving country, \$1100 or best offer. X5937 or 277-3685.
'63 VW sunfr, spec horns, exc cond, avail 9/3, \$950 or best offer. Call 484-6487
evgs.
'64 VW sedan, very gd cond, R&H, ww's, \$975. X6023 or 628-5745 evgs.
'64 VW sunfr, exc cond, 30K, one owner, exc cond, \$1050 or best offer. X5411.
'65 VW, R&H, lt grey, exc cond, \$1400 or best offer. Call 275-8180 evgs.
'65 VW, fly equip, exc cond, must sell. Call 665-7926 evgs.
'65 Simca, R&H, ww's; nearly new Buco 7 1/4-7 1/2 helmet. X2133.
'65 Mustang, 4-spd, high perf, hvy-duty suspension, exc cond, \$2,000. Call
275-6907 evgs.
'66 VW mod 1300, R&H, belts, green. X3911 or 321-0919 evgs.
'66 Chevy II, 6K, immac cond, asking \$2100. Call 868-4577.
MGA, R&H, cont kit, tonneau, wire wh, extras. Trade Plaid, Green stamps or
\$ equiv for 3 bks TV stamps. IV 4-1040.
Arl Hts furn 3-rm apt, htd, all util, conv loc, couple, avail 9/1. MI 3-6371.
Bcn HI, unfurn 2 BR, fpLR, K&B, avail mid-Sept, \$150/mo. Call 523-6509 evgs.
Bcn HI, 2 & 3-rm apts, fp, \$125, \$150/mo. Marquis, X7155.
Bel, furn 3-rm apt, all util, pking, nr trans, avail 9/1-also unfurn. Call 484-2649.
Bri, LR, DR, BR, K&B, \$105/mo. Bill Blackburn, X3392 or 734-8575.
Camb, Porter Sq area, 3-rm apt, 1st fl, avail 9/1. X4074 or KI 7-9019 evgs.
Danvers 48'x27' 6-rm split foyer ranch, hwh, 1/2 acre, city sewerage, gar, dead
end str, 2 fp, \$26,500. Jim Alexander, X5584.
Littleton, Cape Cod, 5 rms, 1 1/2 B, barn, for sale. Call 486-4158 or 275-0496.
Martha's Vineyard, contemp house w/deck, patio, 1 mi from Edgartown, nr
beaches, comf furn & equip, avail from 9/6, \$125/wk. Miss Karb, X7166.
Plymouth, scenic lakeshore lot, 60'x160', asking \$4500. Call 759-4900 Buzz. Bay.
Sagamore Beach, furn house, miles of ocean view, 1 hr from MIT, gd sch, Sept-
June, \$100/mo + util. UN 4-0616 or 888-1468 Sagamore.
Ultra mod apt, 2 BR, lg LR, air cond, etc, on MBTA, \$165/mo. Also Coldspot
refrig w/tp frzr, \$35; parlor grand piano, gd cond, \$350. Chan, X2348.
Will drive your car to Calif 9/11. Call 592-4737 evgs.
Wanted: thesis typing etc. Call 783-0793 evgs.
Wanted: weight lifting set. M. Lavin, X4935.
Grad res asst will drive your car to Calif late Aug or early Sept or will help w/
exp. Irv, X5781 Linc or 862-7041.
Wanted: mermaid car-hood ornament. Wilson, X2237 or 876-6326.
Wanted: semi-furn rm & brd for mild ulcer single man or rm w/K priv begin
9/1-9/15. Bill S., X5692.
Wanted: furn rm or effc for Sept. Diane, X4710.
Wanted: rmmate or apt for 23-yr old girl, \$25/mo. Call 445-4931 after 10 p.m.
Wanted: sitter for 3, 4 or 5 wkdays, 9a.m.-3 or 4 p.m. in my home on MBTA
in Arl. X7353 Linc or 643-7622.
Wanted: rider to Calif now. Call 547-6971.
Want to share rides to and from Nashua, N.H. Bob Mills, X2192.
Wanted: fem rmmate to share mod apt w/3 others. '65 Mustang, 6 cyl, p st,
auto, exc cond, best offer. Call 876-0288 evgs.
Wanted: EICO mod 730 modulator driver. M. Bolton, X2180.
Wanted: Spinnet piano for sm apt. X4765 or 926-0388 evgs.
Wanted: hi fi comp compatible w/KLH mod 6 spkr; need mono amp, trnbl, tuner.
X4271 or WA 6-1931 evgs.
Wanted: 10 spd bike, briefcase, file cab. Call 332-4466.
Wanted: lively rmmate to share mod apt w/2 working girls, own BR, Harv Sq.
Barbara, X2396 or 868-5811 evgs.
Wanted: fem rmmate w/apt, age 22-26, just came from NYC. Call 782-9802.
Wanted: playpen, crib, car rack, TV. Call 876-2113.
Wanted: m rmmate to share pleas 3 BR apt w/3 others, Marlboro & Mass Ave.,
\$62.50/mo. Wood, X5450.
Wanted: ride Linc to Littleton 2 nights a week, beg Sept. Lorraine, X366 Linc.
Wanted: playable piano, free, will pay moving costs. Mrs. Slocum, X2481.
Wanted: sitter for 2 children in their home 9-5:30 daily. Call 275-8106.
Wanted: ride from MIT-Belmont St, nr Star Mkt, Camb. Carolyn, X4585.
Wanted: snorkeling equip: mask, flippers, snorkel, wet suit. J. Martin, X2396.
Wanted: ride from Park St, Brookline to MIT Mass Ave, 9-5, gd compensation.
Flora, X6479 or 6477.
Wanted: 10-20' KTV tower section. Art, X2554.
Wanted: maple chest of drws & bureau for little girl, reas, gd cond. Call 395-8658.
Wanted: typing, tech or straight. X5282 or 646-8275.
Wanted: urgently, ride from Cleve Cir area to Linc, 8:30-5. X7187 Linc.
Wanted: ride from E. Boston to MIT daily 9-5. Phyllis, X5204.