

TRS8BIT



WELCOME TO THE LATEST EDITION OF TRS8BIT, IT'S THE START OF OUR 3RD YEAR AND STILL NEW AND EXCITING HARD AND SOFTWARE APPLICATIONS ARE MAKING THEIR APPEARANCE. THE MODEL 1'S STILL GOING STRONG AFTER 30 YEARS AND THE MODEL 100 AFTER 25+!

IF YOUR DOUBT IT, CHECKOUT PAGE 3 AND BE AMAZED BY THE APPEARANCE OF A 'NADSBOX'. IT'S KEN PETTIT'S EXTERNAL STORAGE DEVICE FOR THE MODEL 100, WHICH USES THE LATEST SD MEMORY CARDS! THERE'S A COUPLE OF SHORT REVIEWS TO WET YOUR APPETITE.

HAS ANYONE IN THE UK ORDERED ONE YET, OR ARE YOU UP AND RUNNING? A SHORT REVIEW WOULD BE MOST WELCOMED BY THE REST OF US!

IF ANYONE IN THE 'STATES' WOULD CARE TO GIVE US THEIR FIRST IMPRESSIONS, IT WOULD BE APPRECIATED.

ALSO, IS THERE ANYONE OUT THERE WORKING ON SOMETHING SIMILAR FOR THE MODELS 1,3 OR 4? PLEASE LET US KNOW IF YOU ARE.

ON THE SOFTWARE FRONT, FOR NEWDOS80 USERS, P. EREAUT HAS WRITTEN A COUPLE OF PROGRAMS. ONE THAT WILL DISPLAY EMULATOR DSK FILES, AND ANOTHER THAT WILL MAKE CHECKING YOUR NEWDOS80 PDRIVE SETTING A BREEZE. YOU CAN DOWNLOAD A COPY FROM IRA'S WEBSITE. THERE'S A LINK TO IRA'S FROM TRS-80.ORG.UK. IF YOU HIT ANY PROBLEMS, EMAIL ME AND I'LL TRY TO GET A COPY TO YOU.

EBAY HAS BEEN BUSY WITH TRS-80 ITEMS OVER THE LAST FEW MONTHS, SINCE THE START OF THE NEW YEAR IN FACT. HARDWARE WISE, MODEL 1'S & 4'S TOGETHER WITH A COUPLE OF VIDEO GENIES SEEM TO MAKE REGULAR APPEARANCES, WITH PRICES RANGING FROM £30 TO £50. ONCE AGAIN THOUGH, EBAY.COM HAS MUCH MORE STUFF THAN THE CO.UK VERSION, (AND, BY THE WAY, HAS A MUCH BETTER DISPLAY OPTION). KEEP YOUR EYES PEELED, WITH A BIT OF LUCK, YOU COULD WELL FIND YOURSELF A BARGAIN.

PETER STEVENS HAS GENEROUSLY DONATED A NUMBER OF TRS-80 RELATED ITEMS TO THE SITE. THERE ARE 2 MODEL 1 KEYBOARDS WHICH WERE ASSUMED TO BE FOR SPARES BUT WHICH SEEM TO WORK FINE. ONE HAS 48K INSIDE! I HAVEN'T OPENED IT UP, YET, BUT WILL KEEP YOU INFORMED! THERE'S ALSO AN ACULAB FLOPPY TAPE AND SOME WAFERS BUT, AS YET, IT'S NOT RESPONDING TO MY TLC. (AND UNFORTUNATELY, THERE IS NO PAPERWORK TO GO WITH IT EITHER!).

THERE ARE NEARLY 20 EDITIONS OF 80-MICRO AND ABOUT THE SAME NUMBER OF MICRO-80'S, MOST IN FAIRLY GOOD CONDITION.

IF THERE IS ANY PARTICULAR EDITION YOU WOULD LIKE TO BORROW, PLEASE EMAIL ME WITH DETAILS AND I'LL GET SOME INFORMATION ON POSTAGE COSTS.

THERE'S ALSO AN OKI MICROLINE-80 PRINTER WITH HALF A DOZEN SPARE RIBBONS, SO IF YOU NEED A SPARE RIBBON, ONCE AGAIN, PLEASE, LET ME KNOW AND I'LL GET ONE SHIPPED OUT TO YOU ASAP.

I'VE FOUND A COUPLE OF MODEL 4 TIPS IN 'AT THE READY PROMPT' TOGETHER WITH A COUPLE OF OTHER SNIPPETS.

FOR THE FIRST TIME, ALL THE ONE-LINERS (AND OTHER PROGRAMS) WERE DEVELOPED USING MATTHEW REED'S MODEL1 EMULATOR. THERE'S A DECIMAL TO HEX CONVERTER. A SCREEN BUBBLE SORT USING A BIT OF ASSEMBLER, WHICH, BY THE WAY, I SEEMED TO RUN INTO TROUBLE WITH, WHEN USING ZEN TO ASSEMBLE THE SOURCE CODE. FOR SOME REASON, I HAD TO ADD ZERO TO THE CONTENTS OF THE IX REGISTER WHEN LOADING THE VALUE INTO A AND WHEN REVERSING THE PROCEDURE INTO D. (SEE LINES 10 & 16). IS THIS NORMAL, OR IS IT JUST MY LACK OF KNOWLEDGE USING ASSEMBLER?

THERE'S ALSO A MEMORY TEST PROGRAM AS PART OF AN ARTICLE ON HOW TO INCREASE THE MEMORY IN AN EXPANSION INTERFACE.

AND FINALLY, THERE'S A LITTLE BASIC AND MACHINE CODE PROGRAM TO INTRODUCE YOU TO THE AMAZING WORLD OF BELL RINGING!

I KNOW VERY LITTLE ON THE SUBJECT, BUT I THOUGHT IT WOULD BE FUN TO PUSH THE STANDARD MODEL 1 TO THE MAX AND SEE JUST WHAT IT SOUNDED LIKE (WITH NO EXTRA ADDED HARDWARE TO HELP). TINNY IT MIGHT BE, BUT I HOPE YOU ENJOY IT NONETHELESS.

THAT'S ABOUT IT FOR NOW, DROP ME A LINE IF YOU'RE UP TO MISCHIEF WITH YOUR TRS-80, WE'D ALL LOVE TO KNOW ABOUT IT !!



BYE FOR NOW

DUSTY

AT THE
READY>
PROMPT



I'VE NEVER OWNED OR USED A MODEL 4 SO I CAN'T VOUCH FOR THIS, BUT ACCORDING TO PAUL SVENTEK THIS IS A HANDY LITTLE ROUTINE TO ENABLE YOUR MODEL 4, RUNNING IN MODEL 3 MODE, UNDER TRSDOS 1.3, TO RUN AT THE HIGHER 4MHZ CLOCK SPEED.

AT THE BEGINNING FOR YOUR BASIC PROGRAM, TYPE
X=PEEK
(16912):X=XOR64:POKE16912,X

ALSO, RATHER THAN GETTING YOUR MODEL 4 TO MAKE SOUNDS VIA JCL COMMANDS, YOU CAN MAKE IT GENERATE TONES IN BASIC BY USING THE 'SOUND' COMMAND. THE SYNTAX OF THE COMMAND IS SOUND TONE, DURATION. THE TONE MAY BE ANY VALUE THROUGH 0 TO 7, AND THE DURATION MAY BE ANY VALUE THROUGH 0 TO 31.
EXAMPLE - SOUND 4,22.

I'VE JUST COME ACROSS A REVIEW (IN AN OLD EDITION, FEBRUARY 1984, OF 80-MICRO) OF AN EXATRON/ACULAB MICRO DRIVE FOR THE MODEL 100. IT WAS MADE BY HOLMES ENGINEERING AND WAS BATTERY POWERED. IT WAS ATTACHED TO THE MODEL 100 VIA THE 100'S RS232 PORT. IT SEEMS TO HAVE HAD 'RAVE REVIEWS' AT THE TIME. DID ANYONE OUT THERE IN TRSDOME EVER USE OR COME ACROSS ONE?

HERE'S ANOTHER LITTLE GEM I'VE ONLY JUST FOUND OUT ABOUT. ACCORDING TO EARLES L MCCAUL, LEVEL 2 BASIC USES THE IX REGISTER ONLY 21 TIMES AND DOES NOT USE THE IY REGISTER AT ALL.

EXPERNAL STORAGE FOR THE MODEL 100

NADSBOX

THE TARGET DATE FOR THE NEW AGE DIGITAL STORAGE BOX (NADSBOX) IS DECEMBER 1ST, 2008. THANKS TO OVER SIX YEARS OF DEDICATION, PERSONAL INVESTMENT AND HALF-MILLION LINES OF MACHINE CODE, KEN PETTIT IS FINALLY IN THE HOME STRETCH. BETA NADSBOXES HAVE GONE OUT AND THUS FAR ALL IS WELL. YOURS TRULY HAS ONE AND ... WOW. WE ARE NOW WAITING FOR A PRODUCTION RUN OF THE ENCLOSURES. EVERYTHING ELSE IS READY, I.E., PCB BOARDS, CARDS, ADAPTERS, ETC. THUS, NADSBOX IS REAL.

DUE TO KEN'S LOCATION (CHINA) AND WORK COMMITMENTS, CLUB 100 WILL BE THE ORDERING HEADQUARTERS FOR THE NADSBOX. CLUB 100'S TRACK RECORD AND COMMITMENT TO THE MODEL 100 OWNERS FOR OVER 25 YEARS MEANS EASY ORDERING, FAST FULFILLMENT AND COST EFFECTIVE SHIPPING.

TWO REASONS TO OWN A NADSBOX:

- 1) PORTABLE MASS STORAGE TO A MEDIA CARD, AND
- 2) 2) MEDIA CARD IS READABLE BY A PC OR MAC CARD READER, I.E., EASY FILE TRANSFERS.

PLUGS INTO THE RS232 PORT OF ANY MODEL 100, 102, 200 (AKA MODEL "T") ... AND NOW SUPPORTS THE WP-2 AS WELL.

READY TO RUN ... OUT OF THE BOX. COMES WITH CONNECTER, MEDIA CARD, 2 AA BATTERIES AND A USB TO DC POWER ADAPTER CABLE.

LOOKS LIKE A TPDD TO THE MODEL "T".

SAVE, LOAD, RENAME, ETC. FILES VIA ANY DOS, SUCH AS TS-DOS OR FROM A COMMAND LINE IN TELCOM (WOW!) ... LIKE THE OLD DOS PROMPT!

USES AN OFF-THE-SHELF SD, SDHC OR MULTIMEDIA CARD, SUCH AS SANDISK, KINGSTON, LEXAR, ETC. SDHC MEANS SUPPORT FOR THE NEWEST 16GB CARDS! THAT'S 167,000 TPDD FLOPPIES!

WHEN REMOVED FROM THE NADSBOX AND PLUGGED INTO A PC, MAC OR LINUX CARD READER, THE MEDIA CARD LOOKS LIKE A FOLDER ... NO-BRAINER FILE TRANSFERS!!!

THE NADSBOX FIRMWARE CAN BE EASILY UPGRADED IN-THE-FIELD TO TAKE ADVANTAGE OF NEW FEATURES AND CODE CHANGES.

ALL SUPPORT FILES WILL BE HOSTED AT WWW.CLUB100.ORG.

LET ME SAY SOMETHING REALLY IMPORTANT IN SUPPORT OF OUR MODEL 100S, 102S, 200S, WP-

HERE'S A ONE-LINER TO CONVERT DECIMAL TO HEX WHICH I HAVE CREATED, FROM AN ORIGINAL MULTI-LINED PROGRAM IDEA BY BILL SHORT. THERE'S NO ERROR CHECKING ETC., BUT EVEN IN ONE LINE, THERE'S STILL PLENTY OF ROOM LEFT IF YOU WISH TO PUT IT IN!

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1 H$="":INPUT"DECIMAL NO. ";D:FORI=1TO4:H=DAND15:H$=CHR$(H+48-7*(H>9))+H$:D=D/16:NEXTI:PRINTH$
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2S AND NEC 8201A/8300S. THE MODEL 100 CAME TO US VIA BILL GATES AND TANDY / RADIO SHACK IN MARCH 1983. IT'S BEEN OVER 25 YEARS AND WE ARE STILL HERE. WOW! AND OVER ALL THIS TIME, THE TOP WISH LIST ITEMS HAVE BEEN PORTABLE MASS STORAGE AND FILE TRANSFERS.

KEN PETTIT'S NADSBOX DOES BOTH VERY WELL. NADSBOX "IS" THE #1 TOOL THAT TAKES MODEL "T" COMPUTING INTO THE 3RD DECADE AND BEYOND. EVERY SERIOUS MODEL "T"ER NEEDS A NADSBOX. WHY? IT WORKS, IT'S COOL AND WE NEED TO STAND UP AND SUPPORT KEN. LET ME ALSO ADD THAT IN THE WINGS IS REX BY STEVE ADOLPH. REX AND NADSBOX CROSS-SUPPORT EACH OTHER, I.E., YOU WILL BE BLOWN AWAY BY THE TEAM WORK.

NADSBOX PRICING

THE NADSBOX HAS IS PRICED REASONABLY AT \$195. SHIPPING IS \$10 FLAT RATE WORLD WIDE!! CLUB 100 OFFERS, VISA, MASTER CARD, CHECKS, MONEY ORDERS AND PAYPAL. PLEASE NOTE: PAYPAL IS PREFERRED.

PRE ORDER ... STARTING NOW!!!

CLUB 100 IS TAKING PRE-ORDERS NOW. AS OF THIS WRITING, THERE WILL BE 32 UNITS AVAILABLE IN THE FIRST BATCH GOING OUT NOVEMBER 1ST

ACCORDING TO KEN.

TO GET ON THE LIST, SIMPLY SEND AN EMAIL TO RICK@CLUB100.ORG. STATE HOW MANY YOU WISH. CONFIRMATION WILL BE SENT IMMEDIATELY.

DO NOT PAY FOR YOUR NADSBOX UNTIL ASKED. I WILL SEND A PAYPAL INVOICE WHEN I ABSOLUTELY KNOW THAT I CAN SHIP A NADSBOX TO YOU.

MODEL "T" IS FOREVER...
-RICK-

NADSBOX

THROW YOUR TPDD/TPDD2 AWAY AND FORGET CABLES AND PROGRAMS FOR FILE TRANSFER. NEW AGE DIGITAL STORAGE BOX ... SOLID STATE STORAGE TO A MEDIA CARD WHICH CAN BE READ ON A PC! ... PLUGS INTO THE RS232 PORT AND IS ACCESSED BY TS-DOS JUST LIKE A DRIVE. THIS IS THE PRODUCT OF THE CENTURY FOR MODEL T COMPUTING. NADSBOXES ARE PRICED AT \$195 EACH. THE FIRST BATCH OF NADSBOXES ARE SOLD OUT. A SECOND BATCH IS IN PROCESS. TO GET ON THE WAITING LIST FOR A NADSBOX SEND AN EMAIL TO

RICK@CLUB100.ORG
NAMES ON THE 2ND BATCH LIST BEFORE 1/1/09 WILL GET A NADSBOX AT THE INTRODUCTORY PRICE EVEN IF IT IS SHIPPED AFTER THE FIRST.

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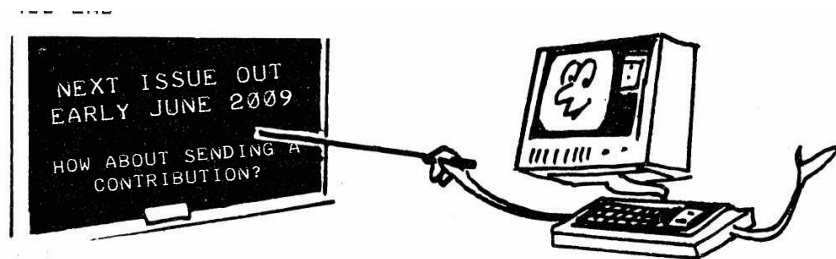
HERE'S A LITTLE ONE-LINER JUST FOR FUN! IT PUTS 255 RANDOM CHARACTERS IN THE FIRST 255 SPACE ON THE SCREEN AND PERFORMS A 'BUBBLE' SORT ON THEM. IN THE EARLY DAYS OF COMPUTING, BEFORE THE MODEL 1 AND 16K RULED, I RECALL, A BUBBLE SORT WAS ALSO REFERRED TO AS A 'FRIEND' SORT, AFTER THE GUY WHO, IN 1956, DESCRIBED IT AS A 'NEW' SORTING ALGORITHM.

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1 DATA 14,0,221,33,0,60,6,254,221,126,0,221,86,1,186,40,10,56,8,
14,1,221,114,0,221,119,1,221,35,16,233,203,65,32,221,201:FORI=32
512T032547:READA:POKEI,A:NEXTI:DEFUSR0=32512:CLS:FORI=15360T0156
14:A=RND(95)+32:POKEI,A:NEXTI:A=USR(0):RUN
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1          ;
2          ;SCRNSORT
3          ;BUBBLE SORTS THE FIRST 255 BYTES OF SCREEN
4          ;
5          ORG 8000H
6          LOAD 8000H
7 8000 0E00      START: LD C,0          ;C IS THE CHANGE FLAG
8 8002 DD21003C LD IX,3C00H      ;START OF SCREEN ADDRESS
9 8006 06FE      LD B,254        ;# OF ENTRIES -1
10 8008 DD7E00   SORT01: LD A,(IX+0) ;GET 1ST ENTRY
11 800B DD5601   LD D,(IX+1)      ;GET NEXT CHARACTER
12 800E BA      CP D              ;COMPARE A TO D
13 800F 280A      JR Z,SORT02     ;JUMP IF EQUAL
14 8011 3808      JR C,SORT02     ;JUMP IF I < I+1
15 8013 0E01      LD C,1          ;SET SWAP FLAG
16 8015 DD7200   LD (IX+0),D      ;SWAP CHARACTERS
17 8018 DD7701   LD (IX+1),A     ;NEXT CHARACTER
18 801B DD23      SORT02: INC IX    ;SCREEN ADDRESS +1
19 801D 10E9      DJNZ SORT01     ;DO FOR 254 PAIRS
20 801F CB41      BIT 0,C          ;TEST IF C=0 OR 1 FOR CHANGE
21 8021 20DD      JR NZ,START     ;SWAP - ANOTHER PASS
22 8023 C9      RET              ;BACK TO BASIC
23          END

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EXPANSION INTERFACE MEMORY

(NO NAME TO ATTRIBUTE)

ADDING MEMORY TO THE MODEL 1'S EXPANSION INTERFACE IS USUALLY QUITE STRAIGHT FORWARD. USE 4116 RAM CHIPS (AT LEAST 200 NS) AND PLACE THE CHIPS IN AN EMPTY SOCKET, ALIGNING THE NOTCH ON THE CHIP WITH THE ONE ON THE SOCKET.

A QUICK TEST TO SEE IF ALL'S OK IS TO PRINT MEM. THE ANSWER SHOULD BE ABOUT 48340 (FOR A FULL 48K MACHINE). IF YOU SUSPECT A PROBLEM AND DON'T HAVE A MEMORY TEST PROGRAM, THE ONE LINER BELOW MIGHT BE OF HELP.

SINCE EACH CHIP IS 1 BIT OF EVERY 8-BIT RAM BYTE, A NUMBER OTHER THAN ZERO TELL YOU WHICH CHIP IS BAD. CHIPS Z1-Z8 ARE ADDRESSES 49,152 TO 63,535. AS YOU CAN'T POKE OR PEEK OVER 32,767, YOU MUST USE NEGATIVE NUMBERS TO ACCESS RAM ABOVE 32,767; (IN THIS CASE - 16,384 TO -1).

CHIPS Z9-Z16 ARE ADDRESSES -32,768 TO -16,383. Z1 AND Z9 ARE BITS 7; Z2 AND Z10 ARE BITS 6; Z8 AND Z16 ARE BITS ZERO. THEREFORE, IF YOU GET A 3 IN THE ADDRESS RANGE -32,767 TO -16,384, YOU NEED TO REPLACE CHIPS Z15 AND Z16.

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1 CLS:FORI=-32767TO-1:PRINT@350,I:POKEI,0:IFPEEK(I)<>0THENPRINT"
BAD ADDRESS ";I;"VALUE =";PEEK(I)ELSENEXT

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CAMPANOLOGY - BELL RINGING ON A MODEL 1

OR A TIN(NY)TINNABULATION

BEING A TOTAL NOVICE AS REGARDS TO BELL RINGING, I JUST THOUGHT IT WOULD BE A NOVEL IDEA TO SEE IF IT WAS POSSIBLE TO 'RING BELLS' ON A MODEL 1. (I GET THESE MAD IDEAS FROM TIME TO TIME AS YOU KNOW, HENCE THE EAR MUFFS).

HAVING PLAYED AROUND WITH A SIMPLE SOUND GENERATION PROGRAM, ORIGINALLY WRITTEN BY HARDING BROTHERS, I THOUGHT AN 8-BELL PEAL, OF SORTS, WAS A POSSIBILITY. I ALSO FOUND THE FOLLOWING INTRODUCTION TO START THINGS OFF.

THE PURPOSE OF THESE BRIEF FEW WORDS, A PRÉCIS OF AN ARTICLE BY MATTHEW SORELL, IS TO INTRODUCE NON BELL RINGERS, LIKE MYSELF, TO CHANGE-RINGING AND TO THE PERMUTATIVE STRUCTURE INHERENT IN CHANGE-RINGING. THE AIM IN CHANGE-RINGING MAY BE SUMMARISED AS RINGING A SET OF PERMUTATIONS, WITHOUT REPETITION OR PAUSE, ENTIRELY FROM MEMORY BY A BAND OF BELL RINGERS. BY ANALOGY, CONSIDER TAKING A RUBIK'S CUBE THROUGH AN ORDERED SEQUENCE OF PATTERNS; BUT WITH EIGHT PEOPLE LOOKING AFTER THE TASK IN SYNCHRONY. IT IS CLEAR THAT CHANGE-RINGING IS A UNIQUE MIX OF MUSIC, TEAMWORK AND MATHEMATICS.

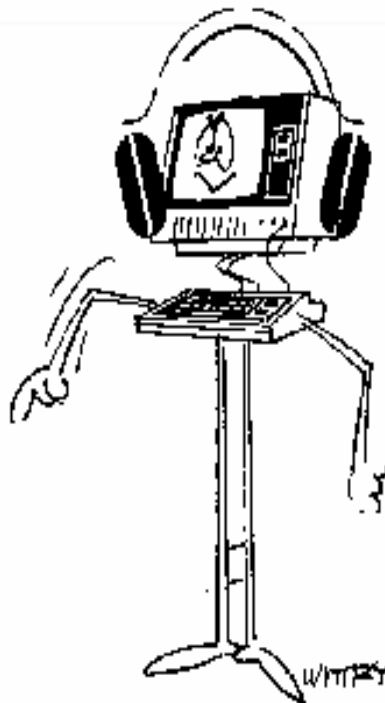
CHANGE-RINGING HAS ITS BEGINNINGS AS EARLY AS THE FOURTEENTH CENTURY. AS MANY AS THREE BELLS WOULD HAVE BEEN IN A CHURCH STEEPLE, FORMING A COMBINATION CHURCH AND SECULAR PUBLIC ADDRESS SYSTEM. THE BELLS WERE NOT WELL TUNED AND WHEN RUNG TOGETHER WOULD HAVE BEEN CACOPHONOUS. THE BELL HANGERS ALSO FOUND THAT BY SWINGING A BELL, RATHER

THAN HITTING IT WITH A CLAPPER, THE BELL WAS ABLE TO RING CLEARLY. OVER TIME, BELLS BEGAN TO BE SWUNG HIGHER AND HIGHER UNTIL EVENTUALLY A MECHANISM WAS DEVELOPED TO ALLOW BELLS TO BE SWUNG FULL-CIRCLE, AS THEY ARE TODAY.

FULL-CIRCLE RINGING HAS THE ADDITIONAL ADVANTAGE OF TIMING CONTROL. ONE CAN IMAGINE THE EARLY BELL RINGERS NOW RINGING THE BELLS IN A

DESCENDING SCALE (THE POOR TUNING OF THE BELLS WOULD HAVE MADE CHORDS HIGHLY UNDESIRABLE), AND, ONE DAY, DECIDING TO CHANGE THE ORDER OF THE BELLS. AND FROM THERE, CHANGE-RINGING WAS BORN.

EACH BELL SWINGS FULL CIRCLE BUT DOES SO IN A FORWARD AND REVERSE DIRECTION. THIS IMPLIES THAT THERE ARE TWO STROKES



WHICH NEED TO BE CONSIDERED; ONE IN WHICH THE ROPE IS WRAPPED AROUND THE WHEEL (THE "HANDSTROKE") AND THE OTHER IN WHICH THE ROPE UNWRAPS (THE "BACKSTROKE"). THE TWO STROKES ALLOW BELL RINGERS TO FOLLOW WHAT IS HAPPENING BY WATCHING THE ROPES AROUND THEM ("ROPESIGHT") AS WELL AS LISTENING TO THE BELLS.

THE SYSTEM BY WHICH THE DIFFERENT UNIQUE ROWS CAN BE ORDERED WAS FORMALISED BY THE END OF THE SEVENTEENTH CENTURY. THE BELL MECHANISM HAS IMPROVED SIGNIFICANTLY, ESPECIALLY WITH THE INTRODUCTION OF STEEL FRAMES (INSTEAD OF OAK) AND ROLLER BEARINGS (INSTEAD OF PLAIN GREASED BEARINGS). THE NUMBER OF BELLS IN A TOWER HAS INCREASED TO A TYPICAL RING OF SIX OR EIGHT AND IN SOME CASES TO TWELVE. FINALLY, A SYSTEMATIC METHOD OF BELL TUNING WAS DEVELOPED AROUND 1900, BRINGING BELLS AND THEIR HARMONICS INTO STANDARD TUNING. ALAS, NOT SO READILY NOTICEABLE ON THE MODEL 1!

THE HEAVIEST BELL IN A RING MAY WEIGH ANYWHERE AROUND A TONNE (THE HEAVIEST RING, LIVERPOOL CATHEDRAL, HAS A FOUR TONNE TENOR).

THE LAST DECADE HAS SEEN NEW INNOVATIONS. RINGS OF UP TO 16 BELLS HAVE APPEARED FOR THE FIRST TIME. THE NUMBER OF METHODS AND PEAL COMPOSITIONS HAS EXPLODED, THANKS IN NO SMALL PART TO THE AVAILABILITY OF COMPUTER SOFTWARE TO ASSIST IN THE COMPOSITION PROCESS. IF YOU WISH TO KNOW MORE ABOUT

BELL RINGING OR EVEN ABOUT THE 300-YEAR-OLD STEDMAN TRIPLES PROBLEM, THERE ARE NUMEROUS WEB-SITES AVAILABLE. A GOOD STARTING POINT IS

WWW.ABELSIM.CO.UK

WHICH HAS ONE OF THE MOST IMPRESSIVE AND VALUE FOR MONEY BELL RINGING SIMULATIONS AVAILABLE.

I HAVEN'T PLACED THE PROGRAMS ON THE WEB-SITE AS DOWNLOADS BECAUSE THEY ARE QUITE SMALL. IF YOU HAVE A PROBLEM HOWEVER, PLEASE EMAIL ME AND I'LL SORT SOMETHING OUT FOR YOU.

LINES 1 TO 4 LOAD THE MACHINE CODE PROGRAM INTO THE VARIABLE A\$. N.B. NORMAL LISTING OF THE PROGRAM AFTER TYPING IN 'RUN' WILL BE CHANGED.

LINES 120-140 SET THE TONE FOR THE 8 BELLS AND THEIR NUMBER.

LINES 170-280 RUN THROUGH 2 LOOPS TO SET THE NECESSARY CHANGES TO THE ORDER OF THE BELLS.

LINE 190 SETS THE CHANGES IN ORDER IF J HAPPENS TO BE ODD OR EVEN AND ALLOWS FOR A SMALL DELAY TO ASSIST THE SOUND OF THE BELL, AND 200 ALLOWS FOR A VARIATION WHEN THE TREBLE IS AT THE LEAD OF THE ROW. (THE '*' MARKS IT).

LINE 310 IS A SUBROUTINE TO PRINT THE BELL ORDER ON THE SCREEN AND SEND TO CORRECT 'BELL SOUND' TO THE SPEAKER.

IN THE WORDS OF 'ALEXANDER MEERKAT' "SIMPLES".

DON'T HESITATE TO SEND IN ANY IMPROVEMENTS OR CHANGES (NO PUN INTENDED) YOU DEVISE.

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1 A$="" 22 SPACES HERE ":A=VARPTR(A$):B=PEEK(A+1)+PEEK(A+2)*256
2 DEFUSR=B:FORC=BTOB+21:D=C:READE:POKED,E:NEXT
3 DATA 205,127,10,76,69,62,1,211,255,16,254,69,62,16,211
4 DATA 255,16,254,13,32,239,201

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100 REM BELL RINGING - PLAIN BOB MAJOR
110 REM THE 1ST PLAIN COURSE
112 OF THE 40320 PERMUTATIONS!

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120 A(1)=70:A(2)=74:A(3)=84:A(4)=96:A(5)=106:A(6)=114
130 A(7)=128:A(8)=142:T=0:L1=0:L2=0
140 FORZ=1TO8:B(Z)=Z:NEXT
150 REM

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160 GOSUB310
170 FORH=1TO7
180 FORJ=1TO16
190 IFJANDNOT-2 THEN L1=1:L2=7ELSEL1=2:L2=6:FORD=1TO150:NEXT
200 IFJ=16L1=3:L2=7:PRINT" *"
210 FORX=L1TOL2STEP2
220 T=B(X+1)
230 B(X+1)=B(X)
240 B(X)=T
250 NEXTX
260 GOSUB310
270 NEXTJ
280 NEXTH
290
300 END
310 FORY=1TO8:PRINTB(Y);:C=USR(A(B(Y))):NEXTY:PRINT
320 RETURN

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1 ; HARDING BROTHER'S
2 ; SIMPLE RELOCATABLE SOUND ROUTINE
3 ;
4 ; ANYWHERE WILL DO
5 ; FIND IT QUICKLY HERE
6 8000 CD7F0A CALL 0A7FH ;GET VALUE FROM USR CALL
7 8003 4C LD C,H ;GET HIGH BYTE INTO C
8 8004 45 LOOP1: LD B,L ;GET LOW BYTE INTO B
9 8005 3E01 LD A,01H ;TURN ON OUTPUT BIT
10 8007 D3FF OUT (0FFH),A ;AND SEND TO PORT
11 8009 10FE LOOP2: DJNZ LOOP2 ;WAIT FOR HALF A CYCLE
12 800B 45 LD B,L ;RELOAD WITH LOW BYTE
13 800C 3E10 LD A,10H ;AND SEND TO PORT
14 800E 10FE LOOP3: DJNZ LOOP3 ;WAIT HALF A CYCLE
15 8010 0D DEC C ;DROP DURATION COUNT
16 8011 20F1 JR NZ,LOOP1 ;GO BACK UNTIL ZERO
17 8013 C9 RET
18 END

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NEXT ISSUE DUE OUT, EARLY JUNE 2009