CLOAD MAGAZINE INC.
P.O. Box 1448,
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CA 93102

Get out the W-2s...

Another addition to the CLOAD family? We just added Grady (I don't think we can take another of him). Well, Robin says the new person won't be ready for a couple of weeks, anyway. She should know. She's been carrying the weight of this decision around for quite a while. About 8 1/2 months or so. I think that the (ab)normal flow of things here is in for a little redirection. Is there a way to get a a corporate tax deduction out of this...?

February 1982

Side	Title	Turns Count CTR-41	Turns Count CTR-80
****	Heart Cover	18 & 272	10 & 158
** **	Subway	61 & 303	35 & 176
** **	Least Square	163 & 382	95 & 222
****			
**	Dollar Growth	12 & 263	7 & 153
***	PILOT Instructions	53 & 295	31 & 171
**	PILOT	150 & 368	87 & 213
**	PILOT Sample (use with PILOT)	208 & 415	121 & 241
****	Heavy Traffic (System HEAVY)	233 & 435	135 & 252

CLOADing Notes - This tape may load at an ODD RECORDER VOLUME. Set the volume LOWER than normal for your first attempt, then increase it slightly until the tape loads. If the first copy of a program won't load, try the second. That is why it is there. Model I only: Put an AM radio very close to the keyboard, tune it to a non-station, and you can listen to the tape loading in. Adjust the recorder volume so the hash from the computer sounds 'cleanest' during a load.

Model III notes - Load the tapes at the LOW speed (POKE 16913,0). An occasional program will NOT run. There may be upper and lower case goofs in some programs. Arrow keys often are translated as follows: (↑, ↓, ←, →) = ([, \,], ^).

What do you mean, the 14th was two weeks ago? Oh, well, Heart Cover is good all year 'round (and in a round year, February 14th will come up again!).

Do you want to get lost in New York? Just take the Subway! Actually, there is someone on the Subway who wants to stay lost, and the object of the game is to move your agents in order to capture him. But you must be careful - the criminal you are after is armed! There is a lot to this game, so a short summary of it is given below:

There are 26 stations (labeled A-Z).
13 of the stations have upper and lower substations.
There are 5 subway lines (Red, Blue, White, Green, and Orange). To see what is happening on a particular line, just type the first letter of that line. A '--' means that there is no train at the station and a '**' indicates that a train is at the platform. Read down the screen for the train's next stop if a train is in a station at the "out" column, up the screen if it is in the "return" column.
To move an agent (numbered 0-9) just type his number and the letter of the station that you want him moved to. To toggle the agent from the lower substation to the upper substation (or vice-versa) at stations that have substations, type the agent's number and '@'.
To see where all of the agents are, type 'P'.
To capture the criminal, type '@' and the number of the capturing agent.

Talk about throwing someone a curve: how about graphing it? If you have a set of data points and you would like to plot a curve that closely models those points, one method (and coincidentally, one program) that you can use is called Least Squares. You feed Least Squares a bunch of data, and it will simulate an equation which describes a curve that fits your data. Why would anyone want to fit a curve to a bunch of points? Because your calculus teacher wants you to! It also becomes handy when you want to predict future trends.

Now I have to be honest (second time this year!). The Least Squares method is only an approximation. If you want real accuracy, you need to use integrals (and possibly a shrink...). But the Least Squares method does a good imitation. How good the imitation is depends on how many degrees of accuracy you want. But the more degrees of accuracy you request, the looonger Trash-80 has to compute. Still beats calculus! Note - you are limited to 17 points in a 16K RAM machine.

From the land of Ronnie comes Dollar Growth. Actually, it's dollar shrinkage since it deals with the price change of an item and its relation to the general change in prices due to inflation.

Speaking of inflation, our prices are going up (again) starting July 1, 1982. More on this later...

Just when you thought you had mastered BASIC, along comes PILOT. PILOT is a simple interpretive language WRITTEN IN BASIC that can be mastered by almost anybody. There are three parts to the program: PILOT Instructions (to tell you how to use PILOT), PILOT (the language itself), and PILOT Sample (a small program written in the PILOT language that must be loaded, listed, and run from PILOT). A manual for PILOT can be found on the last two pages of this spewing.

A trip to Los Angeles can literally DRIVE you up a wall. Those freeways and city streets are crazy! Heavy Traffic is just the thing to prepare you for the ordeal. You find yourself on a two-lane highway trying to pass the slower traffic in your lane while avoiding the oncoming traffic. Your car is controlled by the '<' and '>' keys (or the ',' and '.'). You shift into a higher gear by hitting the <shift> key. The program is in machine language so to load it type 'SYSTEM'<enter>, then answer the *? with 'HEAVY'<enter>. Now the program loads in (the instructions appear on the screen as it loads). In the Model I, Heavy Traffic auto-executes, but the Model IIIers will have to answer the next *? with '/'<enter>. Since the program loads in a few different places in RAM, the start address (16416) and end address (32767 or something lower) are not all that accurate. The entry point, however, is 20480! One out of three ain't bad...

And it's all mine...

The error, that is. In last month's yellow sheets I gave a little (?) routine that took upper case only programs and made them somewhat upper and lower case. But I made a small boo-boo. The 'RESUME' in line 65523 should have been 'RESUME NEXT'. Don't hold your breath, but there may be a machine language version of that routine coming up in a future issue (thanks to a Mr. LeSarge).

Somebody loves the Model III...

I get a few letters from people bemoaning the fact that many of the machine language utilities that we publish won't run on the Model III. They ask us to please fix these programs to run on their machines. Folks, they don't know what they ask sometimes. I have programmed in assembler (I even like it!), but it is VERY time-consuming. So the choice I had was to publish some utilities (and leave some users out in the cold) or not publish any at all (and just pretend that nobody wanted them, anyway). I chose the former. But it brings me great joy (oh, boy!) when someone sends in the fixes for a Model I only program so that it will run on a Model III. Jose Babilonia of Rio Piedras, Puerto Rico did just that for last month's Disk Timer. There are a lot of patches, so get ready:

```
5 FOR O=J TO J+65: READ M: N=N+M: POKE O,M: NEXT
6 IF 8736-N THEN PRINT "CHECKSUM ERROR": END
10 DATA 243,205,127, 10,229,193, 17,  1,  0,121,
        211,244, 25, 56, 47,219,240,203, 79, 40,
        244,121,211,244, 25, 56, 35,219,240,203,
         79, 32,244, 33,  0,  0,121,211,244, 25,
         56, 20,219,240,203, 79, 40,244,121,211,
        244, 25, 56,  8,219,240,203, 79, 32,244,
         16,230,251,195,154, 10
12 OUT 244,129: OUT 240,0: FOR I=3 TO 123 STEP 2:
   SET(I,31): SET(I,45): NEXT
14 I=1: P=300: S=4+11+11+7+10+8+12: T=101376D2/5: M=256*I: NN=15
19 N=N+N: L+L+1: OUT 244,N+128: IF L>3 THEN 18
22 U=USR(M+N+128): IF U=0 THEN NN=NN-N: GOTO 19
```

Oops, it's a short month...

And that means you will get this sooner (just about 28 days from the time you got the last one)! Who says that we will never get an issue out on time (we do...)?

In 31 days,

Dave

ed.

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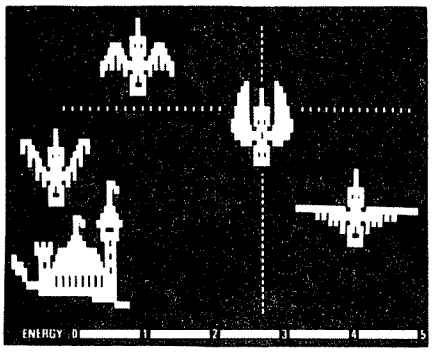
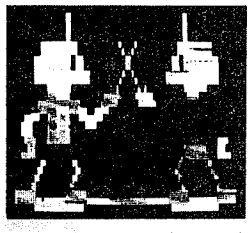
VOYAGE OF THE VALKYRIE



By Leo Christopherson from AOS
Combine the animation and music techniques pioneered by Christopherson with the challenge of his first fast-moving arcade game and you have VOYAGE TO VALKYRIE!

You speed through a magical maze guarded by ferocious birds that swoop down to attack if you don't get them first. To list all the play and options of this exciting game would take the 16 pages of instruction included.

Tape (TRS-80 16K) $34.95
Disk (TRS-80 16K, Apple 48K) $39.95



DUEL «N» DROIDS

By Leo Christopherson from Acorn
Teach your "animated android" how to wield a laser sword! Leo Christopherson, author of "Android NIM," "Dancing Demon," "Voyage to Valkyrie" and other animations, has developed a new type of animation and high-quality sound in this work.

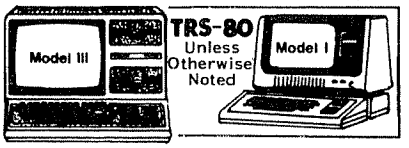
Starting out as a lowly clown, you teach your 'droid to use a laser sword by controlling its movements -- advance, attack, even retreat if necessary. Then you enter the tournament against the program's skilled 'droid. Revel in the fanfares of the victorious -- or hear the funeral dirges of the defeated! Entertainment for all ages.

16K protected tape...$14.95
16K protected disk...$20.95

BATTLE OF SHILOH

From Strategic Simulations
Now Civil War buffs can engage in a realistic simulation of a major battle. Marching through the war-torn countryside, strategically using the forests, creeks, hills for defense, you recreate every facit of the battle on a hex-grid map. If you had been in charge, would we still be whistling "Dixie?"

16K tape...$24.95



From Med Systems
You are sitting alone at 2 AM. Your eyes are bloodshot as you peer into your computer's screen and cry, "I must be CRAZY!" If this has never happened to you, you've never tried ASYLUM. It's Med Systems most ambitious 3-D graphics adventure yet!

ASYLUM places you on a cot in a small (padded?) room. Periodically the janitor lobs a hand-grenade through the window. What you do next could mean escape -- or disaster.

16K tape...$14.95
32K disk...$19.95

Also order DEATHMAZE 5000, Med System's challenging 3-D maze game. Same prices as above.

FORBIDDEN PLANET I

By Wm. Demas from Fantastic Software
The first TALKING adventure! With skill, luck, and tenacity -- and a little help from your chatty TRS-80 -- you may survive Part One of this multipart adventure! You don't need a voice synthesizer, this program talks to you via the cassette port. And it's a good thing it does, 'cause otherwise you'd get mighty lonesome on desolate FORBIDDEN PLANET.

48K disk...$39.95

LOST COLONY

By David Feitelberg from Acorn
It's the world's first deep space colony and you are the economic manager. A remarkable simulation, LOST COLONY arms you with maps and charts as tools for resource management. You assign human and robotic labor, explore new land, and set production quotas. At the same time you must determine equitable pay scales and taxes.

Communicate through your model I or III using full sentences or short commands. A challenging game, it might give you insight into real life management as well.

16K protected tape...$19.95
32K protected disk...$19.95

Crush, Crumble and Chomp!

From Epyx
It's a monster movie, and you are the monster! You can be The Glob, Kraken, Mantra, Mechismo, Arachnis, or Goshilla -- or even design your own "custom" monster (disk version only). This hilarious action game is loaded with graphics and sound as you practice your villany. With 6 monsters, 4 cities, and 5 game objectives, you get a choice of more than 100 possible scenarios. A monster's life is not all carnivorous crunching, though: The combined resources of the police, science, and armed forces are bent on your destruction.

TRS-80 (16K tape or 32K disk), Apple (48K disk)...$29.95

TIGERS IN THE SNOW

From Strategic Simulations
Highly sophisticated simulation of World War II's Battle of the Bulge. Your troops are encamped in the French forests of the Ardennes, ready for the first wave of this key assault. The battle requires complex strategies and a good grasp of the overall situation: troops, artillary, terrain, support, and timing. Are you up to it?

16K tape...$24.95

Unbelievable Realtime 3-D Graphics!

FLIGHT SIMULATION

From Sub-Logic
The wait is over! If 3-D graphics seem impossible on the low resolution TRS-80, you haven't seen this brilliant program. During FLIGHT SIMULATION, you instantly select instrument flight, radar, or a breathtaking pilot's-eye-view. But be sure to strap yourself in -- you're liable to get dizzy!

Once you put in some air time learning to fly your TRS-80, head for enemy territory and try to bomb the fuel depot while fighting off five enemy warplanes. Good Luck!

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Loading Instructions

Model III owners note, this cassette is recorded at 500 baud.

PILOT will load and run on any Model I or Model III with at least 16K memory and Level II BASIC. This one version will work on a disk or cassette based TRS-80.

PILOT is loaded using the usual "CLOAD" command. Then type "RUN" and you will be in PILOT.

Disk users, be sure you are in disk BASIC, type CMD"T", then "CLOAD". If you wish to transfer PILOT to disk, be sure to do so before typing "RUN".

PILOT User's Manual

PILOT (Programmed Inquiry Learning Or Teaching) is a computer language, as is BASIC.

PILOT uses words and sentences, but almost no math. The only math it can do is count to nine.

PILOT is simple: there are few commands to learn.
It is an ideal "first language" for elementary children.
It has been learned and used by first graders.

PILOT is useful in writing computer assisted instruction (CAI) programs, even by someone who doesn't want to spend much time learning a computer language.

Although PILOT is a simple language, it is powerful.
If you wish, long and complex programs can be written.

PILOT is based on 4 statements:

T: Type
A: Answer
M: Match
J: Jump

You can start writing programs with just these four statements.

T: means TYPE

This statement will type anything you wish onto the screen.

Example:

```
T: HELLO, I AM A COMPUTER.  I AM RUNNING A PILOT PROGRAM.
```

A: means ACCEPT an answer

This statement will stop and wait for the user to type an answer. It can also type a message first.

Examples:

```
T: ARE YOU FEELING OK
A:
```

or you could do the same thing by using:

```
A: ARE YOU FEELING OK
```

M: means MATCH

This statement checks the user's answer for words or phrases. They must be separated by "/" marks.

Examples:

```
M: SICK
M: YES/YEAH/I GUESS SO/YUP
```

The computer will remember if it found a match for one of the words or phrases in the previous answer.

Y YES, there was a MATCH
N NO, there was no MATCH

These are conditional statements. When they are the second letter of a statement, it will only execute on that condition.

Examples:

```
TY: I'M GLAD TO HEAR THAT.
TN: THAT'S TOO BAD.
```

LABELS

Since PILOT uses no line numbers, you can refer to a statement by labeling it.

Labels must start with a "*" and can have up to four letters.

Example:

```
*WHEN T: YOU CAN SEE THE MOON AT NIGHT.
```

There must be one space between the label and the statement.

J: means JUMP

This will cause the computer to jump to a particular statement. Naturally, that statement must be identified with a label.

Example:

```
J: *WHEN
```

This tells the computer to jump to the line labeled "*WHEN".

C: means CLEAR the screen

This statement will have the computer clear the screen. It can also then type any message.

Example:

```
C:
T: HELLO THERE.
```

or you can do the same thing by using:

```
C: HELLO THERE.
```

R: means REMARK

This is ignored by PILOT. The programmer can use it to make notes or other remarks about his program.

Example:

```
R: WRITTEN BY J. OLSEN
```

Z: means ZERO the counter
I: means INCREMENT the counter

PILOT can count from 0 to 9. You can tell the computer to start at zero with the "Z:" statement. You can then add one more with the "I:" statement. When the counter reaches 9, then the "I:" is ignored.

0 - 9

When used as the second character in a statement, it causes the statement to be executed only if the counter has that value.

Example:

```
T4: THAT TOOK FOUR TIMES
```

*NAME a special label

If you use this label with a "A:" statement, the computer will remember the user's answer. It can then be used in a "T:", "A:", or "E:" statement.

Example:

```
T: WHO ARE YOU
*NAME A:
T: NICE TO KNOW YOU, *NAME
```

*NAME must be the last thing in the statement.

U: means USE a subroutine

You can jump to a subroutine from anywhere in your program, using the "U:" statement, then return, using the "E:" statement.

Example:

```
U: *LINE
```

You cannot put a subroutine inside another subroutine.

E: means END

This is used to end a subroutine or your program. It can also type a message. It does not have to be the last statement in a program.

Example:

```
E. GOODBYE
```

That concludes the complete list of PILOT statements.
Here are a few review examples and explanations:

```
C: HELLO                        clears the screen, types message
*TOP U: *NAME                   jump to subroutine *NAME
EY: I KNOW YOU                  end if match was yes, type message
I:                              add one to counter
E5: I DON'T KNOW YOU FIVE       end if counter is 5, type message
TN: GET SOMEONE ELSE            if match was no, type message
J: *TOP                         jump to the line labeled *TOP
*NAME A: WHO ARE YOU            asks name, remembers answer
M: BOB/JOHN                     tries to find a match in answer
E:                              ends subroutine, return
```

Here is a list of direct commands for PILOT:

RUN
LIST
LLIST (if you have a printer)
NEW
E (EDIT)
D (DELETE)
I (INSERT)
CLOAD
CSAVE
LOAD (disk only)
SAVE (disk only)

RUN

When you have finished writing your PILOT program, this will begin execution.

Disk users can type RUN "FILESPEC", where "FILESPEC" is the name of any PILOT program on disk. The program will load and automatically run.

Examples:

```
RUN           (runs the program in memory)
RUN "TURK"    (loads TURK from disk and runs it)
```

LIST

This lists the first 14 lines of your program on the video display. Each time you press the (UP-ARROW) key, the list will scroll up one line.

LLIST

This lists your complete program to a line printer. If one is not available, an error message is given, but the system does not freeze up.

NEW

This erases your PILOT program from memory.

E

This is the command to EDIT a program line. When you enter this mode, you will see a listing of your program, and a marker pointing to the first line. Move the marker to the line you wish to EDIT, then (ENTER).

You can then edit the line using commands very similar to the BASIC editing commands. A summary is on the next page.

Here is a list of EDIT commands:

```
C             change a character
D             delete a character
I             insert characters
X             go to end of line, and insert
H             hack and insert
A             cancel
SPACE BAR     move cursor
LEFT ARROW    backspace cursor
RIGHT ARROW   advance cursor 10 spaces
UP ARROW      escape key
ENTER         completed editing
```

See your BASIC User's Manual for details.

D

This is the command to DELETE a program line. When you enter this mode, you will see a listing of your program, and a marker pointing to the first line. Move the marker to the line you wish to delete, then (ENTER).

I

This is the command to INSERT a program line in the middle of your program. When you enter this mode, you will see a listing of your program, and a marker pointing ahead of the first line. Move it between the two lines you want, then (ENTER). You can then type a new program line.

CSAVE

This is the same as in BASIC, but uses no filespec. It saves your program onto a cassette tape. Be sure the tape is advanced pass the leader and the recorder is in the RECORD mode.

CLOAD

This is the same as in BASIC. It loads a previously saved program from cassette. Be sure the cassette is rewound and is in the PLAY mode.

LOAD
SAVE

For disk users only, they require a filespec.

Examples:

```
LOAD "GAME"
SAVE "NAME"
```

That concludes a list of PILOT statements and commands.

Here are a few special notes:

Remember, there are no line numbers in PILOT.
Each line must be 60 characters or less.
PILOT will not accept lower case letters.
PILOT programs can accept all other letters, numbers, and characters, except a double quote (").
You must use a double quote in certain commands such as LOAD.
The (BREAK) key is disabled.
Use the (CLEAR) key for the "BREAK" key.

The program after the PILOT interpreter is a sample PILOT program. When in PILOT, "CLOAD" it.

You will learn much about the PILOT language if you "LIST" it and examine the program before you type "RUN".

Good luck with PILOT, and have fun!