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S I G S I G S I G S I G S I G S I G S I G
I G S I G S I G    C A C H E    I G S I G S
G S I G S I    S P E C I A L    G S I G S I
S I G S I G    I N T E R E S T    S I G S I G
I G S I G S    G R O U P S    I G S I G S
G S I G S I G S I G S I G S I G S I G S I
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The idea of Special Interest Groups (SIGs) was introduced at the May CACHE meeting, and sign up sheets filled out then and at the June meeting. Here's the results:

ACTIVE AND GOING STRONG:

A>P

NORTHSTAR (19) under Ron Mendel
SOL (18) under Tom DiGate
(SOL meets at Noon at CACHE meeting)
The DIGITAL GROUP (?) under Richard Kurtz

NOT YET MEETING REGULARLY:

CP/M (23) under Dave Jaffe
H-11/LSI-11 (7) under Frank Nussbaum
and Bob Kaplow
CAI (Computer Aided Instruction) (4)
under Paul Davidson

IN NEED OF A LEADER:

Business Applications (10)
Communications (9)
Applications (7)
Hardware Hackers (7)
PET (6)
Ohio Scientific (6)
Apple (6)
SWTPC (6)
Radio Shack (4)
Tarbell Cassette (3)
Programmable Calculators (3)

IN NEED OF MEMBERS:

Software Novices (2)
KIM-1 (2)
Hardware Novices (1)
Heath H-8 (1)

It is our intent that each group would, at a minimum: 1) make itself known to potential members; 2) write a short note for each CACHE REGISTER issue; and/or 3) publish a notice or newsletter of their own. CACHE will help financially with postage, etc. If you are interested in joining a group, or chairing one, come to the CACHE meeting, or call the Hotline (312) 849-1132, or write the CACHE mailbox at Box 52, South Holland, Il. 60473. Let us hear of any other groups you might be interested in. We are also
   LOOKING FOR A SIG COORDINATOR,
i.e. someone to post the sign up sheets, distribute the names to the leaders, and perhaps try to get leaders for groups that don't have one.

Ward Christensen

FROM THE MAILBOX

Dear Editor,

   According to MINI-MICRO SYSTEMS, April '78, Bally Mfg. Co. is trying to get computers into the American home "through the back door." Their Z-80 based Arcade, a video-game unit, will expand into a full-blown microcomputer if certain options are added.

   The full system will include 8K ROM, 16K RAM, ROM cassettes, color graphics, alphanumeric keyboard, and dual tape cassettes. Cost will be about $500.

   Also being planned are a text-editor/assembler, FORTRAN, a light pen, and a relay control box.

   Looks like Bally is trying for the same market as Radio Shack, but they may have a better gimmick going for them.

   It may also interest CACHE members to know that Bally has been advertising in the Chicago SUN-TIMES for electronics technicians with a background in solid-state and micros.

--Leah O'Connor

(Ed. note: The Bally Arcade starter system is retailing for $249. Check page 510 of the current Montgomery Ward mail-order catalog.

   (Incidently, a firm called Mid-America Research has asked CACHE if they may contact members in a market survey on micros, including the ARCADE. CACHE officers gave their OK. The firm has been giving a stipend of $25 to participants.)

Boost the Brain of Your TRS-80 Level I

FROM PERSONAL SYSTEMS - San Diego, Ca.

TRS-80 16 K Memory Expansion

The TRS-80 is a great little computer, but 4K of memory is a tad too little. Now that 16K chips are available you can lose those "No Star Trek Blues" by a relatively simple conversion.

Here's a step by step method for converting your 4K Lilliputian into a 16K giant and keep your 4K chips

FIGURE 1. RAM AND JUMPER LOCATIONS

- COMPONENT SIDE -
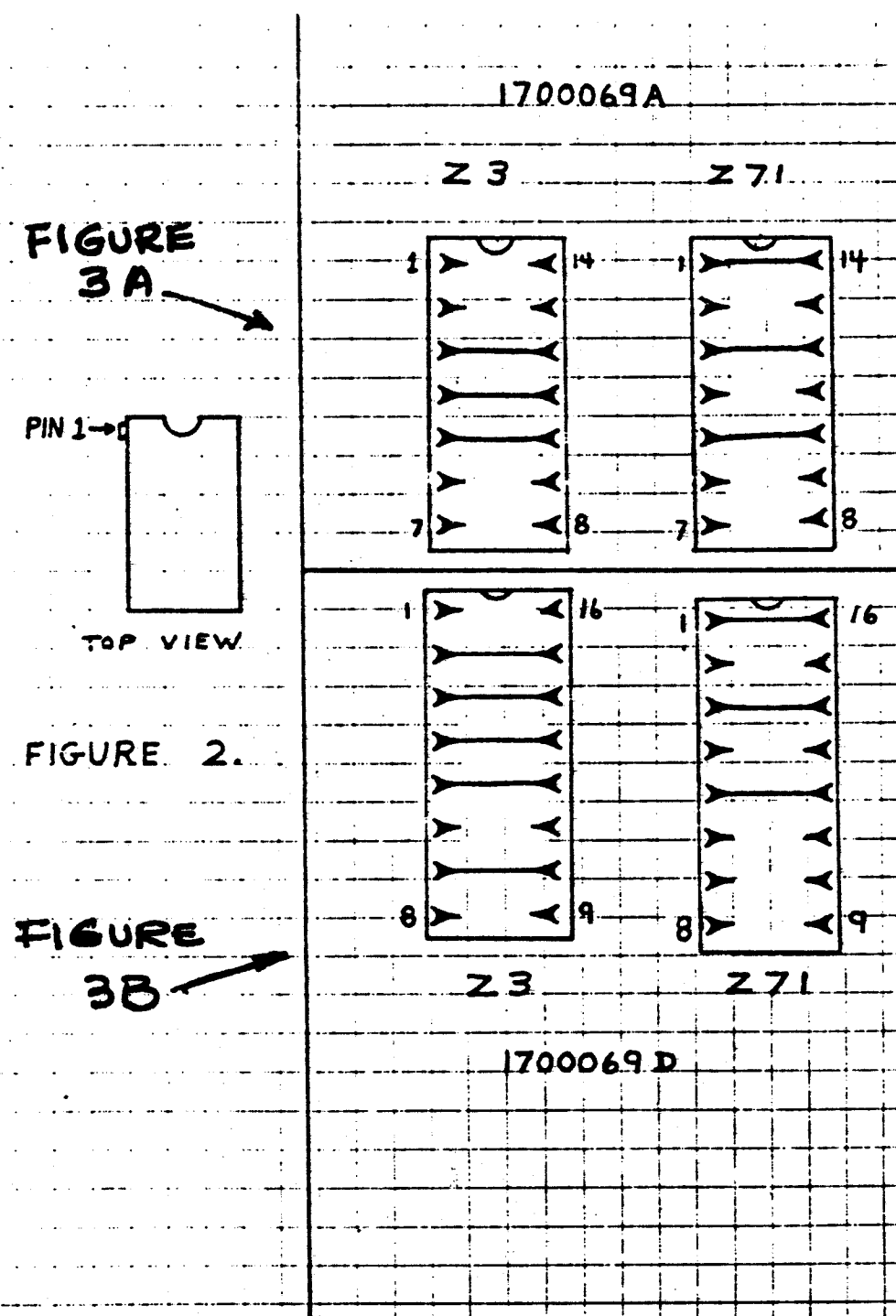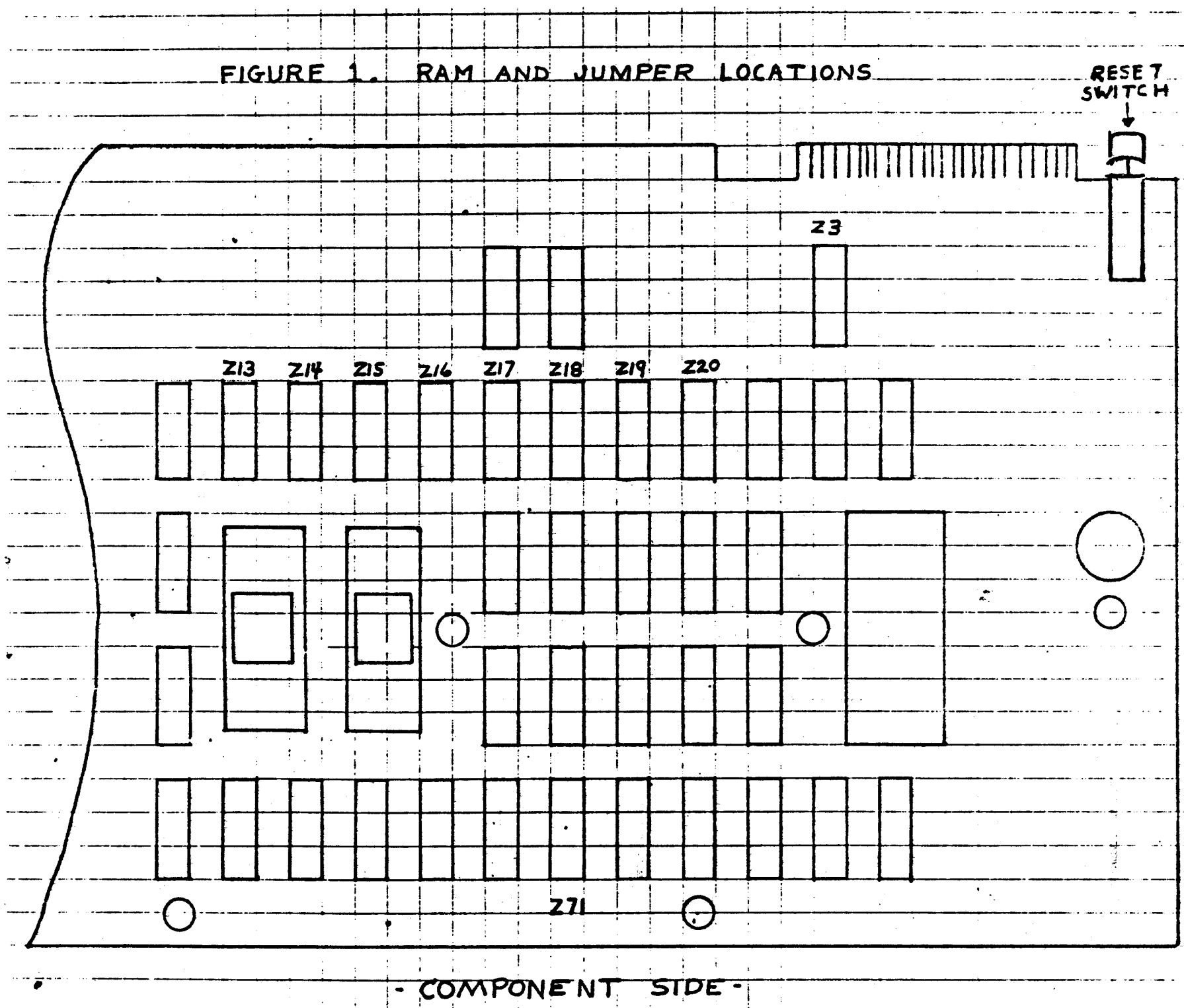
SOL USERS MEET

Tom DiGate

SOL USERS GROUP: MAY 21, 1978

1) A sign-up sheet was put up to get names and addresses of SOL/CUTER users. Contact Dave Jaffe about the list.

2) Bruce Davis said that he had about three more songs to donate to the SOLOS Music System Library. This will make about twenty-four songs that the library has collected. If anyone else has some songs, please send them in.

3) Tom Digate mentioned an article in the SOLUS newsletter that tells how to relocate ALS-8 to any 1k boundary in memory. Tom said that he tried it and it worked very well. He recommends this to anyone that doesn't want to tie up 12k at the top of memory.

4) Gary Eskow said he is going to work on an interface to make CUTS work over phone lines. He feels it might be possible to exchange software using the cassette interface as it stands, without a modem. More info at the next meeting.

5) Larry Marek contributed a program to make the Tarbell cassette interface read and write tape files in a format understandable to the SOL tape systems. Tarbell runs at 300 baud, and saves and reads in SOL block mode only. This program opens the door to easier interchange of software between Tarbell users and CUTS users.

6) Tom DiGate has contributed a program that reads and writes Poly 88 program files. This also simulates the Poly 88 monitor program and has similar commands. Also included is the necessary information to patch Poly BASIC Ver A00 to run on a SOL 20.

If your SOL has a VTI, the only function not usable in BASIC is the time

to boot! (If you have the conversion done by a dealer he gets the chips.)

The rams listed are available for approximately $230 a savings of over $60.00 compared to the Radio Shack cost.

1. Required equipment: eight D416 or 4116 RAMS, a supply of jumper wire (or dip switches if you want to get fancy), a Phillips screwdriver and an IC removal tool.

2. Turn off all power and remove all cables from the TRS-80 keyboard unit.

3. Disassemble the case by placing it upside down on a towel, or other nonabrasive surface, and remove the six screws. (Note: there are three different sizes of screws)

4. Locate the eight 4K RAMS; Z13 thru Z20 (see figure 1).

5. Do not remove the old RAMS until you have noted their position relative to the notches on one end of their cases (see figure 2). The notches in the new RAMs must point in the same direction.

6. These MOS Ic's can be damaged by a static discharge from your body, therefore, before handling remove your shoes and socks (yes, shoes and socks) and temporarily ground yourself to the kitchen faucet or other convenient ground. Then avoid unnecessary movement that could produce a static discharge.

7. Remove the old 4K RAMs (they are all in sockets) using an IC extractor or, heaven forbid, a small screwdriver. Gradually pry them loose at both ends and place them on a conducting black foam or aluminum foil to protect against static.

8. Carefully install the new 16K RAMs being careful not ot bend any of the pins.

9. Locate sockets z3 and z71 (see figure 1) and remove all jumpers or DIP shunts. Install the new jumpers in Z3 and Z71. These wires must match the pattern shown in figure 3A & B. Note: "A" revision boards use 14 pin DIP sockets and "D" revsion boards use 16 pin DIP sockets for Z3 and Z71. Also that pin 1 on Z3 and Z71 line up like all other ICs including the RAMs.

10. Carefully double check the position of the new RAMs and jumper wires.

11. Reassemble the case, making sure that the keyboard is correctly seated.

12. Reconnect all cables, turn on the unit and type P.M. and hit ENTER. The computer should display 15871.

◻

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function, since SOL does not have a real-time clock. If VTI is not available, the BASIC PLOT function will not give good results on VDM. Poly BASIC is available for $25 from most dealers.

7) The SOL program library needs programs that run under PT's new Extended Cassette BASIC. If you have converted an old BASIC5 program to EBASIC, please send it in to the club library.

8) FLASH from the Wisconsin Computer Society-- Don Stevens of the WCS, along with a member of our club, has successfully implemented the Duotronics Z80 board in a SOL 80. He stated that the mods will be published in the next issue of P. T. ACCESS. He says it has been working well for over a month with no problems.

9) Here's a patch for PT's Extended BASIC that not everyone has. This allows one to specify the number of nulls after a CR/LF in BASIC. It also fixes a FOR...NEXT looping problem:

```
EN B50<CR>
:C1 CA 40 0B/<CR>
EN 2670<CR>
:AF 32 6F 28 C3 xx xx/<CR>        NOTE 1
EN 3F81<CR>
:88 A0/<CR>                       NOTE 2
```

notes:
1) xx xx is the address of CR/LF in SOLOS (C2F9) or CUTER (C342).
2) This is the new SOLOS checksum. The CUTER checksum is different.

To change nulls, just
```
POKE 51216,n
```
where n = number of nulls needed.

10) Send software to

Tom DiGate
1366 S. Finley #3s
Lombard, Illinois 60148
(620-4656)

or bring it to the SOL Users Group meeting, on the same day as CACHE meetings, at 12 noon. ◻

BITS & PIECES

ALOS BUG

Larry Marek warns us that there's a bug in his Version 1.0 ALOS assembler. Address locations 691 and 692 should contain HEX 00 and 0F respectively, instead of E8 and 08. Thanks, we'll patch our program accordingly. ▯

GODBOUT ECONORAM

2MHZ

It has been rumored that the Godbout 8K Econoram boards will run at 4MHZ. Since these are nice boards, and among the cheapest around, they would be an outstanding bargain for Z-80 freaks (speedfreaks, that is) if this rumor is true.

I can report that I have built 8 of these boards and Lee Wilkinson has built 6; and of the 14 boards not one chip failed to run reliably at 4MHZ.

I don't know why they're putting 4MHZ chips in their 2MHZ boards, and they might stop; but for the moment, it works.

--Ernie Kent ▯

CACHE is a not-for-profit organization dedicated to investigating the roles and uses of microcomputers and related small-size computing devices in the hobbyist fields.

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If you're a subscriber to the CACHE REGISTER, then check the upper right-hand corner of the mailing label. The code YYMM indicates when your membership should be renewed: YY represents the year, and MM represents the month.
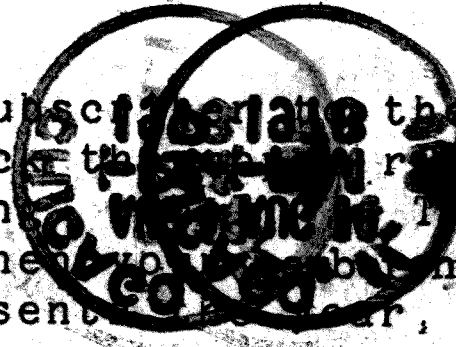
CACHE REGISTER
P.O. Box 52
South Holland, IL 60473

SPECIAL!
PULL OUT SECTION
-8080 ASSEMBLER PART I
1978
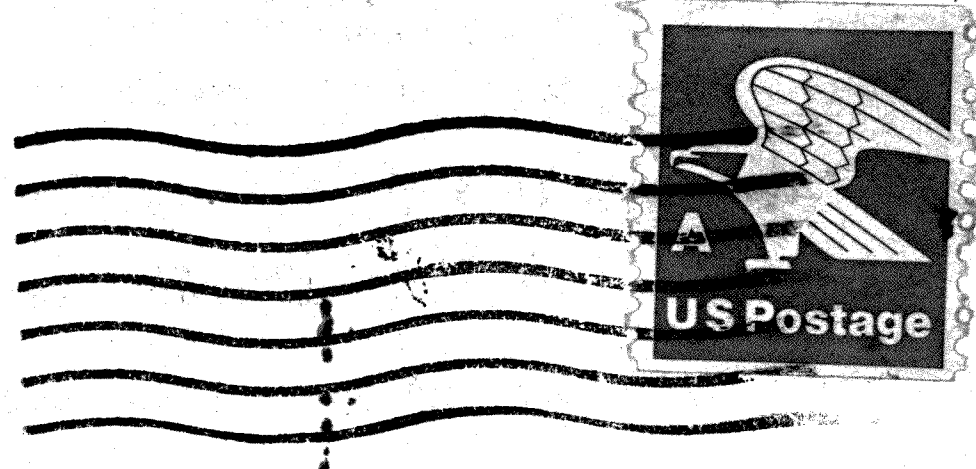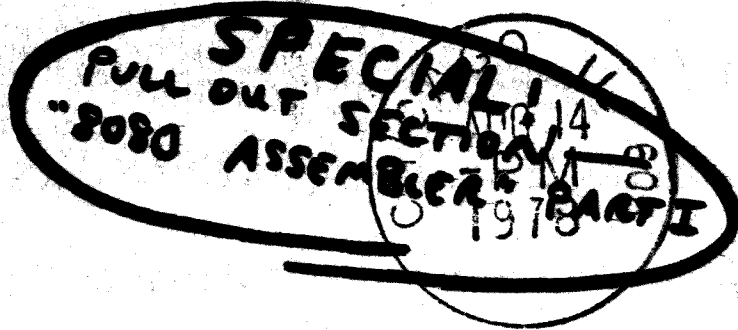
ADDRESS CORRECTION REQUESTED

US Postage A

COME TO THE

PICNIC SWAP-FEST

SUNDAY, AUGUST 20, NOON

Circle August 20 on your calendar! That's the day of this year's super PICNIC and SWAP FEST. For the picnic, bring something to munch; we'll supply FREE softdrinks. (No booze, please.) For the Swap Fest, bring any old equipment you don't need--some one will be glad to buy or trade you for it, and give it a good home.

A feature event of the day will be the FRISBEE CLASSIC free-for-all. Bring your frisbee (and a good sun hat) and join in the fun.

See you there!

NORTHERN ILLINOIS GAS BLDG., just north of GOLF & SHERMER RDS., GLENVIEW, IL

FIRST CLASS