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><><   TRICKS OF THE TRADE   ><><
><><><><><   TUTORIAL #4   ><><><><><
><><><><><   MIKE WHITE   ><><><><><
><><><><><<   COUNTY LINE #2 ><><><><><
><><><><><<   R.D.#1 BOX 373 ><><><><><
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NAUTILUS [L+M SOFTWARE] HAS A VERY INTERESTING TITLE PROGRAM WHICH SEES A SUBMARINE EXPLODE WITH RANDOM LINES AND THEN THESE LINES DISSAPPEAR LEAVING THE SUB WITHOUT A SCRATCH! HERE ARE THE TWO LINES RESPONSIBLE FOR THIS (THOUGHT TO BE IMPOSSIBLE) FEAT:

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6 FOR A=1TO 20;FC=114;NM=3;NV=255;LINE 24+RND (2bH)-H,-40+H-RND
(Hb2),4=XY;*(A)=XY;FC=7;LINE 24,-40,3;`;NEXT A
7 FOR A=1TO 20;FC=114;NM=3;NV=255;XY=*(A);LINE 24,-40,3;FC=7;`;
NEXT A;FC=8;BC=238;&(10)=154;&(9)=-1;&(15)=0

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IGNORING THE COLOR CHANGES, SOUND ENHANCEMENTS, AND THE PORT COMMANDS (AT THE END), YOU GET BASICALLY:

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10 FOR A=1TO 20;LINE RND (150)-51,35-RND (150),0;*(A)=XY;LINE 24
,-40,3;NEXT A;FOR A=1TO 20;XY=*(A);LINE 24,-40,3;NEXT A

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IN THE FIRST LOOPS, H=75. IN THESE LAST LOOPS YOU CAN SEE WHAT DOES THE RANDOM LINE ERASE. AN INVISIBLE LINE IS DRAWN TO A RANDOM LOCATION. THE VARIABLE XY IS STORED, AND A VISIBLE LINE IS DRAWN TO THE SUBMARINE. THE SECOND LOOP MOVES VARIABLE XY TO THE STRINGED LOCATION WHERE OUR VISIBLE LINE STARTS, THEN IT REDRAWES THE LINE TO THE SUB USING XOR (REVERSE LINES). ON PG.109 ASTRO BASIC HANDBOOK IT TELLS US "EACH LINE IS DRAWN BEGINNING AT THE END POINT OF THE MOST RECENT LINE DRAWN. THE LOCATION OF THIS END POINT IS STORED IN THE TWO LETTER VARIABLE XY". MEANING THAT WHEN A LINE IS DRAWN IT DRAWS FROM THE LOCATION IN XY TO THE LOCATION SPECIFIED IN THE LINE COMMAND, THEN BALLY UPDATES VARIABLE XY. IF WE DRAW AND REDRAW THE SAME REVERSE (XOR) LINE WE WIND UP WITH THE ORIGINAL PICTURE REGARDLESS OF WHAT IT MAY HAVE BEEN. THE PROBLEM (UP TO NOW) HAS BEEN HOW TO REDRAW A LINE FROM THE STRUNG XY. ON PG.110 AB HANDBOOK IT SAYS "THE Y VALUE OCCUPIES THE HIGH ORDER BYTE OF THIS WORD, X THE LOWER BYTE". WE MUST PERFORM A "BYTE SPLIT" TO FILL A LINE COMMAND WITH THIS NO. THESE THREE LINES OF PACK RAT [WAVEMAKERS] SHOW US SOMETHING:

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405GOSUB 60;&(17)=129;FOR A=840TO 255STEP -8
406BOX A,-2,8,8,3;BOX A+8,-2,8,8,2;BOX A-24,-2,6,6,3;BOX A-16,-2
,6,6,2;&(21)=A;&(23)=A
410NEXT A;&(16)=19;GOTO 15

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NOTICE THE "A" VARIABLE IN THE BOXES IS OVER 255. THIS MEANS THAT BALLY IGNORES THE HIGH ORDER BYTE BETWEEN COMMAS IN BASIC!!

THE X PART IS DONE FOR US THEN. THE Y PART IS DONE ONE OF 3 WAYS. USING THE BYTE COMMAND (AS I DID LAST MONTH), DIVIDING BY 256 (WHICH GETS MESSY), OR USE VOL.5 PG.59 ARCADIAN. HERE ARE:

RANDOM LINE ERASE PROGRAMS AB

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10 CLEAR ;FOR A=0TO 100;LINE RND (160)-81,RND (88)-45,3;@(A)=XY;
NEXT A;XY=0;FOR A=0TO 100;B=@(A);LINE B,Bc256-(RM#0)b(B<0),3;NEX
T A;RUN
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10 CLEAR ;FOR A=0TO 100;LINE RND (160)-81,RND (88)-45,3;@(A)=XY;
NEXT A;XY=0;FOR A=0TO 100;B=@(A);LINE B,%(20005),3;NEXT A;RUN
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IN THE FIRST ONE I BORROWED ANOTHER VARIABLE SO AS TO CUT 2 BYTES OFF OF THE SUGGESTED "c256" METHOD I HINTED AT LAST MONTH.

IMPROVEMENTS ARE THE NAME OF THE GAME HERE. TRY USING THE KEYWORD "DEFAULT" IN PLACE OF "XY=0" IN THE EB VERSION PRINTED LAST MONTH. XY IS ZEROED ON A DEFAULT COMMAND IN EB, OR ON CLEAR IN AB. YOU MAY NOT BE ABLE TO USE THIS IN A PROGRAM THOUGH, FOR OBVIOUS REASONS, CLEAR SCREEN OR DEFAULT ALL 2 LETTER VARIABLES!

THE 2ND AB LINE ERASE USES VOL.5 PG.59. REMEMBER THAT EACH VARIABLE USES TWO ADDRESSES IN MEMORY. "B" USES %(20004) FOR THE LOW ORDER BYTE AND %(20005) [% (20004+1)] FOR THE HIGH ORDER BYTE. IF WE HAD USED A "Q" INSTEAD OF A "B", THE HIGH ORDER BYTE FALLS AT %(20035). IF ANY OF MY PROGRAMS PUZZLE YOU, DON'T HESITATE TO WRITE. A S.A.S.E. SPEEDS UP REPLY'S.

OVER THE LAST TWO MONTHS I'VE BEEN TALKING ABOUT DIFFERENT WAYS TO FILE SEARCH AND AUTO RUN. THE REASON IS THAT THERE ARE MANY WAYS OF TAPING PROGRAMS. WHY? LET'S SAY YOU HAVE A PROGRAM THAT WON'T FIT IN 1800 BYTES. USE EB? CAN'T SELL IT TO AB USERS. USE 2 PROGRAMS? WHY NOT? BECAUSE AB TAPES THE VARIABLES!! IF YOU WISH TO KEEP THE VARIABLES INTO THE SECOND PROGRAM YOU MUST USE:

CARRY OVER MEMORY

THERE ARE THREE METHODS OF HOLDING VARIABLES INTO ANOTHER PROGRAM. THE FIRST IS SEEN IN "HAUNTED HOUSE" [NEW IMAGE], THE SECOND IN QUADRA (AB + BR 4K VERSIONS), AND THE ONLY PLACE YOU WILL SEE THE THIRD IS IN "SPACE MISSION", THIS MONTHS PROGRAM.

YOU MUST ENTER THE TEXT EXACTLY AS SHOWN IN THE LISTING OR PART 2 (NEXT MONTHS PROGRAM) WILL BLOW RIGHT OUT!! THE CARRY OVER IS IN THE CUSTOM CHIPS. LINES 710 AND 720 DO SOME PRETTY FANCY STUFF TO LOAD THE INTERCEPT FEEDBACK REGISTOR WITH 1 OF 2 POSSIBILITES FOR VARIABLE A. ONLY IF THE TEXT IS IN THE RIGHT PLACE IS INPUT PORT 8 (SEE PG.102 AB HANDBOOK) GOING TO GIVE THE RIGHT NUMBERS. THE CUSTOM CHIPS IS ONE PLACE TO HIDE A VARIABLE THAT YOU WISH TO PASS ALONG FROM ONE PROGRAM TO ANOTHER, BUT NOT A STRING, OR THE WHOLE SCRATCHPAD. HOW CAN WE CHANGE A PROGRAM TEXT AND KEEP THE SAME SCRATCHPAD (SCORES OR STRINGS)? SEE THIS COLUMN NEXT MONTH! (OR QUADRA, OR HAUNTED HOUSE) KEEP BUGGIN'!!!