RENUMBERING UTILITY

FOR THE C-64
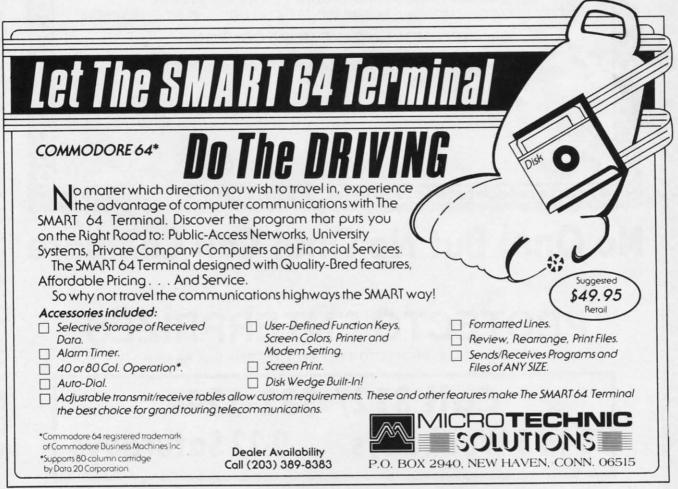
By Anthony Wood

Often while programming, the need arises to insert a line between two lines that have no room between them. In cases like this it would be helpful to renumber the entire program. Other times, when you've finished a program, it would be nice to renumber the program so it looks neat. The renumber utility does this for you.

The renumber program will renumber an entire program while changing GOTO, IF-THEN, GOSUB, ON GOTO, and ON GOSUB references to the correct values.

When you run the program, you are asked for the name of the program to renumber. Enter the name you saved your program under. Next, you are asked for the name of the renumbered program. As the renumber utility renumbers your program, it will be saved under this file name. Next, you are asked what you want the first line in the renumbered program to be. After you enter this, you are prompted for the increment between lines. Once you have answered these questions, the renumber utility proceeds to renumber your program.

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```
LINE #  470:FD      LINE # 3506:KP   LINE # 6051:EJ   LINE # 7120:KH
LINE #  475:FK      LINE # 3510:DK   LINE # 6060:GJ   LINE # 7125:BB
LINE #  480:EN      LINE # 3520:MG   LINE # 6150:LE   LINE # 7130:OO
LINE #  500:DC      LINE # 3535:MD   LINE # 6155:OE   LINE # 7140:AG
LINE #  520:PO      LINE # 3540:KJ   LINE # 6156:NI   LINE # 7160:AC
LINE #  522:DP      LINE # 3550:HB   LINE # 6157:EB   LINE # 7165:EL
LINE #  530:OB      LINE # 3555:LE   LINE # 6158:OD   LINE # 7170:KH
LINE #  540:MJ      LINE # 3556:JC   LINE # 6160:NA   LINE # 9000:IH
LINE #  545:PK      LINE # 3560:GB   LINE # 6170:LF   LINE # 9010:FP
LINE #  550:LP      LINE # 3565:BO   LINE # 6180:KC   LINE # 9020:EG
LINE #  560:DE      LINE # 3580:OH   LINE # 7000:HL   LINE # 9030:HI
LINE #  700:LO      LINE # 3590:IA   LINE # 7010:GI   LINE # 9080:CK
LINE #  715:KC      LINE # 4000:KO   LINE # 7020:OG   LINE # 9085:AK
LINE #  750:JE      LINE # 4010:GN   LINE # 7030:IA   LINE # 9090:JC
LINE #  760:DP      LINE # 4015:DN   LINE # 7040:OE   LINE # 9110:LH
LINE #  770:AM      LINE # 4020:KB   LINE # 7100:EP   LINE # 9200:GB
LINE #  780:IM      LINE # 4030:KC   LINE # 7105:BB   LINE # 9300:PN
LINE #  800:BB      LINE # 4040:BG   LINE # 7110:HD   LINE # 9350:LC
LINE #  810:CP      LINE # 4050:CE   LINE # 7115:KH   LINES: 185
LINE #  820:DH      LINE # 4055:NM
LINE # 1000:EE      LINE # 4060:ED
LINE # 1010:DC      LINE # 4090:DD
LINE # 1100:OL      LINE # 4100:HF
LINE # 1110:BO      LINE # 4120:OE
LINE # 2000:EF      LINE # 4130:LH
LINE # 2010:EH      LINE # 4140:PF
LINE # 2100:HB      LINE # 4150:JP
LINE # 2110:OC      LINE # 4160:PF
LINE # 2500:CL      LINE # 4161:NC
LINE # 2502:HI      LINE # 4170:OA
LINE # 2504:IM      LINE # 5000:AQ
LINE # 2505:AF      LINE # 5005:NI
LINE # 2507:AP      LINE # 5010:HK
LINE # 2510:IN      LINE # 5011:ML
LINE # 2520:EP      LINE # 5015:HO
LINE # 2530:PA      LINE # 5016:NK
LINE # 2540:IP      LINE # 5020:CL
LINE # 2550:AA      LINE # 5035:LL
LINE # 2590:PC      LINE # 5050:JL
LINE # 3000:OJ      LINE # 5060:KF
LINE # 3010:LI      LINE # 5070:JP
LINE # 3015:BM      LINE # 5080:PF
LINE # 3020:PN      LINE # 5090:PM
LINE # 3030:NL      LINE # 5095:NC
LINE # 3035:MP      LINE # 5099:NB
LINE # 3055:PB      LINE # 6000:BM
LINE # 3056:EO      LINE # 6005:KN
LINE # 3057:LP      LINE # 6010:KD
LINE # 3058:BL      LINE # 6020:ID
LINE # 3060:EL      LINE # 6026:IL
LINE # 3090:IP      LINE # 6030:DO
LINE # 3500:BG      LINE # 6040:DP
LINE # 3505:LB      LINE # 6050:OB
```

RENUMBERING
FROM PAGE 29

IMPORTANT
Before typing in an *Ahoy!* program, refer to the
first two pages of the program listings section.

```
•100 REM 2-17-84
•110 DIM L(2000)
•120 PRINT"{SC}{CD}";SPC(9);"RENUM
 BER UTILITY":PRINT
•130 PRINTSPC(8)"(C) COPYRIGHT 198
 4":PRINTSPC(11);"ANTHONY WOOD"
•140 PRINT:INPUT"NAME OF PROGRAM T
 O RENUMBER";I$
•150 INPUT"NAME OF RENUMBERED PROG
 RAM";P$
•160 INPUT"FIRST LINE NUMBER? 100{
 CL}{CL}{CL}{CL}{CL}";S
•170 INPUT"INCREMENT? 10{CL}{CL}{C
 L}{CL}";I:PRINT
•180 DEF FNMB (X)=INT(X/256)
•190 DEF FNLB (X)=X-FNMB(X)*256
•200 PRINT"PASS ONE...":OPEN15,8,1
 5,"IO"
•210 OPEN2,8,2,I$+",P,R"
•220 INPUT#15,E,ER$,A,A:IFE<>0THEN
 PRINTER$:CLOSE15:END
•230 GOSUB 490:A=V
•240 GOSUB 490:IFV=0THEN 280
•250 E=V:GOSUB 490:L(K)=V:K=K+1:A=
```

```
    A+4
• 260 IFA=ETHEN 240
• 270 GET#2,A$:A=A+1:GOTO 260
• 280 CLOSE 2:PRINT"PASS TWO..."
• 290 OPEN2,8,2,I$+",P,R":OPEN3,8,3
  ,P$+",P,W":INPUT#15,E,ER$,A,A
• 300 IFE<>0THENPRINTER$:CLOSE2:CLO
  SE15:END
• 310 GOSUB 490:A=V:PRINT#3,A$;B$;:
  C=0
• 320 REM READ LINE & CHANGE REF'S
• 330 GOSUB 490:GOSUB 490:L$=""
• 340 GET#2,A$
• 345 IFA$=CHR$(137)THENGOSUB500:GO
  TO 345
• 350 IFA$=CHR$(141)THENGOSUB500:GO
  TO 345
• 360 IFA$=CHR$(167)THENGOSUB500:GO
  TO345
• 370 IFLEN(A$)=0THEN 430
• 380 IFA$<>CHR$(24)THENL$=L$+A$:GO
  TO 340
• 390 L$=L$+A$
• 400 GET#2,A$:IFLEN(A$)=0THEN 430
• 410 L$=L$+A$:IFA$=CHR$(24)THEN 34
  0
• 420 GOTO 400
• 430 A=A+5+LEN(L$):PRINT#3,CHR$(FN
  LB(A));CHR$(FNMB(A));
• 440 PRINT#3,CHR$(FNLB(S+C*I));CHR
  $(FNMB(S+C*I));
• 450 PRINT#3,L$;CHR$(0);
• 460 C=C+1:IFC<>KTHEN 330
• 470 PRINT#3,CHR$(0);CHR$(0);CHR$(
  0);
• 480 CLOSE2:CLOSE3:CLOSE15:PRINT"D
  ONE":END
• 490 GET#2,A$:GET#2,B$:V=ASC(A$+CH
  R$(0))+ASC(B$+CHR$(0))*256:RETURN
• 500 N$="":L$=L$+A$
• 510 GET#2,A$:IFA$=" "THEN 510
• 520 GOTO 540
• 530 GET#2,A$
• 540 IFA$<"0"ORA$>"9"THEN 560
• 550 N$=N$+A$:GOTO 530
• 560 IFN$=""THEN610
• 570 N=VAL(N$):FORX=0TOK-1
• 580 IFL(X)=NTHEN 600
• 590 NEXT:PRINT"UNDEF'D LINE NO: "
  ;N$:L$=L$+"0000":GOTO610
• 600 L$=L$+STR$(X*I+S)
• 610 IFA$=","THEN500
• 630 RETURN
```
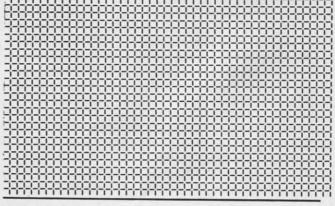
BUG REPELLENT LINE CODES
FOR RENUMBERING UTILITY

LINE	#	100:PK	LINE	#	370:GL
LINE	#	110:OE	LINE	#	380:IN
LINE	#	120:DA	LINE	#	390:LK
LINE	#	130:NH	LINE	#	400:CO
LINE	#	140:PI	LINE	#	410:EN
LINE	#	150:OF	LINE	#	420:CA
LINE	#	160:EL	LINE	#	430:GK
LINE	#	170:NN	LINE	#	440:GJ
LINE	#	180:MI	LINE	#	450:AK
LINE	#	190:MK	LINE	#	460:OI
LINE	#	200:MG	LINE	#	470:IA
LINE	#	210:BN	LINE	#	480:AJ
LINE	#	220:EH	LINE	#	490:CC
LINE	#	230:ME	LINE	#	500:GL
LINE	#	240:IA	LINE	#	510:CP
LINE	#	250:PJ	LINE	#	520:CN
LINE	#	260:AP	LINE	#	530:JB
LINE	#	270:GF	LINE	#	540:KO
LINE	#	280:NP	LINE	#	550:BM
LINE	#	290:OH	LINE	#	560:EH
LINE	#	300:IM	LINE	#	570:EF
LINE	#	310:OI	LINE	#	580:OM
LINE	#	320:AK	LINE	#	590:DO
LINE	#	330:CF	LINE	#	600:KP
LINE	#	340:JB	LINE	#	610:GP
LINE	#	345:DO	LINE	#	630:IM
LINE	#	350:MP	LINES:	54	
LINE	#	360:EH			

CREATING YOUR
OWN GAMES
Continued from page 17

marker, contained in the array RE(x). This is set up
in line 565.

The setup in lines 600 to 635 is more complex
now, too. Each ship has its own color (line 610),
and each ship has its own row number (line 615,

Ahoy!

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