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><><   TRICKS OF THE TRADE   ><><
><><><><><   TUTORIAL #8   ><><><><><
><><><><><   MIKE WHITE   ><><><><><
><><><><><<   COUNTY LINE #2   ><><><><><
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THIS MONTH WE'LL BE LOOKING AT THE MOST MISUNDERSTOOD AND THE LEAST UNDERSTOOD QUIRK THIS LITTLE MACHINE OF OURS HAS. IN FACT, EVERYONE EXCEPT THE TOP EXPERTS IS STILL STUMPED WHEN HE ENCOUNTERS THE BIGGEST MESS WE'VE GOT;

MO SHIFT

MO IS NORMALLY SET TO 71 IN BASIC AND IF YOU HIT THE [RESET] BUTTON THIS IS WHAT YOU GET. BUT, IN CARTRIDGES IT'S DIFFERENT! THERE IS AN ON BOARD SUBROUTINE THAT RESETS ALL THE SOUND PORTS TO ZERO. IT CAN BE REACHED FROM BASIC IN FOUR WAYS. BY "NEW" IN VIPER SOFT, OR "CALL" AND THIS SHORT MACH CODE ROUTINE;

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SNDOFF.PUSH.DE      ;SAVE BASIC POINTER
      .RST.38H      ;CALL SUBROUTINE
      .DB.20        ;SUBROUTINE NUMBER
      .POP.DE       ;RESTORE BASIC POINTER
      .RET.         ;RETURN TO BASIC

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(USE "A=20260;%(A)=-43;%(A+2)=-12012;%(A+4)=201" TO POKE AND "CALLA" TO USE IT). THE "PLAY" COMMAND (BRB ONLY) REACHES THIS ROUTINE ONLY IF NO ARGUMENTS FOLLOW THE BASIC COMMAND, AND THE OTHER WAY TO REACH THIS ROUTINE IS IN **SPACE MISSION**. LINE 730 OF PART 1 RUNS SUBROUTINE 250 JUST BEFORE LOADING PART 2. WITH THIS YOU CAN [HALT] THE PROGRAM THE VERY INSTANT "START TAPE" APPEARS ON THE SCREEN. THEN TURN ON THE PAROLE JET SOUND THIS WAY:

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ENTER>&(23)=60;&(21)=-1
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THE SOUND SHOULD BE NORMAL. NOW ENTER ":INPUT ", PRESS [GO], [HALT], AND REENTER THE PAROLE JET SOUND. **&(16)=0!** THE ON BOARD SUBROUTINE IS REACHED FOR ":INPUT " IN AB, BUT AT NT<0 ONLY! SO, THE ANSWER TO THE CONTEST WAS THAT PART 2 IS TAPED WRONG. TO CORRECT, RELOAD PART 2 AND CHANGE LINE 20 TO READ:

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20 A=(B-151)÷8;NT=-1;&(23)=60;IF A=1N=5
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CHANGE NT TO ZERO, THEN REENTER THE FINAL TAPING COMMAND AND TAPE OVER THE OLD PART 2. THIS IS A LOT EASIER THAN CHANGING LINE 730 OF PART 1 (YOUR OTHER OPTION) TO READ:

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730 GOSUB 250;:INPUT ;NT=-1;RUN
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RULE 1 IS NEVER TAPE AN AB PROGRAM AT NT<0 IF YOU WANT &(16) NOT TO BE ZERO. RULE 2 IS IF YOU USE "PL." TO TURN OFF SOUND (IN BRB ONLY) &(16) WILL BE ZEROED OUT. RULE 3 IS WHEN YOU SHIFT MO WITH THE "x" OR "÷" SIGNS (NT>0) THEN USE THE DIRECT SOUND PORT ACCESS COMMANDS, MO WILL BE SHIFTED TO 35 FOR "x" AND 143 FOR "÷". ANTI-AIRCRAFT GUN MODS HAD THIS PROBLEM. TO CORRECT, EITHER ADD A SPACE TO THE END OF LINE 12, OR CHANGE LINE 12 TO:

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12 PRINT "135+7 5+700
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RULE 4 IS THE "FLAG RULE". WHEN A "x" OR "÷" GOES TO THE SCREEN (REGARDLESS OF NT) A FLAG IS SET, SO THAT THE NEXT QUOTE, "TV=", OR "MU=", SHIFTS MO, (NT>0). ONLY PRINTING A NUMBER OR A VARIABLE DIRECTLY (EXAMPLES "PRINT 8;PRINT A") DOESN'T SHIFT MO.

THE MO AND TA SHIFT ROUTINE PRINTED LAST MONTH DIDN'T GIVE THE CORRECT MO SHIFT NUMBERS BECAUSE OF RULE 5. &(16) IS SHIFTED WHEN THE NOTE STARTS TO PLAY AND MO IS SHIFTED WHEN IT FINISHES. TO CORRECT THIS, REMOVE THE QUOTED SPACE JUST AHEAD OF THE SHIFT SIGN IN LINE 20. YOU WERE READING THE SPACE AND GETTING 71 IN ALL BUT THE "1", WHICH IS BECAUSE THE "0" DOESN'T USE THE FLAG. THE "0" WON'T SHIFT MO BY FOLLOWING "x" OR "÷" EITHER. A SPACE DOES, AND TWO SPACES CAN KILL A SET FLAG. (SHIFT, THEN RESET)

RULE 6 IS THAT ALL NT VALUE OR INDIRECT SOUND CHANGES TAKE PLACE DURING THE SCREEN INTERRUPT. IF YOU WERE TRYING:

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ENTER>NT=0;MO=71;NT=-1;GOTO 30
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ON SPACE MISSION (PART 2), YOU DID NOT GET A CHANGE IN MO. BUT IF YOU KEYED IT IN ONE INSTRUCTION AT A TIME YOU DID. IN ONE LINE, IT EXECUTES TOO FAST FOR THE SCREEN INTERRUPT TO CATCH, (SOMETIMES ANYWAY). NT HAS A COUPLE OTHER QUIRKS ALSO. TRY:

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10 NT=50;PRINT "10000
20 GOSUB 40;PRINT "100000
30 GOSUB 40;NT=2;STOP
40 FOR A=0TO 3000;NEXT A;RETURN
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SEE PG.71+72 OF VOL.1 ARCADIAN FOR THE EXPLANATION, OR NEXT MONTHS COLUMN WHEN WE DISCUSS "NT SHIFT" (WOULD YOU BELIEVE)! IN AB, NT CONTROLS MORE THAN INDIRECT SOUND ACCESS TIMING, IT ALSO FREES US FROM THE SOUND VARIABLES. BUT BE CAREFULL! IF YOU WERE USING THE SOUND VARIABLES, AND TURNED SOUND OFF BY "VA=0;VB=0;VC=0;NV=0" THEN SAID "NT=-1" YOU MAY FIND THAT THE SOUND COMES BACK ON. THE CHOICE WAY TO KILL SOUND IS A SUBROUTINE, SUCH AS:

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90NT=0;↓                27 NT=0;PL.;&(16)=71
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THESE ARE FROM THE LASER,&SLIDE PART OF QUADRA, AB+BRB 4K VERSIONS RESPECIVELY. A SHORT DELAY IN THE FOLLOWING LINE (OF BOTH VERS.) PRECEDES "RETURN ". TILL NEXT MONTH, KEEP BUGGIN'!!