UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE UPSTATE

OUR NEXT MEETING will be on Friday,

FEBRUARY 17, 1984 at 7:30 pm

PLACE: KEY BANK BLDG.

SW corner of Rt. 20 and Rt. 155

THE MARCH MEETING will be on Friday,

MARCH 23, 1984 at 7:30 pm

PLACE: KEY BANK BLDG.

SW corner of Rt. 20 and Rt. 155

The MARCH meeting will be the last meeting held at the Key Bank.

UPSTATE 99/4A USERS GROUP
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ALBANY, N.Y. 12212

ALBANY, NY
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13 FEB
1984

USA
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M I N I - M E M O R Y

Well we finally got some feedback on something that was in the newsletter
that related to assembly language. Several people asked Rich Lane and
myself, "What the #*%@# was that insert that you guys put inside the last
newsletter?" While the question was not particularly flattering, it did
prove that some of you at least open and glance at the newsletter.

The insert contained four tables, two of which were labeled and two of
which were unlabeled. Let's discuss the unlabeled ones first. These two
tables will allow you to "hand assemble" or "hand disassemble" OP CODE in
TMS9900 assembly language. This can be useful when you are debugging and do
not want to drag out your assembler or disassembler to operate on 1 or 2
instructions.

The left hand table lists TMS9900 assembly language instructions, their
format, and the section in the EDITOR/ASSEMBLER manual where they are
described. They are in order according to their hexadecimal operation code;
the order most useful when you are disassembling. The key to disassembling
is the FORMAT. An assembler instruction occupies one word of memory. In
your 16-bit computer: one word = 4 hex digits = 2 bytes = 16 bits, and 1
byte = 8 bits = 2 hex digits. Each word is divided into appropriately sized
bit fields which are arranged in one of 9 formats. The right hand table
shows the make-up of those fields for the nine formats. When a second
and/or third word are associated with an instruction, they are addresses or
values of the operand(s) .

The apparent confusion results from the fact that you must sometimes think
about individual bits and not just about individual hex digits (a single
hex digit represents 4 bits). Let's try an example. Consider the following
MINI-MEMORY program segment:

```
        HEX      HEX
        MEMORY   OBJECT   LABEL   OP
        ADDRESS  CODE     FIELD   CODE    OPERAND(S)
        -------  ------   -----   ----    ----------
        7D00     0041     LB      DATA    >0041
        7D02     C2E0              MOV     @LB,R11
        7D04     7D00
```

Please note that this program segment does not do anything rational, but is
just an example of an instruction that we can decode.

The object code for "MOV @LB,R11" is: C2E0
The binary bit code for "C2E0" is: 1100001011100000

Consider the object code "C2E0" . The left table shows that an instruction
that begins with "C" is a "MOV" and is format "I". Let's decode the 16 bit
representation using the right hand table for format "I".

"B", bit 3, (remember that the bits are numbered 0 thru 15 and not 1 thru
16) is "0" telling us that we are operating on a word rather than on a
byte. "Td", bits 4 and 5, is "00" which means that the destination is a
register. "D", bits 6 thru 9, are "1011" and binary 1011 is decimal 11
telling us that the destination is register 11. "Ts", bits 10 and 11, are
"10" telling us that the instruction uses the next word as the source
address. Note that the next word in our program segment object code is
"7D00", and that is the address of our label "LB" which is the source for
our MOV (move word) instruction.

Sorry we can't do everything in one column. Stay tuned in for more on these
tables.

                          M i k e   H e n r y

H I N T S   F R O M   H E N R Y

The word from John Johnson (who talked to 99'er Magazine twice on the phone
in January) is that 99'er is alive and well. They say they will put out a
new issue in March of about 300 pages. They claim that they still have good
interest from their advertisers and that they will add 2 or 3 other
computers to their line to make for an expanded magazine. They told John
that those of us with subscriptions will still get the correct number of
issues. We're waiting 99'er!

The time is right to share your ideas with your fellow 99/4A users. If you
have hints and/or tricks that you think are worth sharing with your fellow
club members, send them to my home at 734 Wright Avenue, Schenectady, New
York 12309, to me c/o the Users Group at P.O. Box 13522 in Albany, or talk
to me at our monthly meetings. If you pick up an idea someplace else that
you have not seen appear in this column, send that along. Just include a
note as to where you found it and we can give an appropriate credit when we
use it.

Item 1:
If you have a modem, an RS232 interface and a TERMINAL EMULATOR 2, then you
are in for a real treat. There is now a TIBBS (Texas Instruments Bulletin
Board Service) in the Albany area. The service is being provided to us by
Dick Ferrigan, with technical assistance from Will Smith. The phone number
is 765-4993 and this TIBBS is open 24 hours a day. Put your TERMINAL
EMULATOR 2 into the default mode, dial up the number and have a blast.
There is only one line into the computer and Dick has asked that we limit
our calls to 20 minutes at the most (this should be easy if the 765
exchange is a toll call for you). Dick and Will have invested considerable
time and money into this venture, and the service is free to us. All local
TI-99/4(A) owners owe a debt of gratitude to these two guys. Thanks Dick
and Will!

Item 2:
Last month I promised you a short, strategy filled game for the VIDEO CHESS
module. Try this. Select option 4 which is "SET UP A PROBLEM". Put a black
Queen in each of the 8 squares on row 6, and put a black King in square D7.
Put a white Queen in each of the eight squares on row 3, and a white King
in square E2. Then start the game, choosing a skill level and deciding
whether you or the computer plays first. While this set-up may look weird
to you and I, it does not violate any of the rules of chess and the
computer is happy to play it through. You both have so much power and the
attrition rate is so high that games are usually settled in the first 10 or
20 moves. Do you have a favorite short game?

Item 3:
The ATARISOFT cartridges for the TI-99/4A are a nice addition to your game
software. However, there have been reports that some of the games do not
run perfectly on all 99/4A's. Rich Lane reports that DONKEY KONG works okay
on one of his units, but gives scrambled text in the titling on another
unit (although the game play is okay). Bruce Fairweather reports that
DONKEY KONG would not work on two specific units, but did work on others.
Bruce feels that he has pinned it down to units that have the designation
"LTA 3483" following the serial number. The best bet is to make your dealer
aware of the potential problem, and to purchase ATARISOFT cartridges
contingent upon them running in your particular console.

                    M i k e   H e n r y

#
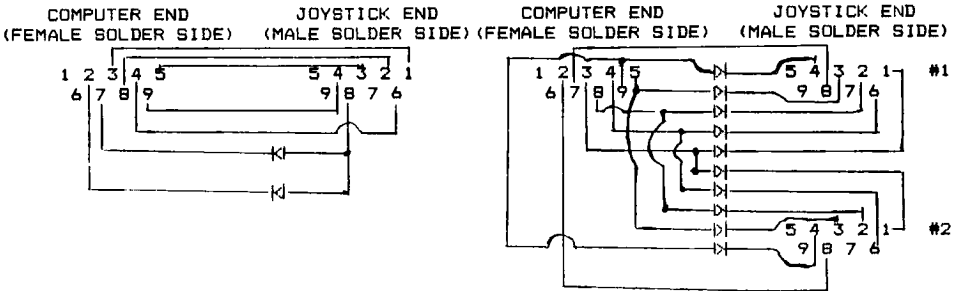
TEST MODE

Still another "Test Mode" has been discovered!!! Along with Munch-Man, and
Alpiner, one of TI's newer games Moon Mine also has a test mode.
What is a test mode you ask?
This allows you to start playing at any level you select and in Munch-Man with a
greater number of playing men. To access this mode select the module and when
it comes to the first screen (game title screen) type this secquence of charac-
ters *#* (do it quickly you may not have much time). This will then tell you how
many levels it has and ask you what level of play you wish to play in.
Munch-Man has 60 levels, Alpiner has 18, and Moon Mine has 50.

!!!

TI FORTH

TI still cares. As they promised TI has sent every Users Group one disk and
manual of TI FORTH. Now what? Obviously all those interested can not share only
one disk and manual. It has been suggested that copies be made of the manual
for those interested. There will probably be some cost involved as the manual
is over 200 pages. Those interested in Forth see Rich Lane at the meeting.

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JOYSTICK ADAPTER

| COMPUTER END | JOYSTICK END | COMPUTER END | JOYSTICK END |
| (FEMALE SOLDER SIDE) | (MALE SOLDER SIDE) | (FEMALE SOLDER SIDE) | (MALE SOLDER SIDE) |

	ATARI PINS	T.I.#1 PINS	T.I.#2 PINS
UP	1 WHITE	3 ORANGE	3 ORANGE
DOWN	2 BLUE	8 GREEN	8 GREEN
LEFT	3 GREEN	5 BROWN	5 BROWN
RIGHT	4 BROWN	9 BLUE	9 BLUE
FIRE	6 ORANGE	4 BLACK	4 BLACK
COM.	8 BLACK	7 WHITE	2 WHITE

THE DRAWING ON THE LEFT IS FOR ONE
STICK ONLY.

THE DRAWING ON THE RIGHT IS FOR TWO
JOYSTICKS.