

OSI-tems Volume 4 Number 7

September 1981

OSI-tems

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From the editor's keyboard

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by Claudio Caballero

This is my first time as editor of OSI-tems, and I have decided to do something new and revolutionary; EDIT! I have always noticed that the editor seems to only run off the newsletter and make a table of contents. Since I don't have the time to re-write all the articles and put editor's notes if&when they are needed, I instead decided to put the notes in the back of the newsletter. The notes are simply corrections to mistakes (?) or omissions, as well as things I thought should be included. Take them with a large grain of salt!

One final thing I'd like to talk (not preach) about. It's the size of 'items'. I think that not including the summer slump, our newsletter is still not as thick as it could be. I think the main problem isn't that we all don't have things to write about, it's that we don't think they're important enough to be published in 'items'. Any tidbit of information is enough to write about! If every single person in OSUNY (including people who get 'items' by mail) would write even a small article every month, we would have quite a newsletter! So get writing!!!!

From the Front Desk

by Ugo V. Re'

During the summer months everyone is more relaxed and we seem to spend most of our time engaged in outdoor activities and very little time indoors working over a 'hot' computer. This relaxed attitude is also carried over to OSUNY and OSI-tems, as evident by the decline in club activities and newsletter articles over the past few months.

Now that summer is over we must revitalize OSUNY and our tired blood, due to a lack of OSI information and move ahead. We must now get back to those projects that were put aside in the past months. We must increase our computer activities and write some new articles for OSI-tems.

Become part of OSUNY, get in the main stream of activity. **CONTRIBUTE !!** If you have some information, a program or a hardware project write about it and send it to OSI-tems. If you can talk for 30 min. or give a demonstration of your project, let me know and I will schedule it for one of the monthly meetings.

Start now! Get your articles in for the next issue or stand up and be heard at our next meeting. Share your information.

After the OSUNY club notice appeared in "MICRO" we received many letters requesting information about OSUNY. Many writers wanted to know if we had a newsletter and what type of information was being distributed.

While trying to answer these letters it became apparent that there wasn't an updated OSI-tems article description or index listing. To remedy this lack of information the following two listings were created.

The first is a listing of all articles by subject matter while the second is a listing of all major articles, reviews and editorials not included, by OSI-tems issue. These lists will be updated and issued semi-annually.

While on the subject of OSI-tems, back issues are still available for a mere \$.75 an issue or \$ 10 for 20 issues (Nov. 1979 to Sept. 1981).

Sharing information
OSUNY & OSI-tems

Subject Listing

Hardware Changes

Add RS232 to a CIP	L. Thaler	Jul,80	2, 5
Beyond the Keyboard	L. Thaler	Feb,81	3, 2
Cassette Motorcontrol	K. Ernst	Dec,80	2,11
Confuse the Computer	D. Valentine	Apr,81	3, 4
CIP to DIP Interface	J. Cox	Apr,81	3, 4
From the Note Book	S. Sacks	Apr,81	3, 4
Handshake of Quick Printer	K. Ernst	Mar,81	3, 3
Interfacing a 6522 VIA to CIP	K. Ernst	Jul,81	3, 6
Joystick	L. Thaler	Apr,80	2, 3
Joystick Adapter	K. Ernst	Apr,81	3, 4
Peak Reading VM	M. Mostalvo	Sep,80	2, 8
Through the Keyboard	L. Thaler	Apr,81	3, 4
Two Screens in One	W. Balaban	Jun,81	3, 5
Up Your Memory	W. Balaban	Aug,80	2, 7

Software Changes

Corrections	D. Schwartz	Jul,80	2, 6
Corrections	U. Re'	Aug,80	2, 7
Corrections	P. Schreiber	Aug,80	2, 7
Corrections	U. Re'	Sep,80	2, 8
Corrections	P. Schreiber	Jan,81	3, 1
Extending BASIC-in-ROM	P. Schreiber	Oct,80	2, 9
Extending BASIC-in-ROM II	P. Schreiber	Dec,80	2,11
Extensions for 65D BASIC	D. Schwartz	Mar,81	3, 3
GOTO X	D. Schwartz	Jul,80	2, 6
Machine Language CALL	M. Cohen	Aug,80	2, 7

General Information

Aardvark's Memory board	I. Terrance	Apr,81	3, 4
Challenge	S. Lederman	Feb,80	2, 1
Computer Acronyms	W. Modell	Nov,80	2,10
Cube Roots	R. Rudnitsky	Jun,81	3, 5
CIP Trivia Quiz	S. Lederman	Apr,80	2, 3
Distance Between Two Points	W. Godsoe	Jul,81	3, 6
From the Note Book	S. Sacks	Mar,81	3, 3
From the Note Book	S. Sacks	Jun,81	3, 5
Ins & Outs of Software Copyright	I. Terrance	May,80	2, 4
Letter to the Editor	I. Terrance	Mar,81	3, 3
Misc. Notes	W. Modell	Feb,81	3, 2
More on Copyright	W. Godsoe	Nov,80	2,10
Program Security	M. Bassman	Apr,80	2, 3
Resource List	M. Cohen	Aug,80	2, 7
Resource Listing	M. Bassman	Mar,80	2, 2
Resource Update	M. Bassman	Apr,80	2, 3
Resource Update	M. Bassman	Aug,80	2, 7
Resource Update	M. Bassman	Oct,80	2, 9
Resource Update	M. Bassman	Dec,80	2,11
Thoughts on Cassette Recording	I. Terrance	Jul,80	2, 6
Truly 'SUPER' Superboard	L. Thaler	Apr,80	2, 3
Use for Your Modem	M. Cohen	Jul,81	3, 6
6502 HL Programming - class 1	S. Lederman	Nov,80	2,10
6502 HL Programming - class 2	S. Lederman	Dec,80	2,11
6502 HL Programming - class 3	S. Lederman	Jan,81	3, 1
6502 Programming - class 1	U. Re'	Feb,81	3, 2
6502 Programming - class 2	U. Re'	Mar,81	3, 3
6502 Programming - class 3	U. Re'	Apr,81	3, 4
6502 Programming - class 4	U. Re'	Jun,81	3, 5

OSI Information

Beat the String Bug	D. Schwartz	May,80	2, 4
BASIC Variables	OSI Journal	Mar,80	2, 2
BASIC/Machine Variable Passing	I. Cheng	Mar,80	2, 2
Cassette Interface	U. Re'	Jul,80	2, 6
C1-C2-C4-C8 Conversions	M. Bassman	Feb,81	3, 2
CIP Cassette Manipulation	M. Bassman	Mar,80	2, 2
CIP Memory Locations	D. Schwartz	Feb,80	2, 1
Fine Points of OSI BASIC	D. Schwartz	Nov,79	1, 1
Great Moments in OSI	M. Bassman	Dec,79	1, 2
OSI fig-FORTH	M. Cohen	Jul,81	3, 6
OSI 600 to 48 Bus	P. Halverson	Aug,80	2, 7
Printing Normal Error Messages	D. Schwartz	Nov,80	2,10
POKE Update	H. Polling	Aug,80	2, 7
Save HL Programs on Tape	D. Schwartz	Sep,80	2, 8
Serial Interface	U. Re'	Jul,80	2, 6
Troubleshooting	K. Ernst	Jan,81	3, 1
Understanding BASIC	M. Bassman	Aug,80	2, 7
Unlocking OSI program disks	M. Bolles	Nov,79	1, 1
UNNEW Your Programs	S. Lederman	Nov,80	2,10
Vectors	M. Bassman	Jun,80	2, 5
Waiting on BASIC	I. Cheng	Aug,80	2, 7
Working Around Strings	M. Bassman	Apr,80	2, 3

65D Corner	M. Cohen	Nov,80	2, 1
65D Kernel	T. Terrance	Oct,80	2, 1
65U Memory Locations	U. Readall	Oct,80	2, 1
65U Utility	D. Schwartz	Dec,80	2, 1

Game Programs

A Hazing I	U. Re'	Jul,81	3, 3
Androids	M. Cohen	Jul,80	2, 1
Bar Graph	M. Cohen	Jul,80	2, 1
Base Conversions	P. Schreiber	Dec,80	2, 1
Block Letters	M. Cohen	Sep,80	2, 1
Clock	S. Lederman	Mar,80	2, 1
Depth Charge	P. Schreiber	Nov,80	2, 1
Dodge'em	S. Lederman	Jun,80	2, 1
Elevator	M. Bassman	Apr,80	2, 1
Etch-A-Sketch	U. Re'	Jul,80	2, 1
Factorial	S. Lederman	Apr,80	2, 1
Fire	S. Lederman	Feb,80	2, 1
Gopher	S. Lederman	Jun,80	2, 1
Hangman	M. Bassman	Mar,80	2, 1
Hex Fifteen Puzzle	D. Schwartz	Apr,80	2, 1
I Ching	M. Cohen	Jul,80	2, 1
July 4 Special	D. Schwartz	Jul,80	2, 1
Kaleidoscope	S. Lederman	Mar,80	2, 1
Killing Cars	M. Bassman	Feb,80	2, 1
Life	S. Lederman	May,80	2, 1
Lissajous	M. Cohen	Mar,80	2, 1
Mastermind	P. Schreiber	Mar,81	3, 1
Multiplication	S. Lederman	Mar,80	2, 1
Mystery Program	M. Mostalvo	Dec,80	2, 1
OSI CIP Demo	M. Bassman	Apr,80	2, 1
Potato Chip Invasion	M. Bassman	May,80	2, 1
Probability Machine	S. Lederman	Mar,80	2, 1
Quiz System	M. Bassman	Jul,80	2, 1
Racer	M. Bassman	Feb,80	2, 1
Reflex Test	M. Bassman	Apr,80	2, 1
Santa Demo	OSI Journal	Feb,80	2, 1
Shape Plotter	S. Lederman	Nov,80	2, 1
Shape Plotter II	M. Cohen	Mar,81	3, 1
Skeet Shoot	M. Bassman	Dec,79	1, 1
Sketch Pad	D. Schwartz	Feb,80	2, 1
Stupid Trek	Many	Jul,80	2, 1
Submarine	L. Thaler	Jul,80	2, 1
Toy Piano	D. Schwartz	Nov,80	2, 1
Trap	S. Lederman	Sep,80	2, 1
Trig Quiz	M. Cohen	Jul,80	2, 1
Typing Test	S. Lederman	Jun,80	2, 1

Utility Programs

Another Print At	S. Lederman	Oct,80	2, 1
Bits	S. Lederman	Feb,80	2, 1
BASIC Utility	S. Sacks	Mar,81	3, 1
Cassette Save/Memory Dump	P. Schreiber	Nov,80	2, 1
CEGMDN Terminal	M. Bassman	Jan,81	3, 1
CIP in Germany	K. Ernst	Nov,80	2, 1
Dumb Terminal	D. Schwartz	Jul,80	2, 1
Error Messages	P. Schreiber	Jan,81	3, 1
Find	I. Terrance	Mar,80	2, 1
Invisible Programs	D. Schwartz	Apr,80	2, 1
Memory Swapping	S. Lederman	Jul,80	2, 1
Number Formatter	M. Cohen	Jul,80	2, 1
OSI BASIC Editor	P. Schreiber	Jul,81	3, 1
OSI Renumber	P. Schreiber	Jul,81	3, 1
Precision Factorials	A. Mosyakov	Mar,81	3, 1
Print At	S. Lederman	Jul,80	2, 1
Print Routine	B. Brown	Feb,80	2, 1
POKE'r Routine	M. Cohen	Apr,80	2, 1
Random Numbers	S. Lederman	Jul,80	2, 1
Resequencer for OSI	T. Terrance	Apr,80	2, 1
Screen Clear	D. Schwartz	Mar,80	2, 1
Single Disk Drive	U. Re'	Aug,80	2, 1
Sorting Arrays	D. Schwartz	Sep,80	2, 1
Turn USR(X) Routines into DATA	T. Cheng	May,80	2, 1
USR Dispatch	S. Lederman	Jul,80	2, 1
XEROX Mode	T. Cheng	Sep,80	2, 1

Book Reviews

Beyond Games	BYTE Books	Jul,81	3, 4
End Quote	Amen	Jul,80	2, 6
First book of OSI	J. Clothier	Jul,80	2, 6
Programming & Interfacing 6502	M. De Jong	Nov,80	2,10
6502 Assembly Language Pgm.	L. Leventhal	Nov,80	2,10

Hardware Reviews

Quick Printer	Radio Shack	Mar,80	2, 2
Anti-static Work Station	Westcom	Apr,81	3, 4
Color TV Conversion kit	Video Marketing	Jan,81	3, 1
Comprint 912	Comprint	Mar,80	2, 2
CEGROM	PKOM-England	Mar,81	3, 3
CIP series 2	OSI	Sep,80	2, 8
CIP series 2	OSI	Nov,80	2,10
CAP DF	OSI	Sep,80	2, 8
EPROM Eraser	L&S Engineering	Apr,81	3, 4
Flippy-Disk kit	Lifeboat Assoc.	Apr,81	3, 4
Lex-11 Modem	Lexicon Corp.	Apr,81	3, 4
OSI Disk drives	BSI	Mar,80	2, 2
Super Expansion Board - CIP	Grafix	Mar,81	3, 3
TI 733 terminal	Texas Instr.	Aug,80	2, 7
420 Memory Board	OSI	Apr,81	3, 4

Software Reviews

A/65 Assembler	Pegasus Software	Oct,80	2, 9
Aaarrrrggg!!!	R. Retelle	Mar,81	3, 3
Adventure	Aardvark	Jul,80	2, 4
Air-Sea Battle	Aardvark	Sep,80	2, 8
Alien Intruders	Aardvark	Feb,80	2, 1
Assembler/Editor	OSI	Feb,80	2, 1
Asteroids	Bare Data	Sep,80	2, 8
Awari	Aardvark	Sep,80	2, 8
Backgannon	Aardvark	Jul,81	3, 6
Barrier Tank	R. Retelle	Mar,81	3, 3
Bilder	Bill's Micro Svc.	Mar,81	3, 3
Bomber	OSI	Feb,80	2, 1
Cannoneers	Aardvark	Jul,80	2, 6
Chat-intelligent terminal	C. Shartsis	Sep,80	2, 8
Checking & Disbursements	Bill's Micro Svc.	Mar,81	3, 3
C1 Cursor Control	Aardvark	Feb,80	2, 1
CIP Assembler	Bill's Micro Svc.	Dec,80	2,11
Destroyer	OSI	Feb,80	2, 1
Dungeon	Aurora Software	Jul,80	2, 6
Dungeon Chase	Orion Software	Jul,80	2, 6
DQ Secretary	Duo Quong	Nov,80	2,10
Escape from Mars	Aardvark	Jul,80	2, 6
Extended BASIC	Software Alchemist	Feb,81	3, 2
Fighter Pilot	Aardvark	Feb,80	2, 1
Galaxia	Aardvark	Feb,81	3, 2
Gomoku	Orion Software	Jul,80	2, 6
Grenlin Hunt	Orion Software	Jul,80	2, 6
Gunfight	Orion Software	Jul,80	2, 6
Head On	Orion Software	Jul,80	2, 6
Hide & Seek	OSI	Sep,80	2, 8
Indy 500	Orion Software	Jul,80	2, 6
Machine Language Monitor	OSI	Feb,80	2, 1
Marooned in Space	Orion Software	Nov,80	2,10
Mini Assembler	Aardvark	Jul,81	3, 6
Minos	Aardvark	Feb,81	3, 2
Minos	Aardvark	Jul,81	3, 6
Monster Maze	Aardvark	Jul,81	3, 6
New York Taxi	OSI	Feb,80	2, 1
Nike Base	R. Retelle	Mar,81	3, 3
Orbital Fighter	Aardvark	Sep,80	2, 8
Orbital Lander	Aardvark	Jul,80	2, 6
OSI FORTH	Technical Products	Sep,80	2, 8
OSI Hex DOS	Program Exchange	Sep,80	2, 8
Plist	Bill's Micro Svc.	Mar,81	3, 3
Rebel Gunner	R. Retelle	Mar,81	3, 3
Renumber 1	Bill's Micro Svc.	Mar,81	3, 3
Road Race	Procom	Nov,80	2,10
Space Invaders	OSI	Sep,80	2, 8
Space Wars	Procom	Feb,80	2, 1
Starship 1	Procom	Nov,80	2,10
Super Utility	Aardvark	Feb,80	2, 1
Time Trek	Aardvark	Jul,80	2, 6
Torpedo	OSI	Feb,80	2, 1
Trap	Orien Software	Jul,80	2, 6
Trek CIP	Bill's Micro Svc.	Mar,81	3, 3
Typing Tutor	Aurora Software	Jul,81	3, 6
Video Game 3	Orien Software	Feb,81	3, 2
Video Trek	R. Retelle	Nov,80	2,10
Wild Weasel	Aurora Software	Jul,81	3, 6
Worms & Gobbler	Aardvark	Sep,80	2, 8
WP6502	Duo Quong	Nov,80	2,10
XPLD Compiler/Interpreter	Pegasus Software	Aug,80	2, 7
10 Tank Blitz	Aardvark	Feb,80	2, 1

- Five Points of OSI BASIC D. Schwartz
use of various BASIC statements and strings.
Unlocking OSI program disks M. Bassman
unlocking protected programs to list or modify them.

- Great Moments in OSI M. Bassman
Basic-ia-RON routines that can be incorporated in user programs.
Sneak Shoot M. Bassman
shoot at alien targets, a real time video game.

- Bits S. Lederman
routine to map points with X-Y coordinates.
Challenge S. Lederman
write a program to calculate 100 factorial.
CIP Memory Locations D. Schwartz
list of locations and their functions.
Fire S. Lederman
put out a fire as it spreads across the screen.
Killing Cars M. Bassman
CIP BASIC program.
Print Routine G. Brown
change BASIC-ia-RON print routine for program-use.
Racer M. Bassman
CIP car race game.
Santa Demo OSI Journal
a program for use during Christmas.
Sketch Pad D. Schwartz
use CIP video screen as a sketch pad.

- BASIC/Machine Variable Passing T. Cheng
passing variable to ML routine & back to BASIC using USR(X).
BASIC Variables OSI Journal
how BASIC stores and accesses variables.
Clock S. Lederman
machine language program to simulate a clock face on a CIP.
CIP Cassette Manipulation M. Bassman
procedure to save characters, data & strings on tape.
Find T. Terrance
program to search for a variable, operator or text in a program.
Hangman M. Bassman
word game of hangman for the CIP.
Kaleidoscope S. Lederman
produces kaleidoscope patterns on the CIP screen.
Lissajous M. Cohen
draws lissajous patterns on the CIP screen.
Multiplication S. Lederman
display all the steps involved in a multiplication problem.
Probability Machine S. Lederman
distribution of marbles falling into slots (bell curve).
Resource Listing M. Bassman
list of OSI software vendors.
Screen Clear D. Schwartz
add a 'RTS' to screen clear routine in ROM.

- CIP Trivia Quiz S. Lederman
how much do you know about your CIP?
Elevator M. Bassman
ride up & down an elevator & pick up passengers.
Factorial S. Lederman
calculate N factorial on your OSI.
Hex Fifteen Puzzle D. Schwartz
slide fifteen numbers around & get them in order.
Invisible Programs D. Schwartz
program that makes your program unlistable.
Joystick L. Thaler
add joysticks to a CIP computer.
OSI CIP Demo M. Bassman
CIP animation demo program.
POKE'r Routine M. Cohen
converts ML routines into DATA statements with line numbers.
Program Security M. Bassman
how to protect your programs from being copied.
Reflex Test M. Bassman
press the correct key after the computer displays a character.
Resequencer for OSI T. Terrance
renumber a BASIC program lines by 10.
Resource Listing M. Bassman
updated list of hardware & software vendors.
Truly 'SUPER' Superboard L. Thaler
notes of hardware modification to increase speed of CIP.
Working Around Strings M. Bassman
notes about the effective use of strings.

- Beat the String Bug D. Schwartz
method of using strings & eliminating the 'garbage'.
Ins & Outs of Software Copyright T. Terrance
the why's of software copyrighting.
Life S. Lederman
game of Life for the CIP.
Potato Chip Invasion M. Bassman
cross between Alien Invaders & Ectetic, more fun.
Turn USR(X) Routines into DATA T. Cheng
turn USR routine into DATA statements & save on tape.

- Add RS232 to a CIP L. Thaler
parts & procedure to add a RS232 port to the CIP.
Dodge'em S. Lederman
car race game with display of mileage.
Dumb Terminal D. Schwartz
turn a CIP into a dumb terminal for use with time-share systems.
Gopher S. Lederman
find a gopher who walks around in a 24x24 grid.
Stupid Trek Easy
two improved versions of programs from the CIP manual.
Submarine L. Thaler
one player game, where you try to destroy the boats above.
Typing Test S. Lederman
typing test to estimate your speed & accuracy.
Vectors M. Bassman
notes on the use of vectors.

- Androids M. Cohen
new animated variation of the 21 matches game.
Bar Graph M. Cohen
general purpose program to plot graphs.
Cassette Interface U. Re'
notes & program to test the cassette port.
Corrections D. Schwartz
changes for Fifteen Puzzle, Dumb terminal & String bugs.
Etch-A-Sketch U. Re'
ML program that moves a character around the screen.
GOTO X D. Schwartz
GOTO X command added to BASIC.
I Ching M. Cohen
computerized fortuneteller.
July 4 Special D. Schwartz
BASIC program with a special display for July.
Memory Swapping S. Lederman
ML program to swap page 0 with user memory in high address.
Number Formatter M. Cohen
input a number & output it in any format.
Print All S. Lederman
ML program that prints messages at any part of the screen.
Quiz System M. Bassman
simple quiz program of national capitals.
Random Numbers S. Lederman
ML program to generate random numbers.
Serial Interface U. Re'
notes about the 4850 ACIA & the serial port.
Thoughts on Cassette Recording T. Terrance
notes on cassette recorders, tapes & procedures.
Trig Quiz M. Cohen
quiz program on finding the sides of a triangle.
USR Dispatch S. Lederman
modify BASIC to specify subroutine address in USR(XXXX).

- Correction U. Re'
change to cassette test program to work on CIP.
Correction P. Schreiber
change to Print All program.
Machine Language CALL M. Cohen
program to add a CALL statement to Disk BASIC.
OSI 400 to 48 Bus P. Balverson
diagram of connections from the CIP bus to the 48 bus.
POKE Update H. Polling
useful POKEs for CIP & C2/I4 systems.
Resource List M. Cohen
list of magazine articles that contain useful information.
Resource Update M. Bassman
listing of additional hardware & software vendors.
Single Disk Drive U. Re'
program to copy all tracks except zero to a new disk.
Understanding BASIC M. Bassman
page zero subroutines, explanation and locations.
Up Your Memory U. Balaban
piggyback memory chips to double size of system RAM.
Waiting on BASIC T. Cheng
use of the WAIT command in BASIC.

Block Letters M. Cohen
print letters on the screen made up of graphic characters.
Corrections U. Re'
changes to Single Disk Drive program for CIP use.
Peak Reading VM M. Kotalvo
modification of the PK80 VM in Popular Electronics
Save ML Programs on Tape D. Schwartz
use of an ASCII-encoded format to save programs on tape.
Sorting Arrays D. Schwartz
new approach & program for sorting arrays.
Trap S. Lederman
a two player game with the CIP as umpire.
XEROX Mode T. Chess
a tape copy utility program.

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Another Print At S. Lederman
program finds T& & puts it at a screen location.
Extending BASIC-in-ROM P. Schreiber
addition of PRINT CLEAR (screen clear) & PRINT ON (PRINT AT).
Resource Update M. Bassman
listing of additional hardware & software vendors.
65D Kernel T. Terrance
notes & things of interest.
65U Memory Locations U. Kendall
location of OS 65U subroutines.

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Cassette Save/Memory Dump P. Schreiber
program to save ML programs on tape.
Computer Acronyms W. Modell
list of acronyms used in the computer world.
CIP in Germany K. Ernst
translation & description of ML save program from Germany.
Depth Charge P. Schreiber
one player game to destroy the submarines.
More on Copyright W. Godsoe
easy method to copyright your programs.
Printing Normal Error Messages D. Schwartz
changes to BASIC-in-ROM to print normal 2 character messages.
Shape Plotter S. Lederman
ML program to move a shape from memory to the screen.
Toy Piano D. Schwartz
a program to play simple melodies on the C4 or C8 systems.
unNEW Your Programs S. Lederman
notes on how to reset BASIC pointer to reenter program.
65D Corner M. Cohen
notes on what to do if you hit BREAK.
6502 ML Programming - class 1 S. Lederman
basic chip information & the use of simple codes.

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Base Conversions P. Schreiber
a program to convert a number from one base to another.
Cassette Motorcontrol K. Ernst
diagram & instructions to add dual cassette ports & motorcontrol.
Extending BASIC-in-ROM II P. Schreiber
improved instructions plus a new Hex to Decimal statement.
Mystery Program M. Kotalvo
a program with an interesting twist.
Resource Update M. Bassman
list of additional hardware & software vendors.
65U Utility D. Schwartz
list of some errors & corrections in OS-65U.
6502 ML Programming - class 2 S. Lederman
use of Branching & Indexing instructions with examples.

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CEGMON Terminal M. Bassman
a terminal program that works with the new CEGMON PROM.
Corrections P. Schreiber
change to Depth Charge program.
Error Messages P. Schreiber
a program that converts the 2 character error to a text message.
Troubleshooting K. Ernst
a slow scroll problem & how it was fixed.
6502 ML Programming - class 3 S. Lederman
use of ML programs, USR(X) functions & HEX to DEC conversion.

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Beyond the Keyboard L. Thaler
relocating the BREAK key on a CIP system.
C1-C2-C4-C8 Conversions M. Bassman
notes on converting programs written for one system to another.
Misc. Notes W. Modell
advertising & public relations, book review, letters.
6502 Programming - class 4 U. Re'
a new start, 6502 architecture, number systems & examples.

BASIC Utility S. Sachs
a program that columnizes numeric data.
Extensions for 65D BASIC B. Schwartz
add 4 new commands to 65D BASIC - NEW, RESTORE, CALL & GOTO.
From the Note Book S. Sachs
notes on a method of transmitting data without a modem.
Handshake of Quick Printer K. Ernst
adding a CTS line to the CIP for handshaking, with test program.
Letter to the Editor T. Terrance
software protection & illegal program copying.
Mastermind P. Schreiber
guess the color code picked by the computer from 9 colors.
Precision Factorials A. Nonymous
use of X & Y registers to perform high precision math.
Shape Plotter II M. Cohen
improved program with multiple shape tables, also for disk use.
6502 Programming - class 2 U. Re'
addressing modes, instruction set & assembler directives.

April 1981

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Real Time Clock for 610 Board

By Mike Cohen

A software controlled real time clock can be easily added to the 610 board with only 2 jumpers. This clock takes advantage of the maskable interrupt input feature of the 610 board's 6820 PIA. The one second clock pulses are routed through the PIA's interrupt input to the CPU's non-maskable interrupt.

As you may know, the 6502's NMI can't be disabled by software. However, since the pulses are routed through the PIA's interrupt output, the interrupt pulses can be easily switched by setting the PIA's interrupt enable bit.

The actual hardware mod is very simple. You will notice the rows of square pads on the 610 board. The pad nearest pin 9 of U11 gives 1 second pulses, and is the one used. It should be connected to the interrupt line of the PIA, which is second from the U10 end of the row of 4 pads across U10 and U11 (see illustration). In addition, the interrupt output of the PIA should be connected to the NMI input to the 600 board. Notice the 3 pads arranged in a triangle near pin 40 of U72, the 6820. The pad nearest U72 pin 40 should be connected to the pad nearest J3, the disk controller port (see illustration).

The software needed to run the real time clock can simply increment a counter which will mark seconds of elapsed time. The example given here was adapted from HEXDOS's interrupt routine. In order to use the real time clock, a jump to this routine, which is relocatable, should be placed at \$0130, which is the NMI vector. Next, the PIA should be initialized and the clock pulses enabled.

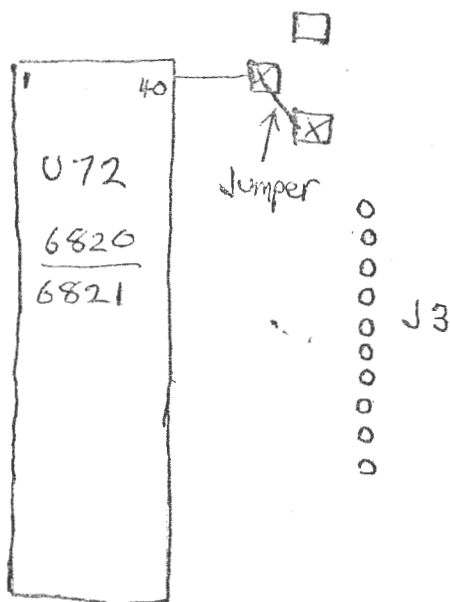
An easy way to initialize the PIA is simply by hitting <BREAK> and <D>. Even if you don't have a disk, the PIA will be initialized. If you wish, it may be initialized from BASIC with the following pokes.

```
1000 POKE49153,0:POKE49152,0:POKE49153,4:POKE49155,0
1010 POKE 49154,255:POKE49155,4:POKE49154,255
```

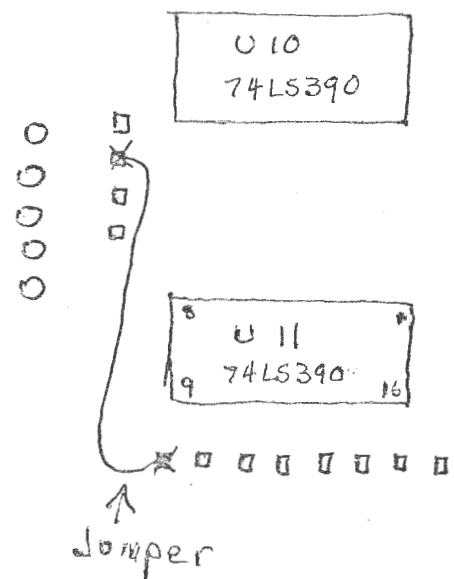
The real time clock can be turned on by POKEing 49153 with 12 and off by POKEing 49153 with 4. If you have a disk system, the clock MUST be turned off before any disk access.

ADDR	HEX	CODE
7F00	48	PHA
7F01	8A	TXA
7F02	48	PHA
7F03	98	TYA
7F04	48	PHA
7F05	A2FC	LDX #FC
7F07	F6EC	INC EC, X
7F09	D003	BNE 7F0E
7F0B	EB	INX
7F0C	D0F9	BNE 7F07
7F0E	68	PLA
7F0F	AB	TAY
7F10	68	PLA
7F11	AA	TAX
7F12	AD00C0	LDA C000
7F15	68	PLA
7F16	40	RTI

Real Time Clock by Mike Cohen



610 board
detail

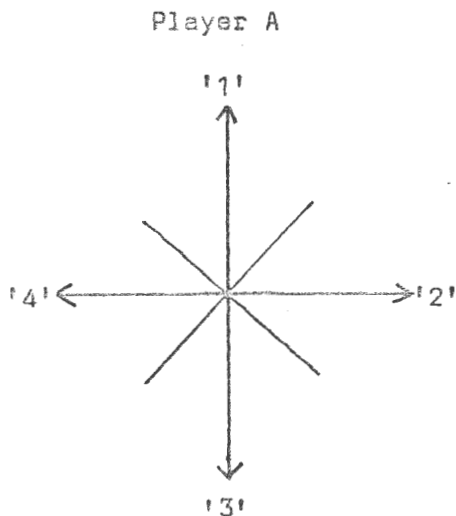


610 board

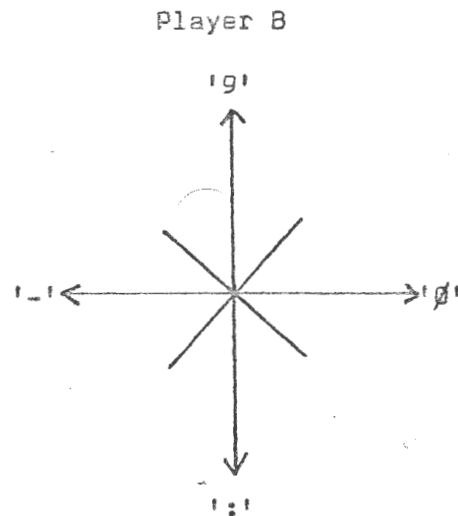
PANZER ATTACK

Peter Schreiber
1609 Washington Ave.
Seaford, N.Y. 11783

Here is a simple tank game for two players. Each player must maneuver his tank through a maze of barricades to seek out and destroy his opponent. Maneuvering the tanks works as follows:



Shoot - '5'



Shoot - 'rub,
out

The diagram above shows the keys needed to move the tanks up, down, left and right. Also a combination of, for instance, up and right keys being depressed at the same time will give you a movement of 45°. I realize that it gets confussing using all of these keys to play the game, and I am not sure if Joy-sticks will work, but once you get the hang of it, it's not too bad. One more thing, you only have 2 minutes for each game so don't waste any time. Ready! GO!!

```

100 FORX=1TO32:PRINT:NEXTX:POKE55104,32:GOTO120
110 FORY=1TOLEN(D$):POKED+Y,ASC(MID$(D$,Y,1)):NEXTY:RETURN
120 POKE53440,32:POKE56900,0:READD$
130 D=53449:GOSUB110:FORX=1TO2:READP(X),T(X),J(X),Q(X):NEXTX
140 FORX=53506TO53533:POKEX,187:POKEX+1472,187:NEXTX:PL=55121
150 FORX=53506TO54978STEP64:POKEX,187:POKEX+27,187:NEXT:T=120
160 FORY=1TO9:READD,E:FORX=DTOE:POKEX,187:NEXTX,Y:K=57088
170 FORY=1TO8:READD,E:FORX=DTOESTEP64:POKEX,187:NEXTX,Y
180 POKE53764,187:POKE53716,187:POKE54804,187:POKE530,1
190 FORX=1TO8:READM(X),N(X),I(X):NEXTX:READD$:D=55105:GOSUB110
200 W=192:L=L+1:IFL<6THEN230
210 L=0:T=T-1:D$=STR$(T):IFT=90RT=99THENPL=PL+1:POKEPL,32
220 D=PL:GOSUB110:IFT=0THEN370
230 FORX=1TO2:S=S(X):IFS=0THEN310
240 POKES,32:S=S+V(X):IFPEEK(S)=187THENS(X)=0:GOTO310
260 IFPEEK(S)<248THENPOKES,46:S(X)=S:GOTO310
270 POKES,233:R=INT(RND(1)*25+53571)+INT(RND(1)*20)*64
280 IFPEEK(R)<>32THEN270
290 POKES,32:S(X)=0:T(3-X)=R:U(X)=U(X)+1:D$=STR$(U(X))
300 D=P(X):GOSUB110
310 W=W-64:POKEK,W:P=PEEK(K):IFW=64THENP=P*2
320 FORY=1TO8:IFP=I(Y)THENM=M(Y):A(X)=N(Y):Q(X)=M
330 NEXTY:IFP=8ANDS(X)=0THENS(X)=T(X):V(X)=Q(X)
340 IFMTHENIFPEEK(T(X)+M)=32THENPOKET(X),32:T(X)=T(X)+M
350 POKET(X),A(X):M=0:NEXTX:GOTO200
370 FORX=1TO20:POKEPL+2,32:FORY=1TO100:NEXTY:POKEPL+2,48
380 FORY=1TO150:NEXTY,X:POKE530,0:POKE56900,1:END
390 DATAPANZER ATTACK,55107,54212,250,1,55130,54235,254,-1
400 DATA53700,53710,53652,53657,53898,53909,54149,54154,54356
410 DATA54361,54594,54600,54740,54747,54858,54862,54476,54482
420 DATA53998,54026,53703,53895,54356,54548,54542,54862,54041
430 DATA54361,54555,54747,54154,54346,53908,54100
440 DATA-64,248,128,-63,249,192,1,250,64,65,251,96,64,252
450 DATA32,63,253,48,-1,254,16,-65,255,144
460 DATA"A= 0 TIME LEFT: 120 B= 0"

```

OK

A real cassette control for C1&C2/4/8

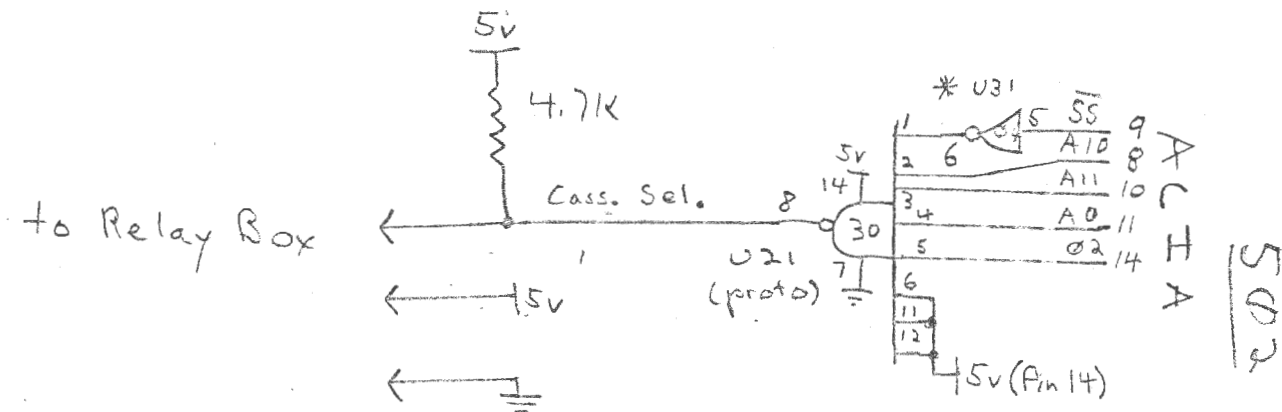
=====

by

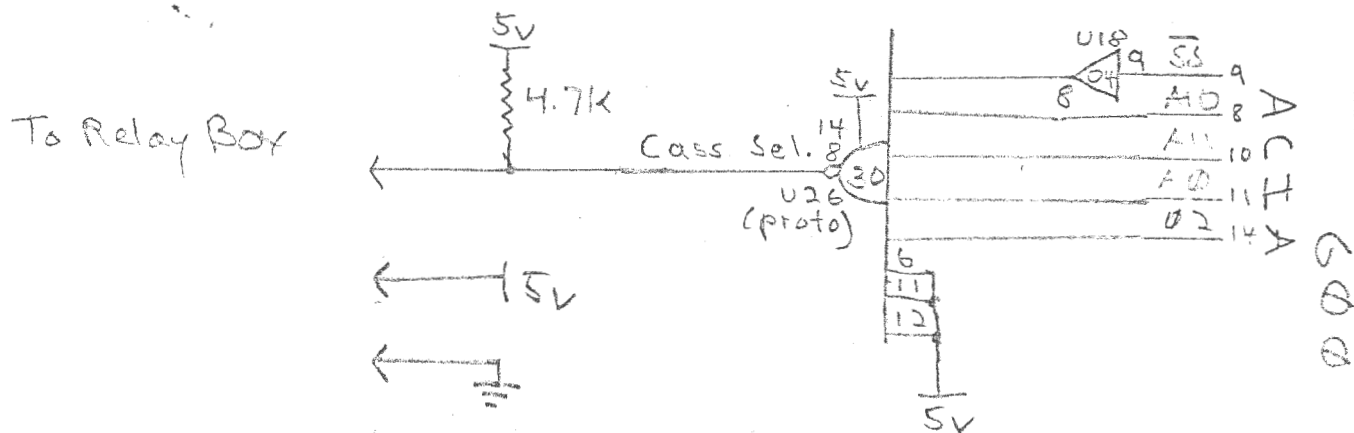
Claudio Caballero

I call this circuit a real cassette control because there are no pokes needed to operate it. In my opinion having to use a poke defeats the purpose of a true cassette control. What the circuit does is use the ACIA select lines (there are three) in conjunction with A0 to determine when the system software (Am I kidding!?) either reads from or writes to the ACIA data register! This signal then triggers a 555 timer chip (what else!) to hold down the relay for about 1 second. So as long as the software accesses the data register once every second, the cassette motor will remain on.

The circuit is really quite simple and rather easy to build. It isn't bad if you want to get your feet wet in hardware (talk to me at the meeting if you're building for the first time). I have found it best to build the circuit in two pieces to minimize cluttering of the already crowded OSI cases. What I did was put all the decoding gates on the CPU (502/600) and then run power and the select signal to an outside bakelite box (4x2 1/8x1 5/8") where the rest of the circuitry sits. The decoding chip(s) can use the proto sockets on the cpu board and the rest of the stuff can easily be wired point to point on a small piece of perfboard. The LED is optional and is only there to indicate that the 1 second pulse is getting to the relay. Oh!, one more thing. I have found it necessary to output a few nulls with a print statement in order to get the motor up to speed so the program will save properly. Other than this the control requires no extra work on the part of the user. Happy loading & saving!!!

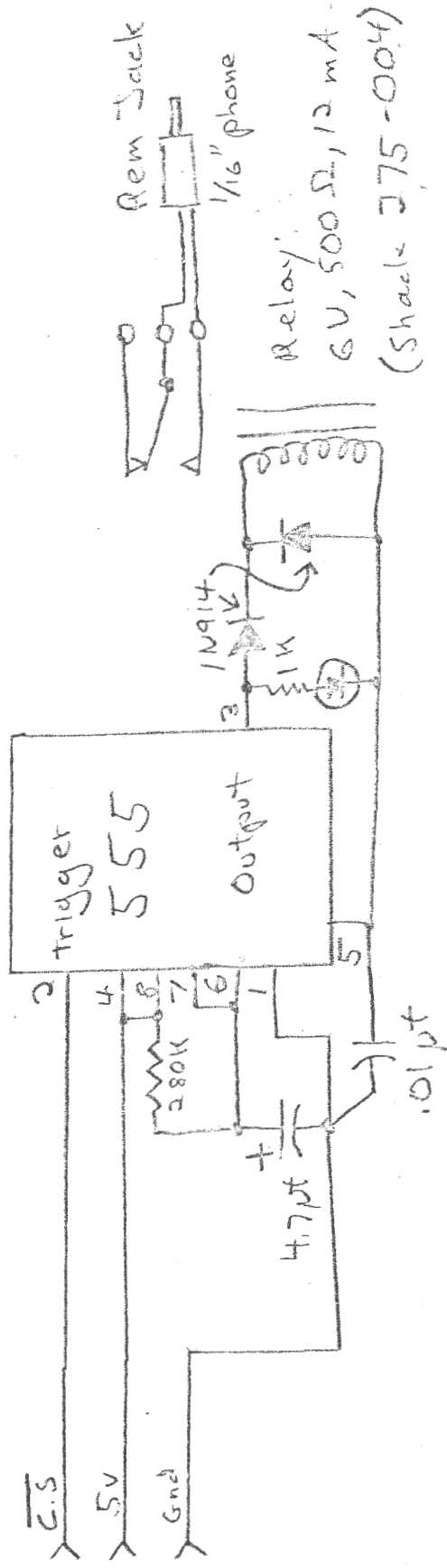


* May have to be installed.



Note: 600 Rev D's (CIP series 2) does not have a proto socket. Piggyback the 7430 onto another chip.

Relay Circuitry



Parts List

- Misc. - tools, wire wrap wire, etc...
- 1 - 74(Ls)30 8 input NAND
- 2 - 1/4 W 4.7K Ω resistors
- 1 - " " 280K Ω resistor
- 1 - 4.7 μ F Electrolytic Capacitor
- 1 - .01 μ F Ceramic disc Cap.
- 1 - LED - any kind
- 2 - 1N914 Diodes
- 1 - 6V Relay (Shack 275-004)

A

```
10 0000      ; -----
20 0000      ;
30 0000      ;
40 0000      ; LINE ORIENTED 'CTRL/C' PATCH
50 0000      ;
60 0000      ; FOR OSI ASSEMBLER S2-2P
70 0000      ;
80 0000      ; DOES NOT BURN BASE & STACK PAGES
90 0000      ;
100 0000     ; by George Brown
110 0000     ;
120 0000     ;
130 0000     ; -----7/11/81
140 0000     ;
150 0000     ;
160 0222     *=$222
170 0222     ;
180 0222 A9FE CTL:C LDA #$FE
190 0224 203902 JSR STABIT CTRL?
200 0227 700D BVS OUT NO
210 0229 A9FB LDA #$FB YES
220 022B 203902 JSR STABIT
230 022E 70F2 BVS CTL:C
240 0230 20DC11 JSR $11DC JUMP TO ASSEMBLER
250 0233 04 .BYT 4 COMMAND MODE
260 0234 2006 .WOR $620
270 0236 4CCF11 OUT JMP $11CF CONTINUE
280 0239      ;
290 0239 8D00DF STABIT STA $DFOO
300 023C 2C00DF BIT $DFOO
310 023F 60 RTS
320 0240      ;
330 0528     *=$528
340 0528     ;
350 0528 2202 .WOR CTL:C
360 052A     ;
370 0A82     *=$A82 PATCH FOR CTL:C DURING
380 0A82     ; PASS 1, A1, AND A3
390 0A82     ;
400 0A82 2202 .WOR CTL:C
```

Hardware review: EPSON GRAFTRAX-80

By Mike Cohen

GRAFTRAX-80 is a set of replacement ROMS for the EPSON MX-80 printer which adds many extra features in addition to bit graphics. With these ROMS, many of the EPSON's control codes, plus the internal switch settings are redefined. Some of the nice features include an *alternate italics character set*, the ability to switch double strike and emphasized printing modes on and off within the same line, and ability to backspace!

Other nice features include bit graphics in 480 and 960 dots per line modes. In the 960 dot mode, the dots overlap slightly and the result is similar to condensed and emphasized print. One problem, however, is that the bit graphics mode requires either a parallel interface or EPSON's new 8151 serial interface with a 2K buffer.

With the new features, EPSON still maintained all of the old features, including expanded and condensed print along with the TRS-80 style block graphics. One thankful improvement is the disappearance of the old annoying 3-second bell, which is replaced by a much less annoying 1/3 second buzz.

In general, **GRAFTRAX-80** seems to be a nice enhancement for the MX-80, which itself is an excellent printer. With the new features, the MX-80 can match almost any dot matrix printer in any price range. Although it still doesn't have a proportional spacing character set like some other printers, its excellent print quality and low price make it very attractive.

Yet another BASIC step and trace

=====

by

Claudio Caballero

What great force has driven me to publish one more step and trace for OSI machines? I don't know; maybe insanity!! However this step and trace is somewhat unique. First it only uses 27 bytes of your page two ram, and second it works with either SYS600 or Cegmon (sorry C2/4/8 owners without Cegmon). It is very simple to use (yes Mike B. even you). Poke 541,2 enables the trace; and poke 541,251 disables it. Be forwarned that that immediate mode will not work properly if the trace is enabled! When it is enabled, pressing any key will execute the next statement and print its line number. Hitting "S" will simply execute the next statement; and hitting "L" will only print the line number. Please note that there are two different versions for SYS600 and Cegmon.

Cegmon	SYS600
0294 A9 FF	029B A9 FF
0296 85 5F	029D 85 5F
0298 20 00 FD	029F 20 00 FD
029B C9 53	02A2 C9 53
029D F0 07	02A4 F0 07
029F C9 4C	02A6 C9 4C
02A1 F0 06	02A8 F0 06
02A3 20 53 B9	02B0 20 53 B9
02A6 4C 94 FB	02B3 4C 9B FF
02A9 20 53 B9	02B6 20 53 B9
02A6 4C 94 02	02B9 4C 9B 02