Here's May!

Every now and then we like to mention that all our cassettes are guaranteed - if you are unable to load either of the two copies of any program, just return the tape to us and we'll replace it (please, return it within a month or so of receiving it). This first paragraph is a great place to put shorty announcements like this.

<table>
<thead>
<tr>
<th>Level</th>
<th>Title</th>
<th>Turns Count</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CTR-41</td>
<td>CTR-80</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cityscape Cover</td>
<td>13 &amp; 197</td>
<td>8 &amp; 116</td>
<td></td>
</tr>
<tr>
<td>**</td>
<td>Coin Toss</td>
<td>50 &amp; 228</td>
<td>30 &amp; 134</td>
<td></td>
</tr>
<tr>
<td>**</td>
<td>Draw Instructions</td>
<td>90 &amp; 259</td>
<td>53 &amp; 152</td>
<td></td>
</tr>
<tr>
<td>**</td>
<td>Draw</td>
<td>138 &amp; 299</td>
<td>81 &amp; 177</td>
<td></td>
</tr>
<tr>
<td>**</td>
<td>Sinewave</td>
<td>166 &amp; 321</td>
<td>98 &amp; 195</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cityscape Cover</td>
<td>13 &amp; 51</td>
<td>8 &amp; 30</td>
<td></td>
</tr>
<tr>
<td>** **</td>
<td>Coin Toss</td>
<td>89 &amp; 114</td>
<td>53 &amp; 67</td>
<td></td>
</tr>
<tr>
<td>** **</td>
<td>Sketcher</td>
<td>139 &amp; 190</td>
<td>82 &amp; 112</td>
<td></td>
</tr>
<tr>
<td>** **</td>
<td>Dungeons Instructions</td>
<td>238 &amp; 272</td>
<td>140 &amp; 160</td>
<td></td>
</tr>
<tr>
<td>** **</td>
<td>Dungeons &amp; Dragons</td>
<td>305 &amp; (348)</td>
<td>180 &amp; (205)</td>
<td></td>
</tr>
<tr>
<td>**</td>
<td>Sinewave</td>
<td>413 &amp; 429</td>
<td>243 &amp; 253</td>
<td></td>
</tr>
</tbody>
</table>

The second copy of Dungeons & Dragons is recorded on the Lvl I side.

The Cityscape cover is an interesting motion-pattern sequence. It is somehow reminiscent of a city. To Pablo Picasso, maybe.

"Coin Toss" is a coin tossing program which demonstrates that probability is a funny thing. A "true" coin is just as likely to come up heads as it is to come up tails, so one could reason that after a large number of tosses, the "heads count" and the "tails count" will be equal. Not so. If you toss a true coin twice, you're just as likely to get two heads or two tails as you are to get one each. If you make six tosses, the chance of coming out equal in the heads/tails department is about 31%. To be sure, it's the most probable outcome, but it's still not too likely. If you were a Las Vegas casino owner, you could make money (in the long run) with the following game:

1) Customer places bet and tosses true coin six times.
2) If there was an equal number of heads and tails, casino pays customer twice the bet.
3) If there was an unequal number, casino takes customer's bet.

The payoff to the casino is about 5%. If 100 bets of $1 each are made, the casino gets about $5.

"Draw" (level I) and "Sketcher" (level II) are a pair of graphics packages. "Sketcher" allows you to draw circles, boxes and lines by
specifying their sizes and such rather than actually drawing them. It also lets you insert text and save the drawings on tape.

"Sinewave" is a plotting program. It lets you select two garden variety sine waves of different frequencies and plot the result of their addition (that is, if at a given instant one sinewave is "at" 3, and the other is "at" -1, their sum is 2 at that instant). It turns out that any waveform (no matter how complex) can be generated by the addition of sine waves of various amplitudes and frequencies. The reverse is also true. Any waveform, for instance that of a spoken word, can be broken down into a bunch of sine waves, and a list can be made of their amplitudes and frequencies.

There is a very real and practical application for this branch of knowledge, folks. If a spoken word's waveform can be broken down into a list of sinewaves by a computer (a TRS-80 can do it), that same computer can continue to listen and break down all incoming words into lists of sinewaves. This means that the computer can "listen" to human speech by using each list as a spoken word. The whole field is relatively new, and the problems yet to be solved are numerous and difficult, but a computer which recognizes when it's being yelled at and what names it's being called is a very powerful (and valuable) computer. The TRS-80 "VOXBOX" is a good example of what is now possible.

For those of you who want to get into this field, the process of breaking a waveform down into a bunch of sinewaves is known as the "Fourier Transform". This beastie is the Waterloo of many an engineering student, myself included. (Note to Dr. Gray, whose EE130A class wiped me out and who is now a CLOAD subscriber: I wasn't much of a student anyway - at the time I was more interested in getting my homebrew computer to work than I was in studying.)

The last program this month is "Dungeons & Dragons". It is a 16K program, so the instructions are separate. To keep you from having to copy them down with a quill pen and parchment, here is a rundown:

When you RUN the program, you are assigned several attributes such as dexterity, strength and richness (in gold pieces). Dexterity is your level of skill at fighting, 10 being a normal level. Strength is how much strength you have left (if it goes to 0, you're dead). Eating elven cakes increases your strength, but be careful. "Eat cakes" doesn't work, it's "eat cake", and you eat the cake that is in your hand, not the cake that may be present in the room. "A.C." stands for armor class (table below). At the beginning of the game, you get to buy weapons with your gold pieces (table below).

<table>
<thead>
<tr>
<th>Armor Class</th>
<th>Weapon &amp; price</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 - no armor</td>
<td>fist...............Free</td>
</tr>
<tr>
<td>8 - a shield only</td>
<td>dagger.............4</td>
</tr>
<tr>
<td>7 - leather armor</td>
<td>sword...............10</td>
</tr>
<tr>
<td>6 - leather armor w/shield</td>
<td>mace...............11</td>
</tr>
<tr>
<td>5 - chain mail armor</td>
<td>battle axe.........13</td>
</tr>
<tr>
<td>4 - chain mail armor w/shield</td>
<td>Morning Star......15</td>
</tr>
<tr>
<td>3 - plate mail armor</td>
<td>two handed sword..20</td>
</tr>
<tr>
<td>2 - plate mail armor w/shield</td>
<td></td>
</tr>
</tbody>
</table>

After you have bought all the weapons that you can, you wander through the caverns in three different modes - travel, command and combat
(you are informed which mode you are in). In travel mode, your choices are N,S,E,W,U and D (for North, South, East, West, Up and Down respectively). In command mode, your choices include take (object), score, say (word), eat (object), clue, fill (object), light (object), and so forth. To change from command mode to travel mode, press <enter>. There are several choices which are undocumented, especially those usable in the dragon's lair. Part of the challenge is to find out what they are. In combat mode, your choices are A,B,S and P. A is an average attack, and B is an all-out maximum effort attack (for which you are penalized one strength point). Enter the letter, then your choice of weapons. Since combat is active and things often get exciting, you may abbreviate your weapons choice to the first three letters (i.e. bat for battle axe). The S and P choices in the combat mode refer to stand up and pray, respectively. Here's a list of the choices:

<table>
<thead>
<tr>
<th>Travel Mode</th>
<th>Command Mode</th>
<th>Combat Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>N north</td>
<td>&lt;enter&gt; travel mode</td>
<td>A average fight</td>
</tr>
<tr>
<td>S south</td>
<td>TAKE object</td>
<td>B all-out fight</td>
</tr>
<tr>
<td>E east</td>
<td>SCORE</td>
<td>S stand up</td>
</tr>
<tr>
<td>W west</td>
<td>SAY word</td>
<td>P pray</td>
</tr>
<tr>
<td>U up</td>
<td>EAT object</td>
<td></td>
</tr>
<tr>
<td>D down</td>
<td>CLUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FILL object</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LIGHT object</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(plus several secret choices)</td>
<td></td>
</tr>
</tbody>
</table>

LISTing the program would normally be a good way to find out what the secret choices are, except that the programmer (Peter Trefonas) has arranged for those lines to be invisible.

And, saving up the worst for last, us folks here at CLOAD are about to do what has become a rather common act lately, known as Raising Our Prices. The effective date is some time away - probably towards the end of summer - so this actually amounts to nothing more than an announcement of intent. We haven't had any price bumps for two years, so the inflation adjustment should theoretically be about 34% upward. Our costs, however, haven't gone up that much so our prices won't either. Here's the rundown:

<table>
<thead>
<tr>
<th>Now</th>
<th>Will be</th>
<th>% increase in 2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year subscriptions $36.00 $42.00 17%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 yr sub (overseas surface) $38.00 -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 yr sub (overseas airmail) $48.00 $50.00 4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single issues (CA add 6%) $ 3.50 $ 4.00 14%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single issues (overseas) $ 4.50 $ 5.00 11%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overseas subscriptions will no longer be shipped as surface mail. We have had too much trouble with proverbial slow boats to China (no, we don't send any subscriptions to China - yet).

Because we are not too avaricious (or bright), we will honor subscription renewals at the old price even if your subscription will not be up until the prices are raised. Likewise, all orders for back issues will be honored at the old price through this summer (there is a list in this issue). Come one, come all...
These include hardcopy listings and commentary on each program as well as the programs themselves.

**Best of CLOAD, Volume I (5.10.00)**

- B Yield: Corporate bond calculator - computer bond yield-to-call and yield-to-maturity
- B Sandcastle: A civil engineering problem - build a sand castle that doesn't fall down
- B Knight: Knight's tour - the old chess problem
- B Pool: One pocket varietal game
- B =X=x8b: Linear regression
- B Break: Bring a window - exercise your timing
- B Pinball: A "Breakout" type game

**Best of CLOAD, Volume II (5.15.00)**

- B Seekers (cover program)
- B Artillery Target practice
- B Ohm's Law Tutorial - teaches Ohm's law and generates practice questions.
- B Four Color Generates maps at random - then has you derive colors (four maximum).
- B Road Rally Race around the "G" shaped track - the cars have poor brakes and have a tendency to crash into the walls.
- B Star Wars Racket down the treacherous outer space banks and enemy tie fighters, drop the charge and get out - fast.
- B Sketch Use a screen as a sketchpad, save up to ten images in memory
- B States Draw map of U.S. and quizzes on state, its capital, etc.

**BACK ISSUES (33.50 each)**

- Not mentioned, but present in every issue (both level I and II), is our "Instructor's" type game for each robot.
- It publishes various subversions of graphic artwork.

**October 78**

- B Star Wars Fly your Tie fighter down the trench
- B Graphic Draws and save screen graphics
- B Chase Instructions for Chase
- B Chase Escape the killer robots
- B Password Keep track of savings, interest, etc.
- B Machin Demonstration of screen character set

**November 78**

- B Art Inst Slide comments from our Editor
- B Act Artillery - aim and fire a cannon
- B Ohm Learn Ohm's law - includes examples made up at random by the computer
- B C & M Cat & mouse - two players, computer acts as referee
- B Crush Crushman - the old "hangman" word game with graphics

**December 78**

- B Color Creates maps for you to color - only four colors allowed
- B States Quiz Test your knowledge of the (US) states
- B States Graphic version of the above
- B Reaction Great for parties
- B Sketch Draw & animate up to ten frames of animation
- B Jukebox TRS-80 tunes - plays through radio

**January 79**

- B Road Rally Two speed race - the race cars have poor brakes, go beware!
- B Nym Beat the computer
- B EGP Test Are you psychic, or merely insane?

**February 79**

- B Corp Notes Instructions for
- B Corporation Run an industry - be a capitalist and put old John D., into scale
- B Powers Of concentration
- B 15 Char [901]
- B Disassemble Converts machine code into mnemonic code

**March 79**

- B Jungle Inst. Escape the natives...of New York
- B Jungle or wash windows in the concrete jungle
- B Worm Rod'nm'wormy! Steer an ever-growing worm around the screen
- B Billboard Graphic Signs - useful for window advertising
- B Messages Similar to above but level II

**April 79**

- B April Fool April Fool
- B UFO Map the invaders
- B Dice ins. Introducing...
- B Dice Nothing special TRS-80
- B Scramble Rearrange the letters of a word
- B Rustle White out the screen

**May 79**

- B Hunt & Peck A "concentration" game
- B Photo Inst. Instructions for
- B Photo Camera - a tutorial on the use of "Z" stops and shutter speeds
- B Voice Create voicepoints - also handy to look at cassette saves
- B Labyrinth Walk through a maze - computer maps the journey from the traveler's viewpoint

**June 79**

- I Foot. Inst. Instructions for:
  - I Football You're the quarterback
  - I Pullback Similar to above
  - I Cartesian Graph equations in the Cartesian coordinate system
  - I Grapher Polar and Cartesian graphing routine
  - I Recorder Figure tape counter - CRT-41 to CRT-80
  - I Cartoon A space age twist on an old problem, animated
  - I Savedata Save a sort data set up in memory as a string array

**July 79**

- B Fuel Conservation computation
- B Motorcycle Over the barbed wire
- B Row Far Computer how far, and in which direction at two points on earthline
- B I Bounce Guide a bouncing ball into a goal
- B Psycho Pattern generator
- B I Polar Draw polar graphs

**August 79**

- B Grand Prix Steer winding road
- B Caesar Find the coefficients of 2nd, 3rd or 4th order equations
- B Acco A quickie aerodynamics course
- B I Hobbit Fantasy adventure

**September 79**

- B Binary tree A Gaussian distribution generator
- B Calendar Of any year
- B Mummy Mummy's Tomb adventure
- B I Ikeke For you specific
- B I Poke Memory changer

**October 79**

- B Constel Star plot & quiz
- B PhoneWind Telephone number mnemonics - helps make up words from telephone numbers
- B Space Skitz Target practice
- B I Germ War Conway's LIFE, with death thrown in, too
- B I Save Save BASIC programs as SYSTEM programs

**November 79**

- B Budget Compute your past expenditures
- B CryptArk Arithmetic - switch letters with numbers
- B Space Invaders" type game for each robot.
- B II Define Game the same as above - except total time to beat a level
- B I Difficulties Difficult words

**December 79**

- B Space War Yet another tag-em-on-the-rise
- B Kaliedoscope Pattern generator program
- B Sign Letters - good for advertising
- B Morse Teaches Morse Code
- B I Blockade Try to blockade your opponent
- B I Tape Test Certify your own cassettes

**January 80**

- B Stars Dodge the stars in your spaceship
- B Two Dates Calendar calculator - works with number of days, weeks or specific dates
- B I Who's On Deductive logic - which ballplayer is on first - generates new problems at random
- B I HiCalc Four function calculator - 1500 places
- B I Midway Carnival type game
- B I RAM Test 1 128 or 48K RAM test program

**February 80**

- B Kalah The old African board game
- B Astron From organs to the source of light, gravity and time
- B I Dissertation Program generates Dissertation suitable for submission for Ph.D.
- B Coefficient Computes coefficients of polynomial equations by Cramer's rule
- B I Election Educational simulation of U.S. Presidential elections - set up game as any as you enter a race against a 1980 candidate and slug it out from primaries to November
- B I Monitor Similar to Radio Shack T-80, but written in level II BASIC

**March 80**

- B Stockpage Tote your program to the floor and see who's winning.
- B Yahzi-80 The old dice game, now on a computer.
- B Nervos You race a rat through a maze. Score is dependent on how much time, how many lives, etc.
- B I Level III Makes level II BASIC more kinder to you - It gives more specific error messages and lists you store whole words under shifted Leter keys.

**April 80**

- B Caps Old dice game from a programmers viewpoint. Draws a flowchart on the screen and shows the progress of decisions for each roll.
- B Distance Distance from earth to various celestial bodies. Input speed, destination and how long you've been traveling, and it shows graphically how far you've gone.
- B Ilque The old peg jumping game
- B I Typing Learn and practice typing. Can also be used as a tachistoscope.
- B I Syzggy Two player word blash. Surround your opponent with your words. Obstacles can be defined, and up to five missiles can be used by each player.
- B I Change System program - converts level II system format into level I system format (works from 4208 to 4FFFE)