33 Challenging Computer Games for TRS-80™/Apple™/PET®

by David Chance

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Preface

Computers are becoming the backbone of family entertainment throughout the world, and games for these computers are growing by the thousands. For families who have computers, the computer is getting to be more of a pastime than that livingroom relic the television.

The programs in this book should help speed the computer's takeover of the livingroom. All but the last four programs run on all three of the most popular home computers.

I wish to thank the Tandy Corporation, Apple Computer Inc. and Commodore Pet Business Machines for their help and use of material in the Appendices.

David Chance

Dedication

Dedicated to my wife, Karen

Chapter 1

Getting Started

This book contains 33 games that will help you enjoy your home computer to the fullest. All but the last four programs run equally well on TRS-80™, Apple II™ or PET® computer, providing you pay attention to the equivalents section of this chapter. The equivalents section shows you the statement types that you must change to make the programs run on your computer—the program description remains the same, however.

The last four programs take advantage of the TRS-80's graphics; converting these programs to run on the other two computers is outside the scope of this book.

Once you have entered the programs and tried them a few times you might try modifying the programs to suit your own needs and tastes. In some cases instructions for such program modification have been included.

THE GAMES THEMSELVES

For each program you'll find a general description, a flow chart, a sample run (where appropriate) and finally, the program listing. All of the programs have been thoroughly tested and do run well.

So, if you are ready to risk losing all of your oxygen, try *Life Support;* if you'd rather become a biologist and search for new life forms on the ocean bottom, try *Fathom. Kat & Mouse* lets you chase a mouse and try to slap it—but you'll never see the mouse's house. Test your memory with *Memory Test* and *Memory Test II.*

The programs are divided by type so that you go through this book like an amusement park. Enter it and have fun!

THE BASIC EQUIVALENTS

Equivalents are given for the TRS-80™, APPLE II™ and PET® computers.

Below is a list of TRS-80 statements along with their APPLE II and PET equivalents. Most of the statements are used throughout the programs. Be sure to check them closely or check your manual before entering a program.

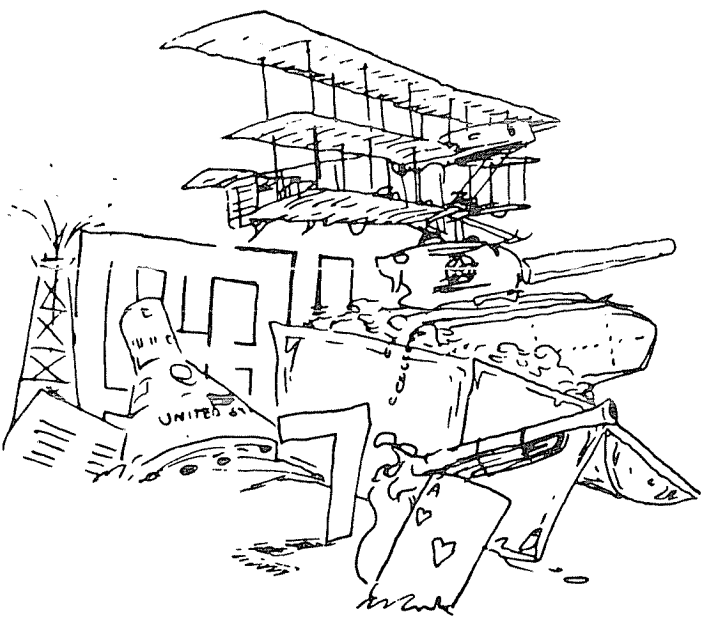
TRS-80	APPLE II	PET
A$ = INKEY$	GET A$	
CLS	HOME	GET A$
RND(N) or	RND(N) or	PRINT "■"
INT(10)*RND(N) + N)	INT(10*RND(N)) + 1	N = INT(6*RND(1) + 1)

Where N = any number, to seed a random generator. The INT (integer) function rounds off the value in parentheses. The biggest difference among these program statement types is the INKEY$ function. If you own a APPLE II or PET computer be sure to change all such program lines to the appropriate GET form run on that computer.

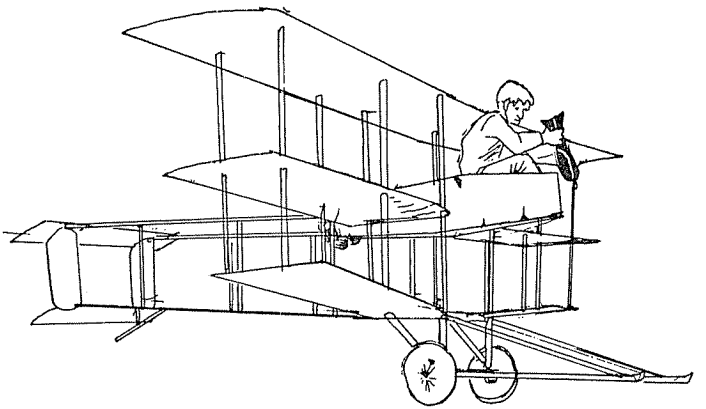
For example: if a line reads: A$ = INKEY$, for APPLE II or PET, change it to read, GET A$.

Chapter 2

Games of War



Bombardier



Sharpen your vision for this game. You are going to be a bombardier and your trusty computer will be the navigator and pilot. Keep the surface wind speed in mind, along with the distance to target. Don't use all your bombs on one target!

Good luck, Bombardier!

Sample Run

```
BOMBARDIER
PRINT INSTRUCTIONS? YES
WELCOME, YOU WILL BE THE BOMBARDIER THROUGHOUT THIS
GAME AND I, YOUR COMPUTER, WILL BE YOUR NAVIGATOR AND PILOT.

WE WILL BE GIVEN A TARGET TO DESTROY. YOU'LL HAVE TO
DECIDE WHEN TO OPEN THE BOMBAY DOORS AND RELEASE
THE BOMBS. BEFORE YOU DROP THE BOMBS YOU'LL HAVE TO TAKE
INTO CONSIDERATION THE FOLLOWING:
1) SURFACE WIND SPEED
2) DISTANCE TO TARGET
PRESS A KEY . . . . .
YOU'LL ONLY BE USING THE FOLLOWING KEYS:
A . . . . TO ABORT MISSION
O . . . . TO OPEN BOMBAY DOORS
D . . . . TO DROP BOMBS
```

F . . . . UPDATE ON SURFACE WIND SPEED,
MILES TO TARGET (CONTINUE FLIGHT).
WE WILL RECEIVE INFORMATION IN A FEW SECONDS . . . . .
YOU WILL BE DROPPING ROCKET BOMBS
MADE FROM A NEW ALLOY.
TRY TO GET WITHIN 100 MILES OF THE
FUEL DEPOT BEFORE DROPPING BOMBS . . . . .
THE STATUS RIGHT NOW:
SURFACE WIND SPEED: 24
OUR SPEED: 1243
BOMBS ON BOARD: 499
MILES TO TARGET: 1013
PRESS A KEY . . . . .
WHEN YOU ENTER A COMMAND:
PRESS THE LETTER, THEN PRESS ENTER/RETURN.
REMEMBER, TO CONTINUE FLIGHT, PRESS 'F'
THEN PRESS ENTER/RETURN.
PRESS A KEY . . . . .
COMMAND? F
MILES TO TARGET: 228
OUR SPEED: 1243
SURFACE WIND SPEED: 19
COMMAND? F
MILES TO TARGET: 198
OUR SPEED: 1243
SURFACE WIND SPEED: 19
COMMAND? F
MILES TO TARGET: 176
OUR SPEED: 1243
SURFACE WIND SPEED: 19
COMMAND? F
MILES TO TARGET: 129
OUR SPEED: 1243
SURFACE WIND SPEED: 19
COMMAND? F
MILES TO TARGET: 81
OUR SPEED: 1243
SURFACE WIND SPEED: 19
COMMAND? O
BOMBAY DOORS OPENING . . . . .
BOMBAY DOORS OPEN . . . . .
COMMAND? F

MILES TO TARGET: 80
OUR SPEED: 1243
SURFACE WIND SPEED: 19
COMMAND? F
MILES TO TARGET: 35
OUR SPEED: 1233
SURFACE WIND SPEED:19
COMMAND? 0
THEY'RE ALREADY OPEN ! !
COMMAND? D
HOW MANY BOMBS TO BE RELEASED? 50
IF YOU ARE READY
TO DROP 50 BOMBS, PRESS ENTER/RETURN?
BOMBS A W W W A A Y ! !
YOU MISSED THE FUEL DEPOT
WE STILL HAVE 449 BOMBS LEFT . . . .
BOMBAY DOORS CLOSED . . . .
THE STATUS RIGHT NOW:
SURFACE WIND SPEED: 24
OUR SPEED: 1233
BOMBS ON BOARD: 449
MILES TO TARGET: 1184
PRESS A KEY . . . . .
COMMAND? F
MILES TO TARGET: 259
OUR SPEED: 1233
SURFACE WIND SPEED: 19
COMMAND? R
WHICH COMMAND IS THAT ???
COMMAND? F
MILES TO TARGET: 185
OUR SPEED: 1233
SURFACE WIND SPEED: 19
COMMAND? F
MILES TO TARGET: 120
OUR SPEED: 1233
SURFACE WIND SPEED: 19
COMMAND? F
MILES TO TARGET: 46
OUR SPEED: 1223
SURFACE WIND SPEED: 19
COMMAND? F

MILES TO TARGET: 41
OUR SPEED: 1183
SURFACE WIND SPEED: 19
COMMAND? 0
BOMBAY DOORS OPENING . . . .
BOMBAY DOORS OPEN . . . .
COMMAND? D
HOW MANY BOMBS TO BE RELEASED? 100
IF YOU ARE READY
TO DROP 100 BOMBS, PRESS ENTER/RETURN?
BOMBS A W W W A A Y ! !
YOU MISSED THE FUEL DEPOT(AGAIN).
WE STILL HAVE 349 BOMBS LEFT . . . .
BOMBAY DOORS CLOSED . . .
THE STATUS RIGHT NOW:
SURFACE WIND SPEED: 24
OUR SPEED: 1173
BOMBS ON BOARD: 349
MILES TO TARGET: 1128
PRESS A KEY . . . . .
COMMAND? F
MILES TO TARGET: 88
OUR SPEED: 1173
SURFACE WIND SPEED: 19
COMMAND? F
MILES TO TARGET: 55
OUR SPEED: 1173
SURFACE WIND SPEED: 19
COMMAND? F
MILES TO TARGET: 26
OUR SPEED: 1163
SURFACE WIND SPEED: 19
COMMAND? 0
BOMBAY DOORS OPENING . . . .
BOMBAY DOORS OPEN . . . .
COMMAND? D
HOW MANY BOMBS TO BE RELEASED? 100
IF YOU ARE READY
TO DROP 100 BOMBS, PRESS ENTER/RETURN?
BOMBS A W W W A A Y ! !
EXCELLENT BOMBING ! !
WE DON'T HAVE TO WORRY ABOUT THE FUEL DEPOT NOW.

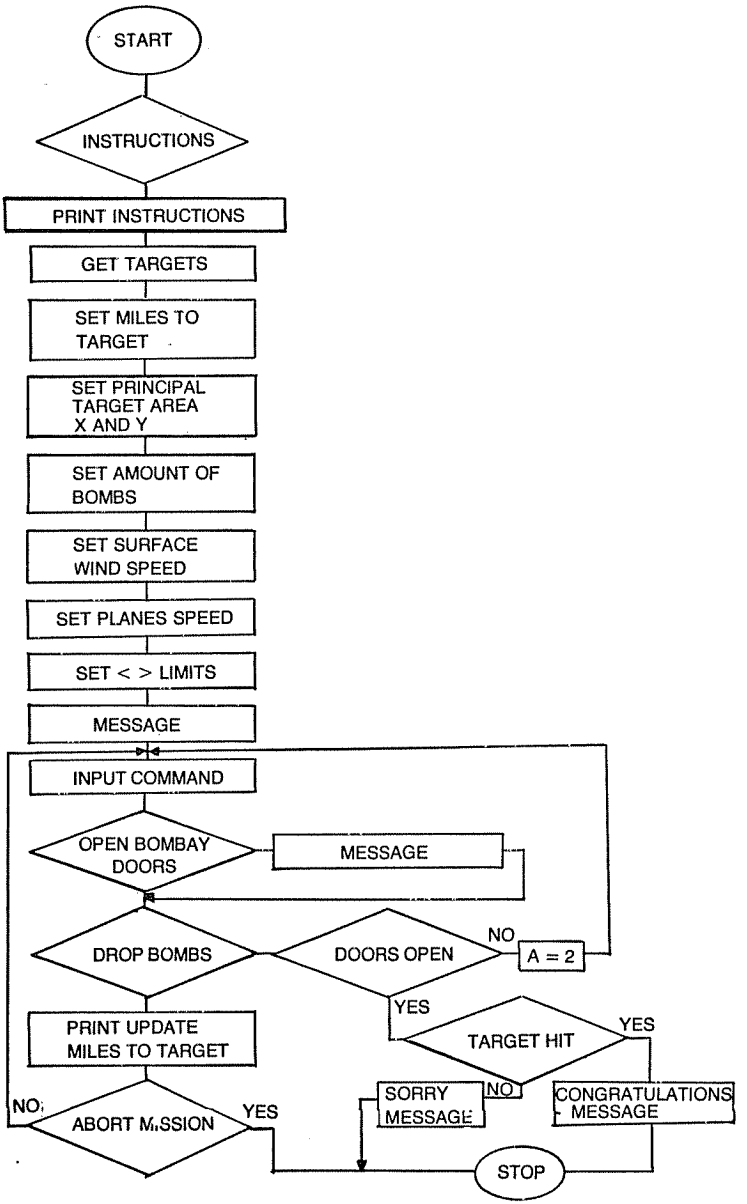


Fig. 2-1. The flowchart for Bombardier.

WE STILL HAVE 249 BOMBS LEFT . . . .
BOMBAY DOORS CLOSED . . . .
STOP

Yes, it is possible to hit a target. Just keep an eye on the miles and remember to open the bombay doors before you drop the bombs as things could get quite messy! See Fig. 2-1 for the flow chart for this program.

Program Listing

```
 10 CLS:PRINT:IF Q=1 THEN 280
 20 PRINT:PRINT TAB(10); "BOMBARDIER"
 30 PRINT
 40 PRINT:PRINT"INSTRUCTIONS";
 50 INPUT A$
 60 IF A$ < > "YES" THEN 80
 70 GOTO 110
 80 IF A$ < > "NO" THEN 100
 90 GOTO 230
100 PRINT:PRINT"I AM ABLE TO RESPOND TO YES OR NO,
    ONLY":PRINT:GOTO 40
110 PRINT
120 PRINT"WELCOME, YOU WILL BE THE BOMBARDIER
    THROUGHOUT THIS"
130 PRINT"GAME AND I, YOUR COMPUTER, WILL BE
    NAVIGATOR AND PILOT."
140 PRINT"WE WILL BE GIVEN A TARGET TO DESTROY.
    YOU'LL HAVE TO"
150 PRINT"DECIDE WHEN TO OPEN THE BOMBAY DOORS AND
    RELEASE THE"
160 PRINT"BOMBS. BEFORE YOU DROP THE BOMBS YOU'LL
    HAVE TO TAKE"
170 PRINT"INTO CONSIDERATION THE FOLLOWING:"
180 PRINT"1) SURFACE WIND SPEED"
190 PRINT"2) DISTANCE TO TARGET"
200 GOSUB 210:GOTO 230
210 PRINT:PRINT"PRESS A KEY . . . . . "
215 A$=INKEY$:IF A$=" " THEN 215
220 CLS:PRINT:RETURN
230 PRINT"YOU'LL ONLY BE USING THE FOLLOWING KEYS:"
240 PRINT"A . . . . TO ABORT MISSION"
250 PRINT"O . . . . TO OPEN BOMBAY DOORS"
```

```
260 PRINT"D . . . . TO DROP BOMBS"
270 PRINT"F . . . . UPDATE ON SURFACE WIND SPEED,"
275 PRINT"MILES TO TARGET (CONTINUE FLIGHT)."
280 A=0:D = 1:PRINT:IF Q = 1 THEN 310
290 PRINT"WE WILL RECEIVE INFORMATION IN A FEW SEC-
    ONDS . . . . "
300 FOR S = 1 TO 1500:NEXT
310 REM SET TARGET
320 I = INT(3*RND(0) + 1) :ON I GOTO 330, 340, 350
330 T$ = "AMMUNITION FACTORY":GOTO 355
340 T$ = "WEAPONS FACTORY":GOTO 355
350 T$ = "FUEL DEPOT"
355 IF T$ = S$ THEN 320
360 REM SET SECONDARY TARGET
370 I = I + 1:IF I = 4 THEN I = 3:READ W$(I)
380 DATA CONVOY OF TANKS, OIL DUMP, ENERGY AIRSTRIP
385 Q$ = W$(I)
390 REM SET MILES TO TARGET
400 M = 1000 + INT(200*RND(0) + 5)
405 IF Q = 1 THEN 590
410 REM SET X AREA, BOMBS
420 ON I GOTO 430, 440, 450
430 X = INT(10*RND(0) + 5):B = INT(X*RND(0) + 300) :GOTO
    460
440 X = INT(40*RND(0) + 15):B = INT(X*RND(0) + 200):GOTO
    460
450 X = INT(50*RND(0)-10) :B = INT(X*RND(0) + 500)
460 REM SET SURFACE WIND SPEED, Y AREA
465 ON I GOTO 470,480,490
470 WS = INT(40*RND(0) + 14) :Y = ((WS-10) + (Y + WS)):
    GOTO 500
480 WS = INT(30*RND(0) + 13)  :Y = ((WS-5) + (Y + WS))
    :GOTO 500
490 WS = INT(20*RND(0) + 10) :Y = ((WS-3) + (Y + WS))
500 REM SET PLANES SPEED
510 S = 800 + INT(500*RND(0) + 300)
520 REM SET < > AREA
530 L = ABS((S/WS)*(Y-X))/20: IF L < 10 OR L > 110 THEN 410
540 LL = INT(L)
550 REM MESSAGE
560 PRINT
570 PRINT"YOU WILL BE DROPPING ROCKET BOMBS"
```

```
580 PRINT"MADE FROM A NEW ALLOY."
585 PRINT"TRY TO GET WITHIN";LL + 5;"MILES OF THE"
586 PRINT T$;" BEFORE DROPPING BOMBS . . . . "
590 PRINT"THE STATUS RIGHT NOW:"
600 PRINT"SURFACE WIND SPEED:";WS
610 PRINT"OUR SPEED :";S
620 PRINT"BOMBS ON BOARD:";B
630 PRINT"MILES TO TARGET:";M
640 GOSUB 210
650 M = ABS(S-M) + 150
655 IF M < 300 THEN M = 275
660 PRINT:IF Q = 1 THEN 730
670 PRINT"WHEN YOU ENTER A COMMAND:"
680 PRINT"PRESS THE LETTER, THEN PRESS ENTER/
    RETURN."
690 PRINT"REMEMBER, TO CONTINUE FLIGHT, PRESS 'F',"
700 PRINT"THEN PRESS ENTER/RETURN."
720 GOSUB 210
730 PRINT"COMMAND";
740 INPUT B$:IF B$ < >"A" AND A = 2 THEN 1260
750 IF B$ = "A" THEN 1210
760 IF B$ = "O" THEN D = D:GOTO 845
770 IF B$ = "D" THEN 900
790 REM CONTINUE FLIGHT IF (F)
795 IF B$ <>"A" AND B$ <>"O" AND B$ <>"D" AND B$ <>
    "F" THEN PRINT"WHICH COMMAND IS THAT???":B$ ="":
    GOTO 730
800 IF M > 51 THEN M = M-INT(50*RND(0) + 1)
805 IF M < 50 THEN M = M-1:S = S-10
806 IF S < 800 THEN S = 800
810 PRINT"MILES TO TARGET:";M
820 PRINT"OUR SPEED:";S
830 PRINT"SURFACE WIND SPEED:";WS-5
840 PRINT:B$=" " :GOTO 730
845 IF D=2 THEN PRINT"THEY'RE ALREADY OPEN !!":GOTO
    840
850 PRINT"OPENING BOMBAY DOORS . . . . "
860 FOR I=1 TO S:NEXT
870 X=Y-10:Y=X+5
880 PRINT"BOMBAY DOORS OPEN . . . . "
890 D=2:GOTO 840
900 IF D < > 2 THEN 1140:REM DOORS NOT OPEN
```

```
910 PRINT"HOW MANY BOMBS TO BE RELEASED";
920 INPUT R
930 IF R > B THEN PRINT"YOU ONLY HAVE";B;"BOMBS LEFT
    !!":GOTO 920
940 PRINT"IF YOU ARE READY"
950 PRINT"TO DROP";R;"BOMBS, PRESS ENTER/RETURN";
960 INPUT X$
965 PRINT"BOMBS A W W W A A Y !!"
970 FOR Q=M TO S
980 X=X-1:Y=Y-1:IF INT((X+Y)/WS)+M <= 0 THEN 1010
990 IF INT((X+Y)/WS)+M=LL THEN 1090
995 IF LL > 15 THEN LL=LL-2:IF LL < INT((X+Y)/WS)+M THEN
    1010
1000 NEXT
1010 REM MISSED
1020 PRINT
1030 PRINT"YOU MISSED THE ";T$;:IF Z=1 THEN PRINT"
     (AGAIN).":GOTO 1040
1035 PRINT:Z=1
1040 IF LL < 20 THEN PRINT"BUT CAME CLOSE TO THE ";Q$
1050 B=B-R:IF B <= 0 THEN 1070
1060 PRINT"WE STILL HAVE";B;"BOMBS LEFT....":GOTO 1080
1070 PRINT"YOU'VE USED YOUR AMOUNT OF BOMBS TOO
     !!":GOTO 1350
1080 Q=1:RESTORE
1085 PRINT"BOMBAY DOORS CLOSED . . . . . ":GOTO 280
1090 REM ON TARGET
1100 PRINT
1110 PRINT"EXCELLENT BOMBING !!"
1120 PRINT"WE DON'T HAVE TO WORRY ABOUT THE ";T$;"
     NOW."
1130 S$=T$:GOTO 1050
1140 REM DOORS NOT OPEN
1150 PRINT
1160 PRINT"YOU'VE JUST DROPPED THE BOMBS -- WITHOUT
     OPENING"
1170 PRINT"THE DOORS . . . . . TURKEY !!"
1180 PRINT
1190 PRINT"ABORT MISSION TO DEFUSE BOMBS . . . . "
1200 A=2:GOTO 730
1210 REM ABORT MISSION
1220 PRINT
```

```
1230 PRINT"YOU'VE ABORTED THE MISSION . . . . . ."
1240 PRINT"JUST REMEMBER WHY, SO THE SAME"
1250 PRINT"MISTAKE WON'T HAPPEN AGAIN !!"
1255 GOTO 1350
1260 REM DID NOT ABORT
1270 CLS
1280 PRINT
1290 PRINT"B B B B R R R R O O O O O M M !!!!"
1300 PRINT"YOU WERE ORDERED TO ABORT THE MISSION"
1310 PRINT"AND YOU DIDN'T . . . . "
1320 PRINT"START FLAPPING YOUR WINGS, WE HAVEN'T"
1330 PRINT"ANY PARACHUTES ! ! "
1350 REM PLAY AGAIN ?
1360 GOSUB 210
1370 PRINT"WOULD LIKE TO TRY AGAIN TODAY";
1380 INPUT A$
1390 IF A$ < >"YES" THEN 1410
1400 Z=O:Q=0:RESTORE:GOTO 10
1410 PRINT
1420 PRINT"TRY TO BE MORE CONSERVATIVE WITH"
1430 PRINT"THE BOMBS NEXT TIME!"
1440 END
```

General

You are the General of an army. You have 20,000 men at your command. You must beat the enemy force before they wipe you out. You must destroy 12,000 enemy troops while you have at least 50 troops remaining to win. (Note: When entering the positions, enter only the first letter, i.e., N, E, S, W.)

Sample Run

```
                    *GENERAL*
DO YOU NEED INSTRUCTIONS LISTED? YES
YOU ARE THE GENERAL OF AN ARMY. YOU'LL HAVE 20,000
MEN UNDER YOUR TOTAL COMMAND.THE COMPUTER WILL
SELECT AN AMOUNT OF ENEMY TROOPS PER RUN AND PLACE
THEM IN
A RANDOM AREA. THE COMPUTER WILL THEN DECIDE IF IT
WILL OUTPUT THE ENEMY'S X AREA. THE X AREA
WILL RANGE FROM 1 TO 10.
TO CONTINUE INSTRUCTIONS PRESS ENTER/RETURN
YOU'LL PLACE YOUR MEN AT POSITIONS - NORTH, EAST
SOUTH OR WEST, AND SELECT AN AREA (BETWEEN 1 AND 10).
YOU'LL THEN INPUT AN AMOUNT OF MEN TO PLACE
AT THAT AREA.
```

IF YOU MATCH THE ENEMY'S POSITION/AREA, THEY'LL BE
IN FOR A SURPRISE. IF YOU MISS, YOU'LL LOSE A
SIZEABLE AMOUNT OF MEN.
IF YOU CAPTURE 12,000 ENEMY TROOPS YOU WIN, IF YOUR
TROOPS DECREASE BELOW 50—YOU'LL LOSE
TO BEGIN PRESS ENTER/RETURN

X POSITION IS BETWEEN 1 AND 10
I WILL RELEASE THE ENEMY'S X AREA, THIS TIME,
BUT YOU MUST SELECT THEIR POSITION
THEY'RE LOCATED AT AREA 3 BUT THIS IS ONLY
TEMPORARY AND COULD QUICKLY CHANGE.
WHERE DO YOU WANT YOUR TROOPS LOCATED?
INDICATE POSITION (N,E,S,W)?N
INPUT AREA? 7
AND HOW MANY OF YOUR TROOPS DO YOU WANT
LOCATED AT THIS AREA? 400
WELL, YOU'VE ENTERED THE POSITION
AND AREA CORRECTLY!!
I'M SORRY. THE ENEMY'S TROOP'S WERE 431
AND YOU ONLY SENT 400 TO THAT AREA.
ONLY 27 OF YOUR TROOPS RETREATED . . . . .
AS THEY FIGURED THEY WERE OUT-NUMBERED.
TOTAL BATTLES: 1
THE ENEMY WAS AT POSITION: NORTH
AND LOCATED AT AREA: 7
YOUR STATUS . . . . . THIS BATTLE:
TROOPS LOST: 373
TROOPS THAT RETREATED: 27
TROOPS THAT DESERTED: 0
TROOPS LEFT TO BATTLE ARE: 19627
GENERAL, THE REASON YOU LOST THIS BATTLE WAS -
THE ENEMY FORCES WERE 431 OUT-NUMBERING YOURS !
PRESS ENTER/RETURN
I WILL NOT RELEASE THE ENEMY'S AREA,
BUT I WILL TELL YOU THEIR ATTACKING FORCES ARE
GREATER THAN 456 TROOPS: WATCH THE ENEMY!!
WHERE DO YOU WANT YOUR TROOPS LOCATED?
INDICATE POSITION (N,E,S,W)?E
INPUT AREA? 2
AND HOW MANY TROOPS DO YOU WANT
LOCATED AT THIS AREA? 500
TOTAL BATTLES: 2

THE ENEMY WAS AT POSITION: EAST
AND LOCATED AT AREA: 7
YOUR STATUS . . . . . THIS BATTLE:
TROOPS LOST: 385
TROOPS THAT RETREATED: 0
TROOPS THAT DESERTED: 14

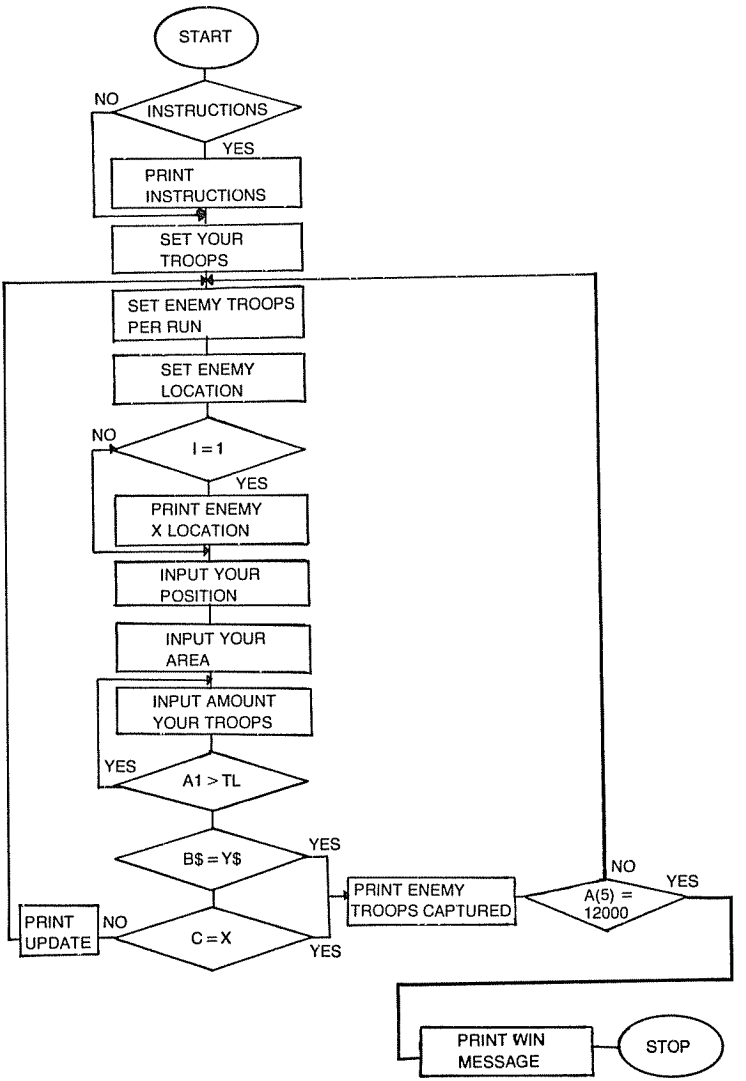


Fig. 2-2. The flowchart for General.

```
TROOPS LEFT TO BATTLE ARE: 19228
PRESS ENTER/RETURN
I WILL RELEASE THE ENEMY'S X AREA, THIS TIME,
BUT YOU MUST SELECT THEIR POSITION.
THEY'RE LOCATED AT AREA 4 BUT THIS IS ONLY
TEMPORARY AND COULD QUICKLY CHANGE.
WHERE DO YOU WANT YOUR TROOPS LOCATED?
INDICATE POSITION (N, E, S, W)?W
AND HOW MANY TROOPS DO YOU WANT
LOCATED AT THIS AREA? 600
TOTAL BATTLES: 3
THE ENEMY WAS AT POSITION: EAST
AND LOCATED AT AREA: 3
YOUR STATUS . . . . . THIS BATTLE:
TROOPS LOST: 550
TROOPS THAT RETREATED: 0
TROOPS THAT DESERTED: 12
TROOPS LEFT TO BATTLE ARE: 18666
PRESS ENTER/RETURN
I WILL GIVE YOU THE ENEMY'S X AREA, THIS TIME,
BUT YOU MUST SELECT THEIR POSITION.
THEY'RE LOCATED AT AREA 9 BUT THIS IS ONLY
TEMPORARY AND COULD QUICKLY CHANGE.
WHERE DO YOU WANT YOUR TROOPS LOCATED?
INDICATE POSITION (N,E,S,W)? E
INPUT AREA? 9
AND HOW MANY OF YOUR TROOPS DO YOU WANT
LOCATED AT THIS AREA? 500
WELL, YOU'VE ENTERED THE POSITION
AND AREA CORRECTLY!!
YOU CAPTURED AN AMOUNT OF 487
ENEMY TROOPS, SENT OUT ON THIS BATTLE.
BUT YOU COULD BE IN FOR ANOTHER ATTACK.
TOTAL ENEMY CAPTURED OR LOST: 487
STOP
```

See Fig. 2-2 for the flow chart for this program.

Program Listing

```
 1 DIM B$(100)
 5 CLS:PRINT:PRINT:PRINT TAB(10) ;"* GENERAL *"
 7 PRINT:PRINT
10 INPUT"DO YOU NEED INSTRUCTIONS LISTED" ; A$
```

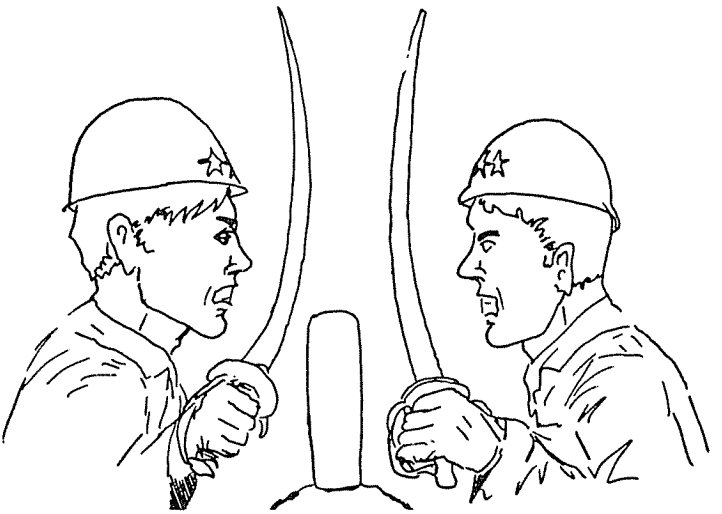
```
12 IF A$="YES" THEN GOSUB 700
20 CLS:PRINT:E(5)=0:B=0:RANDOM
23 PRINT TAB(8); "X POSITION IS BETWEEN 1 AND 10"
30 REM YOUR TROOPS
40 A=2E+04
50 REM ENEMY TROOPS PER RUN
60 E1=INT(500*RND(0)+50)
70 IF E1 < 350 THEN 60
75 E3=E1-INT(200*RND(0)+10):E2=E1
80 REM SET ENEMY AREA, POSITION
90  X=INT(10*RND (0)+1)
95  Y=INT(4*RND(0)+1): ON Y GOTO 100,110,120,130
100 Y$="NORTH":GOTO 140
110 Y$="EAST":GOTO 140
120 Y$="SOUTH":GOTO 140
130 Y$="WEST"
140 I=INT(2*RND(0)+1)
145 ON I GOTO 150,210
150 PRINT
155 PRINT"I WILL RELEASE THE ENEMY'S X AREA, THIS TIME,"
160 PRINT"BUT YOU MUST SELECT THEIR POSITION."
170  PRINT"THEY'RE LOCATED AT AREA";X;"BUT THIS IS ON-
     LY"
180 PRINT"TEMPORARY AND COULD QUICKLY CHANGE."
190 IF X < 5 THEN X=INT(10*RND(0)+1)
200 GOTO 235
210 PRINT
215 PRINT"I WILL NOT RELEASE THE ENEMY'S AREA,"
220 PRINT"BUT I WILL TELL YOU THEIR ATTACKING FORCES
    ARE"
230  PRINT"GREATER THAN";E3;"TROOPS; WATCH THE
     ENEMY!!"
235 PRINT
240 PRINT"WHERE DO YOU WANT YOUR TROOPS LOCATED?"
250 PRINT"INDICATE POSITION (N,E,S,W)";
255 INPUT B$
260 PRINT"INPUT AREA";
270 INPUT C
280 PRINT"AND HOW MANY OF YOUR TROOPS DO YOU WANT"
285 PRINT"LOCATED AT THIS AREA";
290 INPUT A1
295 IF D2 > 0 AND A1 > TL THEN PRINT"YOU HAVEN'T GOT THAT
    MANY TROOPS !!"
```

```
    : GOTO 290
300 REM UPDATE
320 B=B+1
325 IF B$=LEFT$(Y$,1) AND C=X THEN 340
330 GOSUB 1000:GOTO 460
340 PRINT:PRINT"WELL, YOU'VE ENTERED THE POSITION"
350 PRINT"AND AREA  CORRECTLY!!"
360 IF E2 > A1 THEN 900
370 E(5)=E2+E(5) :IF E(5) >12E+03 THEN 960
380 PRINT"YOU'VE CAPTURED AN AMOUNT OF"; E1
390 PRINT"ENEMY TROOPS, SENT OUT ON THIS BATTLE."
400 PRINT"BUT YOU COULD BE IN FOR ANOTHER ATTACK."
405 PRINT"TOTAL ENEMY CAPTURED OR LOST:";E5
410 TL=TL+A1: GOTO 50
460 PRINT:PRINT"TOTAL BATTLES:" ;B
470 PRINT"THE ENEMY WAS AT POSITION:" ;Y$
480 PRINT"AND LOCATED AT AREA:" ;X
481 PRINT:PRINT"YOUR STATUS . . . . . THIS BATTLE:"
482 PRINT"TROOPS LOST:" ;TT
483 PRINT"TROOPS THAT RETREATED:" ;R1
484 PRINT"TROOPS THAT DESERTED:" ;D
485 PRINT"TROOPS LEFT TO BATTLE ARE:" ;TL
486 IF B$=LEFT$(Y$,1) AND C=X AND E2 > A1 THEN 488
487 GOTO 495
488 PRINT:PRINT"GENERAL, THE REASON YOU LOST THIS
    BATTLE WAS -"
490 PRINT"THE  ENEMY  FORCES  WERE";  E2;"  OUT-
    NUMBERING YOURS !"
495 PRINT:INPUT"PRESS ENTER/RETURN";X:CLS:IF TL <  50
    THEN 520
500 R1=0:GOTO 50
520 T=INT(4*RND(0)+1):ON T GOTO  530, 560, 590
530 PRINT:PRINT"YOU'VE LOST THIS BATTLE, HAD";B;
    "TRIES, AND"
540 PRINT"DIDN'T COME ALL THAT CLOSE, WITH THAT I SAY
    . . . SO LONG !"
550  GOTO 620
560 PRINT:PRINT"ALL I CAN SAY IS . . . . MAYBE NEXT TIME
    YOU'LL WATCH"
570 PRINT"THEIR ADVANCE MORE CLOSELY."
575 PRINT"YOU'VE LOST THE BATTLE GENERAL AND ALL
    YOUR MEN."
```

```
576 PRINT"TO BEAT IT ALL YOU HAD";B;"TRIES . . . . ."
580 GOTO 620
590 PRINT:PRINT"AWAY . . . AWAY, ANCHORS THAT IS, MAYBE
    YOU SHOULD"
600 PRINT"TAKE UP SAILING; AT LEAST YOU COULD TAKE A
    SWIM."
610 PRINT"SO LONG, PRIVATE !!"
620 PRINT:PRINT
630 PRINT"WOULD YOU LIKE TO BATTLE THE COMPUTER'S
    FORCES AGAIN";
650 INPUT A$
660 IF A$="YES" THEN A=0:TL=0:TT=0:D=0:D2=0:GOTO 10
665 PRINT
670 PRINT"I DIDN'T THINK YOU COULD STAND ANOTHER"
680 PRINT "BATTLE THIS EARLY IN THE DAY . . . . "
690 END
700 PRINT
710 PRINT"YOU ARE THE GENERAL OF AN ARMY, YOU'LL HAVE
    20,000"
720 PRINT"MEN UNDER YOUR TOTAL COMMAND. THE COM-
    PUTER WILL SELECT "
730 PRINT"AN AMOUNT OF ENEMY TROOPS PER RUN AND
    PLACE THEM IN"
740 PRINT"A RANDOM AREA. THE COMPUTER WILL THEN DE-
    CIDE IF IT"
750 PRINT"WILL OUTPUT THE ENEMY'S X AREA. THE X AREA
    WILL"
760 PRINT"RANGE FROM 1 TO 10."
765 PRINT:INPUT"TO CONTINUE INSTRUCTIONS PRESS
    ENTER/RETURN";X:CLS
767 PRINT:PRINT
770 PRINT"YOU'LL PLACE YOUR MEN AT POSITIONS - NORTH,
    EAST"
780 PRINT"SOUTH OR WEST, AND SELECT AN AREA (BETWEEN
    1 AND 10)."
790 PRINT"YOU'LL THEN INPUT AN AMOUNT OF MEN TO
    PLACE"
800 PRINT"AT THAT AREA."
810 PRINT"IF YOU MATCH THE ENEMY'S POSITION/AREA,
    THEY'LL BE"
820 PRINT"IN FOR A SURPRISE. IF YOU MISS, YOU'LL LOSE A"
825 PRINT"SIZEABLE AMOUNT OF MEN."
```

```
826 PRINT
827 PRINT"IF YOU CAPTURE 12,000 ENEMY TROOPS YOU WIN,
    IF YOUR"
828 PRINT"TROOPS DECREASE BELOW 50—YOU'LL LOSE."
830 PRINT:INPUT"TO BEGIN PRESS ENTER/RETURN";X:CLS
840 RETURN
900 R1=INT(30*RND(0)+5):IF R1 <20 THEN 900
910 PRINT
915 PRINT"I'M SORRY. THE ENEMY'S TROOPS WERE";E1
920 PRINT"AND YOU ONLY SENT";A1;"TO THAT AREA."
925 PRINT"ONLY";R1;"OF YOUR TROOPS RETREATED . . . . ."
930 PRINT"AS THEY FIGURED THEY WERE OUT-NUMBERED."
950 TT=A1-R1:F=1:FOR I=1 TO 2500:NEXT
955 GOSUB 1000:GOTO 460
960 PRINT
965 PRINT"GOOD SHOW GENERAL, YOU'VE FRACTURED THE
    ENTIRE"
970 PRINT"ENEMY FORCE OF";E(5);"MEN AND YOUR TROOPS
    ARE"
980 PRINT"RESTED UP AND READY TO GO AGAIN!!
990 GOTO 620
1000  REM UPDATE
1005  IF F > 0 THEN 1040
1010  D=INT(10*RND(0)+5)
1020  TT=A1-INT(150*RND(0))
1030  IF A1 < 150 THEN TT=A1-INT(50*RND(0))
1040  A=A-TT-D
1050  TL=A
1060  F=0:D2=1:RETURN
```

General II



The game where you and your opponent will battle one another until one of you loses all his men. You'll input where you want your men to be located, then the amount of men. The computer will scramble positions, areas and men, just in case your opponent was watching the video when you entered all the information. Then, with a little common sense (and mostly guessing), your opponent will station his men to try and match yours. If he misses he'll lose an undetermined amount of men. If he's successful — you'll lose all men put at that position !!

Good Luck . . . . . Generals !!

Sample Run

```
THIS IS THE GAME OF GENERAL II, WHICH REQUIRES
TWO PLAYERS. MOST INSTRUCTIONS WILL BE PRINTED AS
YOU PROGRESS THROUGH THE GAME. IT WILL BEGIN BY
ASKING YOUR LAST NAMES, THEN EACH OF YOU WILL INPUT A
NUMBER BETWEEN 0 AND 5. THE ONE THAT HAS SELECTED
THE NUMBER THAT MATCHES THE COMPUTER'S RANDOM
NUMBER WILL GO FIRST . . . . .
PRESS ANY KEY
PLAYER #1 LAST NAME? CUSTER
PLAYER #2 LAST NAME? CHANCE
```

```
CUSTER WHAT IS YOUR GUESS (0-5)? 3
CHANCE WHAT IS YOUR GUESS (0-5)? 5

LET'S TRY IT AGAIN-
CUSTER WHAT IS YOU GUESS (0-5)? 4
CHANCE WHAT IS YOUR GUESS (0-5)? 1
CUSTER GOES FIRST THIS GAME.
GENERAL CUSTER, YOU HAVE 10000 MEN TO POSITION
ON THE BATTLE FIELD. THE POSITIONS AND AREA CODES
CAN BE USED MORE THAN ONCE.
THESE ARE THE POSITIONS:
NORTH
EAST
SOUTH
WEST
HERE ARE THE AREA CODES:
10 1 6 5 8 6 7 5 10 0
PRESS ANY KEY TO CONTINUE
GENERAL CUSTER WHEN YOU INPUT:
INPUT THE LETTER ONLY FOR POSITIONS (N,E,S,W)
THEN INPUT THE CODE NUMBER.
THE COMPUTER WILL GO ON AUTOMATIC SCRAMBLE, SO YOUR
OPPONENT WON'T KNOW WHERE THEY ARE AT.
AFTER YOU INPUT FOUR POSITIONS AND CODES,
YOU'LL INPUT FOUR DIFFERENT AMOUNTS OF MEN TO BE
LOCATED AT THESE POSITIONS. THESE MEN WILL ALSO
GO ON AUTOMATIC SCRAMBLE.
INPUT THE POSITIONS AND CODES
? W
??   5
? E
??   8
? N
??  10
? S
??   9
PRESS ANY KEY TO CONTINUE
W    5
E    8
N   10
S    9
IS THIS THE CORRECT LISTING? YES
```

SCRAMBLING . . . . . .
SCRAMBLE COMPLETE.
PRESS ANY KEY TO CONTINUE
HOW MANY MEN DO YOU WANT AT POSITION 1
? 300
HOW MANY MEN DO YOU WANT AT POSITION 2
? 375
HOW MANY MEN DO YOU WANT AT POSITION 3
? 500
HOW MANY MEN DO YOU WANT AT POSITION 4
? 700
THAT'S 1875 OF YOUR MEN . . . I HOPE YOUR STRATEGY PAYS OFF.
PRESS A KEY TO CONTINUE
GENERAL CUSTER YOUR MEN HAVE BEEN POSITIONED AS REQUESTED
TIME TO TELL GENERAL CHANCE TO READY HIS FORCES - THE BATTLE IS ABOUT TO BEGIN . . . . .
PRESS A KEY TO CONTINUE
SIR . . . GENERAL CUSTER HAS POSITIONED HIS TROOPS IN FOUR DIFFERENT AREAS . . . . .
YOU MUST NOW INPUT TO THE COMPUTER WHERE YOU THINK THE BATTLE WILL TAKE PLACE (INPUT POSITIONS AND AREAS). THEIR WILL BE FOUR BATTLES PER SET.
WHICH POSITION AND AREA SHALL YOUR TROOPS
BE STATIONED.
? W
?? 8
VERY WELL GENERAL, HOW MANY TROOPS SHALL BE
SENT TO THAT AREA? 175
DUMMY . . . . .THAT WASN'T ENOUGH ! !
SORRY GENERAL . . . . I HATE TO TELL YOU THIS BUT YOU'VE MISCALCULATED YOUR OPPONENT. HE HAS JUST CAPTURED 35 OF YOUR TROOPS . . . . .
WHICH POSITION AND AREA SHALL YOUR TROOPS
BE STATIONED.
? E
?? 5
VERY WELL GENERAL, HOW MANY TROOPS SHALL BE
SENT TO THAT AREA? 400
SORRY GENERAL . . . . I HATE TO TELL YOU THIS BUT YOU'VE MISCALCULATED YOUR OPPONENT. HE HAS JUST CAPTURED

```
394 OF YOUR TROOPS . . . . .
WHICH POSITION AND AREA SHALL YOUR TROOPS
BE STATIONED.
? S
??6
VERY WELL GENERAL, HOW MANY TROOPS SHALL BE
SENT TO THAT AREA? 1000
WELL GENERAL SEEMS YOU HAD THE BETTER HAND ON THIS
BATTLE. YOU OVER TOOK THE OTHER FORCES AND GOT A
TOTAL OF 700 TROOPS . . . . CONGRATULATIONS !
WHICH POSITION AND AREA SHALL YOUR TROOPS
BE STATIONED.
? N
?? 10
VERY WELL GENERAL, HOW MANY TROOPS SHALL BE
SENT TO THAT AREA? 400
SORRY GENERAL . . . . I HATE TO TELL YOU THIS BUT YOU'VE
MISCALCULATED YOUR OPPONENT. HE HAS JUST CAPTURED
320
OF YOUR TROOPS . . . . .
NUMBER OF BATTLES COMPLETED: 4
NUMBER OF ENEMY TROOPS CAPTURED: 700
NUMBER OF YOUR TROOPS LOST OR CAPTURED: 749
NUMBER OF YOUR TROOPS DESERTED: 14
WELL GENERAL CUSTER LOOKS LIKE IT'S GENERAL CHANCE'S
TURN TO TAKE OVER THE CONTROLS AND PLACE HIS MEN.
GENERAL CUSTER HAS 9300 TROOPS LEFT.
GENERAL CHANCE HAS 9237 TROOPS LEFT.
PRESS A KEY TO CONTINUE
GENERAL CHANCE YOU HAVE 9237 MEN TO POSITION
ON THE BATTLE FIELD.
STOP
```

Depending on how many men you or your opponent put into a battle and lose, you could battle for quite awhile. This sample run only contained 4 battles, the game doesn't end until either you or your opponent have 0 (zero) men left. So use some strategy when placing your men!! See Fig. 2-3 for the flowchart for this program.

Program Listing

```
800  CLS:DIM P$(100)
810  PRINT:PRINT"THIS IS THE GAME OF GENERAL II, WHICH
     REQUIRES"
```

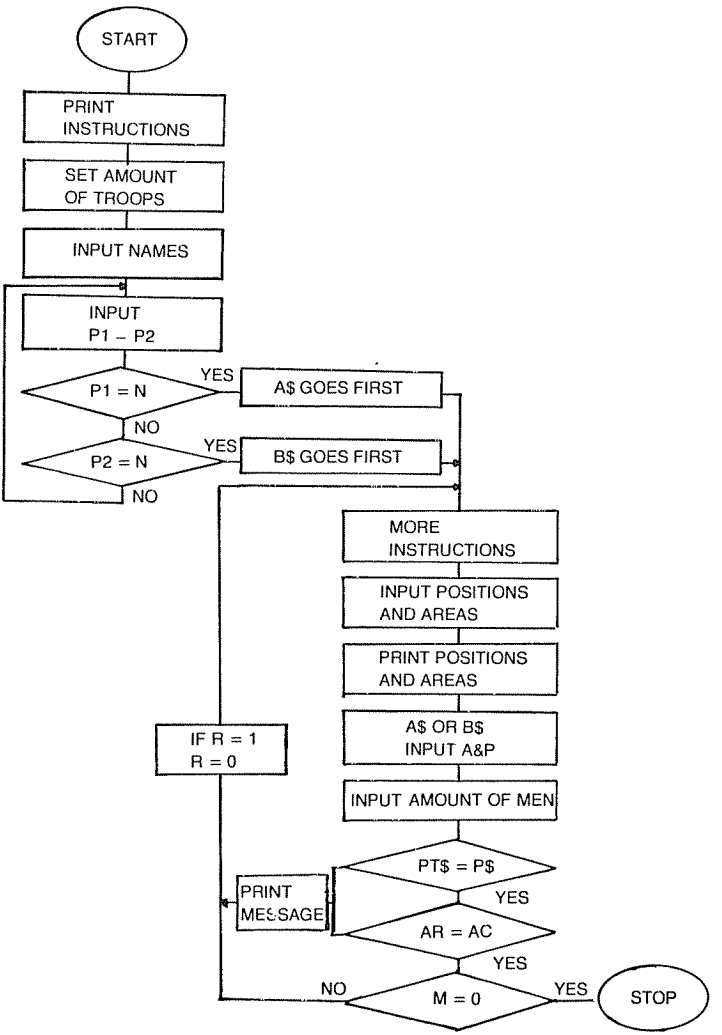


Fig. 2-3. The flowchart for General II.

820 PRINT"TWO PLAYERS. MOST INSTRUCTIONS WILL BE PRINTED AS"

830 PRINT"YOU PROGRESS THROUGH THE GAME. IT WILL BEGIN BY"

```
840 PRINT"ASKING YOUR LAST NAMES, THEN EACH OF YOU
    WILL INPUT A"
850 PRINT"NUMBER BETWEEN 0 AND 5. THE ONE THAT HAS
    SELECTED"
860 PRINT"THE NUMBER THAT MATCHES THE COMPUTER'S
    RANDOM"
870 PRINT"NUMBER WILL GO FIRST . . . . . "
880 PRINT:PRINT"PRESS ANY KEY"
890 N$=INKEY$:IF N$=" " THEN 890
900 CLS:PRINT
990 T=10000:TT=10000:C$="NUMBER"
995 IF TR >0 THEN 1040
1000 REM GAME FOR TWO PLAYERS
1010 REM INPUT PLAYERS LAST NAME
1020 INPUT"PLAYER # 1 LAST NAME:";A$
1030 INPUT"PLAYER # 2 LAST NAME";B$
1040 REM NOW GET RANDOM NUMBER
1050 REM TO SET FIRST PLAYER
1060 N=INT(6*RND(0))
1070 PRINT A$;" WHAT IS YOUR GUESS (0-5).";
1080 INPUT P1
1085 PRINT
1090 PRINT B$;" WHAT IS YOUR GUESS (0-5)";
1100 INPUT P2
1105 IF P1 <> N AND P2 <> N PRINT"LET'S TRY AGAIN.":GOTO
    1070
1110 IF P1 < > N THEN PRINT B$;"GOES FIRST THIS
    GAME.":GOTO 1125
1120 IF P2 < > N THEN PRINT A$;"GOES FIRST THIS
    GAME.":R=1
1125 PRINT:IF R=1 PRINT"GENERAL ";A$;", YOU HAVE";T;:
    GOTO 1135
1130 PRINT"GENERAL ";B$;", YOU HAVE";TT;
1135 PRINT"MEN TO POSITION"
1140 PRINT"ON THE BATTLE FIELD. THE POSITIONS AND
    AREA CODES"
1145 PRINT"CAN BE USED MORE THAN ONCE."
1150 REM GET POSITIONS
1155 PRINT"THESE ARE THE POSITIONS:"
1160 FOR I=1 TO 4:READ P$(I) :NEXT
1170 DATA NORTH,EAST,SOUTH,WEST
1180 REM GET AREA CODES
```

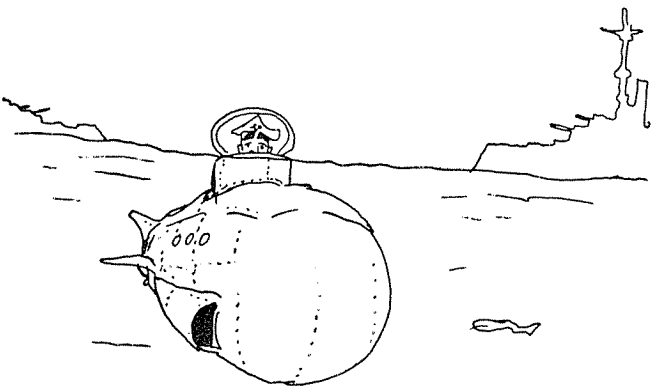
```
1185 X=0
1190 C=INT(10*RND(0)+1)
1200 C(X)=C
1205 X=X+1:IF X < > 10 THEN 1190
1210 REM PRINT POSITIONS—CODES
1220 FOR I=1 TO 4
1230 PRINT P$(I)
1240 NEXT:PRINT
1250 PRINT"HERE ARE THE AREA CODES:"
1260 FOR I=1 TO 10:PRINT C(I)" ";:NEXT
1265 GOSUB 1500
1270 IF R=1 PRINT"GENERAL ";A$;":GOTO 1280
1275 PRINT"GENERAL ";B$;
1280 PRINT"WHEN YOU INPUT:"
1284 PRINT"INPUT THE LETTER ONLY FOR POSITIONS
     (N,E,S,W)"
1285 PRINT"THEN INPUT THE CODE NUMBER."
1290 PRINT"THE COMPUTER WILL GO ON AUTOMATIC
     SCRAMBLE, SO YOUR"
1300 PRINT"OPPONENT WON'T KNOW WHERE THEY ARE AT."
1310 PRINT"AFTER YOU INPUT FOUR POSITIONS AND CODES"
1320 PRINT"YOU'LL INPUT FOUR DIFFERENT AMOUNTS OF
     MEN TO BE"
1330 PRINT"LOCATED AT THESE POSITIONS. THESE MEN WILL
     ALSO"
1340 PRINT"GO ON AUTOMATIC SCRAMBLE."
1350 PRINT:PRINT"INPUT THE POSITIONS AND CODES"
1360 FOR I=1 TO 4
1370 INPUT PT$(I),AC(I)
1380 NEXT
1385 GOSUB 1500
1390 FOR I=1 TO 4:PRINT PT$(I),AC(I):NEXT
1400 PRINT:PRINT"IS THIS THE CORRECT LISTING";
1410 INPUT Z$
1420 IF Z$ < > "YES" THEN PRINT"LET'S TRY IT AGAIN,
     THEN.":GOTO 1350
1430 REM SCRAMBLE POSITIONS AND AREAS
1440 PRINT:PRINT"SCRAMBLING . . . . . "
1460 PT$(6)=PT$(3):PT$(8)=PT$(4):PT$(7)=PT$(2):PT$(9)=PT$(1)
1470 AC(6)=AC(3):AC(8)=AC(4):AC(7)=AC(2):AC(9)=AC(1)
```

```
1490 FOR I=1 TO 1500:NEXT:PRINT"SCRAMBLE COM-
     PLETE.":GOSUB 1500
1495 GOTO 1530
1500 PRINT:PRINT"PRESS A KEY TO CONTINUE"
1510 X$=INKEY$:IF X$=" " THEN 1510
1520 CLS:PRINT:RETURN
1530 FOR I=1 TO 4
1540 PRINT"HOW MANY MEN DO YOU WANT AT POSITION";I
1550 INPUT M(I)
1555 NN=M(I)+NN
1556 IF R=0 AND NN > TT THEN PRINT"YOU HAVEN'T THAT
     MANY TROOPS GENERAL ";B$:NN=0:GOTO 1530
1557 IF R=1 AND NN > T THEN PRINT"YOU HAVEN'T THAT
     MANY TROOPS GENERAL ";A$:NN=0:GOTO 1530
1565 M(6)=M(3):M(8)=M(4):M(7)=M(2):M(9)=M(1):REM
     SCRAMBLE MEN
1570 PRINT:PRINT"THAT'S";NN;"OF YOUR MEN . . .";:IF NN
     >500 THEN PRINT "I HOPE YOUR STRATEGY PAYS OFF."
1580 GOSUB 1500
1590 IF R=1 THEN PRINT"GENERAL ";A$;:GOTO 1600
1595 PRINT"GENERAL ";B$;
1600 PRINT "YOUR MEN HAVE BEEN POSITIONED AS RE-
     QUESTED."
1610 IF R < > 1 GOTO 1625
1620 PRINT"TIME TO TELL GENERAL ";B$;" TO READY HIS
     FORCES—THE" :GOTO 1630
1625 PRINT"TIME TO TELL GENERAL ";A$;" TO MAN THE
     CONTROLS—THE"
1630 PRINT"BATTLE IS ABOUT TO BEGIN . . . . . "
1640 GOSUB 1500:IF R < > 1 GOTO 1650
1645 IF R=1 PRINT"SIR . . . GENERAL ";A$;" HAS POSITIONED
     HIS TROOPS IN":GOTO 1660
1650 PRINT"SIR . . . GENERAL ";B$;" HAS POSITIONED HIS
     TROOPS IN"
1660 PRINT"FOUR DIFFERENT AREAS . . . . "
1670 PRINT:PRINT"YOU MUST NOW INPUT TO THE COMPUTER
     WHERE YOU"
1680 PRINT"THINK THE BATTLE WILL TAKE PLACE (INPUT
     POSITIONS"
1690 PRINT"AND AREAS). THEIR WILL BE FOUR BATTLES PER
     SET."
1700 S=0:REM S=SET
```

```
1705 FOR I=6 TO 9
1710 PRINT:PRINT"WHICH POSITION AND AREA SHALL YOUR
     TROOPS"
1720 PRINT"BE STATIONED."
1730 INPUT S$,AR
1740 PRINT"VERY WELL GENERAL, HOW MANY TROOPS SHALL
     BE"
1750 PRINT"SENT TO THAT AREA";
1760 INPUT F
1765 IF F < M(I) THEN PRINT"DUMMY . . . . THAT WASN'T
     ENOUGH !!"
1770 S=S+1
1780 FOR M=1 TO 2000:NEXT:CLS:PRINT
1790 IF S$ < > PT$(I) OR AR < > AC(I) THEN 1840
1800 PRINT"WELL GENERAL SEEMS YOU HAD THE BETTER
     HAND ON THIS"
1810 PRINT"BATTLE. YOU OVERTOOK THE OTHER FORCES
     AND GOT A"
1815 IF F <M(I) THEN M(I)=0
1820 PRINT"TOTAL OF";M(I);"TROOPS . . . .";:IF M(I) > 30
     PRINT"CONGRATULATIONS !!"
1825 IF M(I)=0 PRINT"SIR YOUR FORCES WERE LOWER THAN
     HIS . . THAT'S THE REASON YOU CAME UP WITH 0
     CAPTURED . . . ."
1830 TL=M(I)+TL:NEXT:IF S < > 4 GOTO 1710
1835 IF S=4 GOTO 1900
1840 F(I)=INT(F*RND(0)+10):DR=INT(10*RND(0)):DS=DR+DS
1850 PRINT"SORRY GENERAL . . . I HATE TO TELL YOU THIS
     BUT YOU'VE"
1860 PRINT"MISCALCULATED YOUR OPPONENT. HE HAS JUST
     CAPTURED";F(I)
1870 PRINT"OF YOUR TROOPS . . . ";:IF I<3 PRINT"WATCH
     YOUR MOVES !"
1880 IF R < > 1 THEN T=T-F(I):YY=F(I)+YY:GOTO 1890
1885 TT=TT-F(I):YT=F(I)+YT
1890 IF S=4 THEN 1900
1895 NEXT:IF S < > 4 GOTO 1710
1900 TB=S+TB:REM TB=TOTAL BATTLES
1910 REM OUTPUT STATUS OF BATTLES
1920 PRINT:PRINT C$;" OF BATTLES COMPLETED:";TB
1930 PRINT C$;" OF ENEMY TROOPS CAPTURED:";TL
1940 PRINT C$;" OF YOUR TROOPS LOST OR CAPTURED:";
```

```
1945 IF R < > 1 PRINT YY:GOTO 1955
1950 PRINT YT
1955 PRINT C$;" OF YOUR TROOPS DESERTED:";DS
1960 IF R < > 1 THEN T=T-YY-DS+YY:TT=TT-TL:GOTO 1990
1970 TT=TT-YT-DS+YT:T=T-TL
1990 IF T < 1 OR TT <1 GOTO 2070
1995 IF R=0 GOTO 2030
2000 PRINT:PRINT"WELL GENERAL ";A$;"LOOKS LIKE IT'S
     GENERAL ";B$;" 'S"
2010 IF R=1 THEN R=0
2020 GOTO 2040
2030 PRINT:PRINT"WELL GENERAL ";B$;" LOOKS LIKE IT'S
     GENERAL ";A$;" 'S":IF R=0 THEN R=1
2040 PRINT"TURN TO TAKE OVER THE CONTROLS AND PLACE
     HIS MEN."
2050 PRINT"GENERAL ";A$;" HAS";T;"TROOPS LEFT."
2055 PRINT"GENERAL ";B$;" HAS";TT;"TROOPS LEFT."
2060 GOSUB 1500: RESTORE: NN=0: TL=D: YY=0: YT=0: DS=0:
     GOTO 1125
2070 IF T < 0 THEN 2090
2080 IF TT < 0 THEN 2120
2090 PRINT:PRINT"SORRY GENERAL ";A$;" YOUR OUT OF
     TROOPS, THE BATTLES"
2100 PRINT"ARE OVER . . . UNLESS YOU AND GENERAL ";B$;"
     WOULD LIKE TO"
2110 PRINT"GO ANOTHER SET OR SO";:GOTO 2150
2120 PRINT:PRINT"SORRY GENERAL ";B$;" THAT'S THE END
     OF THIS GAME, YOUR"
2130 PRINT"OUT OF TROOPS . . . MAYBE YOU AND GENERAL
     ";A$;" WOULD LIKE"
2140 PRINT"TO SET UP SOME MORE BATTLES";
2150 INPUT Q$
2160 IF RIGHT $(Q$, 1) ="S" THEN RESTORE: CLS: NN=0:
     TL=0:  YT=0:  DS=0: TR=1: GOTO 990
2170 PRINT
2180 PRINT"I FIGURED YOU FOR A BETTER CHICKEN
     THAN THAT !!"
2190 END
```

Enemy Waters



You and your computer are in an experimental sub, your mission—destroy enemy ships. You will input the commands to fire the torpedos; the computer will print damage (if any), compute distance to ship, and if torpedo does miss the computer will tell you why.

Fasten the hatch . . . . we're about to dive!

Sample Run

```
                ***** ENEMY WATERS *****
DO YOU NEED INSTRUCTIONS? YES
IN THIS SIMULATION YOU AND THE COMPUTER
ARE IN CONTROL OF AN EXPERIMENTAL SUB.
TORPEDOS WILL BE DETONATED BY TIMERS
INSTEAD OF IMPACT.
YOU CAN SET THE TIMERS FROM 2 TO 9 SECONDS.
THE REASON FOR THE SHORT INTERVALS?
HIGH SPEED TORPEDOS.
TO EXIT PRESS ENTER/RETURN?
JUST REMEMBER . . . . .
YOUR TORPEDOS MUST EXPLODE WITHIN 25 YARDS.
MEANING THE FARTHER AWAY THE SHIP THE LONGER
INTERVAL YOU'LL NEED. THE COMPUTER WILL PRINT YOUR
AMOUNT OF TORPEDOS ON BOARD.
WHEN THE COMPUTER OUTPUTS TO YOU THE FORMAT WILL BE
COMPUTER: (MESSAGE TO YOU)
TO EXIT PRESS ENTER/RETURN?
```

***** INPUT COMMANDS *****
(1) FIRE TORPEDO ONE - 200 Y.P.S.
(2) FIRE TORPEDO TWO - 250 Y.P.S.
(3) FIRE TORPEDO THREE - 300 Y.P.S.
(4) FIRE TORPEDO FOUR - 350 Y.P.S.
(5) AMOUNT OF TORPEDOS LEFT
Y.P.S. = YARDS PER SECOND
TO EXIT PRESS ENTER/RETURN . . . .?
YOU ARE NOW BATTLE READY, AND IN ENEMY TERRITORY.
COMPUTER: OUTPUT AMOUNT OF TORPEDOS IN 5 SECONDS.
COMPUTER: 15 TORPEDOS FOR THIS MISSION.
COMPUTER: RADAR SHOWS ENEMY SHIP AT 2658 YARDS.
SHIP NOW AT 2484 YARDS AND CLOSING.
SELECT COMMAND? 4
SET TIMER FOR HOW MANY SECONDS? 7.1
FIRING TORPEDO # 4 . . . . .
AT 300 YARDS PER SECOND.
COMPUTER: OUTPUT STATUS OF TORPEDO IN 7.1 SECONDS. . . .
COMPUTER:
TORPEDO HAS MADE HEAVY DAMAGE TO SHIP . . . .
IT'S BEGINNING TO SINK ! !
COMPUTER: LARGE TANKER AT 2322 YARDS . . . .
SELECT COMMAND? 3
SET TIMER FOR HOW MANY SECONDS? 7
FIRING TORPEDO # 3 . . . . .
AT 300 YARDS PER SECOND.
COMPUTER: OUTPUT STATUS OF TORPEDO IN 7 SECONDS.
COMPUTER:
YOUR TIMER SETTING WAS OFF, TORPEDO EXPLODED
PREMATURELY . . . NOTE DISTANCE TO SHIP BEFORE SETTNG
TIMER. TORPEDO EXPLODED 222 YARDS THIS SIDE OF SHIP.
DISTANCE TO SHIP CLOSING, NOW AT 2134 YARDS.
SELECT COMMAND? 3
SET TIMER FOR HOW MANY SECONDS? 7
FIRING TORPEDO # 3 . . . . .
AT 300 YARDS PER SECOND.
COMPUTER: OUTPUT STATUS OF TORPEDO IN 7 SECONDS.
COMPUTER:
YOUR TIMER SETTING WAS OFF, TORPEDO EXPLODED
PREMATURELY . . . NOTE DISTANCE TO SHIP BEFORE SETTING
TIMER. TORPEDO EXPLODED 34 YARDS THIS SIDE OF SHIP.
DISTANCE TO SHIP CLOSING, NOW AT 1932 YARDS.

SELECT COMMAND? 2
SET TIMER FOR HOW MANY SECONDS? 8
FIRING TORPEDO # 2 . . . . .
AT 250 YARDS PER SECOND.
COMPUTER: OUTPUT STATUS OF TORPEDO IN 8 SECONDS.
COMPUTER:

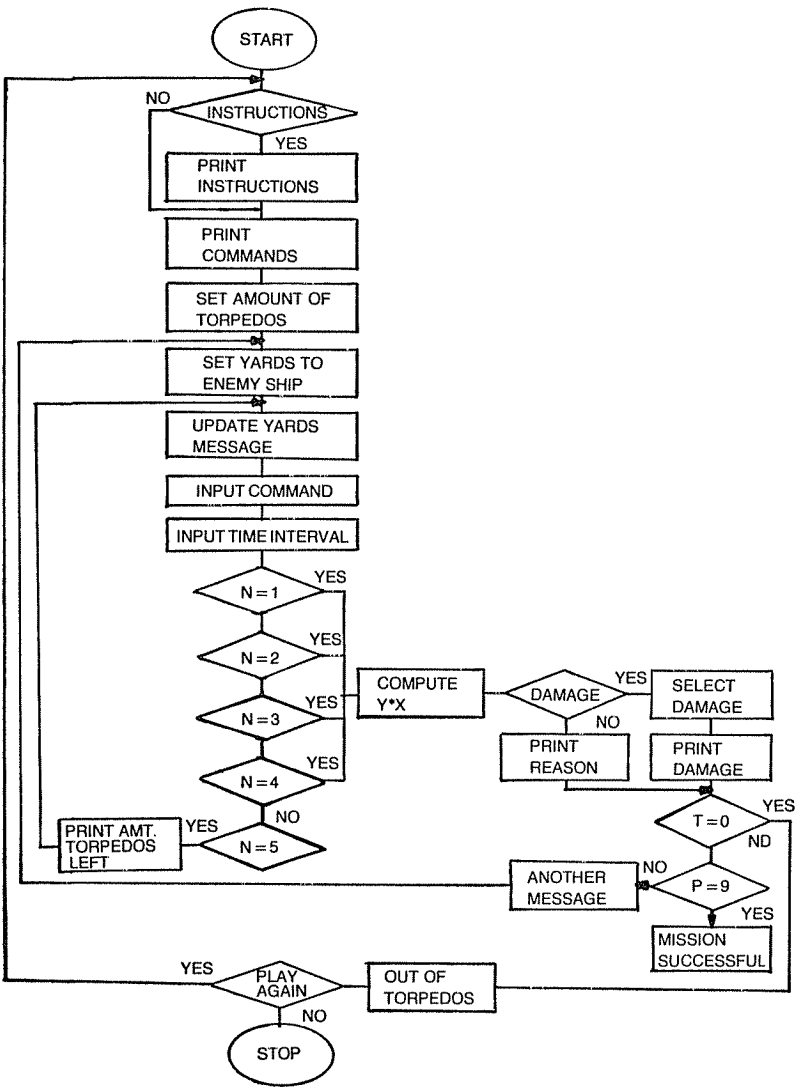


Fig. 2-4. The flowchart for Enemy Waters.

```
CHECK YOUR TIMING RATE . . . . THAT TORPEDO HAS JUST
PASSED UP THE SHIP AND EXPLODED 68 YEARS PAST
IT !! KEEP THIS UP AND YOU'LL END UP ON
THE BOTTOM WITH ALL THE FISHES . . . . .
SHIP NOW AT 1785 YARDS, CLOSING FAST.
SELECT COMMAND? 5
AMOUNT OF TORPEDOS LEFT: 11
SELECT COMMAND? 3
SET TIMER FOR HOW MANY SECONDS? 6
FIRING TORPEDO # 3 . . . . .
AT 300 YARDS PER SECOND.
COMPUTER: OUTPUT STATUS OF TORPEDO IN 6 SECONDS.
COMPUTER: TORPEDO HAS BLOWN APART MAIN DECK OF SHIP.
ANOTHER SHIP AT 2776 YARDS . . . . .
STOP
```

As you can see from the sample run, you do have to come within 25 yards to destroy the ship! I almost forgot to mention one other thing, don't let the ship come within 300 yards of your sub. If you do??? Try it and find out! See Fig. 2-4 for the flowchart for this program.

Program Listing

```
10  CLS:PRINT TAB(8) ; "***** ENEMY WATERS *****"
15  PRINT:PRINT:PRINT
20  PRINT TAB (8);"DO YOU NEED INSTRUCTIONS";
30  INPUT A$
40  IF A$="YES" THEN 60
45  IF A$="NO" THEN CLS:PRINT:PRINT:GOTO 130
50  PRINT"I AM NOT PROGRAMMED TO RESPOND TO THAT
    ANSWER . . .":GOTO 20
60  CLS:PRINT
70  PRINT"IN THIS SIMULATION YOU AND THE COMPUTER"
80  PRINT"ARE IN CONTROL OF AN EXPERIMENTAL SUB."
92  PRINT"TORPEDOS WILL BE DETONATED BY TIMERS"
93  PRINT"INSTEAD OF IMPACT."
94  PRINT"YOU CAN SET THE TIMER FROM 2 TO 9 SECONDS."
95  PRINT"THE REASON FOR THE SHORT INTERVALS ?"
96  PRINT"HIGH SPEED TORPEDOS.":GOSUB 127
97  PRINT"JUST REMEMBER . . . ."
98  PRINT"YOUR TORPEDOS MUST EXPLODE WITHIN 25
    YARDS."
```

```
99 PRINT"MEANING THE FARTHER AWAY THE SHIP THE
   LONGER"
100 PRINT"INTERVAL YOU'LL NEED. THE COMPUTER WILL
   PRINT YOUR"
110 PRINT"AMOUNT OF TORPEDOS ON BOARD."
120 PRINT"WHEN THE COMPUTER OUTPUTS TO YOU THE
   FORMAT WILL BE"
125 PRINT"COMPUTER: (MESSAGE TO YOU)":GOSUB
   127:GOTO 130
127 PRINT:INPUT"TO EXIT PRESS ENTER/RETURN . . . .
   .";X:CLS:PRINT:PRINT:RETURN
130 PRINT"**** INPUT COMMANDS *****"
140 PRINT"(1) FIRE TORPEDO ONE - 200 Y.P.S."
150 PRINT"(2) FIRE TORPEDO TWO - 250 Y.P.S."
160 PRINT"(3) FIRE TORPEDO THREE - 300 Y.P.S."
170 PRINT"(4) FIRE TORPEDO FOUR - 350 Y.P.S."
175 PRINT"(5) AMOUNT OF TORPEDOS LEFT"
180 PRINT"Y.P.S. = YARDS PER SECOND."
210 GOSUB 127
215 D=0
220 PRINT"YOU ARE NOW BATTLE READY, AND IN ENEMY
   TERRITORY."
230 PRINT"COMPUTER: OUTPUT AMOUNT OF TORPEDOS IN 5
   SECONDS."
235 FOR I=1 TO 1500:NEXT
240 REM AMOUNT OF TORPEDOS
245 T=INT(30*RND(0)+5)
246 IF T < 15 THEN T=15
250 PRINT"COMPUTER: ";T;"TORPEDOS FOR THIS MISSION."
270 PRINT
280 REM Y= AMOUNT OF YARDS TO ENEMY SHIP
300 Y=INT(2900*RND(0)+29) :IF Y <2400 THEN 300
310 PRINT"COMPUTER: RADAR SHOWS ENEMY SHIP AT
   ";Y;"YARDS."
400 FOR I=1 TO 1500:NEXT
410 Y=Y-INT(500*RND(0)+50)
420 PRINT"SHIP NOW AT";Y;"YARDS AND CLOSING."
425 PRINT"SELECT COMMAND";
430 IF T < =1 THEN 650
432 IF D > THEN 790
433 IF Y < 300 THEN 1500
```

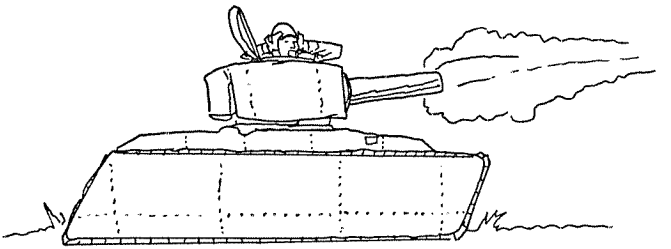
```
435 INPUT N:IF N < 1 OR N > 5 THEN PRINT"SIR, THIS SUB NOT
    EQUIPPED WITH COMMAND";N:GOTO 425
440 ON N GOTO 450, 500,550,610,740
450 GOSUB 1200
460 PRINT"FIRING TORPEDO # ";N;" . . . . ."T=T-1
465 PRINT"AT 200 YARDS PER SECOND."
470 GOSUB 1060:CLS
480 PRINT"COMPUTER:"
485 M=(TI*200)
490 GOTO 1300
495 GOSUB 1100
497 GOTO 700
500 GOSUB 1200:PRINT"FIRING TORPEDO #";N;". . . . .":T=T-1
505 PRINT"AT 250 YARDS PER SECOND."
510 GOSUB 1060:CLS
520 PRINT"COMPUTER:"
525 M=(TI*250)
530 GOTO 1310
535 GOSUB 1100:IF I=3 OR I=4 THEN 425
545 GOTO 580
550 GOSUB 1200:PRINT"FIRING TORPEDO #";N;". . . . .":T=T-1
555 PRINT"AT 300 YARDS PER SECOND."
560 M=(TI*300)
570 GOTO 1310
575 GOSUB 1100:IF I=3 OR I=4 THEN 425
580 PRINT"COMPUTER: LARGE TANKER . . . . ."
590 GOSUB 1400
600 PRINT"CLOSING FAST AT";Y;"YARDS . . . . .":GOTO 425
610 GOSUB 1200:PRINT"FIRING TORPEDO #";N;". . . . .";T=T-1
615 PRINT"AT 350 YARDS PER SECOND."
620 GOSUB 1060:CLS
630 PRINT"COMPUTER:"
635 M=(TI*350)
640 GOTO 1310
645 GOSUB 1100:IF I=3 OR I=4 THEN 425
647 GOTO 700
650 PRINT:PRINT"COMPUTER:"
660 PRINT"YOU ARE OUT OF TORPEDOS . . . . ."
670 PRINT"BUT YOU HAVE DESTROYED OR DAM-
    AGED";D;"SHIPS."
680 PRINT"RETURN TO PORT BEFORE YOU ARE DEPTH
    CHARGED . . . . ."
```

```
690 GOTO 810
700 PRINT:PRINT"LARGE DESTROYER CLOSING AT";Y;
    "YARDS, EQUIPPED"
710 PRINT"WITH ARMOR PLATING AND LOADED WITH DEPTH
    CHARGES."
720 PRINT"DON'T LET THIS ONE GET TOO CLOSE . . . . ."
730 GOTO 425
740 PRINT"AMOUNT OF TORPEDOS LEFT:";T:PRINT:GOTO
    425
790 PRINT:PRINT"COMPUTER:"
800 PRINT"RADAR SHOWS NO ENEMY SHIPS
    APPROACHING. . . . ."
810 PRINT" . . . . .MISSION SUCCESSFUL."
820 PRINT:PRINT"COMPUTER:"
830 PRINT"WOULD YOU LIKE TO DESTROY SOMEMORE SHIPS
    TODAY";
840 INPUT A$
850 IF A$="YES" THEN 10
860 PRINT:PRINT"WELL THEN . . . SEE YOU NEXT TIME ! !":
    END
870 REM TOO FAR
880 PRINT"CHECK YOUR TIMING RATE . . . . THAT TORPEDO
    HAS JUST"
890 PRINT"PASSED UP THE SHIP AND EXPLODED";(M-Y);
    "YARDS PAST"
900 PRINT"IT ! ! KEEP THIS UP AND YOU'LL END UP ON"
910 PRINT"THE BOTTOM WITH ALL THE FISHES . . . . ."
920 Y=Y-INT(200*RND(0)+50)
930 PRINT"SHIP NOW AT";Y;"YARDS, CLOSING FAST"
940 GOTO 425
1060 PRINT:PRINT
1065 PRINT"COMPUTER: OUTPUT STATUS OF TORPEDO
    IN";TI;"SECONDS."
1070 FOR TT=1 TO 250
1075 FOR TN=1 TO TI:NEXT TN, TT
1080 P=INT(10*RND(0)+1):IF P <2 AND TI < 2 THEN 1450
1090 RETURN
1100 D=D+1:I=INT(4*RND(0)+1):ON I GOTO 1110,1130,1150,1170
1110 PRINT"TORPEDO HAS SEVERELY DAMAGED SHIP . . . .
    INOPERABLE."
1120 IF Y < 500 GOSUB 1400
1122 Y=Y-100+INT(30*RND(0)+10)
```

```
1125 RETURN
1130 PRINT"TORPEDO #";N;"HAS MADE HEAVY DAMAGE TO
     SHIP . . . . ."
1135 PRINT"IT'S BEGINNING TO SINK !!"
1140 IF Y < 500 GOSUB 1400
1144 Y=Y-200+INT(40*RND(0)+10)
1145 RETURN
1150 PRINT"TORPEDO HAS BLOWN APART MAIN DECK OF
     SHIP."
1155 IF Y < 500 GOSUB 1400
1160 Y=Y-175+INT(20*RND(0)+10):PRINT"ANOTHER SHIP
     AT";Y;"YARDS . . . . ."
1165 RETURN
1170 PRINT"TORPEDO HAS COMPLETELY BLOWN APART SHIP.
     ANOTHER"
1172 IF Y <500 GOSUB 1400
1175 Y=Y-25+INT(50*RND(0)+5)
1180 PRINT"SHIP CLOSING ON YOU AT";Y;"YARDS . . . . .":
     RETURN
1200 PRINT"SET TIMER FOR HOW MANY SECONDS";
1210 INPUT T1
1220 IF TI >9 THEN PRINT"CAN'T RESPOND -- TIMING RATE TO
     HIGH . . ." :GOTO 1200
1230 RETURN
1250 PRINT"YOUR TIMER SETTING WAS OFF, TORPEDO
     EXPLODED"
1260 PRINT"PREMATURELY . . . NOTE DISTANCE TO SHIP BE-
     FORE SETTING"
1270 PRINT"TIMER. TORPEDO EXPLODED";(Y-M); "YARDS
     THIS SIDE OF SHIP."
     :REM NOT FAR ENOUGH
1275 IF Y <500 GOSUB 1400
1280 IF Y <2000 THEN Y=Y-INT(100*RND(0)+30)
1285 IF Y >2000 THEN Y=Y-INT(275*RND(0)+50)
1290 PRINT"DISTANCE TO SHIP CLOSING, NOW AT";Y;
     YARDS."
1300 GOTO 425
1310 IF ABS(Y-M) >0 AND ABS(Y-M) <31 THEN 1340
1320 IF (Y-M) < 0 THEN 1250
1330 IF ABS(Y-M) >31 THEN 870
1340 ON N GOTO 495,535,575,645
1400 Y=(2800-INT(50*RND(0)+5))
```

```
1410 RETURN
1450 PRINT:PRINT"COMPUTER:"
1460 PRINT"CAN'T REPORT ANY DAMAGE TO THE ENEMY SHIP
     . . . ."
1470 PRINT"THE TORPEDO YOU JUST FIRED CAUGHT IN THE
     TUBE"
1480 PRINT"AND BLEW OUR SUB ALL OVER THE OCEAN FLOOR
     !!!"
1490 GOTO 820
1500 FOR I=1 TO 1000:NEXT
1510 CLS:PRINT
1520 PRINT"WE'RE SINKING !!"
1530 PRINT"HEAVY WATER DAMAGE COMING THROUGH"
1540 PRINT"ENGINE ROOM !!"
1550 PRINT:PRINT"SHIP WAS LESS THAN";Y;"YARDS,"
1560 PRINT"AND DEPTH CHARGED US !!"
1570 PRINT"BULB . . . .BULB. . . .BULB. . . . ."
1590 FOR I=1 TO 2500:NEXT
1600 CLS:PRINT:GOTO 820
```

Tank Assault



You and the computer will battle one another. You must set degrees of your cannon to hit the target. If you miss the target the computer's tank will take a shot at you.

Sample Run

```
                ** TANK ASSAULT **
DO YOU NEED INSTRUCTIONS PRINTED? YES
THIS IS THE GAME OF TANK ASSAULT IN WHICH YOU
AND THE ENEMY (YOUR COMPUTER) WILL BATTLE ONE
ANOTHER. BEFORE YOU FIRE A SHELL YOU'LL INPUT
THE DEGREES TO WHICH YOUR CANNON WILL BE SET.
AFTER YOU FIRE (IF YOU MISS) THE COMPUTER WILL FIRE
AT YOUR TANK. YOU'LL BOTH START WITH AT LEAST 20
SHELLS. IF THE RANDOM TARGET SELECTED IS NOT
AN ENEMY TANK, HAVE NO FEAR: THE COMPUTER'S TANK
WILL STILL FIRE AT YOURS !!
PRESS ANY KEY TO BEGIN ASSAULT.
YOU'RE GOING TO BATTLE A PANTHER TANK
DISTANCE TO ENEMY IS 1277 YARDS.
YOU HAVE 29 SHELLS TO GET YOUR TARGET.
THRUST FACTOR FOR EACH SHELL IS 46 FT. P.S.I.
THE ANGLE OF YOUR CANNON CAN BE
BETWEEN 0 AND 45 DEGREES . . . . .
SET DEGREES OF CANNON? 35
YOU OVER SHOT THE TARGET . . . . .
NOW IT'S MY TURN . . . . .
DRAT !! MY SHOT WAS TOO LONG THAT TIME. YOU CAN
BE SURE I'LL DO BETTER NEXT SHOT.
IF I GET ANOTHER . . . SHOT
DISTANCE TO ENEMY IS 1273 YARDS.
THRUST FACTOR FOR EACH SHELL IS 46 FT. P.S.I.
THE ANGLE OF YOUR CANNON CAN BE
BETWEEN 0 AND 45 DEGREES . . . . .
```

SET DEGREES OF CANNON? 46
KEEP WITHIN RANGE OF CANNON !!
SET DEGREES OF CANNON? 28
HEY, NOT BAD . . . NOT BAD AT ALL. YOU'VE
TAKEN CARE OF THAT TARGET, BUT YOU'RE NOT FINISHED
YOU STILL HAVE 27 SHELLS LEFT.
DISTANCE TO ENEMY IS 1437 YARDS.
YOU HAVE 27 SHELLS TO GET YOUR TARGET.
THRUST FACTOR IS 47 FT. P.S.I.
THE ANGLE OF YOUR CANNON CAN BE
BETWEEN 0 AND 45 DEGREES . . . . .
SET DEGREES OF CANNON? 32,
OVER SHOT THE TARG . . . . .
NOW IT'S MY TURN . . . . .
DRAT ! ! MY SHOT WAS TOO LONG THAT TIME. YOU CAN
BE SURE I'LL DO BETTER NEXT SHOT.
IF I GET ANOTHER . . . SHOT.
DISTANCE TO ENEMY IS 1431 YARDS.
THRUST FACTOR FOR EACH SHELL IS 47 FT. P.S.I.
THE ANGLE OF YOUR CANNON CAN BE
BETWEEN 0 AND 45 DEGREES . . . . .
SET DEGREES OF CANNON? 25
YOU UNDER SHOT YOUR TARGET, WASTED A SHELL.
NOW IT'S MY TURN . . . . .
IT'S YOUR TURN AGAIN.. I WASTED ANOTHER
SHELL . . . (LUCKY YOU).
DISTANCE TO ENEMY IS 1423 YARDS.
THRUST FACTOR FOR EACH SHELL IS 47 FT. P.S.I.
THE ANGLE OF YOUR CANNON CAN BE
BETWEEN 0 AND 45 DEGREES . . . . .
SET DEGREES OF CANNON? 35
YOU OVER SHOT THE TARGET . . . . .
NOW IT'S MY TURN . . . . .
THAT'S IT . . . . . YOU'RE OUT OF ACTION. I JUST
DEMOLISHED YOUR TANK . . . COMPLETELY ! ! !
NOT BAD FOR A COMPUTER CONTROLLED SHOT . . . HUH ??
WOULD YOU LIKE TO TRY YOUR HAND AT THE
CONTROLS AGAIN? I'LL EVEN GIVE YOU ANOTHER TANK. NO
CAN'T HANDLE THE CONTINUOUS SOUND OF
ROCKETS SAILING OVER YOUR HEAD ?
END

See Fig. 2-5 for the flowchart for this program.

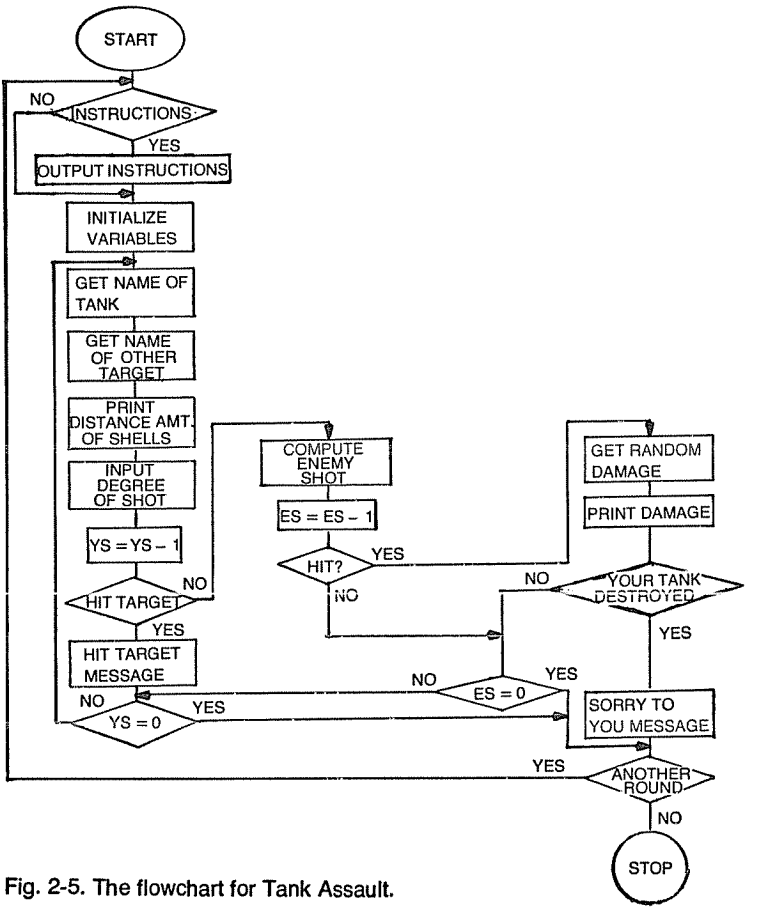


Fig. 2-5. The flowchart for Tank Assault.

Program Listing

```
10  CLS
20  REM IF YOU HAVE TROUBLE HITTING THE TARGET
30  REM TRY SOME MULTIPLICATION USING THE FACTOR
40  REM OF COURSE YOU SHOULD FIGURE THAT OUT BY
50  REM YOURSELF
60  PRINT:PRINT TAB(15) ;"*** TANK ASSAULT ***"
62  PRINT:PRINT
65  PRINT TAB (10) ;"DO YOU NEED INSTRUCTIONS PRINTED
    "; :INPUT A$
68  IF RIGHT$(A$,1)="0" THEN CLS:GOTO 200
```

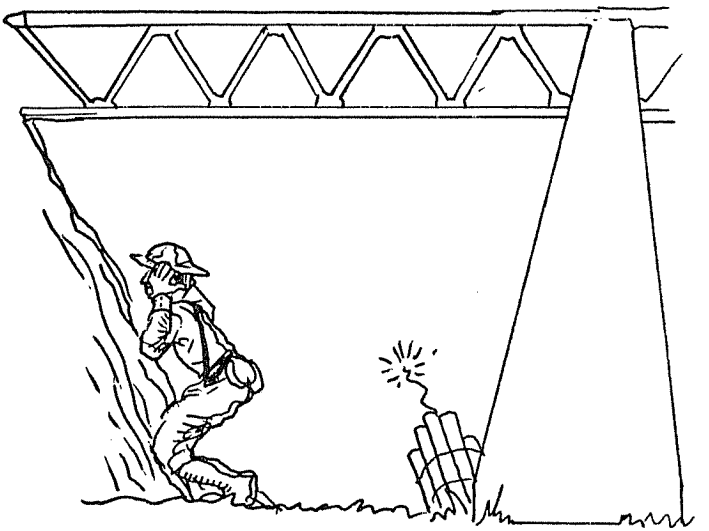
```
 70 PRINT:PRINT"THIS IS THE GAME OF TANK ASSAULT IN
    WHICH YOU"
 80 PRINT"AND THE ENEMY (YOUR COMPUTER) WILL
    BATTLE ONE"
 90 PRINT"ANOTHER. BEFORE YOU FIRE A SHELL YOU'LL
    INPUT"
100 PRINT"THE DEGREES TO WHICH YOUR CANNON WILL BE
    SET."
110 PRINT"AFTER YOU FIRE (IF YOU MISS) THE COMPUTER
    WILL FIRE"
120 PRINT"AT YOUR TANK. YOU'LL BOTH START WITH AT
    LEAST 20"
130 PRINT"SHELLS. IF THE RANDOM TARGET SELECTED IS
    NOT"
140 PRINT"AN ENEMY TANK, HAVE NO FEAR; THE COMPU-
    TER'S TANK
150 PRINT"WILL STILL FIRE AT YOURS."
160 PRINT"PRESS ANY KEY TO BEGIN ASSAULT."
170 A$=INKEY$:IF A$=" " THEN 170
180 CLS
200 REM GET DISTANCE TO TARGET
205 D=INT(1000*RND(0)+500):IF D <1000 THEN 205
210 REM GET NAME OF ENEMY TANK
220 FOR I=1 TO 3:READ T$(I):NEXT:N=1:L=0
230 DATA ASSAULT III, PANTHER, ARMOR PLATED
240 TA$=T$(INT(4*RND(0))):IF TA$=" " THEN 240
250 REM GET ENEMY SHELLS
260 ES=INT(20*RND(0)+10):IF ES <20 THEN 260
270 REM GET OTHER ENEMY TARGET
280 FOR I=1 TO 4:READ P$(I):NEXT
290 DATA FACTORY, ENEMY HIDEOUT,MOTOR POOL,
    BRIDGE
300 PL$=P$(INT(4*RND(0))):IF PL$=" " THEN 300
305 IF R=1 GOTO 330
310 REM GET YOUR SHELLS
320 YS=INT(20*RND(0)+10):IF YS <20 THEN 320
330 REM NOW SET ENEMY TANK OR OTHER TARGET
335 IF M=1 GOTO 370
340 I=INT(2*RND(0)+1):ON I GOTO 350, 360
350 PRINT:PRINT"YOU'RE GOING TO BATTLE A ";TA$;"
    TANK.":GOTO 370
360 PRINT:PRINT"TARGET FOR THIS ROUND IS THE ";PL$
```

```
370 PRINT"DISTANCE TO ENEMY IS";D;"YARDS."
375 IF BB=1 GOTO 420
380 PRINT"YOU HAVE"; YS; "SHELLS TO GET YOUR TARGET."
390 REM THRUST FACTOR FOR EACH SHELL
400 TF=INT(50*RND(0)+15)
410 IF TF <30 THEN 400
420 PRINT"THRUST FACTOR FOR EACH SHELL IS";TF;"FT.
    P.S.I."
430 PRINT"THE ANGLE OF YOUR CANNON CAN BE"
440 PRINT"BETWEEN 0 AND 45 DEGREES . . . . ."
450 REM GET DEGREES
460 PRINT:PRINT"SET DEGREES OF CANNON";
470 INPUT DG
480 IF DG < 0 OR DG >45 THEN PRINT"KEEP WITHIN RANGE
    OF CANNON !!":GOTO 460
490 YS=YS-1:BB=1:QQ=DG*TF
495 IF YS <1 THEN 940
500 IF QQ=D THEN 530
510 IF HP <D-50 THEN 540
520 IF QQ >D+50 THEN 550
530 BB=0:GOTO 820
535 RESTORE:FOR I=1 TO 2000:NEXT:CLS:GOTO 200
540 PRINT "YOU UNDER SHOT YOUR TARGET, WASTED A
    SHELL.":GOTO 560
550 PRINT"YOU OVERSHOT THE TARGET . . . . ."
560 PRINT:PRINT"NOW IT'S MY TURN . . . ."
570 ES=ES-1:FOR I=1 TO 1500:NEXT:M=1:R=1
575 IF ES <1 THEN 970
580 ET=INT(TF*RND(0)-1)
590 EQ=ET*TF:IF EQ <QQ-100 OR EQ>QQ +100 GOTO 580
595 IF (D-EQ) >1 AND (D-EQ) <100 THEN 620
597 IF (EQ-D) >1 AND (EQ-D) <100 THEN 620
600 IF EQ <D THEN 730
610 IF EQ >D THEN 770
620 I=INT(3*RND(0) + 1)
625 ON I GOTO 630,660,690
630 PRINT:PRINT"YOU'VE JUST TAKEN A DIRECT HIT TO ONE"
640 PRINT"OF YOUR TRACKS, YOUR TANK IS IMMOBILE. BUT"
650 PRINT"YOU CAN STILL FIRE."
655 GOTO 685
660 PRINT:PRINT"HOW DID YOU LIKE THAT SHOT? A DIRECT
    HIT"
```

```
670 PRINT"TO YOUR ENGINE COMPARTMENT, IT DIDN'T
    DAMAGE"
680 PRINT"YOUR TURRENT OR CANNON . . .":L=L+1
683 IF L >0 AND L <2 THEN 1070
685 FOR I=1 TO 2000:NEXT:GOSUB 900:GOTO 330
690 PRINT:PRINT"THAT'S IT . . . . . YOU'RE OUT OF ACTION. I
    JUST"
700 PRINT"DEMOLISHED YOUR TANK . . . COMPLETELY !!!"
710 PRINT"NOT BAD FOR A COMPUTER CONTROLLED SHOT
    . . . HUH ??"
720 GOTO 1000
730 REM COMPUTER SHOT TOO SHORT
735 PRINT
740 PRINT "IT'S YOUR TURN AGAIN . . .I WASTED ANOTHER"
750 PRINT"SHELL . . .";:IF N=1 PRINT"(LUCKY YOU).":N=0
760 GOTO 685
770 REM COMPUTER SHOT TOO LONG
775 PRINT
780 PRINT"DRAT !! MY SHOT WAS TOO LONG THAT TIME.
    YOU"
790 PRINT"CAN BE SURE I'LL DO BETTER NEXT SHOT."
800 PRINT"IF I GET ANOTHER . . . SHOT."
810 GOTO 685
820 I=INT(2*RND(0)+1):ON I GOTO 830,860
830 PRINT:PRINT"GOOD GOING . . . YOU'VE HIT THE TARGET
    RIGHT ON"
840 PRINT"THE BULLS EYE, NOT BAD SHOOTING . . . . ."
850 GOTO 535
860 PRINT:PRINT "HEY NOT BAD. . . NOT BAD AT ALL.YOU'VE "
870 PRINT"TAKEN CARE OF THAT TARGET, BUT YOU'RE NOT
    FINISHED"
875 PRINT"YOU STILL HAVE";YS;"SHELLS LEFT."
880 GOTO 535
900 REM SUBTRACT DISTANCE BY RANDOM (10) YARDS
910 D=D-INT(10*RND(0)+1)
920 PRINT:PRINT:PRINT
930 RETURN
940 REM YOUR OUT OF SHELLS
945 PRINT
950 PRINT"SORRY MAC . . . YOU'RE COMPLETELY OUT OF
    SHELLS. YOU CAN"
960 PRINT"EITHER SURRENDER OR START OVER . . . . "
```

```
965 GOTO 1000
970 REM ENEMY OUT OF SHELLS
975 PRINT
980 PRINT"I SURRENDER (THIS TIME). I'M OUT OF SHELLS!!"
990 PRINT"I'LL GIVE YOU ANOTHER BATTLE THOUGH."
1000 PRINT:PRINT"WOULD YOU LIKE TO TRY YOUR HAND AT
     THE"
1010 PRINT"CONTROLS AGAIN? I'LL EVEN GIVE YOU ANOTHER
     TANK.";
1020 INPUT A$
1030 IF LEFT$(A$,1)="Y" THEN BB=0:M=0:R=0:GOTO 535
1040 PRINT
1050 PRINT"CAN'T HANDLE THE CONTINUOUS SOUND OF"
1055 PRINT"ROCKETS SAILING OVER YOUR HEAD ?"
1060 END
1070 FOR I=1 TO 1000:NEXT
1080 PRINT"YOU HAVE A FIRE STARTING IN YOUR ENGINE"
1090 PRINT"NOW. WON'T BE LONG YOU'LL HAVE TO
     ABANDON"
1100 PRINT"THAT TANK."
1110 L=0:GOTO 685
```

The Bridge



In this simulation you will try to blow up a bridge before the enemy has time to advance their troops across it. Everything will be computer selected, so, to complete your mission, you must match the computer's selected weak areas (of bridge) and the amount of dynamite needed. Also, you must remember the name of the bridge you are to blow up.

Sample Run

```
THE BRIDGE
DO YOU NEED INSTRUCTIONS PRINTED? YES
IN THIS SIMULATION YOU WILL ATTEMPT TO BLOW UP A
BRIDGE
BEFORE THE ENEMY HAS TIME TO ADVANCE THEIR TROOPS
ACROSS IT. THE BRIDGE'S NAME,  WEAK AREAS AND AMOUNT
OF DYNAMITE WILL
ALL BE COMPUTER SELECTED. YOU MUST REMEMBER THE
NAME AND
YOU MUST SELECT WHICH OF THE WEAK AREAS WILL
BE MOST EFFECTIVE. THEN YOU WILL SELECT AN AMOUNT OF
DYNAMITE TO BE PLACED IN THAT AREA. YOU WILL HAVE ALL
THE TIME YOU NEED—AS LONG AS THE ENEMY DOESN'T AD-
VANCE
```

```
BEFORE IT'S BLOWN UP.
PRESS A KEY . . . . .
YOUR TARGET IS THE LOST RIVER BRIDGE
THIS NAME WILL ONLY BE PRINTED ONCE . . . .
HERE ARE THE FIVE WEAK AREAS:
LEFT CENTER
RIGHT CENTER
MIDDLE
LOWER BEAMS
UPPER BEAMS
YOU MUST CHOOSE WHICH TWO WILL BE MOST EFFECTIVE.
THE COMPUTER HAS SELECTED AN AMOUNT OF DYNAMITE
THAT
WILL DO THE JOB. YOU MUST MEET OR EXCEED THAT AMOUNT
BUT INPUT NO MORE THAN 10 STICKS.
PRESS A KEY . . . . .
THE ENEMY HASN'T ADVANCED YET . . . . .
INPUT THE NAME OF YOUR TARGET? LOST RIVER
INPUT WHICH TWO AREAS WILL BE MOST EFFECTIVE? MIDDLE
?? LOWER BEAMS
HOW MUCH DYNAMITE DO YOU WANT PLACED THERE? 6
PRESS A KEY . . . . .
SORRY . . . THE TWO SELECTIONS WERE INCORRECT.
THE ENEMY CAN STILL ADVANCE, THE BRIDGE WASN'T COM-
PLETELY
DESTROYED . . . TRY AGAIN.
PRESS A KEY . . . . .
THE ENEMY HASN'T ADVANCED YET . . . . .
INPUT WHICH TWO AREAS WILL BE MOST EFFECTIVE? UPPER
BEAMS
?? MIDDLE
HOW MUCH DYNAMITE DO YOU WANT PLACED THERE? 5
PRESS A KEY . . . . .
CONGRATULATIONS !!
YOU'VE BLOWN UP THE BRIDGE WITHIN PLENTY OF TIME
TO STOP THE ENEMY FORCES. VERY WELL DONE, I MIGHT ADD.
PRESS A KEY . . . . .
WOULD YOU LIKE TO TRY THIS SIMULATION ONCE MORE? NO
THE ENEMY WILL THANK YOU AFTER THEY'RE
ACROSS THE OTHER BRIDGES !!
END
```

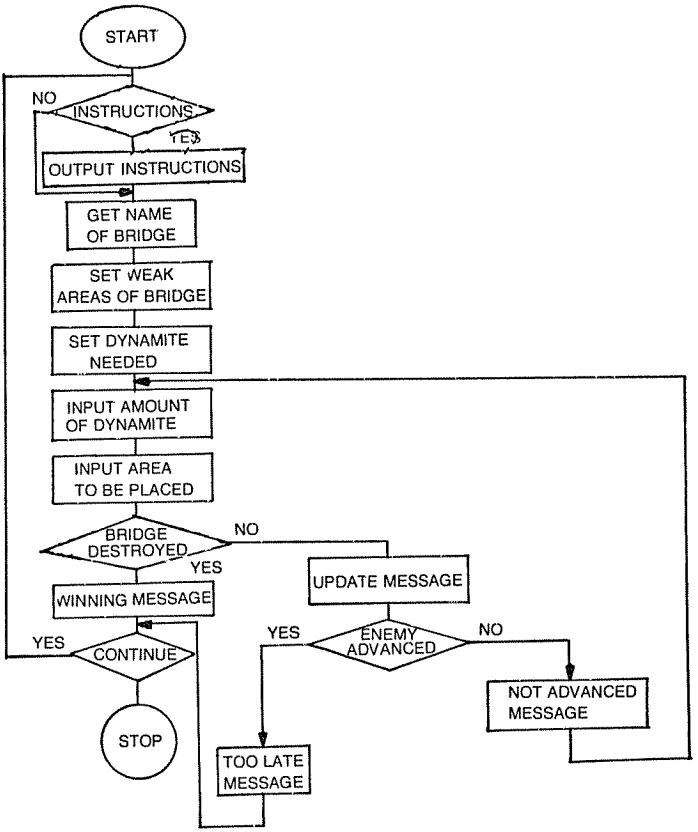


Fig. 2-6. The flowchart for The Bridge.

Providing you don't run out of dynamite, this simulation could last for awhile. Enemy advancement is randomly selected so, as long as the computers' random generator doesn't come up with that magic number, you could blow up a few bridges. See Fig. 2-6 for the flowchart for this program.

Program Listing

```
100  RANDOM:DIM W$(20)
105  CLS:PRINT
110  PRINT"THE BRIDGE"
120  PRINT
130  PRINT"DO YOU NEED INSTRUCTIONS PRINTED";
140  INPUT A$
150  IF A$="NO" THEN N=1:GOTO 290
```

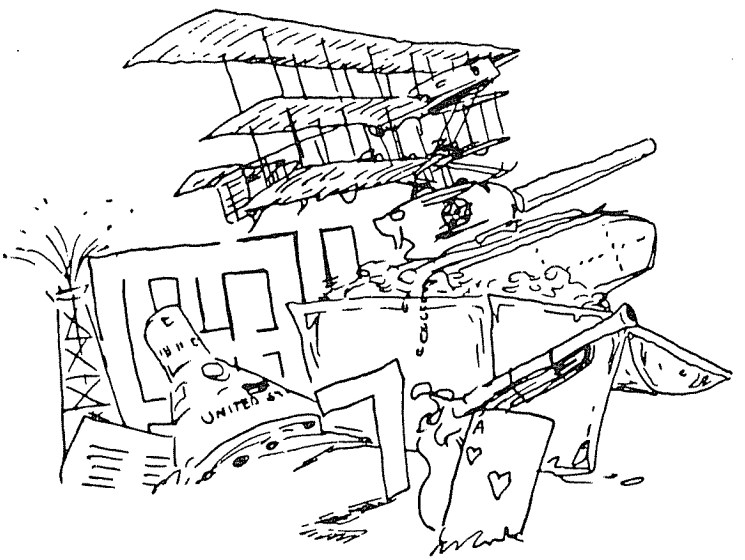
```
160 IF A$="YES" THEN 190
165 PRINT
170 PRINT"CAN'T RESPOND TO THAT ANSWER"
180 PRINT:GOTO 130
190 PRINT
200 PRINT"IN THIS SIMULATION YOU WILL ATTEMPT TO
    BLOW UP A BRIDGE"
210 PRINT"BEFORE THE ENEMY HAS TIME TO ADVANCE
    THEIR TROOPS ACROSS"
220 PRINT"IT. THE BRIDGE'S NAME, WEAK AREAS AND
    AMOUNT OF DYNAMITE WILL"
230 PRINT"ALL BE COMPUTER SELECTED. YOU MUST RE-
    MEMBER THE NAME AND"
240 PRINT"YOU MUST SELECT WHICH OF THE WEAK AREAS
    WILL"
250 PRINT"BE MOST EFFECTIVE. THEN YOU WILL SELECT AN
    AMOUNT OF"
260 PRINT"DYNAMITE TO BE PLACED IN THAT AREA. YOU'LL
    HAVE ALL"
270 PRINT"THE TIME YOU NEED—AS LONG AS THE ENEMY
    DOESN'T ADVANCE"
280 PRINT"BEFORE IT'S BLOWN UP."
290 REM GET NAMES OF BRIDGES
300 FOR I=1 TO 3:READ N$(I) :NEXT
310 DATA LOST RIVER,RANGE CREEK,AREA FIVE
315 REM NOW SELECT ONE
320 I=INT(3*RND(0)+1)
330 NB$=N$(I)
340 REM NOW GET WEAK AREAS
350 FOR W=1 TO 5:READ WA$(W):NEXT
360 DATA LEFT CENTER,RIGHT CENTER,MIDDLE,LOWER
    BEAMS,UPPER BEAMS
370 REM NOW SELECT TWO
380 W=INT(5*RND(0)+1)
390 W$(W)=WA$(W)
400 M=W+INT(2*RND(0)+1):IF M > 5 THEN M=(W-INT(2*
    RND(0)+1))
410 W$(M)=WA$(M)
420 REM NOW SET DYNAMITE NEEDED
430 D=INT(10*RND(0)+1):IF N=1 THEN 460
435 GOSUB 440:GOTO 460
440 PRINT:PRINT"PRESS A KEY . . . . . "
```

```
445 A$=INKEY$:IF A$=" " THEN 445
450 RETURN
460 PRINT
470 PRINT"YOUR TARGET IS THE ";NB$;" BRIDGE"
480 PRINT"THIS NAME WILL ONLY BE PRINTED ONCE . . . . "
500 PRINT"HERE ARE THE FIVE WEAK AREAS:"
510 FOR I=1 TO 5:PRINT WA$(I):NEXT
520 PRINT"YOU MUST CHOOSE WHICH TWO WILL BE MOST
    EFFECTIVE."
530 PRINT"THE COMPUTER HAS SELECTED AN AMOUNT OF
    DYNAMITE THAT"
540 PRINT"WILL DO THE JOB. YOU MUST MEET OR EXCEED
    THAT AMOUNT"
550 PRINT"BUT INPUT NO MORE THAN 10 STICKS."
560 GOSUB 440
570 CLS
580 PRINT
585 REM IF T=2 ENEMY HAS ADVANCED
590 T=INT(5*RND(0)+1)
595 IF T=2 THEN 960
600 PRINT"THE ENEMY HASN'T ADVANCED YET . . . . ."
605 IF A=1 THEN 640
610 PRINT"INPUT THE NAME OF YOUR TARGET";
620 INPUT T$
640 PRINT"INPUT WHICH TWO AREAS WILL BE MOST
    EFFECTIVE";
650 INPUT E$,EF$
670 PRINT"HOW MUCH DYNAMITE DO YOU WANT PLACED
    THERE";
680 INPUT DY
700 IF DY > 10 THEN PRINT"DUMMY !! IT WON'T TAKE THAT
    MUCH !!":GOTO 680
710 GOSUB 440:GOSUB 900:GOTO 850
720 FOR I=1 TO 5000:NEXT
750 PRINT"YOU JUST BLEW UP THE WRONG BRIDGE, LUCKY
    FOR YOU"
760 PRINT"THAT NONE OF YOUR TROOPS WERE ON IT !!!"
770 GOTO 1000
780 PRINT:PRINT"SORRY . . . THE TWO SELECTIONS WERE
    INCORRECT."
790 PRINT"THE ENEMY CAN STILL ADVANCE, THE BRIDGE
    WASN'T COMPLETELY"
800 PRINT"DESTROYED . . . TRY AGAIN."
```

```
805 P=P+1:IF P=3 THEN GOSUB 1100
810 GOSUB 440:A=1:GOTO 570
820 PRINT"YOU DIDN'T PLACE ENOUGH DYNAMITE AT THE
    LOCATIONS"
830 PRINT"YOU SELECTED. VERY LITTLE DAMAGE WAS
    DONE TO THE BRIDGE."
840 GOTO 810
850 PRINT:PRINT"CONGRATULATIONS !!"
860 PRINT"YOU'VE BLOWN UP THE BRIDGE WITHIN PLENTY
    OF TIME"
870 PRINT"TO STOP THE ENEMY FORCES. VERY WELL DONE,
    I MIGHT ADD."
880 GOTO 1000
900 REM WAS BRIDGE DESTROYED???
910 IF T$ < > NB$ THEN 750
920 IF E$ < > W$(W) OR EF$ < > W$(M) THEN 780
930 IF DY < D THEN 820
940 REM RETURN IF DESTROYED
950 RETURN
960 PRINT:PRINT"SORRY... YOU ARE TOO LATE, THE ENEMY
    HAS ALREADY"
970 PRINT"ADVANCED ACROSS THE ";NB$;" BRIDGE. YOU
    CAN'T STOP"
980 PRINT"THEM NOW . . . TURKEY !!"
1000 GOSUB 440
1010 PRINT
1020 PRINT"WOULD YOU LIKE TO TRY THE BRIDGE ONCE
     MORE";
1030 INPUT A$
1040 IF A$="YES" THEN RESTORE:GOTO 130
1050 IF A$="NO" THEN 1080
1060 PRINT"LET'S TRY A STRAIGHT YES/NO ANSWER"
1070 GOTO 1020
1080 PRINT:PRINT"THE ENEMY WILL THANK YOU AFTER
     THEY'RE"
1085 PRINT"ACROSS THE OTHER BRIDGES !!"
1090 END
1100 PRINT
1105 PRINT
1110 PRINT"WHY DON'T YOU WRITE THEM DOWN ON PAPER."
1120 PRINT"CROSS OUT THE ORDER WHICH YOU'VE TRIED.."
1130 PRINT"AND TAKE IT FROM THERE !!"
1140 P=0:RETURN
```

Chapter 3

Games for Learning



Math Session

Step right up, you math brains. Try Math Session (without using a calculator) and see how many problems you can answer correctly without getting your mind tangled!

Note: Do not use remainders in division.

Sample Run

```
THIS GAME CALLED MATH SESSION, LETS YOU CHOOSE BE-
TWEEN
ADDITION, SUBTRACTION, MULTIPLICATION & DIVISION. YOU
WILL
HAVE 10 PROBLEMS TO SOLVE, IF YOU MISS ONE YOU CAN'T
CONTINUE
UNTIL YOU'VE ANSWERED IT CORRECTLY. THERE ARE THREE
LEVELS OF
DIFFICULTY FOR EACH SET TO CHOOSE FROM.
**NOTE **DO NOT USE REMAINDERS IN DIVISION ***
WHICH DO YOU SELECT (ADD, SUBTRACT, MULTIPLY, DIVIDE)?
MULTIPLY
```

```
CHOOSE ONE OF THE FOUR . . . AND SPELL IT RIGHT . . .
TURKEY!!
WHICH DO YOU SELECT (ADD, SUBTRACT, MULTIPLY, DIVIDE)?
MULTIPLY
READY FOR SOME MULTIPLICATION . . . .
SELECT THE LEVEL (1, 2, OR 3)? 1
HERE'S YOUR PROBLEM 8 × 1 =? 8
FANTASTIC, KEEP IT UP ! !
HERE'S YOUR PROBLEM 2 × 2 = ? 4
THAT'S CORRECT !!
HERE'S YOUR PROBLEM 7 × 3 = ? 21
THAT'S CORRECT ! !
HERE'S YOUR PROBLEM 2 × 8 =? 16
VERY GOOD ! !
HERE'S YOUR PROBLEM 7 × 7 =? 49
FANTASTIC, KEEP IT UP !!
HERE'S YOUR PROBLEM 7 × 5 =? 35
VERY GOOD ! !
HERE'S YOUR PROBLEM 1 × 1 = ? 1
THAT'S CORRECT ! !
HERE'S YOUR PROBLEM 6 × 0 = ? 6
MISSED IT, TRY AGAIN
HERE'S YOUR PROBLEM 6 × 0 = ? 0
THAT'S CORRECT ! !
HERE'S YOUR PROBLEM 9 × 9 = ? 81
VERY GOOD ! !
HERE'S YOUR PROBLEM 9 × 4 = ? 36
THAT'S CORRECT ! !
THEIR WERE 10 PROBLEMS, YOU MISSED 1
THAT'S NOT BAD, BUT COULD BE BETTER.
WOULD YOU LIKE TO TRY SOME MORE? NO
WANT TO STUDY SOME MORE . . . DO YOU ??
```

See Fig. 3-1 for the flowchart for this program.

Program Listing

```
10  CLS:PRINT
30  PRINT"THIS GAME CALLED MATH SESSION, LETS YOU
    CHOOSE BETWEEN"
40  PRINT"ADDITION, SUBTRACTION, MULTIPLICATON &
    DIVISION, YOU WILL"
50  PRINT"HAVE 10 PROBLEMS TO SOLVE, IF YOU MISS ONE
    YOU CAN'T CONTINUE"
```

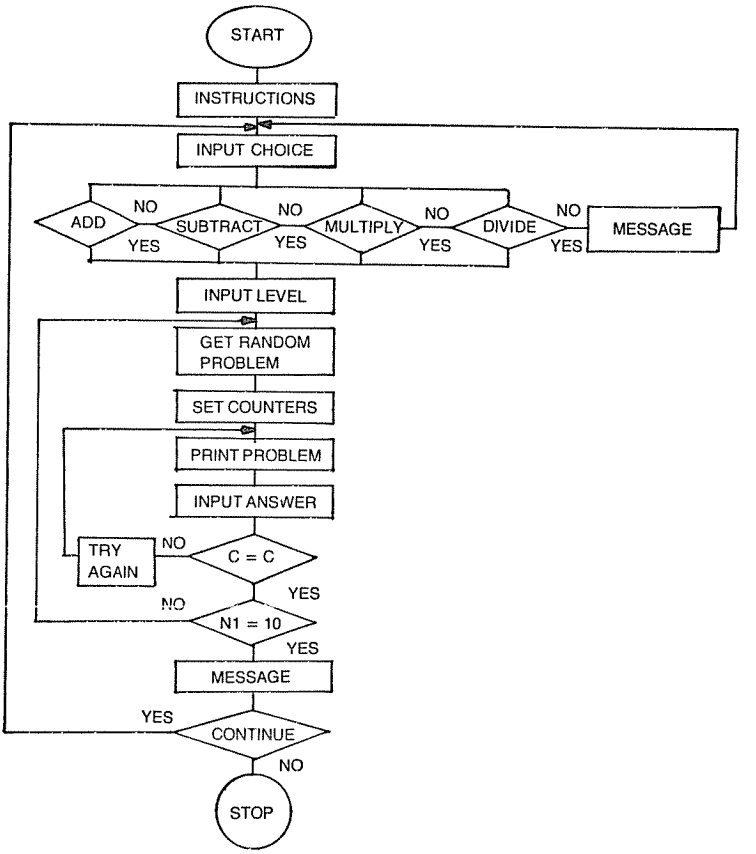


Fig. 3-1. The flowchart for Math Session.

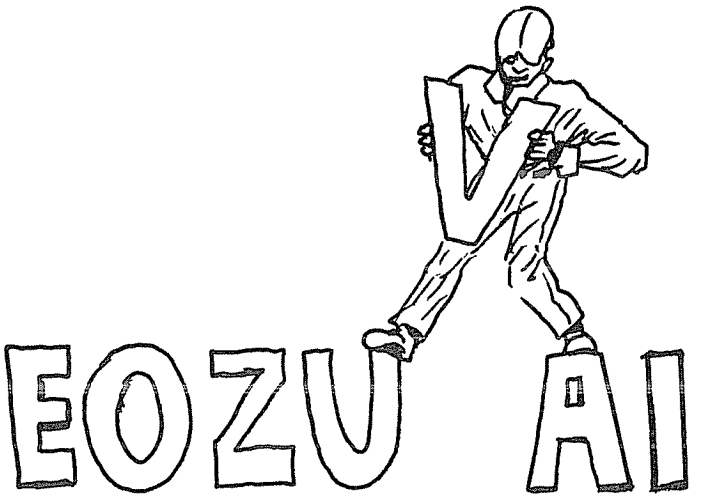
```
60  PRINT"UNTIL YOU'VE ANSWERED IT CORRECTLY. THERE
    ARE THREE LEVELS OF"
70  PRINT"DIFFICULTY FOR EACH SET TO CHOOSE FROM."
75  PRINT"** NOTE **DO NOT USE REMAINDERS IN DIVI-
    SION**
80  PRINT:PRINT
85  RANDOM:C=0:N=10:N1=0:W=0
90  INPUT"WHICH DO YOU SELECT (ADD, SUBTRACT, MUL-
    TIPLY, DIVIDE)";A$
100 IF A$ < > "ADD" AND A$ < >"SUBTRACT" AND A$ < >
    "MULTIPLY' AND
    A$ < > "DIVIDE" THEN PRINT "CHOOSE ONE OF THE FOUR
    . . . AND SPELL
    IT RIGHT . . . TURKEY ! !":GOTO 90
```

```
120 IF A$="ADD" GOTO 200
130 IF A$="SUBTRACT" GOTO 400
140 IF A$="MULTIPLY" GOTO 600
150 IF A$="DIVIDE" GOTO 800
200 CLS:PRINT
210 INPUT"SELECT THE LEVEL YOU WANT TO PLAY (1,2,OR
    3)";L
220 ON L GOTO 230,240,250
230 S=INT(RND(0)*10+RND(10)):S1=INT(RND(0)*10+RND(10)):
    S2=S+S1: IF S1 > S THEN 230
235 GOTO260
240 S=INT(RND(10)*10+RND(10)):S1=INT(RND(10)*10+RND(10))
    :S2=S+ S1: IF S1 >S2 THEN 240
245 GOTO 260
250 S=INT(RND(100)*10+RND(10)):S1=INT(RND(100)*10+RND(
    10)):S2=S+S1:  IF S1 >S THEN 250
260 PRINT:PRINT
270 PRINT"HERE'S YOUR PROBLEM ";S;" +";S1;"= ";
280 INPUT S3
290 IF S3< >S2 THEN PRINT"TRY AGAIN, PLEASE":PRINT:
    W=W+1:GOTO 270
300 GOSUB 3050:C=C+ 1
310 N1=N1+1
320 IF N1=N GOTO 370
330 GOTO 220
370 PRINT"OF THE";N;"PROBLEMS, YOU MISSED";W
380 GOTO 2000
400 CLS:PRINT:PRINT"SO YOU WANT TO TRY SOME SUB-
    TRACTION ?":PRINT:PRINT
410 INPUT"SELECT A LEVEL (1,2,OR 3)";L
420 ON L GOTO 430,440,450
430 T=INT(RND(0)*50+RND(10)):T1=INT(RND(0)*10+RND(10)):
    T2=T-T1: IF T1 >T THEN 430
435 GOTO 460
440 T=INT(RND(10)*150+RND(10)):T1=INT(RND(10)*20+RND(
    10)):T2=T-T1:IF T1 > T THEN 440
445 GOTO 460
450 T=INT(RND(20)*200+RND(10)):T1=INT(RND(20)* 35+RND
    (10)):T2=T-T1:IF T1 >T THEN 450
460 PRINT:PRINT
470 PRINT"YOUR SUBTRACTION PROBLEM ";T;" - ";T1;"=";
480 INPUT T3
```

```
490 IF T3 < >T2 THEN PRINT"INCORRECT RESPONSE
    . . .":PRINT:W=W+1:GOTO 470
500 GOSUB 3050:C=C+1
510 N1=N1+1
520 IF N1=N THEN 570
530 GOTO 420
570 PRINT"OF THE";N;"SUBTRACTION PROBLEMS, YOU
    MISSED";W
580 GOTO 2000
600 CLS:PRINT:PRINT"READY FOR SOME MULTIPLICATION
    . . . .":PRINT:PRINT
610 INPUT"SELECT YOUR LEVEL (1,2,OR 3)";L
620 ON L GOTO 630, 640,650
630 M=INT(RND(0)*10):M1=INT(RND(0)*10):M2=M*M1:IF M1
    >M THEN 630
635 GOTO 660
640 M=INT(RND(5)*15+RND(15)):M1=INT(RND(5)*15+RND(5))
    M2=M*M1:IF M1 > M THEN 650
645 GOTO 660
650 M=INT(RND(50)*50+RND(15)):M1=INT(RND(50)*45+RND(5)
    ):M2=M*M1: IF M1 >M THEN 650
660 PRINT:PRINT
670 PRINT"HERE'S THE PROBLEM ";M;" X ";M1;"= ";
680 INPUT M3
690 IF M3 < > M2 THEN PRINT"MISSED IT, TRY
    AGAIN":PRINT:W=W+1:GOTO 670
700 GOSUB 3050:C=C+1
710 N1=N1+1
720 IF N1=N GOTO 770
730 GOTO 620
770 PRINT"THERE WERE";N;"PROBLEMS, YOU MISSED";W
780 GOTO 2000
800 CLS:PRINT:PRINT"A LITTLE DIVISION . . . . GOOD LUCK!!"
810 INPUT"SELECT ONLY ONE LEVEL (1,2,OR 3)";L
820 ON L GOTO 830, 840, 850
830 D=INT(RND(15)+4):D1=INT(RND(12)+4):D2=INT(D/D1):IF
    D1 > D THEN 830
835 GOTO 860
840 D=INT(RND(100)*8):D1=INT(RND(20)*6):D2=INT(D/D1):IF
    D1 >D THEN 840
845 GOTO 860
850 D=INT(RND(1000)*8):D1=INT(RND(40)*6):D2=INT(D/D1):IF
```

```
    D1 >D THEN 850
 860 PRINT:PRINT
 870 PRINT"HERE'S THE PROBLEM ";D;"/ ";D1"= ";
 880 INPUT D3
 890 IF D3 < >D2 THEN PRINT "ERROR .... TRY AGAIN"
     :PRINT:W=W+1:GOTO 870
 900 GOSUB 3050:C=C+1
 910 N1=N1+1
 920 IF N1 =N THEN 970
 930 GOTO 820
 970 PRINT"OUT OF";N;"PROBLEMS, YOU MISSED";W
2000 IF W=0 THEN 2040
2010 IF W > 0 AND W <5 THEN 2050
2020 IF W > 5 AND W < 9 THEN 2060
2030 IF W > 9 THEN 2070
2040 PRINT"THAT'S FANTASTIC !! EVERY PROBLEM RIGHT !!:
     GOTO 3000
2050 PRINT"THAT'S NOT BAD, BUT COULD BE BETTER.":GOTO
     3000
2060 PRINT"YOU MISSED THAT MANY? THAT IS TERRIBLE
     !!":GOTO 3000
2070 PRINT"GOOD GRIEF . . . YOU MISSED EVERY ONE ! MAYBE
     YOU SHOULD"
2075 PRINT"GO BACK TO SCHOOL !!"
3000 FOR I=1 TO 1500:NEXT:PRINT
3010 INPUT"WOULD YOU LIKE TO TRY SOME MORE";B$
3020 IF B$="YES" THEN 85
3030 PRINT:PRINT
3040 PRINT"WANT TO STUDY SOME MORE . . . DO YOU ??"
3045 END
3050 I=INT(3*RND(0)+1):ON I GOTO 3060, 3070, 3080
3060 PRINT"THAT'S CORRECT !!":RETURN
3070 PRINT"VERY GOOD !!": RETURN
3080 PRINT"FANTASTIC, KEEP IT UP !!":RETURN
```

Alphabet



Here's your chance to compete against yourself. You have to put the total alphabet in order in as few tries as possible. Once you do get it in order you can try the program again to beat your last record.

Sample Run

```
THIS IS THE GAME OF ALPHABET.
YOU'LL SOON SEE THAT THE LETTERS AREN'T IN ORDER. YOU
MUST FIX THAT. YOU CAN MOVE THE LETTERS ANYWHERE AS
LONG AS IT'S TO A SPACE. TRY TO ORDER THEM IN
THE LEAST AMOUNT OF MOVES.
IF YOU WANT TO START OVER INPUT A NUMBER FROM 50 TO 50.
(NOTE: BE SURE TO COUNT THE SPACES WHEN MOVING LET-
TERS).
THIS IS THE ALPHABET:
JEFDB CGALK IMHPO NRSTQ ZVU YXW
WHAT IS YOUR MOVE (FROM/TO)? 11
?? 12
YOUR ALPHABET THUS FAR:
JEFDB CGAL KIMHPO NRSTQ ZVU YXW
WHAT IS YOUR MOVE (FROM/TO)? 1
?? 11
YOUR ALPHABET THUS FAR:
EFDB CGALJKIMHPO NRSTQ ZVU YXW
```

```
WHAT IS YOUR MOVE (FROM/TO)? 9
?? 1
YOUR ALPHABET THUS FAR:
AEFDB CG LJKIMHPO NRSTQ ZVU YXW
WHAT IS YOUR MOVE (FROM/TO)? 7
?? 6
YOUR ALPHABET THUS FAR:
AEFDBC G LJKIMHPO NRSTQ ZVU YXW
WHAT IS YOUR MOVE (FROM/TO)? 8
?? 9
YOUR ALPHABET THUS FAR:
AEFDBC GLJKIMHPO NRSTQ ZVU YXW
WHAT IS YOUR MOVE (FROM/TO)? 4
?? 7
YOUR ALPHABET THUS FAR:
AEF BCD GLJKIMHPO NRSTQ ZVU YXW
WHAT IS YOUR MOVE (FROM/TO)?2
?? 8
YOUR ALPHABET THUS FAR:
A F BCDEGLJKIMHPO NRSTQ ZVU YXW
WHAT IS YOUR MOVE (FROM/TO)? 5
?? 2
YOUR ALPHABET THUS FAR:
AB F CDEGLJKIMHPO NRSTQ ZVU YXW
WHAT IS YOUR MOVE (FROM/TO)? 4
?? 5
YOUR ALPHABET THUS FAR:
AB FCDEGLJKIMHPO NRSTQ ZVU YXW
WHAT IS YOUR MOVE (FROM/TO)? 6
?? 3
YOUR ALPHABET THUS FAR:
ABC F DEGLJKIMHPO NRSTQ ZVU YXW
WHAT IS YOUR MOVE (FROM/TO)? 7
?? 4
YOUR ALPHABET THUS FAR:
ABCDF EGLJKIMHPO NRSTQ ZVU YXW
WHAT IS YOUR MOVE (FROM/TO)?
STOP
```

As you can see this game could be very time consuming. But the general idea is to run through the game until you come up with your best score. This sample took 12 moves (not complete); think you could do better? Try it! See Fig. 3-2 for the flowchart for this program.

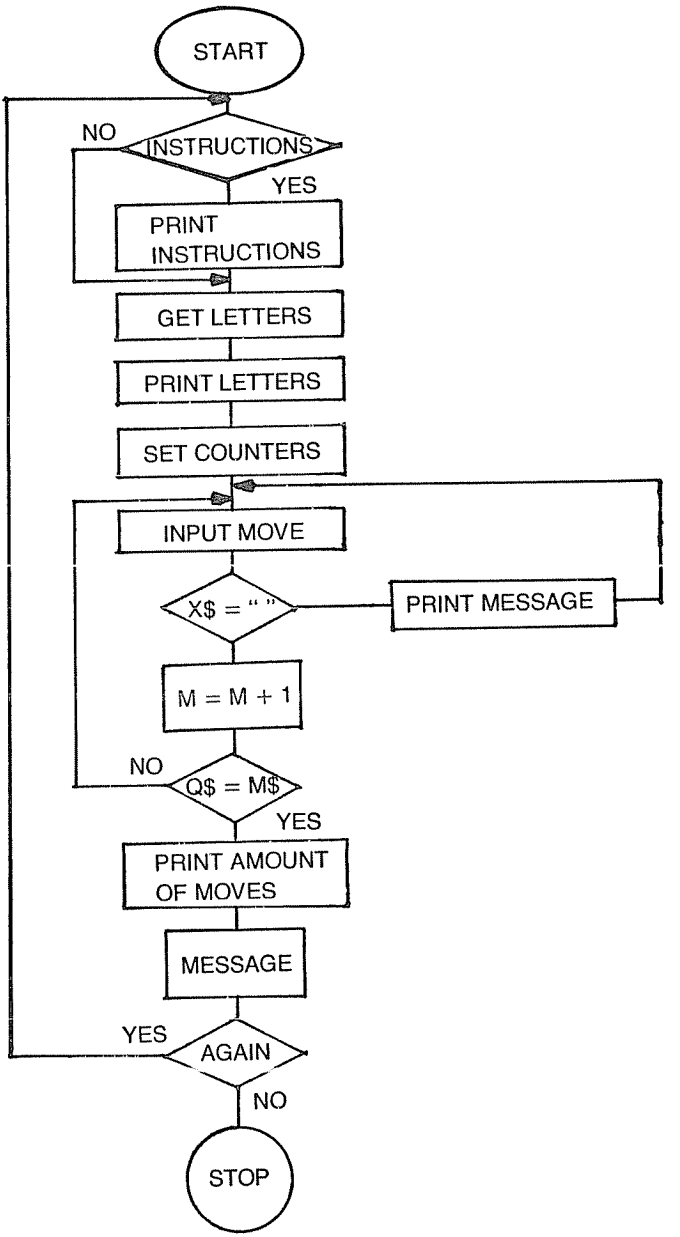


Fig. 3-2. The flowchart for Alphabet.

Program Listing

```
 5 CLEAR 100
10 DIM A$(31),X$(50)
20 CLS:PRINT:M=0
30 PRINT"THIS IS THE GAME OF ALPHABET."
40 PRINT"YOU'LL SOON SEE THAT THE LETTERS AREN'T IN
   ORDER. YOU MUST"
50 PRINT"FIX THAT. YOU CAN MOVE LETTERS ANYWHERE
   AS LONG"
60 PRINT"AS IT'S TO A SPACE. TRY TO ORDER THEM IN"
70 PRINT"IN THE LEAST AMOUNT OF MOVES."
80 PRINT"IF YOU WANT TO START OVER INPUT A NUMBER
   FROM 50 TO 50."
90 PRINT"(NOTE: BE SURE TO COUNT THE SPACES WHEN
   MOVING LETTERS)."
200 FOR I=1 TO 31:READ A$(I):NEXT
210 DATA J,E,F,D,B, ,C,G,A,L,K, ,I,M,H,P,O, ,N,R,S,T,Q
215 DATA ,Z,V,U, ,Y,X,W
220 FOR I=1 TO 5:X$(I)=A$(I):NEXT
230 FOR I=7 TO 11:X$(I)=A$(I):NEXT
240 FOR I=13 TO 17:X$(I)=A$(I):NEXT
250 FOR I=19 TO 23:X$(I)=A$(I):NEXT
260 FOR I=25 TO 27:X$(I)=A$(I):NEXT
270 FOR I=29 TO 31:X$(I)=A$(I):NEXT
300 FOR I=6 TO 24 STEP 6:X$(I)=" ":NEXT
310 X$(28)=" "
320 PRINT:PRINT"THIS IS THE ALPHABET:"
330 FOR I=1 TO 31:PRINT X$(I);:NEXT
340 PRINT:PRINT
350 PRINT"WHAT IS YOUR MOVE (FROM/TO) ";
360 INPUT F,T
365 IF F=50 AND T=50 THEN RESTORE:M=0:GOTO 200
370 IF X$(T) <>" "THEN PRINT"TRY LANDING ON A SPACE -
   THIS TIME" :GOTO 340
380 X$(T)=X$(F)
390 X$(F)=" "
420 Q$=" "
430 FOR I=1 TO 31
440 Q$=Q$+X$(I)
450 NEXT
460 PRINT:PRINT"YOUR ALPHABET THUS FAR:"
470 PRINT Q$
```

```
480 M=M+1
490 M$="ABCDEFGHIJKLMNOPQRSTUVWXYZ      ":REM BE
    SURE TO INCLUDE 5
    SPACES AT END OF LETTERS
495 IF Q$=M$ THEN 510
500 GOTO 340
510 PRINT:PRINT"FANTASTIC !!"
515 PRINT"YOU'VE LEARNED THE ALPHABET !!"
530 IF M < 50 THEN PRINT"AND IT ONLY TOOK";M;
    "MOVES":GOTO 550
540 IF M >50 THEN PRINT"BUT IT DID TAKE YOU A TOTAL
    OF";M;"MOVES"
550 PRINT:PRINT"ARE YOU READY TO BEAT YOUR LAST RE-
    CORD NOW";
560 INPUT I$
570 IF RIGHT$(I$,1)="S" THEN RESTORE:M=0:GOTO 200
580 PRINT
590 PRINT"YOU WANT TO POLISH UP ON THE ALPHABET
    WITH"
600 PRINT"A PENCIL AND PAPER, RIGHT?"
610 END
```

Alphabetize

This game teaches the young (or young at heart) to put words in alphabetical order. You can easily modify this program to suit your needs, such as changing the DATA STATEMENTS to add new words, or adding more than 10 words per set. Just be sure to change the DIM STATEMENT, line 10, to fit the amount of words used (per set).

Sample Run

```
                ***** ALPHABETIZE *****
ARE INSTRUCTIONS REQUIRED? YES
THIS IS THE GAME OF ALPHABETIZE, WHERE ALL YOU
HAVE TO DO IS ARRANGE A GIVEN LIST OF WORDS IN
ALPHABETICAL ORDER. SOUNDS SIMPLE YOU SAY ?
LET'S TRY IT.
INPUT THE WORDS IN THEIR CORRECT ORDER BY
NUMBER ONLY.
EXAMPLE: AFTER WOULD BE THE FIRST WORD SO
INPUT #3, ETC.
1 HELLO          2 HELP
3 AFTER          4 MODULE
5 MODULAR        6 SUSPENSE
7 MR.            8 MRS.
9 BETA          10 BET
INPUT YOUR ALPHABETIZED LIST (BY NUMBER ONLY)
? 3
```

```
? 10
?
                    NOT CORRECT !!
?
                    NOT CORRECT !!
?
                    NOT CORRECT !!
? 2
                    NOT CORRECT !!
? 4
?
                    NOT CORRECT !!
? 6
                    NOT CORRECT !!
? 8
                    NOT CORRECT !!
THAT SCORE DOESN'T EVEN DESERVE AN HONORABLE MEN-
TION !!
ONLY 3 CORRECT !! OUT OF A POSSIBLE 10 !!
PRESS A KEY . . . . .
INPUT THE WORDS IN THEIR CORRECT ORDER BY
NUMBER ONLY.
1 WENT              2 DOZE
3 CALIFORNIA        4 SAMOLA
5 CALLAO            6 RESPIRATOR
7 RESPOND           8 COMPUTER
9 COMPUTE          10 ZOOLOGY
INPUT YOUR ALPHABETIZED LIST (BY NUMBER ONLY)?
?
```

See Fig. 3-3 for the flowchart for this program.

Program Listing

```
  10  DIM Q$(11),W$(11)
1000  CLS:PRINT TAB(20);"***** ALPHABETIZE *****
1010  R=1:TW=0:PRINT
1020  PRINT"ARE INSTRUCTIONS REQUIRED?";
1030  INPUT I$
1040  IF RIGHT$(I$,1) <>"S" THEN CLS:PRINT:GOTO 1090
1045  PRINT
1050  PRINT"THIS IS THE GAME OF ALPHABETIZE, WHERE ALL
      YOU"
1060  PRINT"HAVE TO DO IS ARRANGE A GIVEN LIST OF WORDS
      IN"
```

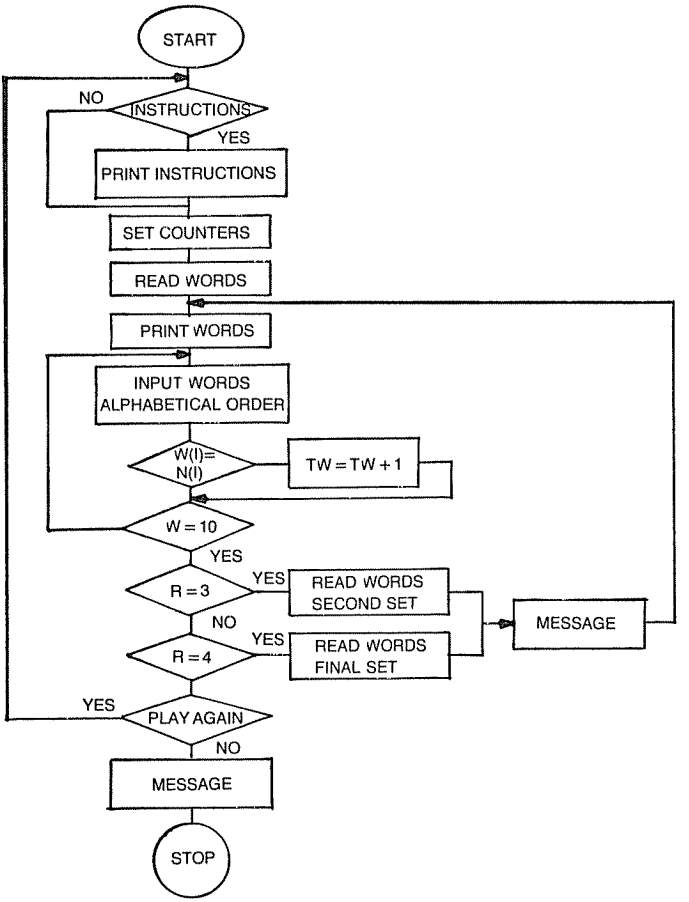


Fig. 3-3. The flowchart for Alphabetize.

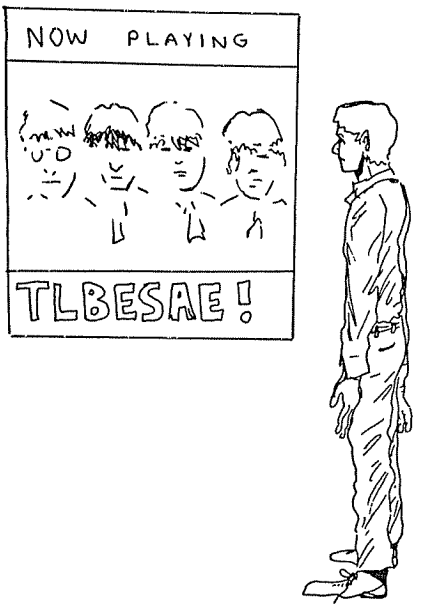
```
1070  PRINT"ALPHABETICAL ORDER, SOUNDS SIMPLE YOU SAY
      ?"
1080  PRINT"LET'S TRY IT."
1085  FOR I=1 TO 3500:NEXT:CLS:PRINT
1090  REM GET FIRST SET OF WORDS
1100  FOR I=1 TO 10:READ W$(I):NEXT
1110  DATA HELLO,HELP,AFTER,MODULE,MODULAR,SUS-
      PENSE,MR.,MRS.,BETA,BET
1120  REM NOW ALPHABETIZE THEM BY NUMBER
1130  FOR I=1 TO 10:READ N(I) :NEXT
1140  DATA 3,10,9,1,2,5,4,7,8,6
1150  REM SET COUNTERS FOR ROUND
```

```
1160 W=10:WT=(W+WT)
1170 PRINT"INPUT THE WORDS IN THEIR CORRECT ORDER BY"
1180 PRINT"NUMBER ONLY."
1185 IF R >1 THEN 1200
1190 PRINT"EXAMPLE: ";W$(3);"WOULD BE THE FIRST WORD
     SO"
1195 PRINT"INPUT #3, ETC."
1200 PRINT:REM LIST THE WORDS
1210 I=1:U=2:P=5
1215 PRINT TAB(P-5);I;W$(I) TAB(P*2+P) ;U;W$(U)
1220 I=U+1:U=I+1:IF U <> 12 THEN 1215
1260 REM INPUT THE LIST / CHECK IF CORRECT
1270 PRINT"INPUT YOUR ALPHABETIZED LIST (BY NUMBER
     ONLY)"
1280 FOR I=1 TO 10
1290 INPUT W(I)
1295 Q$=W$(N(I))
1300 IF W(I) < > N(I) THEN 1320
1310 NEXT:R=R+1:PRINT:GOTO 1340
1320 PRINT TAB(P*3);"NOT CORRECT !!"
1330 W=W-1:TW=TW+1:GOTO 1310
1340 IF W=10 THEN 1370
1350 IF W >=7 THEN 1400
1360 IF W < 7 THEN 1430
1370 PRINT"THAT'S EXCELLENT, ALL";W;"WORDS IN THEIR
     CORRECT ORDER."
1380 PRINT"MUST'VE BEEN TOO EASY . . . . "
1390 PRINT"PRESS A KEY . . . . ":GOSUB 2000:GOTO 1460:REM
     NEXT ROUND
 400 PRINT"THAT'S NOT BAD,";W;"OUT OF A POSSIBLE 10."
 410 IF R <=3 THEN PRINT"IT'LL BE HARDER NEXT ROUND."
 420 GOTO 1390
1430 PRINT"THAT SCORE DOESN'T EVEN DESERVE AN HON
     ORABLE MENTION !!"
1440 PRINT"ONLY";W;"WORDS CORRECT !! OUT OF A POSSIBLE
     10 !!"
1450 GOTO 1390
1460 REM USE SAME STRING
1470 IF R=3 GOTO 1560:REM BRANCH TO ROUND #3
1475 IF R=4 GOTO 1700:REM STOP / CONT LOOP
1480 REM GET 10 MORE WORDS
1490 FOR I=1 TO 10:READ W$(I):NEXT
```

```
1500 DATA WENT,DOZE,CALIFORNIA,SAMOLA,CALLAO, RE-
     SPIRATOR
1510 DATA RESPOND,COMPUTER,COMPUTE,ZOOLOGY
1520 REM ALPHABETIZE BY NUMBER
1530 FOR I=1 TO 10:READ N(I):NEXT
1540 DATA 3,5,9,8,2,6,7,4,1,10
1550 GOTO 1150
1560 PRINT:PRINT"THIS WILL BE YOUR THIRD AND FINAL
     ROUND."
1570 REM GET FINAL SET OF WORDS
1580 FOR I=1 TO 10:READ W$(I):NEXT
1590 DATA ZEPHYR,ZEPPELIN,ZENER,ZAP,WITTY,
     BROUGHT,BOUGHT
1600 DATA LESSON,TRADE,RESTRAIN
1610 REM ALPHABETIZE
1620 FOR I=1 TO 10:READ N(I):NEXT
1630 DATA 7,6,8,10,9,5,4,3,1,2
1640 GOTO 1150
1700 REM FINAL MESSAGE
1710 TS=(WT-TW):REM TOTAL SCORE
1715 PRINT:PRINT
1720 IF TS <= 15 THEN 1820
1730 IF TS > 15 AND TS <20 THEN 1800
1740 IF TS > 20 AND TS < 25 THEN 1780
1750 PRINT
1760 PRINT"THAT'S REALLY A GOOD SCORE, GOING THAT FAR
     THOUGH,"
1770 PRINT"YOU PROBABLY COULD'VE GOTTEN ALL OF THEM
     CORRECT."
1775 GOTO 1850
1780 PRINT"I KNOW YOU COULD'VE MADE A BETTER SCORE
     THAN";TS
1790 PRINT"CORRECT. THAT'S NOT BAD THOUGH . . . ."
1795 GOTO 1850
1800 PRINT"HOW FAR DID YOU SAY YOU WENT THROUGH
     SCHOOL ?"
1810 PRINT"OH I SEE, YOU'RE ONLY IN THE THIRD GRADE !!"
1815 GOTO 1850
1820 PRINT"ONLY";TS;"RIGHT, OUT OF";WT;". WHY DON'T
     YOU SEE IF"
1830 PRINT"YOU CAN GET YOUR FIRST, MIDDLE AND LAST
     NAME IN"
```

```
1840 PRINT"ALPHABETICAL ORDER. THEN TRY THIS PRO-
     GRAM AGAIN !!"
1845 GOTO 1875
1850 PRINT:PRINT"WOULD YOU LIKE TO RUN THIS PROGRAM
     AGAIN";
1860 INPUT I$
1870 IF RIGHTS(I$,1)="S" THEN RESTORE:GOTO 1000
1875 PRINT"SEE YA NEXT TIME !!"
1900 END
2000 A$=INKEY$:IF A$=" " THEN 2000
2010 CLS:RETURN
```

Scrambled Words



This game program lets you unscramble 17 different words. The computer will give you 2 chances to unscramble each word, after which you'll be asked to select another.

The words are about people, places and things. But you can modify this game to suit your wishes. Examples are: use all names, names of cars, movie titles just to name a few. There is no sample run for this program, to unscramble the words for you would be defeating the purpose of the game. See Fig. 3-4 for the flowchart for this program.

Program Listing

```
10 CLS:DIM X$(51)
20 READ A$(1),A$(2),B$(1),B$(2),C$(1),C$(2),D$(1),D$(2),
   E$(1),E$(2),F$(1),F$(2),G$(1),G$(2)
30 READ H$(1), H$(2), I$(1), I$(2), J$(1),J$(2), K$(1), K$(2), L$(2),
   M$(1), M$(2)
35 READ N$(1), N$(2), P$(1), P$(2), Q$(1), Q$(2), R$(1), R$(2)
36 PRINT: C=0: Q=0: IF R=1 THEN 110
40 PRINT"IN THIS PROGRAM YOU WILL BE ASKED TO UN-
   SCRAMBLE A WORD."
```

```
50 PRINT"UNDER THE SCRAMBLED WORDS WILL BE A SEN
   TENCE"
60 PRINT"TO HELP YOU UNSCRAMBLE THIS WORD (OR
   WORDS)."
70 PRINT"THESE WORDS WILL BE ABOUT NAMES, PLACES
   AND OR THINGS,"
80 PRINT"ALL YOU HAVE TO DO IS SELECT A NUMBER BET-
   WEEN 1 AND 17."
90 PRINT"THEN YOU'LL HAVE 2 CHANCES TO RESPOND
   CORRECTLY, AFTER"
100 PRINT"THIS YOU'LL BE ASKED TO SELECT ANOTHER."
105 PRINT"IF YOU THINK THERE ARE 2 WORDS TO UNSCRAM-
   BLE"
106 PRINT"BE SURE TO ADD THE SPACE WHEN ENTERING IT,
   OR YOU'LL"
107 PRINT"RECEIVE AN INCORRECT RESPONSE.":PRINT
110 INPUT"SELECT A NUMBER BETWEEN 1 AND 17 TO EXE-
   CUTE GENERATOR";X
111 Q=Q+1:IF Q=17 THEN 5020
115 IF X <1 OR X> 17 THEN PRINT"OUT OF RANGE... TRY
   AGAIN.":Q=Q
   :GOTO 110
120 CLS:ON X GOTO
   130,200,280,370,460,550,640,730,820,910,1000,1090,
   1180,1270,1360,1450,1540
130 A=0
140 GOSUB 3020:PRINT A$(1):GOSUB 3040
150 PRINT"THE BEATLES ORIGINATED IN THIS ENGLISH
   TOWN";
160 INPUT X$
165 GOSUB 3045
170 IF X$ < >A$(2)THEN 180
175 GOTO 190
180 GOSUB 2000:IF A <> THEN 140
184 GOSUB 2050
185 GOTO 110
190 GOSUB 2090:GOTO 110
200 A=0
210 GOSUB 3020:PRINT B$(1):GOSUB
220 PRINT"IN 1976 THIS 4 TON SPACE CRAFT SET DOWN
   SAFELY ON MARS";
230 INPUT X$
```

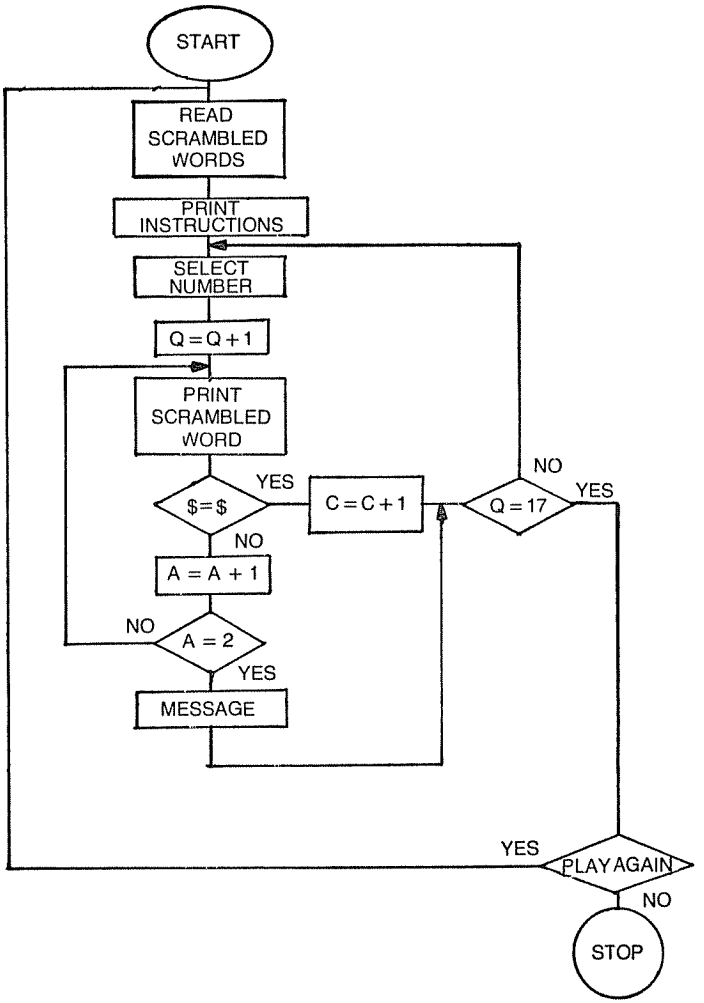


Fig. 3-4. The flowchart for Scrambled Words.

```
240  GOSUB 3045
250  IF X$ < > B$(2) THEN 260
255  GOTO 190
260  GOSUB 2000:IF A < > 2 THEN 210
264  GOSUB 2050
265  GOTO 110
280  A=0
290  GOSUB 3020:PRINTC$(1):GOSUB 3040
```

```
300 PRINT"THIS SMALL COMPONENT WAS INVENTED IN
    1948";
310 INPUT X$
320 GOSUB 3045
330 IF X$ < > C$(2) THEN 340
335 GOTO 190
340 GOSUB 2000:IF A < > 2 THEN 290
350 GOTO 110
370 A=0
380 GOSUB 3020:PRINT D$(1):GOSUB 3040
390 PRINT"THIS PRESIDENT, IN 1862, GAVE THE SLAVES
    FREEDOM";
400 INPUT X$
410 GOSUB 3045
420 IF X$ < > D$(2) THEN 430
425 GOTO 190
440 GOTO 110
460 A=0
470 GOSUB 3020:PRINT E$(1):GOSUB 3040
480 PRINT"AMERICAN ASTRONAUT FIRST TO STEP ON
    MOON";
490 INPUT X$
500 GOSUB 3045
510 IF X$ < > E$(2) THEN 520
515 GOTO 190
520 GOSUB 2000:IF A < > 2 THEN 470
525 GOSUB 2050
530 GOTO 110
550 A=0
560 GOSUB 3020:PRINT F$(1):GOSUB 3040
570 PRINT"IN 1927, FOR THE FIRST TIME, THIS WAS USED IN A
    MOVIE";
580 INPUT X$
590 GOSUB 3045
600 IF X$ < > F$(2) Then 610
605 GOTO 190
610 GOSUB 2000:IF A < > 2 THEN 560
615 GOSUB 2050
620 GOTO 110
640 A=0
650 GOSUB 3020: PRINT G$(1):GOSUB 3040
660 PRINT"THIS APPLIANCE WAS FIRST INTRODUCED 72
    YEARS AGO";
```

```
670 INPUT X$
680 GOSUB 3045
690 IF X$ < > G$(2) THEN 700
695 GOTO 190
700 GOSUB 2000:IF A < > 2 THEN 650
705 GOSUB 2050
710 GOTO 110
730 A=0
740 GOSUB 3020:PRINT H$(1):GOSUB 3040
750 PRINT"THE FIRST LONG SUSPENSION BRIDGE, BUILT
    1937";
760 INPUT X$
770 GOSUB 3045
780 IF X$ < > H$(2) THEN 790
785 GOTO 190
790 GOSUB 2000:IF A < > 2 THEN 740
795 GOSUB 2050
800 GOTO 110
820 A=0
830 GOSUB 3020:PRINT I$(1):GOSUB 3040
840 PRINT"HE WAS CALLED THE KING OF ROCK & ROLL";
850 INPUT X$
860 GOSUB 3045
870 IF X$ < > I$(2) THEN 880
875 GOTO 190
880 GOSUB 2000:IF A < > 2 THEN 830
885 GOSUB 2050
890 GOTO 110
910 A=0
920 GOSUB 3020:PRINT J$(1):GOSUB 3040
930 PRINT"OFTEN CALLED THE HEART OF YOUR COMPU-
    TER";
940 INPUT X$
950 GOSUB 3045
960 IF X$ < > J$(2) THEN 970
965 GOTO 110
970 GOSUB 2000:IF A < > 2 THEN 920
975 GOSUB 2050
980 GOTO 110
1000 A=0
1010 GOSUB 3020:PRINT K$(1):GOSUB 3040
1020 PRINT"COOKING TIME WAS CUT WHEN THIS APPLIANCE
     WAS INVENTED";
```

```
1030 INPUT X$
1040 GOSUB 3045
1050 IF X$ < > K$(2) THEN 1060
1055 GOTO 190
1060 GOSUB 2000:IF A < > 2 THEN 1010
1065 GOSUB 2050
1070 GOTO 110
1090 A=0
1100 GOSUB 3020:PRINT L$(1):GOSUB 3040
1110 PRINT"USED FOR COMMUNICATION IN MILLIONS OF
     PLACES";
1120 INPUT X$
1130 GOSUB 3045
1140 IF X$ < > L$(2) THEN 1150
1145 GOTO 190
1150 GOSUB 2000:IF A < > 2 THEN 1100
1155 GOSUB 2050
1160 GOTO 110
1180 A=0
1190 GOSUB 3020:PRINT M$(1):GOSUB 3040
1200 PRINT"THIS IS WHAT PEOPLE LIKE TO RELAX IN FRONT
     OF";
1210 INPUT X$
1220 GOSUB 3045
1230 IF X$ < > M$(2) THEN 1240
1235 GOTO 190
1240 GOSUB 2000:IF A < > 2 THEN 1190
1245 GOSUB 2050
1250 GOTO 110
1270 A=0
1280 GOSUB 3020:PRINT N$(1):GOSUB 3040
1290 PRINT"CALLED THE WINDY CITY";
1300 INPUT X$
1310 GOSUB 3045
1320 IF X$ < > N$(2) THEN 1330
1325 GOTO 190
1330 GOSUB 2000:IF A < > 2 THEN 1280
1340 GOSUB 2050
1350 GOTO 110
1360 A=0
1370 GOSUB 3020:PRINT P$(1):GOSUB 3040
1380 PRINT"IT CAN DO JUST ABOUT ANYTHING, GIVEN THE
     INFORMATION";
```

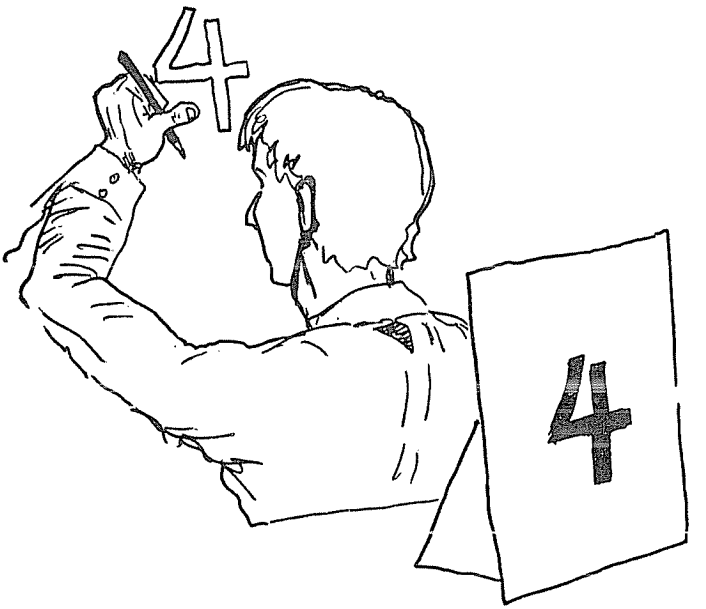
```
1390 INPUT X$
1400 GOSUB 3045
1410 IF X$ < > P$(2) THEN 1420
1415 GOTO 190
1420 GOSUB 2000:IF A < > 2 THEN 1370
1430 GOSUB 2050
1440 GOTO 110
1450 A=0
1460 GOSUB 3020:PRINT Q$(1):GOSUB 3040
1470 PRINT"DEEMED DANGEROUS FOR YOUR HEALTH";
1480 INPUT X$
1490 GOSUB 3045
1500 IF X$ < > Q$(2) THEN 1510
1505 GOTO 190
1510 GOSUB 2000:IF A < > 2 THEN 1460
1520 GOSUB 2050
1530 GOTO 110
1540 A=0
1550 GOSUB 3020:PRINT R$(1):GOSUB 3040
1560 PRINT"THIS ACTOR PLAYED THE SUNDANCE KID";
1570 INPUT X$
1580 GOSUB 3045
1590 IF X$ < > R$(2) THEN 1600
1595 GOTO 190
1600 GOSUB 2000:IF A < > 2 THEN 1550
1605 GOSUB 2050
1610 GOTO 110
2000 GOSUB 3020:PRINT"INCORRECT RESPONSE":FOR I=1 TO
     1500:NEXT
2010 CLS:RETURN
2050 GOSUB 3040:PRINT"YOU'VE HAD 2 TRIES AT THE SAME
     QUESTION, SORRY"
2060 FOR I=1 TO 1500:NEXT
2070 CLS
2080 Q=Q-1:RETURN
2090 GOSUB 3020:PRINT"VERY GOOD !!":FOR I=1 TO 1500:NEXT
3000 CLS
3010 C=C+1:RETURN
3020 PRINT:PRINT:PRINT:PRINT TAB(15);
3030 RETURN
3040 PRINT:PRINT:PRINT:RETURN
3045 A=A+1:RETURN
```

```
3050 DATA IVPLOROEL,LIVERPOOL
3060 DATA IKGIVNTRBOO,VIKING ROBOT
3070 DATA RSTANORTIS,TRANSISTOR
3080 DATA MAARABHNCOLINL,ABRAHAM LINCOLN
3090 DATA LINETRRAMGSNO,NEIL ARMSTRONG
4000 DATA DOSUN,SOUND
4010 DATA HASISDHREW,DISHWASHER
4020 DATA NDLOETAGEG,GOLDEN GATE
4030 DATA SLEIVSPERELY,ELVIS PRESLEY
4040 DATA RPORMCISSRCEOO,MICROPROCESSOR
4050 DATA ROMCIAWVE,MICROWAVE
4060 DATA EPHENOTLE,TELEPHONE
4070 DATA NTLEEVSIOI,TELEVISION
4080 DATA GAHCICO,CHICAGO
4090 DATA RPUMCOTE,COMPUTER
5000 DATA RATETGICE,CIGARETTE
5010 DATA BRORETFDERDOR,ROBERT REDFORD
5020 FOR I=1 TO 2000:NEXT
5030 CLS
5040 PRINT
5050 PRINT"YOU'VE ANSWERED";Q;"OF THE 17 QUESTIONS"
5060 PRINT"TOTAL CORRECT OF THESE ARE";C
5070 PRINT
5080 PRINT"WOULD YOU LIKE TO TRY SOME MORE";
5090 INPUT X$
5100 IF X$="YES" THEN RESTORE:GOTO 5130
5110 PRINT"YOU CHICKEN !!"
5120 END
5130 PRINT"DO YOU NEED INSTRUCTIONS";
5140 INPUT X$
5150 IF X$="YES" THEN 20
5160 R=1:GOTO 20
```

Chapter 4

Games for Self Improvement

Esp Test Program



Now you can test your mind to see if or how good your Extra Sensory Perception really is. The program is sectioned into two parts, the first part requires two people, the second part you do on your own. No sample run is provided as this would defeat the program's purpose, but you can get a really good idea of the program by reading the print statements. See Fig. 4-1 for the flowchart for this program.

Program Listing

```
10 CLS:RANDOM
20 PRINT:PRINT"THIS PROGRAM TESTS YOUR KNOWLEDGE
   OF ESP."
30 PRINT"THEIR ARE TWO PARTS TO THE ENTIRE PRO-
   GRAM, UPON SELECTION"
40 PRINT"OF AN INDIVIDUAL PART, FURTHER INSTRUC-
   TIONS WILL BE LISTED."
50 PRINT:PRINT"SELECT BY NUMBER ONLY:"
60 PRINT"(1) TELEPATHY (REQUIRES TWO PEOPLE)"
70 PRINT"(2) PRECOGNITION"
80 INPUT X
```

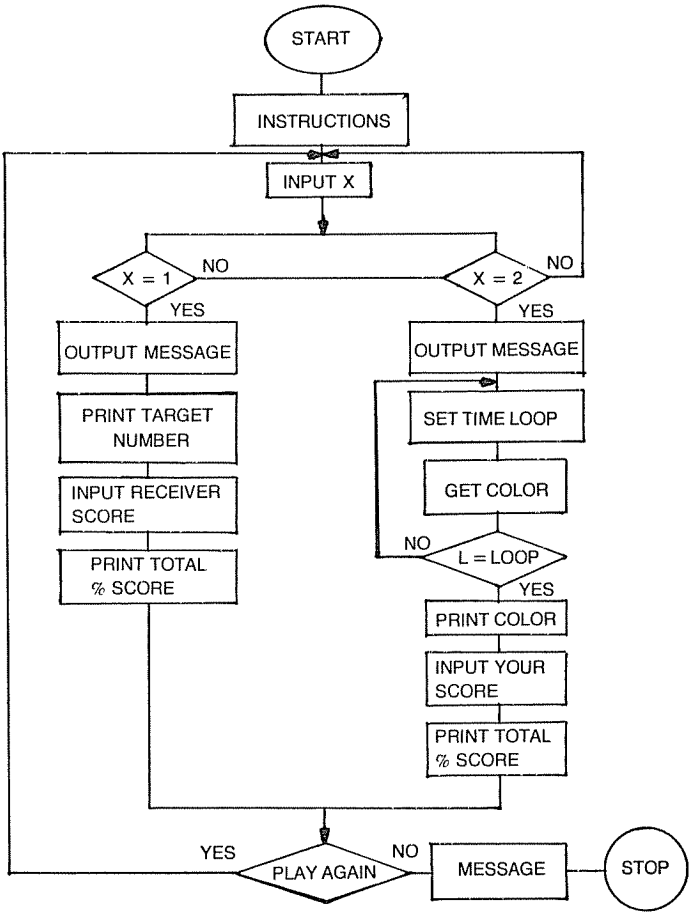


Fig. 4-1. The flowchart for ESP Test.

```
 90 ON X GOTO 100,550
100 CLS:PRINT
105 F=0:N=0:T=10
110 PRINT"THIS PART OF THE PROGRAM DEALS WITH TELE-
    PATHY."
120 PRINT"TELEPATHY IS THE TRANSFERENCE OF
    THOUGHTS FROM ONE"
130 PRINT"PERSON TO ANOTHER WITHOUT USE OF THE FIVE
    SENSES."
140 PRINT"HAVE ANOTHER PERSON (THE RECEIVER) SIT
    WHERE THE VIDEO"
```

```
150 PRINT"SCREEN IS NOT VISIBLE TO THEIR SIGHT. AFTER
    EXECUTION"
160 PRINT"OF THIS PROGRAM A NUMBER WILL BE PRINTED
    ON THE"
170 PRINT"SCREEN (THESE WILL BE CALLED RANDOM
    TARGET NUMBERS)."
180 PRINT"LOOK AT THE NUMBER, CONCENTRATE ON IT
    VERY HARD. THEN"
190 PRINT"ASK THE RECEIVER WHAT THE NUMBER IS.
    THERE WILL BE TEN"
200 PRINT"TARGET NUMBERS. DO THESE TESTS IN QUIET
    SURROUNDINGS."
205 GOSUB 500
210 REM GET TARGET NUMBER
220 T=INT(10*RND(0)+1)
230 PRINT:PRINT
240 PRINT:PRINT TAB(30);T
250 PRINT
260 PRINT"THIS IS THE RANDOM TARGET NUMBER. CON-
    CENTRATE ON IT"
270 PRINT"ASK THE RECEIVER WHAT IT IS, THEN ENTER THE
    RECEIVER'S"
280 PRINT"SCORE (ENTER 1 FOR A CORRECT RESPONSE AND
    0 FOR AN"
290 PRINT"INCORRECT RESPONSE)."
300 GOSUB 530:REM TIME LOOP
310 INPUT"ENTER THE RECEIVERS SCORE";A
320 N=N+1:REM AMOUNT OF NUMBERS PRINTED
330 IF A=1 THEN F=F+1
340 IF A=0 THEN F=F
350 S=INT(100*F/T):REM PRECENT SCORE
360 PRINT"NUMBER OF TRIES —";N
370 PRINT"SCORE THUS FAR";S;"% CORRECT . . ."
380 IF N <>10 THEN GOSUB 500: GOTO 210
390 GOTO 910
400 GOTO 550
500 PRINT:PRINT"PRESS ANY KEY . . . . ."
510 A$=INKEY$:IF A$=" "THEN 510
520 CLS:RETURN
530 FOR I=1 TO 2500:NEXT:RETURN
550 CLS:A=10:F=0:N=0
555 FOR I=1 TO 5:READ C$(I):NEXT
```

```
560 PRINT
570 PRINT"THIS PORTION OF THE PROGRAM DEALS WITH
    PRECOGNITION."
580 PRINT"WHICH IS TO KNOW BEFOREHAND. YOU'LL AT-
    TEMPT TO READ (THE COMPUTER'S)"
590 PRINT"MEMORY)BEFORE IS PRINTED ON THE SCREEN IN
    A"
600 PRINT"GIVEN AMOUNT OF TIME (NAMES OF COLORS
    WILL BE USED)."
610 REM L= TIME LOOP / 500
620 PRINT"TO SET THE TIME RATE, HAVE YOU HAD ANY PRE-
    COGNITIONS"
630 PRINT"THAT YOU CAN REMEMBER?(ENTER 0,1,2,3, ETC. -
    NOT MORE"
635 PRINT"THAN 10)";
640 INPUT P
650 IF P < 0 OR P > 10 THEN PRINT"TRY AGAIN . . . INVALID
    RESPONSE.":
    GOTO 640
660 IF P >5 THEN P=5000:L=P/500:GOTO 680
670 P=7500:L=P/500
680 PRINT:PRINT"YOU'LL HAVE";L;"SECONDS BEFORE EACH
    COLOR IS"
685 PRINT"PRINTED ON THE SCREEN . . . . ."
690 GOSUB 500:PRINT
700 PRINT"AFTER EXECUTION OF THIS PORTION, CONCEN-
    TRATE ON THE"
710 PRINT"DIFFERENT COLORS THAT MIGHT BE CONTAINED
    IN THE COMPUTER'S"
715 PRINT"MEMORY, WRITE DOWN YOUR ANSWER ON A
    PIECE OF PAPER."
720 PRINT"AFTER YOUR ALLOTTED TIME, THE COMPUTER
    WILL PRINT THE"
725 PRINT"COLOR. ENTER YOUR SCORE: 1 FOR CORRECT, 0
    FOR INCORRECT."
730 PRINT"THE ROOM YOU ARE IN MUST BE QUIET !!"
760 GOSUB 500
765 PRINT
770 PRINT"CONCENTRATE, THEN WRITE YOUR ANSWER ON
    PAPER."
780 PRINT"REMEMBER, YOU ONLY HAVE";L;"SECONDS."
790 N=N+1:I=INT(4*RND(0)+1)
```

```
800 FOR Q=1 TO P:NEXT
810 PRINT:PRINT"TIME'S UP !!!"
820 PRINT:PRINT:PRINT
825 PRINT TAB(25);C$(I)
830 PRINT:PRINT"DID YOUR ANSWER MATCH THE COMPUT-
    ERS MEMORY? (1/0)";
840 INPUT M
850 IF M=1 THEN F=F+1
860 IF M=0 THEN F=F
870 S=INT(100*F/A)
880 PRINT:PRINT"NUMBER OF TRIES —";N
890 PRINT"SCORE THUS FAR";S;"% CORRECT."
900 IF N < > 10 THEN GOSUB 500:GOTO 770
910 GOSUB 500
920 PRINT:PRINT"YOU HAD";N;"TRIES . . . PERCENTAGE AS
    LISTED:"
930 PRINT"CHANCE SCORE 10% TO 30%"
940 PRINT"GOOD SCORE 40% TO 60%"
950 PRINT"EXCELLENT SCORE 70%TO 100%"
955 PRINT
960 PRINT"YOUR TOTAL SCORE WAS —";S;"% CORRECT."
970 GOSUB 500
975 PRINT
980 PRINT"SHALL WE TRY AGAIN";
990 INPUT N$
1000 IF LEFT$(N$,1)="Y" THEN RESTORE:GOSUB 500:GOTO 50
1010 PRINT
1020 PRINT"WHAT'S THE MATTTER, GOT A HEADACHE ???"
1030 END
1050 DATA RED, GREEN, BROWN, YELLOW, BLUE
```

Memory Test

See how good your memory really is. If you think your memory is excellent, this program will let you know for sure. Don't cheat by writing the words on paper as they're listed on the screen; to do so would be to miss the whole point of the test!!

After you or your friends tire of the same words, you can change the DATA in lines 40, 50 and 60 to suit your needs. How you rate your memory will determine the amount of time a word will be printed on the screen. Meaning if you rate your memory as excellent, the words will be printed only a short time. Rating your memory as poor has an opposite effect the words are printed for a long duration.

Because of the words and point of the test, no sample run is included—to do this would be to render the test useless. But remember, after each word is printed, the screen will clear after an allotted amount of time. See Fig. 4-2 for the flowchart for this program.

Program Listing

```
10  CLEAR 500:DIM A(20),W(20),A$(16),S$(16),T$(16),W$(16)
20  CLS:PRINT:PRINT
30  FOR I=1 TO 15:READ A$(I):NEXT
40  DATA COMPUTER, LOST, INTELLIGENT, WONDER, AB-
    SENT, SOFTLY
50  DATA SECOND, HEREAFTER, MORNING, SYSTEM, QUES-
    TIONS, SILVER
60  DATA SWATH, TEMPERATURE, ENTERTAINMENT
110 PRINT TAB(15); "***** MEMORY TEST *****"
120 PRINT:PRINT"RATE YOUR MEMORY (BY NUMBER ONLY)"
```

```
130 PRINT"(1)       EXCELLENT"
140 PRINT"(2)       GOOD"
150 PRINT"(3)       FAIR"
160 PRINT"(4)       POOR"
170 INPUT N
175 IF N < 1 OR N > 4 PRINT"TRY A NUMBER THAT'S LISTED
    !!":GOTO 170
180 ON N GOTO 190,200,210,220
190 T=400:V=15:Y=V:A$="EXCELLENT":GOSUB 1500:GOTO
    230
200 T=700:V=10:Y=V:A$="GOOD":GOSUB 1500:GOTO 230
210 T=900:V=8:Y=V:A$="FAIR":GOSUB 1500:GOTO 230
220 T=1000:V=6:Y=V:A$="POOR":GOSUB 1500
230 PRINT:IF N < > 1 AND N < > 2 THEN 260
240 PRINT"WITH YOUR MEMORY (";A$;"), YOU SHOULDN'T
    HAVE"
250 PRINT"TOO MANY PROBLEMS WITH THIS TEST."
260 PRINT"YOU WILL SEE":V;"WORDS, PRINTED ON THE
    SCREEN."
270 PRINT"AFTER THESE WORDS ARE ERASED YOU WILL
    INPUT THEM"
280 PRINT"IN THE ORDER THEY APPEARED."
290 REM SET PRINT AREA / TIME LOOP
295 PRINT:INPUT"PRESS ENTER/RETURN TO BEGIN";X$
300 X=25:CLS:PRINT:PRINT:PRINT:PRINT:PRINT
310 FOR I=1 TO V
320 PRINT TAB(X-10);"(";I;")"; TAB(X);T$(I)
330 FOR J=1 TO T
340 NEXT J:CLS:PRINT:PRINT:PRINT:PRINT:PRINT
350 NEXT I
360 CLS:PRINT
370 PRINT"NOW YOU WILL INPUT THE WORDS, STARTING
    WITH THE FIRST"
380 PRINT"WORD THAT WAS PRINTED."
390 FOR W=1 TO V
400 PRINT"ENTER WORD #";W; " ";
410 INPUT W$(W)
420 IF W$(W)< >T$(W) THEN Y=Y-1:A$(W)=" ":W(W)=W(W)+W
430 NEXT
435 IF Y=V THEN 490
440 PRINT:PRINT"INCORRECT WORDS:"
450 FOR I=1 TO V
460 IF W(I) > 0 THEN PRINT W(I);",";
```

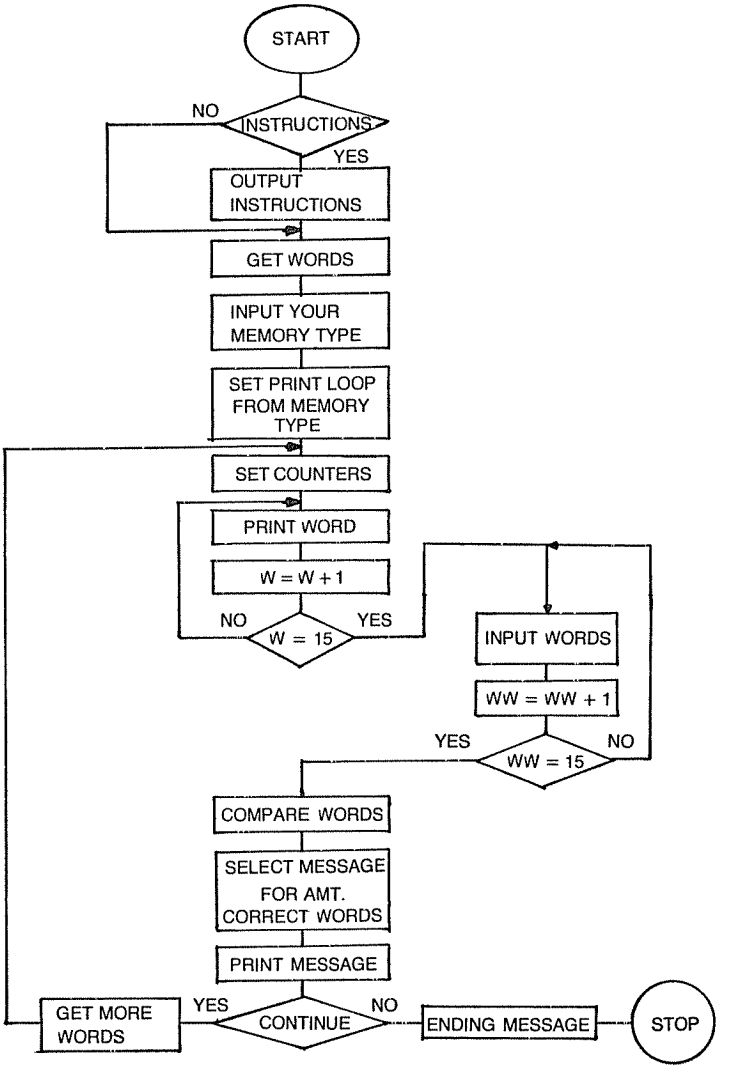


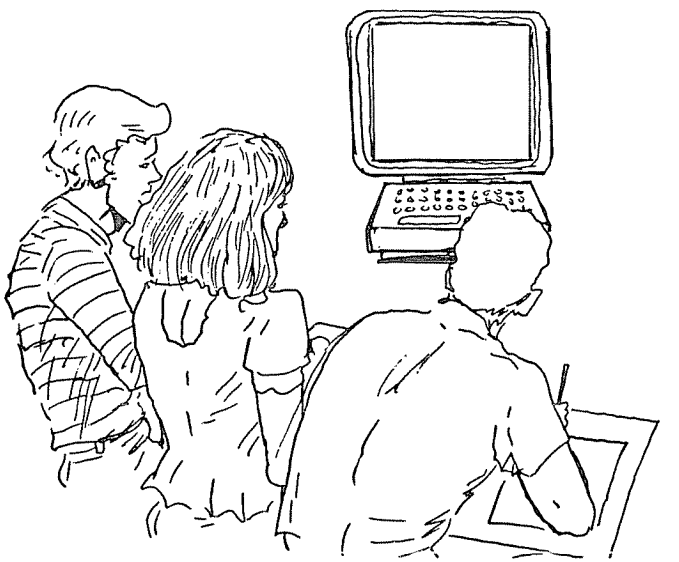
Fig. 4-2. The flowchart for Memory Test.

```
480  NEXT:PRINT
485  GOTO 700
490  REM ALL WORDS CORRECT
500  PRINT
510  PRINT"VERY WELL DONE—ALL WORDS CORRECT."
520  REM GOTO FINAL PART OF TEST
530  GOTO 800
```

```
700 PRINT"IF YOU MISSED MORE THAN 2 WORDS YOU
    SHOULD TRY THE"
710 PRINT"FIRST PART OF THE PROGRAM OVER, OR YOU
    MIGHT"
720 PRINT"NEVER NEVER MAKE IT THROUGH THE FINAL
    PART."
730 IF ABS (V-Y) > 2 THEN 750
740 PRINT"YOU DIDN'T SO . . . . .":GOTO 800
750 PRINT"CHECKING YOUR SCORE, YOU MISSED";(V-Y);"."
760 PRINT"WOULD YOU LIKE TO TRY THE FIRST PART
    AGAIN?";
770 INPUT I$
780 IF I$="YES" THEN FOR I=1 TO V:W(I)=0:NEXT:Y=V:GOTO
    260
790 PRINT:PRINT"I HOPE YOU MAKE IT THROUGH THE FINAL
    PART !!"
800 PRINT
810 PRINT"PRESS ENTER/RETURN FOR FINAL PART OF
    TEST";
820 INPUT X$
830 CLS:PRINT
840 PRINT"KEEP A CLOSE EYE ON THESE WORDS, AS THE
    COMPUTER"
850 PRINT"MAY NOT ASK YOU TO INPUT THEM IN THE ORDER
    THEY"
860 PRINT"WILL BE PRINTED."
870 PRINT:INPUT"PRESS ENTER/RETURN TO BEGIN";X$
880 PRINT
890 REM GET WORDS AGAIN
900 RESTORE
910 FOR I=1 TO 15:READ A$(I):NEXT
920 FOR I=1 TO 10
930 S=INT(10*RND(0)+1)
940 IF B(S) < > 0 THEN 930
950 S$(I)=A$(S)
960 B(S)=1
970 NEXT
980 X=15:Q=1:R=:Z=X
990 FOR T=1 TO 1500:NEXT:CLS:PRINT:PRINT:PRINT:
    PRINT:PRINT
1000 PRINT TAB(X-5);Q;")";TAB(X); S$(Q); TAB (X+15);
    R;")";TAB (X+20); S$(R)
```

```
1010 Q=Q+2:R=Q+1
1020 Z=Z-2
1030 IF Z < > 5 THEN 990
1040 REM TIME LOOP
1050 FOR T=1 TO 800:NEXT:CLS:PRINT
1060 PRINT"YOU NOTICED THAT THE WORDS APPEARED IN
     PAIRS"
1070 PRINT"AND THERE WERE 10 OF THEM. TO SUCCEED
     THIS PART"
1080 PRINT"OF THE TEST, YOU MUST INPUT THE WORDS THE
     WAY"
1090 PRINT"THE COMPUTER ASKS YOU TO."
1100 I=INT(8*RND(0)+1):C=I
1110 IF I < 5 THEN 1100
1120 PRINT"YOU'LL ENTER";I;"OF THE 10 WORDS."
1130 PRINT:PRINT"INPUT THE FOLLOWING WORDS:"
1140 FOR W=1 TO 1
1150 N=INT(10*RND(0)+1)
1160 IF E(N) <>0 THEN 1150
1170 PRINT"ENTER WORD # ";N;
1180 INPUT W$(W): IF W$(W) < > S$(W) THEN C=C-1
1190 E(N)=1
1200 NEXT
1210 CLS:PRINT
1220 IF C < 5 THEN 1260
1230 PRINT"OUT OF THE";I;"WORDS, YOU'VE REMEM-
     BERED";C
1240 PRINT"OF THEM, NOT BAD AT ALL !!"
1250 PRINT:PRINT"END OF PROGRAM . . . . .":END
1260 PRINT"YOU COULD HAVE CHEATED AND COME UP WITH
     A BETTER"
1270 PRINT"SCORE THAN THIS. ";C;"CORRECT OUT OF ON-
     LY";I;"WORDS !!!"
1280 GOTO 1250
1500 REM SELECT NUMBER OF RANDOM WORDS
1505 FOR I=1 TO 15
1510 M=INT(15*RND(0)+1)
1515 IF A(M) < >0 THEN 1510
1520 T$(I)=A$(M)
1525 A(M)=1
1530 NEXT
1540 RETURN
```

Memory Test II



Memory Test II takes over where the previous Memory Test One left off. This test has three categories, numbers, names and places. How you rate your memory will determine the length of time that a word or number will be printed on the screen.

This program could be a great help to your school age children. You could change the DATA in lines 230, 280 and 290 to insert words that they have trouble spelling, then when the program is run, you could not only test their memory but brush up on their spelling.

As with the previous Memory Test, no sample run is included. To do so would forfeit the numbers, names and places. See Fig. 4-3 for the flowchart of this program.

Program Listing

```
 10 REM *** MEMORY TEST II ***
 20 CLS:CLEAR 500:DIM N(30),Y(30)
 30 PRINT:PRINT TAB(5);"** MEMORY TEST II **"
 40 PRINT
 50 PRINT
 80 PRINT"THIS SIMULATION WILL TEST YOUR MEMORY."
 90 PRINT"POOR, FAIR, GOOD OR EXCELLENT, YOU'LL RUN"
100 PRINT"YOUR MEMORY THROUGH IT'S PACES."
```

```
110  PRINT"SELECT ONE OF THE FOLLOWING:"
120  PRINT"(1)        NUMBERS"
130  PRINT"(2)        NAMES"
140  PRINT"(3)        PLACES"
150  PRINT"(4)        CANCEL PROGRAM"
160  INPUT X
170  CLS:PRINT:PRINT:IF X > 3 THEN 320
180  PRINT"HOW DO YOU RATE YOUR MEMORY"
190  INPUT"(POOR, FAIR, GOOD OR EXCELLENT)";A$
200  GOSUB 1000:IF R > 0 THEN 300
210  REM READ NAMES
220  FOR I=1 TO 10:READ N$(I):NEXT
230  DATA CHARLES, MAC,RHONDA,CARLA,KAREN
     DENNIS,ROBIN,MOZART, ALAN,MICHELLE
250  REM READ PLACES
270  FOR I=1 TO 10:READ P$(I):NEXT
```

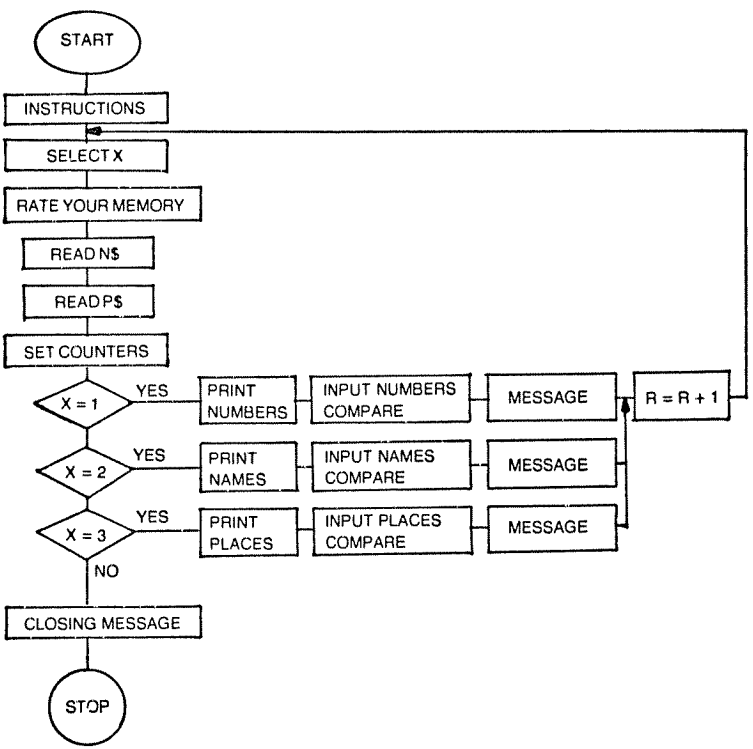


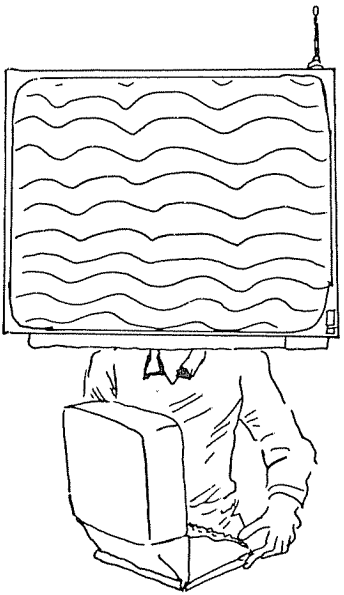
Fig. 4-3. The flowchart for Memory Test II.

```
280 DATA CHICAGO,ALABAMA,HONOLULU,CALIFORNI-
    A,TEXAS
290 DATA FLORIDA,MISSISSIPPI,NEW YORK,CANADA,SWE-
    DEN
300 REM SET COUNTERS
310 A=1:B=10:C=0:R=0
320 ON X GOTO 330,830,840,1550
330 CLS:PRINT:PRINT:IF Z=1 THEN 370
340 Z=1:REM GET NUMBERS
350 N(1)=10:N(2)=N(1)*2:N(3)=N((1)*3)/2:N(4)=N(3)*2+5:N(5)=N(2)/2
360 N(6)=N(3)*4:N(7)=N(5)*N(4)/N(1):(8)=N(4)*N(7)/2:N(9)=N(8)/N(2)*
    N(1):N(10)=N(9)/N(2)
365 FOR I=11 TO 20:READ N(I):NEXT
366 DATA 11.2,2,7.7,8.2,100,22, 01,244,5.44,101
370 PRINT"YOU RATED YOUR MEMORY AS BEING ";A$
380 IF M < >1 AND M < > 2 THEN 410
390 PRINT"WITH A MEMORY LIKE THAT, YOU SHOULDNT
    HAVE"
400 PRINT"TOO MANY PROBLEMS WITH THIS PART OF THE
    TEST."
405 GOTO 425
410 PRINT"KEEP YOUR EYES ON THE NUMBERS—YOU
    MIGHT"
420 PRINT"ENCOUNTER SOME UNEXPECTED PROBLEMS !!"
425 PRINT:INPUT"PRESS ENTER/RETURN";X$:CLS:GOSUB
    1060
426 ON R GOTO 480,110
430 T=20:TT=T+5
440 FOR NN=A TO B
450 PRINT TAB(T);N(NN);
460 GOSUB 1060:REM TIME LOOP THAT NUMBERS, NAMES &
    PLACES ARE PRINTED
470 NEXT:GOTO 530
480 FOR I=A TO B:N(I)*2:NEXT
490 FOR I=A TO B
500 PRINT TAB(TT);N(I);
510 GOSUB 1060
520 NEXT
530 GOSUB 1060:IF R > 0 THEN 560
540 PRINT"DID YOU REMEMBER THE FIRST SET?"
550 PRINT"WE'RE GOING TO FIND OUT NOW."
560 PRINT"INPUT THE NUMBERS, STARTING WITH THE
    FIRST"
```

```
570 PRINT"NUMBER SEEN."
580 FOR I=A TO B
590 INPUT Y(I)
600 IF Y(I) < > N(I) THEN 620
610 C=C+1
620 NEXT
630 IF  C < 5 THEN 650
640 IF C > 5 THEN 690
650 PRINT"I DON'T THINK I NEED TO TELL YOU,"
660 PRINT"YOU'VE MADE A VERY POOR GRADE"
670 PRINT"ON THAT SET OF ";
675 'IF X=1 THEN PRINT"NUMBERS."
676 IF X=2 THEN PRINT"NAMES."
677 IF X=3 THEN PRINT"PLACES."
680 A=A+10:B=B+10:R=R+1:IF R <3 THEN 425
685 FOR I=1 TO 1500:NEXT:CLS:PRINT:GOTO 110
690 PRINT"THAT'S FANTASTIC !! ";C;"OF THEM CORRECT !!"
700 PRINT"MUST'VE BEEN A LITTLE SIMPLE ???"
710 GOTO 680
830 GOSUB 1000:GOTO 1100
840 GOSUB 1000:GOTO 1310
1000 IF A$="POOR" THEN TI=1000:M=4:GOTO 1040
1010 IF A$="FAIR" THEN TI=750:M =3:GOTO 1040
1020 IF A$="GOOD" THEN TI=500:M=2:GOTO 1040
1030 IF A$="EXCELLENT" THEN TI=400:M=1
1040 REM TI IS PRINT/TIME LOOP
1050 RETURN
1060 FOR L=1 TO TI:NEXT
1070 FOR P=1 TO 20
1080 CLS:PRINT:PRINT
1090 NEXT
1095 RETURN
1100 CLS:PRINT:A=1:B=10:R=3:T=20
1110 IF M < >AND M <>2 THEN 1145
1120 PRINT"SO YOU'RE READY TO TRY NAMES,"
1130 PRINT"AND YOU'RE MEMORY IS";A$;" ? "
1140 PRINT"LET'S FIND OUT, NOW.":GOTO 425
1145 PRINT"KEEP A CLOSE EYE ON THE NAMES . . . . ."
1150 GOTO 425
1160 FOR I=A TO B
1170 PRINT TAB(T-7);I;")" TAB(T);N$(I)
1180 GOSUB 1060
```

```
1190 NEXT
1200 GOSUB 1060
1210 NEXT
1220 PRINT"NOW WE'LL TEST YOUR MEMORY OF NAMES."
1230 PRINT"STARTING WITH THE FIRST NAME, ENTER THEM."
1240 FOR I=A TO B
1250 PRINT"ENTER NAME #";I;
1260 INPUT Q$(I)
1270 IF Q$(I) < > N$(I) THEN 1290
1280 C=C+1
1290 NEXT
1300 GOTO 630
1310 CLS:PRINT:PRINT
1320 A=1:B=10:T=10
1330 IF M < >1 AND M <>2 THEN 1360
1340 PRINT"EVEN THOUGH YOUR MEMORY IS ";A$
1350 PRINT"KEEP A CLOSE EYE ON THESE PLACES.":GOTO
     1390
1360 PRINT"YOU MIGHT FIND DIFFICULTY WITH THIS"
1370 PRINT"PART OF THE PROGRAM, WITH ONLY A ";A$
1380 PRINT"MEMORY TO HELP YOU . . . . ."
1390 PRINT:INPUT"PRESS ENTER/RETURN TO BEGIN";X$
1395 GOSUB 1060
1400 FOR I=A TO B
1410 PRINT TAB(T-6); I;")"TAB(T);P$(I)
1420 GOSUB 1060
1430 NEXT
1440 GOSUB 1060
1460 PRINT"NOW ENTER THE PLACES, STARTING WITH"
1470 PRINT"THE FIRST ONE SEEN."
1480 FOR I=A TO B
1490 PRINT"ENTER PLACE #";I;
1500 INPUT W$ (I)
1510 IF W$(I) < > P$(I)THEN 1530
1520 C=C+1
1530 NEXT
1540 R=3:GOTO 630
1550 GOSUB 1060
1560 PRINT"MAYBE YOU'D LIKE TO TRY"
1570 PRINT"MEMORY TEST II"
1580 PRINT"SOME OTHER TIME . . . . ."
1590 END
```

Computer Concentration



You'll have to get out your thinking cap for this one. 10 questions will be printed about television, past and present. After you answer each one, a clue word to a mystery sentence or statement will be printed. After all 10 questions, all clue words will be printed (maybe). You must place these words together to match the sentence that the computer has in memory.

The second half of the game also contains 10 questions. These will be of general knowledge. The clue word or word(s) will be torn apart and each time you answer a question correctly a letter to the clue word will be printed. If you answer incorrectly no new letters will be printed. When you are ready to guess, your word must match the computer's word exactly. For obvious reasons all answers were left out of the sample run.

Sample Run

```
                COMPUTER CONCENTRATION
YOU WILL BE GIVEN SEVERAL DIFFERENT QUESTIONS
TO ANSWER. IF YOU ANSWER EACH QUESTION
SUCCESSFULLY, A CLUE WORD TO
THE PUZZLE WILL BE PRINTED.
YOU MUST PLACE THESE WORD(S)
```

```
TOGETHER TO MATCH WHAT THE COMPUTER
HAS IN ITS MEMORY.
PRESS ANY KEY TO BEGIN.
THE THEME FOR THIS PORTION WILL
BE TELEVISION. YOUR ANSWERS
WILL BE THE FILL IN TYPE.
THE ANSWER TO THE PUZZLE
WILL BE EITHER A SENTENCE
OR A STATEMENT.
USED TO BE ONE OF CHARLIE'S ANGELS?
CORRECT !!
CLUE WORD TO PUZZLE: IS
DO YOU WANT TO GUESS OR PASS? PASS
ALIEN BEINGS FROM A DYING PLANET?
CORRECT !!
NO CLUE WORD . . . SORRY
```
(Computer has the option of not giving clue words during the first part of the game.)
```
DO YOU WANT TO GUESS OR PASS? PASS
AGENT AGAINST T.H.R.U.S.H.?
CORRECT!!
CLUE WORDS TO PUZZLE: ARE IS
DO YOU WANT TO GUESS OR PASS? PASS
RATED BEST T.V. MINISERIES EVER?
CORRECT !!
CLUE WORDS TO PUZZLE: THE ARE IS
DO YOU WANT TO GUESS OR PASS? PASS
DAYTIME SOAP WITH NURSES?
CORRECT !!
CLUE WORDS TO PUZZLE: THE ARE IS PLAYING
DO YOU WANT TO GUESS OR PASS? PASS
MRS. BUNKER?
UNSATISFACTORY ANSWER.
TRY THE LAST NAME ONLY . . . . .
MRS. BUNKER?CORRECT !!
NO CLUE WORD . . . SORRY
DO YOU WANT TO GUESS OR PASS? PASS
STOP
```

The user could become quite involved in the game, answering the questions and trying to solve the puzzle.

What's more, you can change the string expression in line 12070 and the DATA in line 11020 to fit your own particular needs.

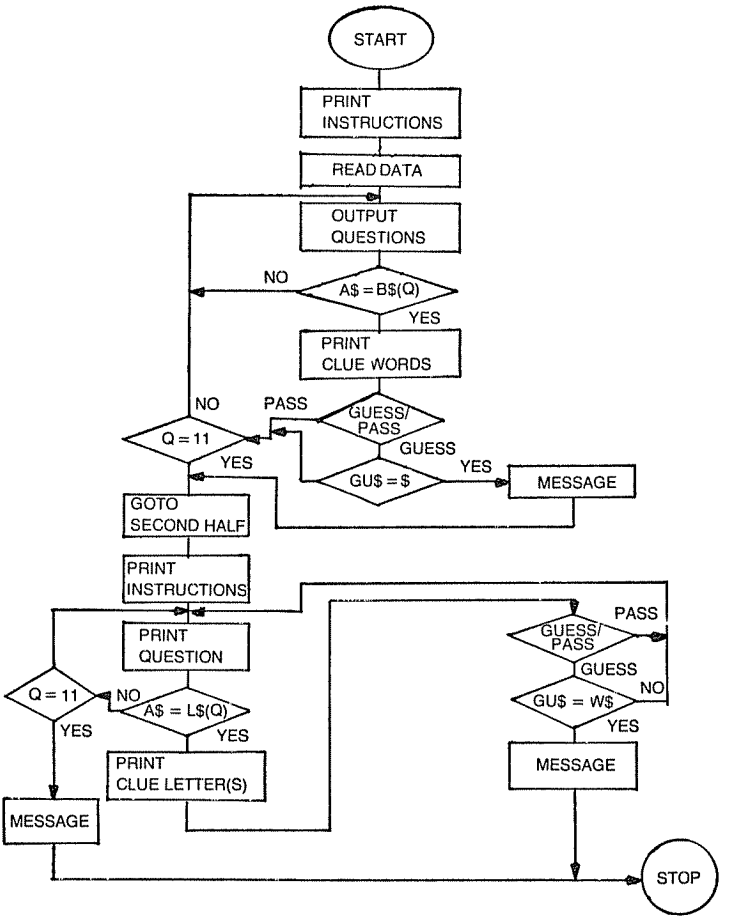


Fig. 4-4. The flowchart for Computer Concentration.

With the second half of the game you can add more words at line 15000 (W$) or change them to whatever your needs. See Fig. 4-4 for the flowchart for this program.

Program Listing

```
100  CLS:DIM W$(17):CLEAR 550
110  PRINT:R=1
120  PRINT TAB(15),"COMPUTER CONCENTRATION":PRINT
130  PRINT"YOU WILL BE GIVEN SEVERAL DIFFERENT QUES-
     TIONS"
140  PRINT"TO ANSWER. IF YOU ANSWER EACH QUESTION"
```

```
150 PRINT"SUCCESSFULLY, CLUE WORD TO"
160 PRINT"THE PUZZLE WILL BE PRINTED."
170 PRINT"YOU MUST PLACE THESE WORD(S)"
180 PRINT"TOGETHER TO MATCH WHAT THE COMPUTER"
190 PRINT"HAS IN ITS MEMORY."
195 GOSUB 200:GOTO 270
200 PRINT:PRINT"PRESS ANY KEY TO BEGIN."
210 A$=INKEY$:IF A$=" " THEN 210
220 C=0:Q=1:NN=0
260 S$=" ":C$=":":X$="UNSATISFACTORY ANSWER.":RE-
    TURN
270 CLS
280 PRINT"THE THEME FOR THIS PORTION WILL"
290 PRINT"BE TELEVISION. YOUR ANSWERS"
300 PRINT"WILL BE THE FILL IN TYPE."
310 PRINT"THE ANSWER TO THE PUZZLE"
330 PRINT"WILL BE EITHER A SENTENCE"
340 PRINT"OR A STATEMENT."
345 GOSUB 7000:GOSUB 8000:GOSUB 9000
350 PRINT"USED TO BE ONE OF CHARLIE'S ANGELS ";
360 INPUT A$
370 IF A$< > B$(Q) THEN GOSUB 10000
380 GOSUB 7000:GOSUB 390:GOSUB 11000:GOSUB
    12000:GOSUB 9000:GOTO 400
390 PRINT"CORRECT !!":Q=Q+1:RETURN
400 PRINT"ALIEN BEINGS FROM A DYING PLANET ";
410 INPUT A$
420 IF A$< > B$(Q) THEN GOSUB 10000
430 GOSUB 7000:GOSUB 390:GOSUB 11040:GOSUB
    12000:GOSUB 9000
440 PRINT"AGENT AGAINST T.H.R.U.S.H. ";
450 INPUT A$
460 IF A$< > B$(Q) THEN GOSUB 10000
470 GOSUB 7000:GOSUB 390:GOSUB 11040:GOSUB
    12000:GOSUB 9000
480 PRINT"RATED BEST T.V. MINISERIES EVER ";
490 INPUT A$
500 IF A$< > B$(Q) THEN GOSUB 10000
510 GOSUB 70000:GOSUB 390: GOSUB 11040:GOSUB
    12000:GOSUB 9000
520 PRINT"DAYTIME SOAP WITH NURSES ";
530 INPUT A$
```

```
540 IF A$< > B$(Q) THEN GOSUB 10000
550 GOSUB 7000:GOSUB 390:GOSUB 11040:GOSUB 12000:
    GOSUB 9000
560 PRINT"MRS. BUNKER ";
570 INPUT A$
580 IF A$< > B$(Q) THEN GOSUB 10000
590 GOSUB 7000:GOSUB 390:GOSUB 11040:GOSUB 12000:
    GOSUB 9000
600 PRINT"HE PORTRAYED PERRY MASON";
610 INPUT A$
620 IF A$< >B$(Q) THEN GOSUB 10000
630 GOSUB 7000:GOSUB 390:GOSUB 11040:GOSUB 12000:
    GOSUB 9000
640 PRINT"CALL LETTERS FOR NEW RADIO T.V. SERIES";
650 INPUT A$
660 IF A$<>B$(Q) THEN GOSUB 10000
670 GOSUB 7000:GOSUB 390:GOSUB 11040:GOSUB 12000:
    GOSUB 9000
680 PRINT"SAID TO CONTAIN TOO MUCH VIOLENCE"
690 PRINT"SO MUCH THIS SHOW WAS CANCELLED";
700 INPUT A$
710 IF A$< > B$ (Q) THEN GOSUB 10000
720 GOSUB 7000:GOSUB 390:GOSUB 11040:GOSUB 12000:
    GOSUB 9000
730 PRINT"STAR OF BLACK SHEEP ";
740 INPUT A$
750 IF A$< > B$(Q) THEN GOSUB 10000
760 GOSUB 7000:GOSUB 390:GOSUB 11040:GOSUB 12000:
    GOSUB 9000
770 CLS:GOSUB 7000:GOSUB 9000
780 PRINT"YOU SHOULD'VE GUESSED THE PUZZLE WITH"
790 PRINT"ALL THOSE CLUE WORDS."
800 PRINT"THIS HALF OF THE GAME WILL DEAL WITH"
810 PRINT"GENERAL KNOWLEDGE."
820 PRINT"YOU'LL HAVE SEVERAL QUESTIONS AGAIN,"
830 PRINT"BUT INSTEAD OF CLUE WORDS, YOU'LL ONLY"
840 PRINT"HAVE LETTERS TO WORK WITH. YOU MUST"
850 PRINT"PLACE THESE LETTERS TOGETHER AND MATCH"
860 PRINT"THE COMPUTER EXACTLY . . . . . GOOD LUCK !!"
870 GOSUB 200:GOSUB 15000:GOSUB 9000:R=2:Q=1:S=9
880 L$(Q)="T":L$(Q+Q)=L$(Q):L$(R+Q)="F":L$(R*R)=L$(Q):L$(R*R+Q)="F"
890 L$(S-(R+Q))="F":L$(S-R)="B":L$(S-Q)="C":L$(S)="A":L$(S+Q)="C"
```

```
920 PRINT"A HEXAGON HAS SIX ANGLES AND SIX SIDES."
930 PRINT"(T/F)";
940 INPUT A$
950 IF A$< >L$(Q) THEN GOSUB 10000:GOTO 970
960 GOSUB 7000:GOSUB 390:GOSUB 14000:GOSUB 9000
970 PRINT"OPPOSITE IS ANTAGONISTIC."
980 PRINT"(T/F)";
990 INPUT A$
1000 IF A$< >L$(Q) THEN GOSUB 10000:GOTO 1020
1010 GOSUB 7000:GOSUB 390:GOSUB 14000:GOSUB 9000
1020 PRINT"MAKING UP THE LARGEST PART OF A"
1030 PRINT"COMPUTER IS TRANSISTORS."
1040 PRINT"(T/F)";
1050 INPUT A$
1060 IF A$< >L$(Q) THEN GOSUB 10000:GOTO 1080
1070 GOSUB 7000:GOSUB 390:GOSUB 14000:GOSUB 9000
1080 PRINT"PRICELESS IS TO BE INVALUABLE."
1090 PRINT"(T/F)";
1100 INPUT A$
1110 IF A$< >L$(Q) THEN GOSUB 10000:GOTO 1130
1120 GOSUB 7000:GOSUB 390:GOSUB 14000:GOSUB 9000
1130 PRINT"A COMPUTER CAN BE TRAINED WITHOUT"
1140 PRINT"THE USE OF A KEYBOARD."
1150 PRINT"(T/F)";
1160 INPUT A$
1170 IF A$< >L$(Q) THEN GOSUB 10000
1175 PRINT"EVEN WHEN LOADING FROM A RECORDER,"
1177 PRINT"YOU MUST USE THE KEYBOARD !!":GOTO 1190
1180 GOSUB 7000:GOSUB 390:GOSUB 14000:GOSUB 9000
1190 PRINT"FUD IS THE TAIL OF AN ELEPHANT."
1200 PRINT"(T/F)";
1210 INPUT A$
1220 IF A$< >L$(Q) THEN GOSUB 10000:GOTO 1240
1230 GOSUB 7000:GOSUB 390:GOSUB 14000:GOSUB 9000
1240 PRINT"THE NEXT FOUR QUESTIONS WILL BE MULTIPLE"
1250 PRINT"CHOICE. SELECT ONLY ONE LETTER PER QUES-
     TION."
1260 GOSUB 9000
1270 PRINT"A LUNAR MONTH CONTAINS HOW MANY DAYS";C$
1280 PRINT"(A) 20  (B) 29.5  (C) 29.3  (D) 30"
1290 INPUT A$
1300 IF A$< >L$(Q) THEN GOSUB 10000:GOTO 1320
```

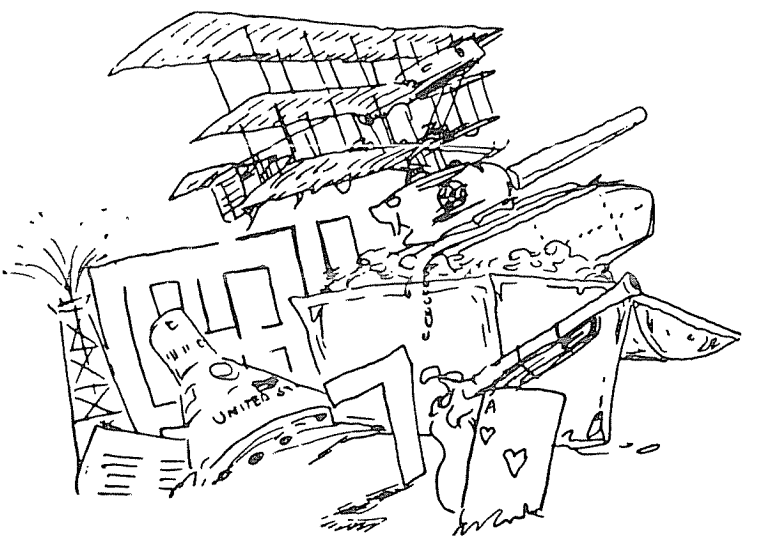
```
1310 GOSUB 7000:GOSUB 390:GOSUB 14000:GOSUB 9000
1320 PRINT"THEREFORE, A LUNAR YEAR WOULD CONTAIN";C$
1330 PRINT"(A) 352 DAYS  (B) 351 DAYS  (C) 354 1/3 DAYS"
1340 INPUT A$
1350 IF A$< >L$(Q) THEN GOSUB 10000:GOTO 1370
1360 GOSUB 7000:GOSUB 390:GOSUB 14000:GOSUB 9000
1370 PRINT"SO THEN LUNAR IS MEASURED BY THE";C$
1380 PRINT"(A) MOON (B) SUN (C) EARTH (D) NONE OF THESE"
1390 INPUT A$
1400 IF A$< >L$(Q) THEN GOSUB 10000:GOTO 1415
1410 GOSUB 7000:GOSUB 390:GOSUB 14000:GOSUB 9000
1415 PRINT"THIS IS THE FINAL QUESTION . . . . ."
1420 PRINT"ZAMOUSE IS A";C$
1430 PRINT"(A) GERMAN MOUSE (B) SOUTHERN FISH (C) WEST AFRICAN BUFFALO"
1440 INPUT A$
1450 IF A$< >L$(Q) THEN GOSUB 10000:GOTO 1470
1460 GOSUB 7000:GOSUB 390:GOSUB 14000:GOSUB 9000
1470 PRINT"SORRY . . . THAT WAS YOUR FINAL QUESTION."
1480 PRINT"THE CLUE WORD WAS";C$;S$;W$
1490 PRINT
1500 PRINT"THAT'S THE END OF BOTH ROUNDS . . . . ."
1520 PRINT
1530 PRINT"SO THAT CONCLUDES . . . . .COMPUTER CONCENTRATION !!"
1540 END
7000 FOR XX=1 TO 1000:NEXT:RETURN
8000 FOR I=1 TO 10:READ B$(I):NEXT
8010 DATA FAWCETT
8020 DATA THE INVADERS
8030 DATA SMART
8040 DATA ROOTS
8050 DATA DOCTORS
8060 DATA EDITH
8070 DATA BURR
8080 DATA WKRP
8090 DATA WILD WILD WEST
8100 DATA CONRAD
8200 RETURN
9000 PRINT:PRINT
9010 RETURN
```

```
10000 GOSUB 7000
10020 PRINT X$:IF R=2 THEN 13000
10030 IF Q=9 THEN 10050
11040 IF LEN(A$) > =12 THEN PRINT"TRY THE LAST NAME
      ONLY . . . . ."
10050 GOSUB 9000
10060 ON Q GOTO 350, 400, 440, 480, 520, 560, 600, 640, 680, 730
11000 REM SELECT PART OF PUZZLE
11010 FOR M=1 TO 9:READ P$(M):K$=K$+P$(M):NEXT
11020 DATA THE, GAME, YOU, COMPUTER, PLAYING IS
11030 DATA ARE, CALLED CONCENTRATION
11040 IF Q>2 THEN N=INT(2*RND(0)+1):IF N=1 AND NN< >3
      THEN PRINT"NO
      CLUE WORD . . . SORRY.":NN=NN+1:RETURN
11045 P=INT(4*RND(0)+1):ON P GOTO 11050,11055,11060,11065
11050 Q$=MID$(K$,19,P+3):GOTO 11070
11055 W$=LEFT$(K$,9/3):GOTO 11070
11060 V$=MID$(K$,26,2):GOTO 11070
11065 U$=MID$(K$,31,P+2)
11070 T$=Q$+S$+W$+S$+V$+S$+U$:IF TT=LEN(T$) THEN
      11045
11075 IF LEN(T$) >=18 THEN T$=T$+S$+MID$(K$,11,8)
11076 IF TT >=27 THEN T$=T$+S$+MID$(K$,28,3)
11078 IF TT >=31 THEN T$=T$+S$+MID$(K$,4,4)
11079 IF TT > = 36 THEN T$=T$+S$+MID$(K$,8,3)
11080 PRINT"CLUE WORD(S) TO PUZZLE";C$;T$
11085 IF Q=11 THEN PRINT"THIS IS THE FINAL CLUE . . . . ."
11090 TT+LEN(T$):RETURN
12000 PRINT"DO YOU WANT TO GUESS OR PASS";
12010 INPUT G$:IF R=2 THEN 14060
12020 IF G$="PASS" THEN G$=" ":RETURN
12030 IF G$="GUESS" THEN 12050
12040 PRINT"TRY ENTERING THE WORD GUESS OR PASS,
      ONLY."
12045 GOTO 12000
12050 PRINT"ENTER YOUR GUESS";
12060 INPUT GU$
12070 IF GU$< >"THE GAME YOU ARE PLAYING IS CALLED
      COMPUTER CONCENTRATION"
      THEN 12090
12080 GOTO 12200
12090 PRINT"UNSATISFACTORY RESPONSE, SORRY . . . . "
```

```
12100 G$=" ":RETURN
12200 GOSUB 9000
12210 PRINT"FANTASTIC !!!"
12220 PRINT"YOU'VE SOLVED THE BLOODY PUZZLE !!!"
12230 IF R< > 3 THEN GOSUB 7000:GOSUB 9000:GOTO 800
12240 REM END
12250 GOTO 1490
13000 PRINT"NO CLUE LETTER . . . . .":REM NO CLUE LETTER
      WITH INCORRECT ANSWER
13010 GOSUB 9000
14000 REM SELECT RANDOM LETTER
14020 Y=INT (10*RND(0)+1):IF A(Y)=0 THEN 14020
14025 LT$=LT$+MID$(W$,Y,1)
14030 IF LT$=" " THEN 14020
14040 PRINT"YOUR CLUE LETTER(S) ARE";C$;S$;LT$
14045 A(Y)=0
14050 GOTO 12000:REM GUESS/PASS
14060 IF G$< >"GUESS" THEN RETURN
14070 GOSUB 9000
14080 PRINT"ENTER YOUR GUESS";
14090 INPUT GU$
14100 IF GU$< > W$ THEN 14120
14110 R=3:GOTO 12200
14120 PRINT"SORRY . . . . .";X$
14130 GOSUB 9000
14140 RETURN
15000 REM SELECT RANDOM WORD
15010 W=INT(5*RND(0)+1)
15020 ON W GOTO 15030,15040,15050,15060,15070
15030 W$="LASER BEAM":GOTO 15080
15040 W$="COMPUTER ART":GOTO 15080
15050 W$="PRACTICAL GUESS":GOTO 15080
15060 W$="RECORDER":GOTO 15080
15070 W$="MISSMATCH"
15080 FOR X=1 TO 10
15090 READ A(X)
15100 NEXT
15200 DATA 1,2,3,4,5,6,7,8,9,10
15300 RETURN
```

Chapter 5

Games of Adventure & Disaster



Meteor

Your planet is in danger! A large meteor is headed for it and it is sure to destroy the entire planet. You have a predetermined amount of missiles with which to destroy or alter the course of the meteor. The computer can also fire for you if you wish; just enter 99 when you are asked which angle you want the missile launched.

Good Luck!!

Sample Run

```
                **** METEOR ****
THIS SIMULATION WILL TEST YOUR NERVES TO THEIR
BREAKING POINT. WHILE YOU'RE SITTING HERE READING
THESE INSTRUCTIONS A METEOR IS HEADING FOR YOUR
PLANET.
CERTAIN DESTRUCTION WILL BE EVIDENT IF THIS METEOR
COLLIDES WITH YOUR PLANET.
ALL YOU HAVE TO DO TO PREVENT THIS IS GET A DIRECT HIT
ON THE METEOR (DOESN'T HAVE TO BE DEAD CENTER).
JUST FOLLOW THE PROGRAM THROUGH. IF AT ANYTIME YOU
WANT THE COMPUTER TO FIRE FOR YOU ENTER 99 FOR
AN ANGLE . . . .
PRESS A KEY . . . . .
CURRENT STATUS:
METEOR SPEED: 436 MILES PER HOUR
DISTANCE BETWEEN YOU AND METEOR: 1745 MILES
SIZE OF METEOR: 6 MILES ACROSS
METEOR IS ON A PRESENT ANGLE BETWEEN 48 AND 64 DE-
GREES.
YOU HAVE 20 MISSILES TO DESTROY OR ALTER ITS COURSE.
THIS STATUS REPORT WILL BE PRINTED AFTER EACH
MISSILE HAS BEEN FIRED AND ALLOWED TIME TO REACH ITS
DESTINATION.
```

```
INPUT ANGLE TO LAUNCH MISSILE? 64
YOU WERE 9 DEGREES OFF ON THAT SHOT . . . . .
CURRENT STATUS:
METEOR SPEED: 446 MILES PER HOUR
DISTANCE BETWEEN YOU AND METEOR: 1645 MILES
SIZE OF METEOR: 6 MILES ACROSS
METEOR IS ON AN ANGLE BETWEEN 47 AND 63 DEGREES.
YOU HAVE 19 MISSILES TO DESTROY OR ALTER ITS COURSE.
INPUT ANGLE TO LAUNCH MISSILE? 51
YOU WERE -4 DEGREES OFF ON THAT SHOT . . . . .
CURRENT STATUS:
METEOR SPEED: 456 MILES PER HOUR
DISTANCE BETWEEN YOU AND METEOR: 1545 MILES
SIZE OF METEOR: 6 MILES ACROSS
METEOR IS ON AN ANGLE BETWEEN 43 AND 59 DEGREES.
YOU HAVE 18 MISSILES TO DESTROY OR ALTER ITS COURSE.
INPUT ANGLE TO LAUNCH MISSILE? 99
I'VE MISCALCULATED THE MISSILE BY -1 DEGREES.
CURRENT STATUS:
METEOR SPEED: 466 MILES PER HOUR
DISTANCE BETWEEN YOU AND METEOR: 1445 MILES
SIZE OF METEOR: 6 MILES ACROSS
METEOR IS ON AN ANGLE BETWEEN 42 AND 58 DEGREES.
YOU HAVE 17 MISSILES TO DESTROY OR ALTER ITS COURSE.
INPUT ANGLE TO LAUNCH MISSILE? 50
YOU'VE MADE A HIT TO THE METEOR . . . BUT ITS COURSE
HASN'T CHANGED ENOUGH TO HELP YOUR PLANET . . . . .
CURRENT STATUS:
METEOR SPEED: 476 MILES PER HOUR
DISTANCE BETWEEN YOU AND METEOR: 1345 MILES
SIZE OF METEOR: 6 MILES ACROSS
METEOR IS ON AN ANGLE BETWEEN 39 AND 55 DEGREES.
YOU HAVE 16 MISSILES TO DESTROY OR ALTER ITS COURSE.
INPUT ANGLE TO LAUNCH MISSILE? 45
CONGRATULATIONS !! YOU'VE ALTERED THE METEOR'S
COURSE !!
SHALL WE TRY THIS SIMULATION ONCE MORE? NO
TRY SOME PRACTICE AT RUBBER DUCKS THEN !!
END
```

Don't let the meteor get within 50 miles of the planet, there's no way to stop it when it gets that close. See Fig. 5-1 for the flowchart for this program.

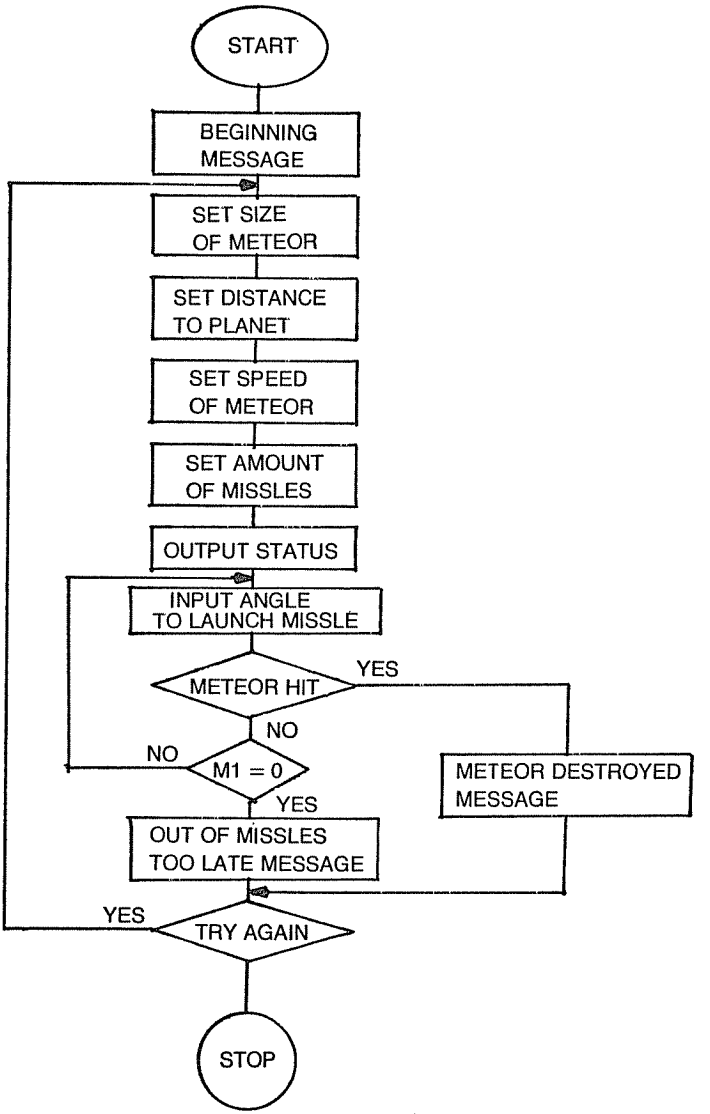


Fig. 5-1. The flowchart for Meteor.

Program Listing

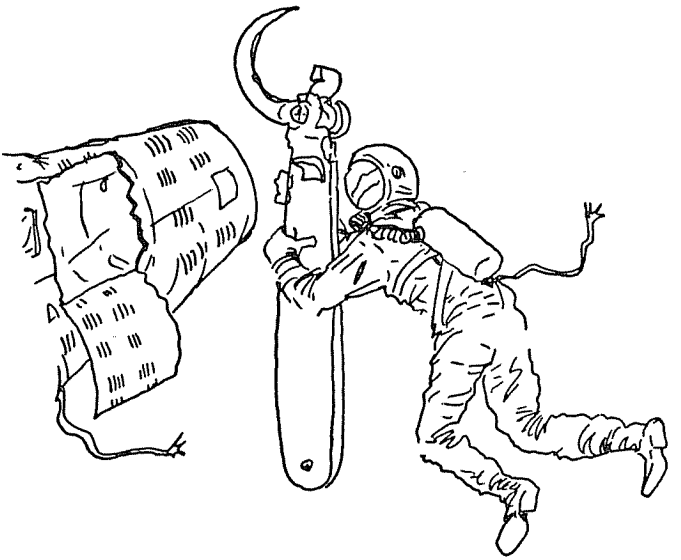
```
10  CLS:PRINT:PRINT TAB(20);"**** METEOR ****"
15  REM SET METEOR SIZE
20  SM=INT(10*RND(0)+1): IF SM < 4 THEN 20
25  REM SET DISTANCE BETWEEN METEOR & PLANET
```

```
 30 DM=INT(5000*RND(0)+1):IF DM < 1000 THEN 30
 35 REM SET METEOR SPEED
 40 MS=INT(500*RND(0)+10):IF MS < 250 THEN 40
 45 REM METEOR ANGLE TO PLANET
 50 MA=INT(90*RND(0)+5):IF MA < 40 THEN 50
 60 IF A=1 THEN 210
110 PRINT"THIS SIMULATION WILL TEST YOUR NERVES TO
    THEIR"
120 PRINT"BREAKING POINT. WHILE YOU'RE SITTING HERE
    READING THESE"
130 PRINT"INSTRUCTIONS A METEOR IS HEADING FOR YOUR
    PLANET."
140 PRINT"CERTAIN DESTRUCTION WILL BE EVIDENT IF
    THIS METEOR"
150 PRINT"COLLIDES WITH YOUR PLANET."
160 PRINT"ALL YOU HAVE TO DO TO PREVENT THIS IS TO GET
    A DIRECT HIT ON THE"
170 PRINT"METEOR (DOESN'T HAVE TO BE DEAD CENTER)."
190 PRINT"JUST FOLLOW THE PROGRAM THOUGH. IF AT
    ANYTIME YOU"
200 PRINT"WANT THE COMPUTER TO FIRE FOR YOU ENTER
    99 FOR"
205 PRINT"AN ANGLE . . . . . "
208 REM GET AMOUNT OF MISSILES
210 MI=INT(30*RND(0)+5):IF MI < 15 THEN 210
215 GOSUB 300:GOSUB 220:GOTO 350
220 PRINT
225 PRINT"CURRENT STATUS:"
230 PRINT"METEOR SPEED: ";MS;"MILES PER HOUR"
240 PRINT"DISTANCE BETWEEN YOU AND METEOR:
    ";DM;"MILES"
250 PRINT"SIZE OF METEOR: ";SM;"MILES ACROSS"
260 PRINT"METEOR IS ON AN ANGLE BETWEEN"; (MA-8);
    "AND"; (MA+8); "DEGREES:"
270 PRINT"YOU HAVE";MI;"MISSILES TO DESTROY OR ALTER
    ITS COURSE."
275 IF R > 1 THEN RETURN
280 PRINT
285 PRINT"THIS STATUS REPORT WILL BE PRINTED AFTER
    EACH"
290 PRINT"MISSILE HAS BEEN FIRED AND ALLOWED TIME TO
    REACH ITS"
295 PRINT"DESTINATION.":RETURN
```

```
300 PRINT
305 PRINT"PRESS A KEY . . . . . "
310 A$=INKEY$:IF A$=" " THEN 310
320 CLS:RETURN
350 PRINT
355 PRINT"INPUT ANGLE TO LAUNCH MISSILE";:R=2
360 INPUT ML:MI=MI-1: IF MI < 1 THEN 800
370 REM CHECK FOR COMPUTER SHOT
375 GOSUB 850:GOSUB 600
380 IF ML=MA THEN 450
390 IF ML < > MA THEN 400
400 PRINT
410 PRINT"YOU WERE";(ML-MA);"DEGREES OFF THAT
    SHOT. . . . ."
420 DM=DM-100:MS=MS+10
425 MA=MA-INT(5*RND(0)+2)
430 IF DM < 500 THEN PRINT"THE METEOR IS LESS THAN 500
    MILES OUT !!"
435 IF DM < 50 THEN 860
440 GOSUB 220:GOTO 350
450 I=INT(2*RND(0)+1):ON I GOTO 455,485
455 PRINT
460 PRINT"YOU'VE MADE A HIT TO THE METEOR . . . BUT ITS
    COURSE"
470 PRINT"HASN'T CHANGED ENOUGH TO HELP YOUR
    PLANET . . . . ."
480 GOTO 420
485 PRINT
490 PRINT"CONGRATULATIONS !! YOU'VE ALTERED THE
    METEOR'S COURSE !!"
495 PRINT"IT'S HEADED FOR ANOTHER GALAXY . . . . . "
500 GOTO 900
600 IF ML < > 99 THEN RETURN
605 GOSUB 850
610 CS=INT(MA*RND(0))
615 IF CS < (MA-5) THEN 610
620 CM=CS+INT(8*RND(0)+1)
630 IF CM=MA THEN 660
640 IF ABS (CM-MA) < 4 THEN 720
650 IF ABS (CM-MA) > 4 THEN 740
660 I=INT(2*RND(0)+1)
665 ON I GOTO 670,690
```

```
670 PRINT
675 PRINT"SORRY . . . I'VE HIT THE METEOR, BUT ONLY
    CHANGED"
680 PRINT"ITS COURSE SLIGHTLY . . . . ."
685 GOTO 420
690 PRINT
695 PRINT"HOW WAS THAT . . . I'VE DESTROYED THE METEOR
    COMPLETELY !!"
700 PRINT"YOU ARE SAFE FROM DESTRUCTION NOW . . . . ."
710 GOTO 900
720 PRINT"I'VE MISCALCULATED THE METEOR BY";(CM/
    MA);"DEGREES"
730 GOTO 685
740 PRINT
745 PRINT"I'VE OVERSHOT IT THIS TIME BY";(CM-
    MA);"DEGREES"
750 GOTO 730
800 REM OUT OF MISSILES
810 PRINT
815 PRINT"SORRY . . . YOUR PLANET IS SURE TO BE DE-
    STROYED NOW,"
820 PRINT"YOU'VE EXHAUSTED YOUR AMOUNT OF MISSILES,
    SAY GOODBYE"
830 PRINT"TO YOUR PLANET . . . . ."
840 GOTO 900
850 FOR T=0 TO DM:NEXT
855 RETURN
860 CLS:PRINT
870 PRINT"THE METEOR IS NOW LESS THAN 50 MILES OUT—
    YOU CAN'T"
880 PRINT"STOP IT NOW . . . EVEN THOUGH YOU
    HAVE";MI;"MISSILES"
890 PRINT"LEFT . . . SORRY—THAT'S IT."
900 FOR I=1 TO 2500:NEXT
910 PRINT
920 PRINT
930 PRINT"SHALL WE TRY THIS SIMULATION ONCE MORE";
940 INPUT A$
950 IF A$ < > "NO" THEN R=0:A=1:GOTO 10
960 PRINT
970 PRINT"TRY SHOOTING AT SOME RUBBER DUCKS NOW !!"
980 END
```

Life Support



You are on a mission in outer space for your country. A meteor hit one of the outer fuel lines on your ship and you left the safety of your cabin to repair it. Returning to the cabin you snagged your life support line and broke it. You must enter the hatch before your reserve tanks empty of oxygen.

Good luck!!

Sample Run

```
                    *** LIFE SUPPORT ***
INSTRUCTIONS:
THE INSTRUCTIONS TO LIFE SUPPORT ARE SIMPLE; YOU'VE
LEFT THE INSIDE OF YOUR SPACESHIP TO REPAIR A FUEL
LINE THAT HAD A SMALL LEAK IN IT CAUSED BY A METEOR.
ON YOUR WAY BACK INTO THE SHIP YOU CAUGHT YOUR LIFE
SUPPORT LINE AND BROKE IT. LUCKY YOU . . . . YOU AREN'T
FLOATING AWAY IN SPACE, BUT YOUR RESERVE TANKS
HAVE ONLY A MINIMUM AMOUNT OF OXYGEN LEFT.
YOU MUST REACH THE HATCH ON YOUR SHIP BY FIRING
THE RIGHT AMOUNT OF THRUSTS FROM YOUR JETTISON
TANKS BEFORE YOUR OXYGEN RUNS OUT . . . .
PRESS ENTER/RETURN?
POSITIVE THRUSTS (TO MOVE TOWARDS THE SHIP) ARE:
```

```
BETWEEN 1 AND 20
NEGATIVE THRUSTS (TO MOVE AWAY FROM POSITIONS) ARE:
BETWEEN -1 AND -30
WHEN ENTERING A POSITIVE THRUST ENTER ONLY THE
NUMBER,
WHEN ENTERING A NEGATIVE THRUST ENTER A MINUS (-)
SIGN THEN THE NUMBER.
DISTANCE TO HATCH IS: 26 FEET
OXYGEN LEFT: 15 MINUTES
ENTER YOUR THRUST? 17
DISTANCE TO HATCH IS: 15 FEET
OXYGEN LEFT: 9 MINUTES
ENTER YOUR THRUST? 8
DISTANCE TO HATCH IS: 10 FEET
OXYGEN LEFT: 3 MINUTES
YOU ONLY HAVE 3 MINUTES OF OXYGEN LEFT !!
ENTER YOUR THRUST? 3
DISTANCE TO HATCH IS: 8 FEET
OXYGEN LEFT: 2.31818 MINUTES
YOU ONLY HAVE 2.31818 MINUTES OF OXYGEN LEFT !!
ENTER YOUR THRUST? 5
DISTANCE TO HATCH IS: 4 FEET
OXYGEN LEFT: -3.68182 MINUTES
DO YOU FEEL YOURSELF GASPING FOR AIR?
YOU'VE RUN OUT OF OXYGEN !!
DO YOU FEEL LIKE BREATHING LONG ENOUGH TO TRY AGAIN?
YES
                    *** LIFE SUPPORT ***
PRESS ENTER/RETURN?
DISTANCE TO HATCH IS: 17 FEET
OXYGEN LEFT: 18 MINUTES
ENTER YOUR THRUST? 12
DISTANCE TO HATCH IS: 9 FEET
OXYGEN LEFT: 12 MINUTES
ENTER YOUR THRUST? 6
DISTANCE TO HATCH IS: 5 FEET
OXYGEN LEFT: 6 MINUTES
ENTER YOUR THRUST? 4
DISTANCE TO HATCH IS: 10.4 FEET
OXYGEN LEFT: 5.09091 MINUTES
YOU ONLY HAVE 5.09091 MINUTES OF OXYGEN LEFT !!
ENTER YOUR THRUST? 5
```

DISTANCE TO HATCH IS: 7.4 FEET
OXYGEN LEFT: .909091 MINUTES
DO YOU FEEL YOURSELF GASPING FOR AIR ?
YOU'VE RUN OUT OF OXYGEN !!
DO YOU FEEL LIKE BREATHING LONG ENOUGH TO TRY AGAIN?
NO
THAT'S FINE, I NOTICED YOU GASPING BEFORE
WE EVEN MADE IT THIS FAR . . . . .
END

You'll note from the above run that it might be quite difficult to get back into your ship . . . . but it is possible! See Fig. 5-2 for the flowchart for this program!

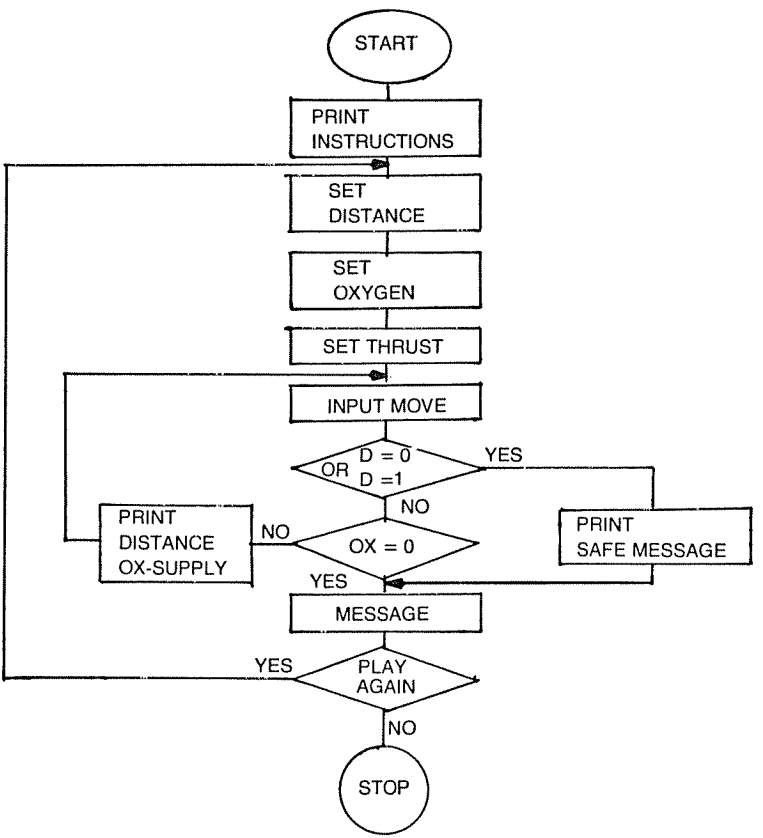


Fig. 5-2. The flowchart for Life Support.

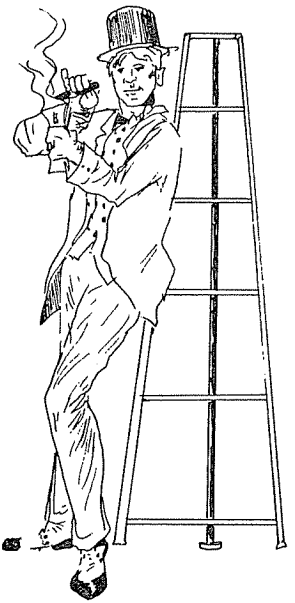
Program Listing

```
10 CLS:DIM P(20),T(20)
20 PRINT
30 PRINT TAB(20);"*** LIFE SUPPORT ***"
40 IF R>1 THEN 170:REM ROUND>1
50 PRINT"INSTRUCTIONS:"
60 PRINT"THE INSTRUCTIONS TO LIFE SUPPORT ARE
   SIMPLE; YOU'VE"
70 PRINT"LEFT THE SAFETY OF YOUR SPACESHIP TO REPAIR
   A FUEL"
80 PRINT"LINE THAT HAD A SMALL LEAK IN IT CAUSED BY A
   METEOR."
90 PRINT"ON YOUR WAY BACK TO THE SHIP YOU CAUGHT
   YOUR LIFE"
100 PRINT"SUPPORT LINE AND BROKE IT. LUCKY YOU.... YOU
    AREN'T"
110 PRINT"FLOATING AWAY IN SPACE, BUT YOUR RESERVE
    TANKS"
120 PRINT"HAVE ONLY A MINIMUM AMOUNT OF OXYGEN
    LEFT."
130 PRINT
140 PRINT"YOU MUST REACH THE HATCH ON YOUR SHIP BY
    FIRING"
150 PRINT"THE RIGHT AMOUNT OF THRUSTS FROM YOUR
    JETTISON TANKS"
160 PRINT"BEFORE YOUR OXYGEN RUNS OUT . . . . ."
170 REM SET DISTANCE TO HATCH
180 D=INT(30*RND(0)+1):IF D < 15 THEN 180
190 REM SET OXYGEN SUPPLY
200 OX=INT(20*RND(0)+3):IF OX < 15 THEN 200
210 REM SET THRUST AMOUNT TO REACH HATCH
220 FOR H=1 TO 10
230 T(H)=((H/2)*2)
240 FOR I=1 TO 10
250 T(H)=INT((T(I)+3)*2)+INT(10*RND(0)+5)
255 P(I)=-(T(H)-30)
260 NEXT I,H
270 GOSUB 500:GOSUB 520
280 PRINT:IF R > 1 THEN 370
290 PRINT"POSITIVE THRUSTS (TO MOVE TOWARD THE SHIP)
    ARE:"
300 PRINT"BETWEEN 1 AND 20"
```

```
310 PRINT"NEGATIVE THRUSTS (TO MOVE AWAY FROM
    POSITIONS) ARE:"
320 PRINT"BETWEEN -1 AND -30"
330 PRINT
340 PRINT"WHEN ENTERING A POSITIVE THRUST ENTER
    ONLY THE NUMBER"
350 PRINT"WHEN ENTERING A NEGATIVE THRUST ENTER A
    MINUS (-)"
360 PRINT"SIGN THEN THE NUMBER."
370 PRINT
380 PRINT"DISTANCE TO HATCH IS:";D;"FEET"
390 PRINT"OXYGEN LEFT:";OX;"MINUTES"
391 GOTO 560
395 IF SGN(D) < 0 PRINT"ENTER A NEGATIVE THRUST—
    YOU'VE PASSED UP THE SHIP !!"
400 PRINT:INPUT"ENTER YOUR THRUST"; X
410 IF X > 20 THEN PRINT"I SAID NOT GREATER THAN 20
    !!":GOTO 400
420 FOR I=1 TO 10
430 IF ABS(X-T(I)) > 3 AND ABS(X-P(I)) > 3 THEN NEXT:GOTO
440 GOTO 480:REM MOVE O.K.—MAYBE
450 OX=OX-(INT(ABS(X*T(2)))/(T(1)*5.5))
460 D=D+(ABS(D-T(1)/INT(OX+2)))
470 GOTO 495
480 OX=OX-(INT(ABS(T(4)/2)+1.5))
490 D=D-INT((X)/1.5)
495 GOSUB 680:GOTO 370
500 INPUT"PRESS ENTER/RETURN?";X$
510 CLS:RETURN
520 IF T(4) > 11 THEN T(4)=9
530 IF T(2) > 13 THEN T(2)=10
540 IF T(1) > 12 THEN T(1)=8
550 RETURN
560 IF INT(OX) < = 1 THEN 590
570 IF INT(OX) < 8 THEN 580
575 GOTO 395
580 PRINT:PRINT"YOU ONLY HAVE";OX;"MINUTES OF OXYGEN
    LEFT !!":GOTO 395
590 PRINT:PRINT"DO YOU FEEL YOURSELF GASPING FOR AIR
    ?"
600 PRINT"YOU'VE RUN OUT OF OXYGEN !!"
610 PRINT
```

```
620 PRINT"DO YOU FEEL LIKE BREATHING LONG ENOUGH TO
    TRY AGAIN";
630 INPUT A$
640 IF RIGHT$(A$,1)="S" THEN R=2: FOR I=1 TO10:T(I)=0:
    NEXT:CLS:GOTO 20
650 PRINT:PRINT"THAT'S FINE, I NOTICED YOU GASPING
    BEFORE"
660 PRINT"WE MADE IT THIS FAR. . . . ."
670 END
680 IF D=0 OR D=1 THEN 700
690 RETURN
700 PRINT
710 PRINT"YOU'VE DONE IT !!"
720 PRINT"YOU'VE MADE IT BACK TO YOUR SPACESHIP WITH"
730 PRINT"OXYGEN TO SPARE !!"
740 GOTO 610
```

Oil Tycoon



This game you'll be playing a rich oil man who's tired of sitting around counting his money. So your going to get out and drill your own well. You'll select the site, and set the r.p.m. for the drill. Watch out for hidden surprises. When you think you've reached the oil, enter 00 for an r.p.m.

Sample Runs

```
                    $$$ OIL TYCOON $$$
INSTRUCTIONS (Y/N)? Y
YOUR IN THE BIG MONEY NOW, YOU OWN MORE THAN 20
OIL WELLS. BUT, YOU'RE TIRED OF SITTING AROUND JUST
COUNTING YOUR MONEY, SO YOU'RE GOING OUT ON YOUR OWN
AND DRILL YOUR OWN WELL, YOU'LL EVEN SELECT
THE SITE YOU WANT TO DRILL ON.
SELECT THE SITE (BY NUMBER ONLY):
(1) LOWER FORTY
(2) UPPER FIFTY
(3) BACK YARD
ENTER YOUR SELECTION? 2
HOW MUCH OF YOUR RICHES WOULD YOU LIKE TO
```

```
INVEST ON THIS SITE (UP TO $500,000.00)
    (WITHOUT THE DOLLAR SIGN, PLEASE)? 10000
YOU MIGHT BE RICH, BUT IT'S GOING TO TAKE MORE THAN
$10000
? 25000
WE'RE AT THE SITE, YOUR RIG IS SET UP.
WHEN YOU'RE READY TO STOP DRILLING, ENTER 00.
ENTER THE R.P.M. FOR THE DRILL.
(UP TO 750 R.P.M.)? 125
THIS IS GOING TO TAKE AWHILE,
YOU'VE ONLY DRILLED 956 FEET.
YOU'RE WASTING MONEY AT THIS SPEED.
SO FAR YOU'VE USED $2122 DOLLARS !!
ENTER THE R.P.M. FOR THE DRILL.
(UP TO 750 R.P.M.)? 320
THIS IS GOING TO TAKE A WHILE,
YOU'VE ONLY DRILLED 1786 FEET.
ENTER THE R.P.M. FOR THE DRILL.
(UP TO 750 R.P.M.)? 360
YOUR MONEY MATTERS ON THIS SITE.
SO FAR YOU'VE USED $5607 DOLLARS !!
ENTER THE R.P.M. FOR THE DRILL
(UP TO 750 R.P.M.)? 425
YOU'RE AT 3807 FEET,
AND USED $7167 DOLLARS.
ENTER THE R.P.M. FOR THE DRILL.
(UP TO 750 R.P.M.)? 550
I CAN HEAR THE DRILL GRINDING THAT STONE !!
YOU'RE BETTER THAN 5090 FEET DOWN NOW.
ONLY 2064.49 FEET TO THE OIL !!
ENTER THE R.P.M. FOR THE DRILL.
(UP TO 750 R.P.M.)? 620
MONEY . . .MONEY . . .MONEY !!
DRILLING ALMOST $11517 AWAY NOW.
ENTER THE R.P.M. FOR THE DRILL.
(UP TO 750 R.P.M.)? 735
GREAT GUNS . . . WE'RE ALREADY AT 6373 FEET.
AND CONSUMED JUST ABOUT $13370 DOLLARS !!
ENTER THE R.P.M. FOR THE DRILL
(UP TO 750 R.P.M.)? 00
YOU'RE NOT TOO RICH NOW, OIL MAN,
YOU DRILLED 3289.1 FEET PAST THE OIL !!
```

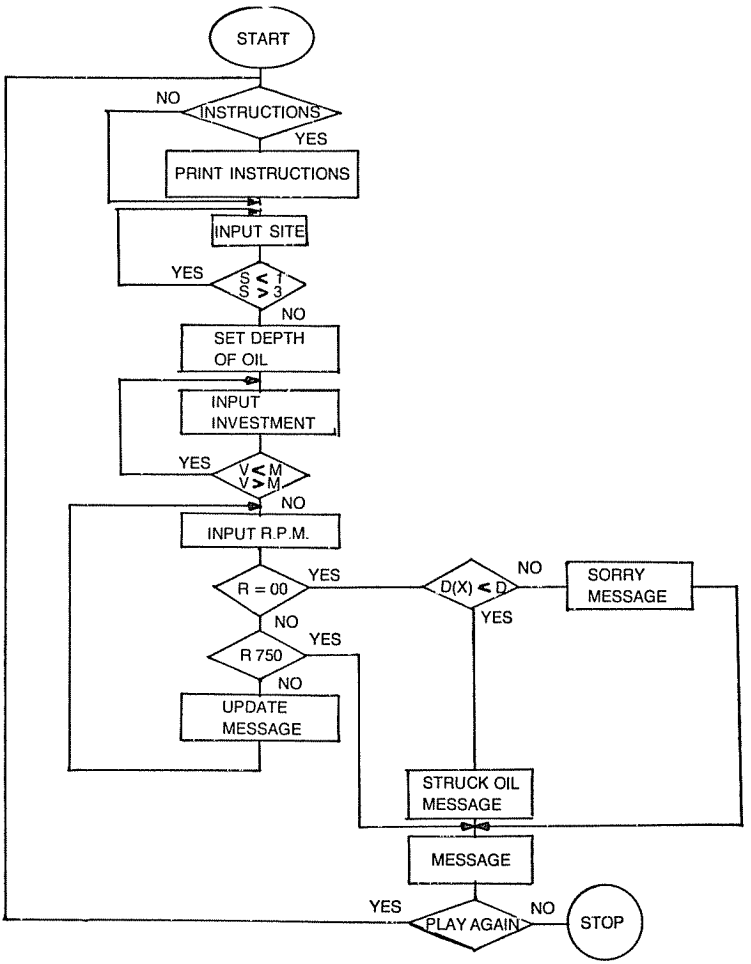


Fig. 5-3. The flowchart for Oil Tycoon.

YOU'VE STRUCK WATER AND WASTED $15117 DOLLARS !!
WELL TYCOON, THAT'S THE END OF THIS GUSHER
GAME. SEE YA AT THE NEXT DRILLING !!
ARE YOU READY TO TRY AGAIN NOW? NO
TYCOON !!

See Fig. 5-3 for the flowchart for this program.

Program Listing

```
20  CLS:PRINT
30  PRINT
```

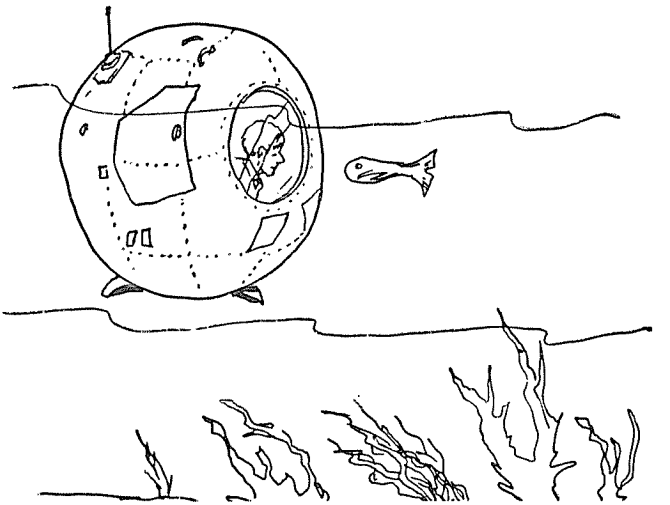
```
 40 PRINT TAB(20);"$$$ OIL TYCOON $$$"
 45 IF C=1 THEN 140
 50 PRINT:PRINT"INSTRUCTIONS (Y/N)";
 60 INPUT A$
 70 IF A$ < >"Y" THEN 140
 80 CLS:PRINT
 90 PRINT"YOUR IN THE BIG MONEY NOW, YOU OWN MORE
    THAN 20"
100 PRINT"OIL WELLS. BUT, YOU'RE TIRED OF SITTING
    AROUND JUST"
110 PRINT"COUNTING YOUR MONEY, SO YOU'RE GOING OUT
    ON YOUR OWN"
120 PRINT"AND DRILL YOUR OWN WELL, YOU'LL EVEN
    SELECT"
130 PRINT"THE SITE YOU WANT TO DRILL ON."
140 REM SELECT SITE
150 PRINT
160 PRINT"SELECT SITE (BY NUMBER ONLY):"
165 PRINT
170 PRINT"(1)     LOWER FORTY"
180 PRINT"(2)     UPPER FIFTY"
190 PRINT"(3)     BACK YARD"
195 PRINT
200 INPUT"ENTER YOUR SELECTION";S
205 IF S < 1 OR S > 3 THEN PRINT"DO YOU SEE THAT NUMBER
    ??":GOTO 200
210 REM GET DEPTH OF OIL
220 D=(5000*RND(0)+500)*2
230 IF D < 4800 THEN 220
245 M=5E+05
250 REM GET INVESTMENT
260 PRINT
270 PRINT"HOW MUCH OF YOUR RICHES WOULD YOU LIKE
    TO"
280 PRINT"INVEST ON THIS SITE (UP TO $500,000.00)"
285 PRINT"(WITHOUT THE DOLLAR SIGN, PLEASE)";
290 INPUT V
300 REM CHECK FOR ENOUGH
310 REM OR NOT ENOUGH
320 IF V < (M-475E+03)THEN PRINT"YOU MIGHT BE RICH, BUT
    IT'S GOING TO TAKE MORE THAN $";V:GOTO 290
330 IF V >M THEN PRINT"I SAID NO MORE THAN $";M;", YOU
```

```
     MUST WANT TO THROW IT AWAY !!": GOTO 290
340  V1=INT(2500*RND(0)+10):IF V1 < 1500 THEN 340
345  V(X)=V1+V(X)
350  V2=V
355  IF D(X) < =0 THEN D(X)=INT(200*RND(0)+50)
360  PRINT:IF Q=1 THEN 380
370  PRINT"WE'RE AT THE SITE, YOU RIG IS SET UP."
375  PRINT"WHEN YOU'RE READY TO STOP DRILLING, ENTER
     00."
380  PRINT"ENTER THE R.P.M. FOR THE DRILL."
390  PRINT"(UP TO 750 R.P.M.)";
400  INPUT R:IF R=00 THEN 900
405  Q=1:IF R=R(X)THEN PRINT"YOU'RE AT THAT SPEED
     NOW, TURKEY !:PRINT
     :GOTO 380
410  IF R > 750 THEN 500
420  IF R >99 AND R <351 THEN 550
430  IF R > 350 AND R <401 THEN 590
440  IF R > 400 AND R < 501 THEN 650
450  IF R > 500 AND R < 601 THEN 700
460  IF R > 600 AND R < 701 THEN 750
470  IF R > 700 AND R < 750 THEN 800
490  IF R < 100 THEN 850
500  GOSUB 1100
510  PRINT"YOU'VE LOST $";V(X);"ON THIS SITE,";R;"R.P.M. !!"
520  PRINT"YOUR DRILL JUST MELTED AT";D;"FEET !!"
530  GOTO 1010
550  D1=((D-S)+R)/9
560  GOSUB 1100
570  PRINT"THIS IS GOING TO TAKE AWHILE,"
575  PRINT"YOU'VE ONLY DRILLED";D(X);"FEET."
580  I=INT(3*RND(0)+1):IF I=2 THEN PRINT"YOU'RE WASTING
     MONEY AT
     THIS SPEED.":GOTO 630
585  GOTO 340
590  D1=((D-S)+R)/8
610  GOSUB 1100
620  PRINT"YOUR MONEY MATTERS ON THIS SITE."
630  PRINT"SO FAR YOU'VE USED $";V(X);"DOLLARS !!"
640  GOTO 340
650  D1=((D-S)+R)/7
670  GOSUB 1100
```

```
680 PRINT"YOU'RE AT";D(X);"FEET."
685 PRINT"AND USED $";V(X);"DOLLARS."
690 GOTO 340
700 D1=((D-S)+R)/6
710 GOSUB 1100
720 PRINT"I CAN HEAR THE DRILL GRINDING THAT STONE !!"
730 PRINT"YOU'RE BETTER THAN";D(X);"FEET DOWN NOW."
735 I=INT(3*RND(0)+1):IF I=1 AND D(X) <D THEN PRINT"ON-
    LY";D(X);"
    FEET TO THE OIL !!"
740 GOTO 340
750 D1=((D-S)+R)/5
760 GOSUB 1100
770 PRINT"MONEY . . . MONEY . . . MONEY !!"
780 PRINT"DRILLING ALMOST $";V(X);"AWAY NOW."
785 I=INT(3*RND(0)+1):IF I=2 THEN PRINT"AND YOUR DRILL
    JUST BUSTED !!":GOTO 1010
790 GOTO 340
800 D1=((D-S)+R)/2
810 GOSUB 1100
820 PRINT"GREAT GUNS . . . WE'RE ALREADY AT";D(X);
    "FEET."
830 PRINT"AND CONSUMED JUST ABOUT $";V(X);"DOLLARS
    !!"
835 I=INT(3*RND(0)+1):IF I=3 AND V(X) >V THEN PRINT
    "THAT'S";V(X)-V;"PAST THE AMOUNT YOU INVEST-
    ED !!"
840 GOTO 340
850 PRINT
860 PRINT"COME ON NOW, DRILLING AT";R;"R.P.M."
870 PRINT"ISN'T GOING TO BRING IN ANYTHING, BUT"
880 PRINT"MAYBE A HEADACHE !!"
890 GOTO 340
900 PRINT
910 IF V(X) < V AND ABS(D-D(X)) >500 THEN 930
920 IF V(X) < V AND ABS(D-D(X)) <500 THEN 980
922 PRINT"TOO BAD . . . YOU WASTED $";V(X);"DOLLARS AND"
925 PRINT"DIDN'T STRIKE A THING . . . BUT DIRT ! ! !":GOTO
    1010
930 PRINT"YOU'RE NOT TOO RICH NOW, OIL MAN,"
935 IF D(X) < D THEN PRINT"YOU ONLY
    DRILLED";D(X);"FEET, THE
```

```
        OIL WAS AT";D;"FEET !!":GOTO 950
 940 PRINT"YOU DRILLED";D(X);"FEET BEYOND THE OIL !!"
 950 PRINT"YOU'VE STRUCK AND WASTED $";V(X);"DOLLARS
     !!!"
 970 GOTO 1010
 980 PRINT"GUSHER !!!      GUSHER !!!"
 990 PRINT"YOU'RE RICHER THAN EVER, AND YOU"
1000 PRINT"STILL HAVE $";V-V(X);"LEFT FOR"
1005 PRINT"ANOTHER SITE !!"
1010 PRINT
1020 PRINT"WELL RICH MAN, THAT'S THE END OF THIS
     GUSHER"
1030 PRINT"GAME. SEE YA AT THE NEXT DRILLING !!"
1040 PRINT
1050 PRINT"ARE YOU READY TO TRY AGAIN NOW";
1060 INPUT A$
1070 IF A$="YES" THEN C=1:D(X)=0:V(X)=0:GOTO 20
1080 PRINT
1090 PRINT"TYCOON !!":END
1100 PRINT
1110 R(X)=R:D(X)=INT(D1+D(X))
1120 RETURN
```

Fathom



In this game you'll enter a sphere and lower yourself into the ocean to try and capture a new type of species of plant life unknown to man. You must come within 5 fathoms of the species to make your mission successful.

Good Luck!

Sample Run

```
                    ***FATHOM ***
ARE INSTRUCTIONS REQUIRED? YES
YOU ARE A BIOLOGICAL EXPERT, YOU HAVE HEARD AND
STUDIED THAT A CERTAIN PART OF THE OCEAN CONTAINS
A NEW TYPE SPECIES OF PLANT LIFE THAT UP TO NOW
HAS BEEN LEFT TO NATURE. TO LOCATE THIS SPECIES
YOU'LL ENTER A FUEL BURN TO THE SPHERE'S COMMAND
COMPUTER, BURNS WILL RANGE FROM -3 TO 4.
THE COMPUTER WILL PRINT UPDATES.
(NOTE: ENTERING A NEGATIVE BURN WILL RAISE YOUR
SPHERE).
PRESS ENTER/RETURN TO EXIT
OCEAN BOTTOM IS GREATER THAN 149 FATHOMS.
TO GET THE SPECIES YOU MUST COME WITHIN 5 FATHOMS
OF THEIR LOCATION.
IF YOU'RE READY, ENTER THE SPHERE, AND
ENTER THE FUEL BURN? 2
```

```
UPDATE:
OCEAN BOTTOM IS NOW AT 73.7618 FATHOMS.
OUTSIDE PRESSURE IS NOW AT 354.5 UNITS.
TOP OUTSIDE PRESSURE (BEFORE WE EXPLODE) IS 592.5 UNITS.
SPECIES ARE AROUND 67 FATHOMS FROM YOUR LOCATION.
IF YOU THINK YOUR NEAR ENOUGH TO THE SPECIES,
OR YOU WANT TO ABANDON MISSION,
ENTER 00 FOR A FUEL BURN.
ENTER THE FUEL BURN? 2
SPECIES LESS THAN 59 FATHOMS.
COMFORTABLE INSIDE, OUTSIDE PRESSURE NOW AT 385 U-
NITS.
UPDATE:
OCEAN BOTTOM NOW AT 63.7618 FATHOMS.
OUTSIDE PRESSURE NOW AT 385 UNITS.
TOP OUTSIDE PRESSURE (BEFORE WE EXPLODE) IS 592.5 UNITS.
SPECIES ARE AROUND 57 FATHOMS FROM YOUR LOCATION.
ENTER THE FUEL BURN? 4
UPDATE:
OCEAN BOTTOM IS NOW AT 43.7618 FATHOMS.
OUTSIDE PRESSURE NOW AT 427.5 UNITS.
TOP OUTSIDE PRESSURE (BEFORE WE EXPLODE) IS 592.5 UNITS.
SPECIES ARE AROUND 31 FATHOMS FROM YOUR LOCATION.
ENTER THE FUEL BURN? 3
OCEAN BOTTOM LESS THAN 30.7618 FATHOMS.
WATCH FUEL BURNS.
COMFORTABLE INSIDE,OUTSIDE PRESSURE NOW AT 452 UNITS.
UPDATE:
OCEAN BOTTOM NOW AT 28.7618 FATHOMS.
OUTSIDE PRESSURE IS NOW AT 452 UNITS.
TOP OUTSIDE PRESSURE (BEFORE WE EXPLODE) IS 592.5 UNITS.
SPECIES ARE AROUND 19 FATHOMS FROM YOUR LOCATION.
ENTER THE FUEL BURN? 2
OCEAN BOTTOM LESS THAN 20.7618 FATHOMS.
WATCH FUEL BURNS.
OUTSIDE PRESSURE RISING, NOW AT 476.5 UNITS.
UPDATE:
OCEAN BOTTOM NOW AT 18.7618 FATHOMS.
OUTSIDE PRESSURE NOW AT 476.5 UNITS.
TOP OUTSIDE PRESSURE (BEFORE WE EXPLODE) IS 592.5 UNITS.
SPECIES ARE AROUND 12 FATHOMS FROM YOUR LOCATION.
ENTER THE FUEL BURN? 2
```

```
OCEAN BOTTOM LESS THAN 10.7618 FATHOMS.
WATCH FUEL BURNS.
OUTSIDE PRESSURE RISING, NOW AT 507 UNITS.
UPDATE:
OCEAN BOTTOM IS NOW AT 8.76179 FATHOMS.
OUTSIDE PRESSURE IS NOW AT 507 UNITS.
TOP OUTSIDE PRESSURE (BEFORE WE EXPLODE) IS 592.5 UNITS.
SPECIES ARE AROUND 2 FATHOMS FROM YOUR LOCATION.
ENTER THE FUEL BURN? 00
STOPPED THE SPHERE JUST IN TIME, I THOUGHT WE WERE
GOING THROUGH THE OCEAN BOTTOM !!
NOW THAT YOU HAVE YOUR SPECIES, WHAT'S NEXT ???
ARE YOU AREADY TO TRY AGAIN? NO
COULDN'T STAND ALL THE PRESSURE ??
END
```

See Fig. 5-4 for the flowchart for this program.

Program Listing

```
 20 CLS:L=0:M=0:N=0:Q=0:P2=0:PRINT
 30 PRINT:PRINT TAB(20);" *** FATHOM ***"
 40 PRINT:PRINT
 50 PRINT"ARE INSTRUCTIONS REQUIRED?";
 60 INPUT A$
 70 IF A$ < >"YES" AND A$ < >"NO" THEN 90
 80 IF A$="YES" THEN 100
 85 R=1:GOTO 100
 90 PRINT:PRINT"INCORRECT RESPONSE, ANSWER YES OR
    NO":GOTO 40
100 CLS:IF R=1 THEN 190
110 PRINT"YOU ARE A BIOLOGICAL EXPERT, YOU HAVE
    HEARD AND"
120 PRINT"STUDIED THAT A CERTAIN PART OF THE OCEAN
    CONTAINS"
130 PRINT"A NEW TYPE SPECIES OF PLANT LIFE THAT UP TO
    NOW"
140 PRINT"HAS BEEN LEFT TO NATURE. TO LOCATE THIS
    SPECIES"
160 PRINT"YOU'LL ENTER A FUEL BURN TO THE SPHERE'S
    COMMAND"
170 PRINT"COMPUTER, BURNS WILL RANGE FROM -3 TO 4."
180 PRINT"THE COMPUTER WILL PRINT UPDATES."
185 PRINT"(NOTE: ENTERING A NEGATIVE BURN WILL RAISE
    YOUR SPHERE)."
```

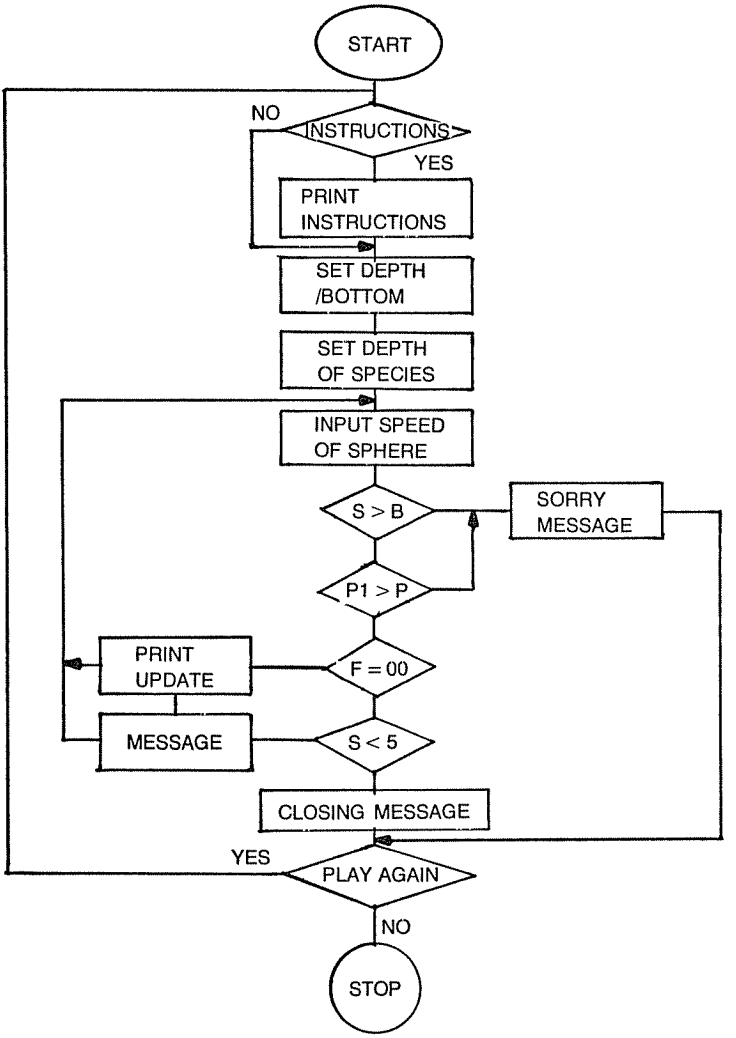


Fig. 5-4. The flowchart for Fathom.

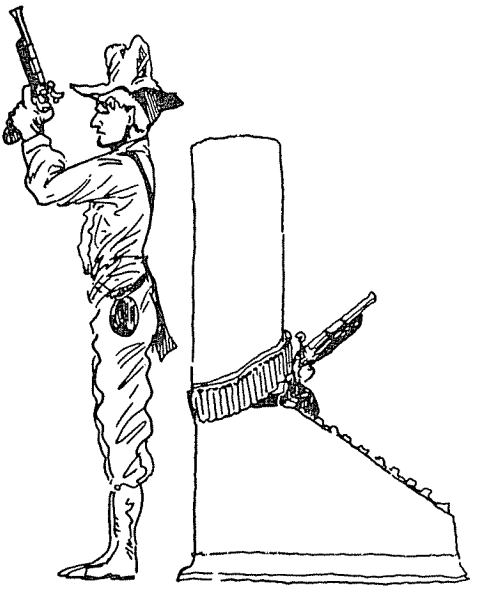
```
190  REM SET DEPTH TO OCEAN BOTTOM
200  B=INT(100*RND(0)+10):IF B <75 THEN 200
205  B1=INT(B+100/2.2)
210  REM SET DEPTH OF SPECIES
220  S=INT(5*RND(0)+1)
230  READ S
240  DATA 10,3.3,5.5,8,4.5
250  S=S+INT(B/1.2):P=INT(S*15)/2
255  IF R=1 THEN 270
```

```
260 PRINT:INPUT"PRESS ENTER/RETURN TO EXIT";X$
270 CLS:PRINT
280 PRINT"OCEAN BOTTOM IS GREATER
    THAN";B1;"FATHOMS."
300 PRINT"TO GET THE SPECIES, YOU MUST COME WITHIN 5
    FATHOMS"
305 PRINT"OF THEIR LOCATION."
310 PRINT
320 PRINT"IF YOU'RE READY, ENTER THE SPHERE, AND"
330 INPUT"ENTER THE FUEL BURN";F
335 IF F=00 THEN 1120
340 IF F < -3 OR F >4 THEN 360
350 GOTO 370
360 PRINT"YOU WERE INSTRUCTED TO ENTER -3 TO 4, TRY
    AGAIN.": Q=Q+1:IF Q>1 THEN 990
365 GOTO 330
370 FOR I=1 TO 1000:NEXT
380 B=B-(F*5):B2=(B-50)+P2
390 P1=P-250+F*6+P 2
395 IF F <0 THEN P1=P1-P2+10
400 S=INT(B-(F*3))
405 IF S <0 THEN 920
410 IF S >0 AND S <30 THEN 620
420 IF S >31 AND S <60 THEN 660
430 IF S >61 AND S <75 THEN 690
500 PRINT
510 PRINT"UPDATE:"
530 PRINT
540 PRINT"OCEAN BOTTOM IS NOW AT";B;"FATHOMS."
550 PRINT"OUTSIDE PRESSURE IS NOW AT";P1;"UNITS."
560 PRINT"TOP OUTSIDE PRESSURE (BEFORE WE EXPLODE)
    IS";P;"UNITS."
570 PRINT"SPECIES ARE AROUND";S;"FATHOMS FROM YOUR
    LOCATION."
580 PRINT:M=M+1:IF M >1 THEN 610
590 PRINT"IF YOU THINK YOUR NEAR ENOUGH TO THE
    SPECIES,"
595 PRINT"OR YOU WANT TO ABANDON MISSION,"
600 PRINT"ENTER 00 FOR A FUEL BURN."
610 P2=P2+30.5:GOTO 330
620 GOSUB 630:GOTO 640:REM MESSAGES
630 PRINT:PRINT:PRINT:RETURN
```

```
640 PRINT"OCEAN BOTTOM LESS THAN";B+2;"FATHOMS."
644 PRINT"WATCH FUEL BURNS."
645 GOSUB 650:GOTO 1030
650 FOR I=1 TO 1500:NEXT:RETURN
660 GOSUB 630
670 PRINT"SPECIES LESS THAN";S+2;"FATHOMS."
680 GOTO 645
690 GOSUB 630
700 PRINT"WE'RE AT A DEPTH OF";ABS((B1-S)-10)+F;
    "FATHOMS."
710 GOTO 645
730 GOSUB 630
740 PRINT"COMFORTABLE INSIDE, OUTSIDE PRESSURE NOW
    AT";P1;"UNITS."
750 GOSUB 650:GOTO 500
770 GOSUB 630
780 PRINT"OUTSIDE PRESSURE RISING, NOW AT";P1;"U-
    NITS."
790 GOTO 750
810 GOSUB 630
820 PRINT"WE MUST BE LOWERING THE SPHERE TOO FAST
    . . . ."
830 PRINT"OUTSIDE PRESSURE NOW AT";P1;"UNITS.":
    N=N+1:IF N >2 THEN 840
835 GOTO 750
840 PRINT"WON'T STAND MUCH MORE."
850 GOTO 750
860 CLS
870 GOSUB 630
880 PRINT"C R R R R A C K . . . . ."
885 L=L+1:IF L=2 THEN 905
890 PRINT"OUTSIDE PRESSURE HAS RISEN TOO HIGH, RAISE
    THE SPHERE,"
900 PRINT"WE'RE GONNA BLOW IN LESS THAN A MIN-
    UTE.":GOTO 910
905 PRINT"BULB . . . BULB . . . B L U B !!"
906 PRINT"THE SPHERE JUST EXPLODED . . . TURKEY
    !!":GOTO 1180
910 GOTO 750
920 CLS
930 GOSUB 630
940 PRINT"THAT IS IT !!"
```

```
950 PRINT"WE'VE JUST SLAMMED INTO THE OCEAN
    BOTTOM ! !"
960 PRINT"WITH ONLY";S+30;"MINUTES OF OXYGEN LEFT,
    NO WAY"
970 PRINT"YOU'LL GET OUT OF THIS ONE . . . . ."
980 GOTO 1180
990 GOSUB 630
1000 PRINT"YOU CONTINUE TO INPUT GREATER BURNS THAN
     THIS SPHERE"
1010 PRINT"CAN HANDLE,WE'RE NOT A BATTLE CRUISER !!!"
1020 Q=0:GOSUB 650:GOTO 330
1030 IF P1 >P THEN 870
1035 IF (P-P1) <25 THEN 1080
1040 IF P1 > 300 AND P1 <475 THEN 730
1050 IF P1 >475 AND P1 <550 THEN 770
1060 IF P1 >550 AND P1 < 575 THEN 810
1070 GOTO 500
1080 GOSUB 630
1090 PRINT"PRESSURE ALMOST OR GREATER THAN EXPLOD-
     ING POINT !!"
1100 PRINT"DECREASE OR HALT FUEL BURNS !!"
1110 GOTO 750
1120 GOSUB 630
1130 IF S < 5 THEN 1160
1140 PRINT"WATCH YOUR BURNS, YOU STILL HAVE";S;
     "FATHOMS TO GO."
1150 GOTO 750
1160 PRINT"STOPPED THE SPHERE JUST IN TIME, I THOUGHT
     WE WERE"
1170 PRINT"GOING THROUGH THE OCEAN BOTTOM !!"
1175 PRINT"NOW THAT YOU HAVE YOUR SPECIES, WHAT'S
     NEXT ??"
1180 GOSUB 650
1190 GOSUB 630
1200 PRINT"ARE YOU READY TO TRY AGAIN";
1210 INPUT A$
1220 OF A$="YES" THEN RESTORE:GOTO 20
1230 PRINT
1240 PRINT"COULDN'T STAND ALL THE PRESSURE ??"
1250 END
```

Duel



How are your reflexes? Excellent you say? Well this game will tell you, when you duel with one of the famous duelists in the world . . . your computer!

Don't try to cheat your computer and shoot it in the back, that won't work. As the rounds get higher the computer will get faster.

Sample Run

```
                    *** DUEL ***
THIS GAME WILL TEST YOUR REFLEXES WHEN YOU DUEL
WITH ONE OF THE MOST FAMOUS DUELISTS IN THE WORLD,
YOUR COMPUTER !!
KEEP YOUR FINGER ON THE 'F' KEY
WHEN YOU'RE READY TO FIRE, JUST PRESS IT.
DON'T FIRE BEFORE THE COUNT OF TEN AND YOU
SEE A STAR (*) ON THE VIDEO - THAT WOULD BE CHEATING.
A TOTAL OF TEN ROUNDS WILL BE RUN, THE ONE COMING UP
WITH THE MOST HITS WILL BE THE WINNER.
(NOTE: AS THE ROUNDS BECOME GREATER THE COMPUTER
WILL GET FASTER).
PRESS ENTER/RETURN TO BEGIN?
```

START YOUR PACES . . . .

1
2
3
4
5
6
7
8
9
10

*

(press f)
O U C H !!
YOU GOT ME, SCRATCH ONE INTEGRATED CIRCUIT !!
THAT'S ROUND NUMBER 1
ONLY 9 MORE TO GO.
PRESS ENTER/RETURN TO BEGIN?
START YOUR PACES . . . .

1
2
3
4
5
6
7
8
9
10

(accidently press f, before star is set)
OKAY RESTLESS !!
NEITHER ONE OF US GOT THIS ROUND. AS A MATTER
OF FACT, YOU LOSE A ROUND—FOR SHOOTING ME
IN THE BACK !! DID YOU SEE A STAR ??
THAT'S ROUND NUMBER 2
ONLY 8 MORE TO GO.
PRESS ENTER/RETURN TO BEGIN?
START YOUR PACES . . . .

1
2
3
4

```
                    5
                    6
                    7
                    8
                    9
                    10
*(press f)
TOO SLOW SUCKER !!
I JUST SHOT YA !!
THAT'S ROUND NUMBER 3
ONLY 7 MORE TO GO.
PRESS ENTER/RETURN TO BEGIN?
STOP
```

That's only three rounds of the ten. As the rounds go on, the computer will get faster and faster. The computer will get extremely fast after firing about 5 rounds. See Fig. 5-5 for the flowchart for this program.

Good luck!

Program Listing

```
 1 REM * IF YOUR REFLEXES ARE SUPER FAST YOU CAN *
 2 REM *CHANGE S, LINE 10, TO A SMALLER NUMBER *
 3 REM * IF YOUR REFLEXES ARE SLOW, YOU *
 4 REM * CAN INCREASE S, LINE 10 *
 5 REM * ALSO,ANY KEY CAN BE USED TO FIRE BY CHANGING*
 6 REM * LINE NUMBERS 220,275, AND 320 *
10 CLS:PRINT:Q=0:T=0:W=0:S=120
20 PRINT TAB(10);"*** D U E L ***"
30 PRINT:IF P=1 THEN 140
40 PRINT"THIS GAME WILL TEST YOUR REFLEXES WHEN YOU
   DUEL"
50 PRINT"WITH ONE OF THE MOST FAMOUS DUELISTS IN THE
   WORLD,"
60 PRINT"YOUR COMPUTER !!"
70 PRINT
80 PRINT"KEEP YOUR FINGER ON THE 'F' KEY"
90 PRINT"WHEN YOU'RE READY TO FIRE, JUST PRESS IT."
100 PRINT"DON'T FIRE BEFORE THE COUNT OF TEN AND YOU"
110 PRINT"SEE A STAR (*) ON THE VIDEO—THAT WOULD BE
    CHEATING."
120 PRINT"A TOTAL OF TEN ROUNDS WILL BE RUN, THE ONE
    COMING UP"
```

```
130 PRINT"WITH THE MOST HITS WILL BE THE WINNER."
135 PRINT"(NOTE: AS THE ROUNDS BECOME GREATER THE
    COMPUTER WILL GET FASTER)."
140 PRINT:INPUT"PRESS ENTER/RETURN TO BEGIN";X
150 CLS:PRINT
160 PRINT"START YOUR PACES . . . . "
170 REM COUNT PACES
180 FOR M=1 TO 10
190 PRINT TAB(19);M
200 FOR N=1 TO 500:NEXT N
210 Z$=INKEY$:REM NO CHEATERS
220 IF Z$="F" THEN GOSUB 580:GOTO 410
230 NEXT M
240 REM SET STAR
250 X=INT(30*RND(0)+1)
260 CLS:FOR J=1 TO 500:NEXT
265 Z$=INKEY$:REM CHECK FOR CHEATERS AGAIN
270 PRINT:PRINT:PRINT:PRINT
275 IF Z$="F" THEN GOSUB 580:GOTO 410
280 PRINT TAB(X);"*"
290 REM SET UP SPEED FOR COMPUTER SHOT
300 FOR I=1 TO S:NEXT
310 Y$=INKEY$
320 IF Y$ < >"F" THEN 340
330 GOTO 380
340 CLS:PRINT
350 PRINT"TOO SLOW SUCKER !!"
360 PRINT"I JUST SHOT YA !!"
365 Q=Q+1
370 GOTO 410
380 CLS:PRINT
390 PRINT"O U C H !!"
400 PRINT"YOU GOT ME, SCRATCH ONE INTEGRATED CIRCUIT
    !!":W=W+1
405 IF W > 4 THEN PRINT"I'M GETTING WEAKER !"
410 PRINT:T=T+1:IF T=10 THEN 440
420 PRINT"THAT'S ROUND NUMBER";T
430 IF T < 10 PRINT"ONLY";10-T;"MORE TO GO.":S=S-10:GOTO
    140
440 PRINT"THAT'S";T;"ROUNDS !!"
460 IF Q > W THEN 490
470 IF W > Q THEN 520
```

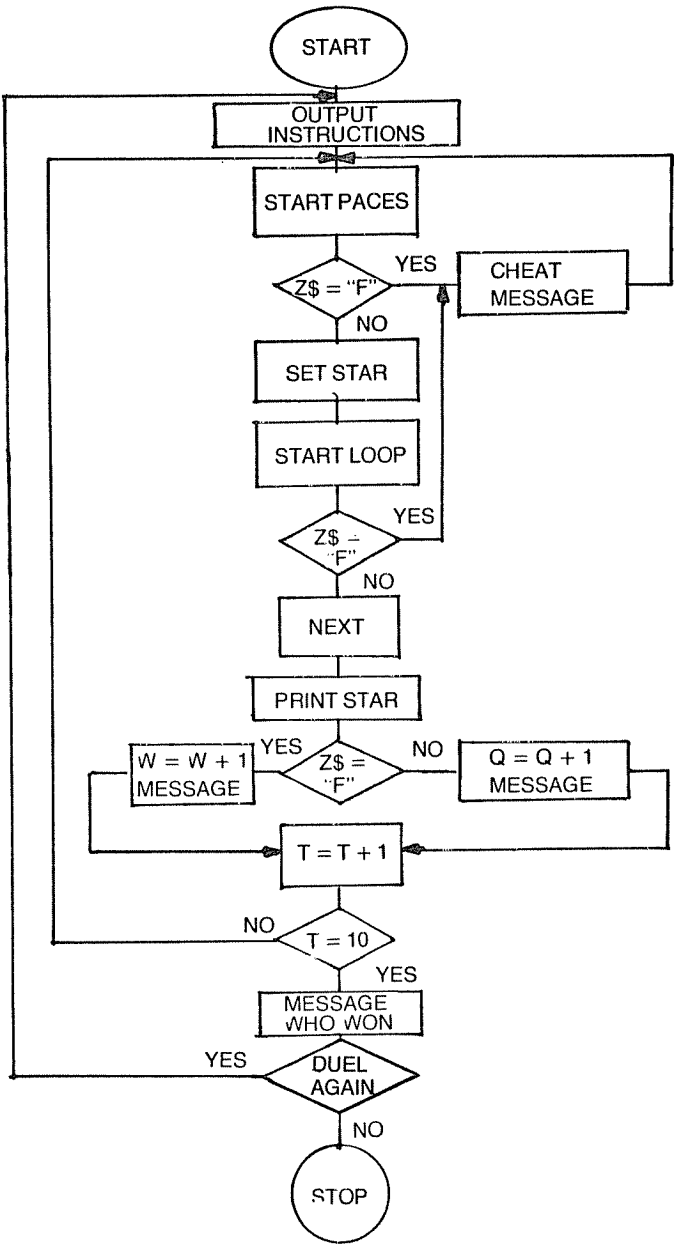
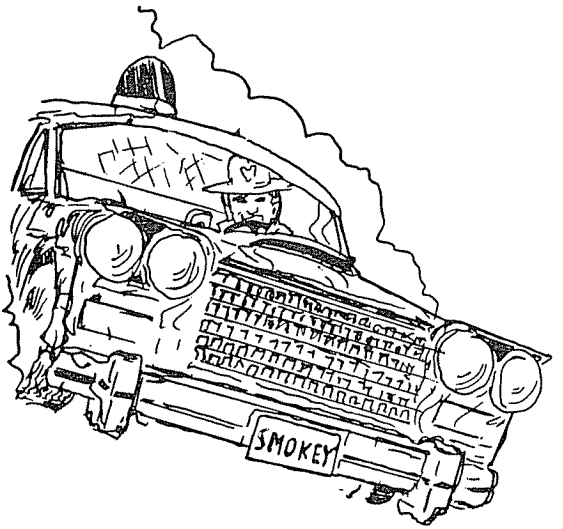


Fig. 5-5. The flowchart for Duel.

```
480 IF Q=W THEN 550
485 REM FINAL MESSAGES
490 PRINT:PRINT"LOOKS LIKE I WON THE BETTER OF";T
500 PRINT"ROUNDS. WITH A TOTAL OF";Q
510 GOTO 640
520 PRINT:PRINT"WELL YOU'RE FASTER THAN YOUR COMPU-
    TER, DILLON !!"
530 PRINT"YOU WON THE";T;"ROUNDS, WITH A TOTAL OF";W
540 GOTO 640
550 PRINT:PRINT"SO WE'RE ABOUT EVEN WITH THE RE-
    FLEXES,"
560 PRINT"YOU HAD";W;"AND I HAD";Q;"NOT BAD !!"
570 GOTO 640
580 FOR I=1 TO 300:NEXT:CLS:PRINT:PRINT
590 PRINT"OKAY RESTLESS !!"
600 PRINT"NEITHER ONE OF US GOT THIS ROUND. AS A MAT-
    TER"
610 PRINT"OF FACT, YOU LOSE A ROUND—FOR SHOOTING
    ME"
620 PRINT"IN THE BACK !! DID YOU SEE A STAR ??"
630 W=W-1:RETURN
640 PRINT:PRINT"WOULD YOU LIKE TO TRY YOUR REFLEXES"
650 PRINT"AGAIN, BY GOING";T;"MORE ROUNDS";
660 INPUT A$
670 IF A$="YES" THEN P=1:GOTO 10
680 PRINT
690 PRINT"GETTING TIRED OF SHOOTING AT A STAR. . .HUH
    ???"
700 END
```

Smokey



In this game all you have to do is catch the bandit. Watch the computer—it might move the bandit around or give you false directions!

Sample Run

```
                              S M O K E Y
INSTRUCTIONS (YES/NO)? YES
THIS IS THE GAME OF SMOKEY.
IN WHICH YOU'LL BE SMOKEY AND I YOUR COMPUTER WILL
BE YOUR ASSISTANT. YOU'LL BE CHASING THE BANDIT
AND TRYING TO GUESS HIS HIDEOUTS. BUT BEWARE....
YOU MIGHT END UP CATCHING THE WRONG PERSON
PRESS A KEY IF YOU'RE READY FOR THE CHASE
*
SPEED 23 RIGHT
SPEED 66 RIGHT
SPEED 66 STRAIGHT
SPEED 124 STRAIGHT
SPEED 185 LEFT
```

* The screen clears after each direction.

```
PRETTY FAST CAR HUH ?
NOW FOR THE EASY PART, TO CATCH UP WITH THE BANDIT
```

YOU MUST INPUT THE DIRECTIONS HE TOOK AND INPUT HIS TOTAL SPEED DURING THE CHASE . . . .
INPUT THE ROUTE STARTING WITH THE BANDIT'S FIRST MOVE (NOTE: ONLY INPUT THE FIRST LETTER).
MOVE 1? R
MOVE 2? R
MOVE 3? S
MOVE 4? S
MOVE 5? L
WHAT WAS THE BANDIT'S TOTAL SPEED? 460
DUMMY, LOOKS AS THOUGH YOU CAN'T ADD !!
OKAY SMOKEY, YOU'VE OUT-FOXED THE BANDIT WITH THE CHASE SCENE, NOW YOU HAVE TO LOCATE WHERE HE'S HIDING.
DEPARTMENT STORE
HOUSE
VACANT FACTORY
DUMP
I'VE NARROWED IT DOWN FOR YOU. ABOVE ARE FOUR POSSIBLE
LOCATIONS THE BANDIT COULD BE HIDDEN.
HIS LAST DIRECTION WAS LEFT SO FROM YOUR ANGLE
THAT WOULD EITHER PUT HIM IN THE VACANT FACTORY
OR MAYBE IN THE DEPARTMENT STORE
WHICH OF THE FOUR WOULD YOU LIKE TO TRY? VACANT FACTORY
I MUST ADMIT, I MISLED YOU, HE WASN'T ANYWHERE NEAR THE VACANT FACTORY SO COME ON TRY AGAIN.
WHICH OF THE FOUR WOULD YOU LIKE TO TRY? HOUSE
SSSSHH !! BE QUIET YOU'VE GOT TO FIGURE OUT WHICH ROOM HE'S HIDING IN. LUCKY YOU. SOMEBODY NUMBERED THE DOORS IN THIS HOUSE (FROM 1 TO 5).
WELL WHICH DOOR ARE YOU GOING TO TRY? 2
LOOKS LIKE AN EMPTY BATHROOM !!
WELL WHICH DOOR ARE YOU GOING TO TRY? 4
GOOD CAPTURE !! WOULD YOU LET HIM GO; HE LIVES IN THIS HOUSE YOU'VE RAIDED !!
IT'S THE OWNER, DUMMY !! YOU HAVEN'T GOT THE BANDIT !!
HE'S CHANGED ROOMS NOW . . . .
WELL WHICH ROOM ARE YOU GOING TO TRY? 5
ISN'T THAT NICE, A KITCHEN WITH A STEEL DOOR !!
WELL WHICH DOOR ARE YOU GOING TO TRY? 2

LOOKS LIKE AN EMPTY BATHROOM !!
WELL WHICH DOOR ARE YOU GOING TO TRY? 4
CONGRATULATIONS !!
VERY WELL DONE SMOKEY, NOT A SCRATCH ON YOU. HE DIDN'T LIKE BEING CAPTURED THIS EASY, SO LET'S TRY THIS GAME AGAIN, O.K.? NO
JUST AS WELL, YOU WORE YOUR HAT PRETTY SLOPPY ANYWAY.
END*

See Fig. 5-6 for the flowchart for this program.

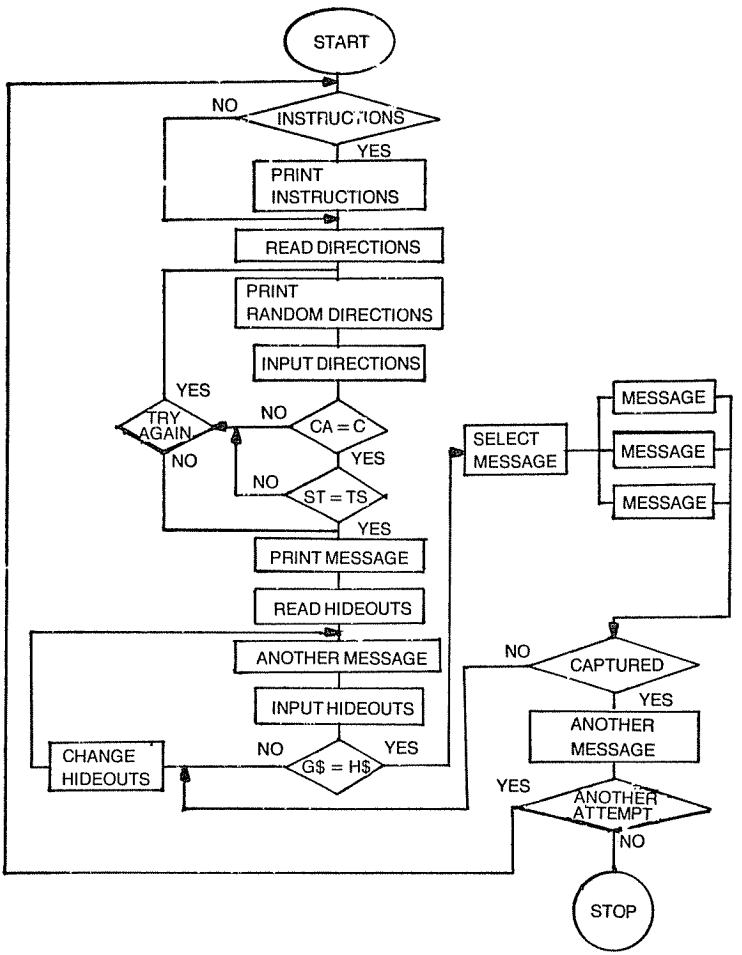


Fig. 5-6. The flowchart for Smokey.

Program Listing

```
10 CLS:RANDOM:C=5:CA=C
15 PRINT TAB(20);"S M O K E Y"
20 PRINT:PRINT
30 INPUT"INSTRUCTIONS (YES/NO)";A$
40 IF A$ < >"YES" THEN 105
50 PRINT
60 PRINT"THIS IS THE GAME OF SMOKEY."
70 PRINT"IN WHICH YOU'LL BE SMOKEY AND I YOUR COM-
   PUTER WILL"
80 PRINT"BE YOUR ASSISTANT. YOU'LL BE CHASING THE
   BANDIT"
90 PRINT"AND TRYING TO GUESS HIS HIDEOUTS. BUT BE-
   WARE...."
100 PRINT"YOU MIGHT CATCH THE WRONG PERSON !"
105 PRINT"PRESS A KEY IF YOU'RE READY FOR THE CHASE."
110 GOSUB 1000:PRINT:PRINT
115 REM GET BANDITS DIRECTIONS
120 FOR I=1 TO 3:READ A$(I):NEXT
130 DATA LEFT,RIGHT,STRAIGHT
135 P=1
140 REM DRIVE AT RANDOM
150 I=INT(3*RND(0)+1)
155 S=P*INT(20*RND(0)+20):REM SPEED OF BANDIT
160 PRINT"SPEED";S,A$(I)
165 TS=(S+TS):REM TOTAL SPEED
170 FOR T=1 TO 800:NEXT
180 D$(P)=A$(I)
185 CLS:PRINT:PRINT
190 P=P+1:IF P < > 6 THEN 150
200 PRINT:PRINT"PRETTY FAST CAR HUH ?"
210 PRINT"NOW FOR THE EASY PART, TO CATCH UP WITH
   THE BANDIT"
220 PRINT"YOU MUST INPUT THE DIRECTIONS HE TOOK AND
   INPUT HIS"
230 PRINT"TOTAL SPEED DURING THE CHASE . . . ."
240 PRINT"INPUT THE ROUTE, STARTING WITH THE BAN-
   DIT'S FIRST MOVE."
245 PRINT"(NOTE: ONLY INPUT THE FIRST LETTER)."
250 FOR I=1 TO 5
260 PRINT"MOVE #";I;
270 INPUT M$(I)
```

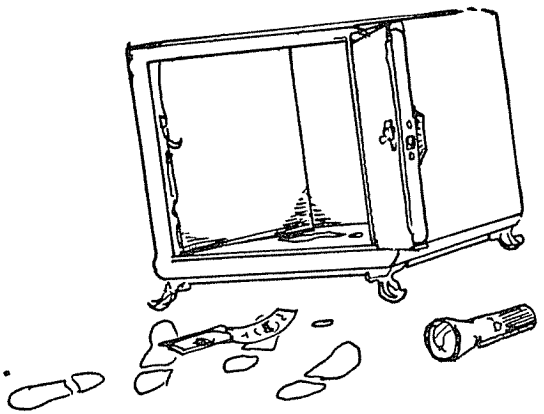
```
280 IF M$(I) < > LEFT$(D$(I),1) THEN C=C-1:GOTO 300
290 CA=CA
300 NEXT
310 PRINT:PRINT"WHAT WAS THE BANDIT'S TOTAL SPEED";
320 INPUT ST
330 IF ST < > TS THEN PRINT"DUMMY, LOOKS AS THOUGH
    YOU CAN'T ADD !!"
340 IF C < > 5 THEN 360
350 GOTO 440:REM CORRECT ROUTE MESSAGE
360 PRINT"LOOKS AS THOUGH YOU DIDN'T FOLLOW THE
    BANDIT."
370 PRINT"YOU MISSED";(CA-C);"OF HIS MOVES."
380 PRINT"ARE YOU READY TO RUN THE CHASE AGAIN."
390 PRINT"YOU COULDN'T POSSIBLY GET HIS HIDEOUTS
    (YES/NO)";
400 REM START OVER IF YES
410 INPUT A$
420 IF A$="YES"THEN PRINT"PRESS A KEY . . . ":GOSUB
    1000:RESTORE:C=5:
    CA=C:PRINT:PRINT:GOTO 115
430 PRINT"HOW DO YOU THINK YOU'LL CATCH THE BANDIT
    IF YOU CAN'T"
435 PRINT"IF YOU CAN'T EVEN FOLLOW HIM IN A CAR . .
    .":PRINT:GOTO 460
440 PRINT:PRINT"OKAY SMOKEY, YOU'VE OUT-FOXED THE
    BANDIT WITH THE"
450 PRINT"CHASE SCENE, NOW YOU HAVE TO LOCATE
    WHERE HE'S HIDING."
455 IF ST < > TS THEN PRINT"WE'LL SKIP YOUR ADDING
    PROBLEM FOR NOW."
460 REM GET BANDITS HIDEOUT
470 FOR I=1 TO 4:READ H$(I):NEXT
480 DATA DEPARTMENT STORE,VACANT FACTORY,HOUSE
    DUMP
490 I=INT(4*RND(0)+1)
500 HI$=H$(I)
510 REM GET FALSE HIDEOUT
520 IF I <= 3 THEN F=I+INT(2*RND(0)+1)
525 IF F > 4 THEN 520
530 FH$=H$(F)
540 IF FH$=" " THEN 490
545 IF FH$=HI$ THEN 490
```

```
550 FOR I=1 TO 4:PRINT H$(I):NEXT
560 PRINT:I'VE NARROWED IT DOWN FOR YOU. ABOVE ARE
    FOUR POSSIBLE"
570 PRINT"LOCATIONS THE BANDIT COULD BE HIDDEN."
580 PRINT"HIS LAST DIRECTION WAS";D$(5);"SO FROM YOUR
    ANGLE"
590 PRINT"THAT WOULD EITHER PUT HIM IN THE ";FH$
595 PRINT"OR MAYBE THE ";H$(I)
596 PRINT
600 PRINT"WHICH WOULD YOU LIKE TO TRY";
610 INPUT G$
615 BM$=HI$
620 IF G$=BM$ THEN 730:REM CAPTURE MESSAGE
630 IF G$=FH$ THEN 690:REM FALSE HIDEOUT
640 GOSUB 1020
650 REM TRY AGAIN
660 PRINT"SORRY SMOKEY, HE WASN'T THERE. BUT I WILL
    TELL YOU"
670 PRINT"HE'S CHANGED HIS LOCATION . . . "
680 PRINT:GOTO 600
690 PRINT"I MUST ADMIT, I MISLED YOU, HE WASN'T ANY-
    WHERE NEAR"
700 PRINT"THE ";FH$;" SO COME ON TRY AGAIN."
710 GOSUB 1020:PRINT:GOTO 600
730 REM CAPTURED . . . MAYBE
740 IF BM$="DEPARTMENT STORE" THEN 800:REM MORE
    PROBLEMS
750 IF BM$="HOUSE" THEN 1060:REM WHICH ROOM
760 PRINT:PRINT"CONGRATULATIONS !!"
770 PRINT"VERY WELL DONE SMOKEY, NOT A SCRATCH ON
    YOU."
780 PRINT"HE DIDN'T LIKE BEING CAPTURED THIS EASY, SO
    LET'S"
790 GOTO 1230
800 REM DEPARTMENT STORE
810 REM GET FLOOR BANDIT IS ON
820 FL=INT(5*RND(0)+1)
830 REM GET ROOM NUMBER
840 RM=INT(8*RND(0)+1)
850 REM NOW TRY IT SMOKEY
860 PRINT"YOU HAVE HIM TRAPPED IN THE ";BM$;"
    SMOKEY."
```

```
870 PRINT"WHICH FLOOR WILL YOU TRY (THERE'S FIVE OF
    THEM)";
880 INPUT WF
890 IF WF < > FL THEN PRINT"SORRY SMOKEY, HE'S NOT ON
    THAT ONE":
    PRINT:GOTO 870
900 PRINT"VERY GOOD GUESS, NOW WHICH OF THE EIGHT
    ROOMS IS HE IN";
910 INPUT HI
920 IF HI < > RM THEN 935
930 GOTO 760
935 R=INT(2*RND(0)+1):ON R GOTO 940,980
940 PRINT"CONGRATULATIONS NITWIT ! YOU'VE JUST
    BROKE IN ON THE"
950 PRINT"STORE MANAGERS MEETING—THERE'S NO BAN-
    DIT HERE !!"
960 PRINT"HE'S MOVED TO A DIFFERENT FLOOR NOW !!"
970 PRINT:GOTO 800
980 PRINT"OOPS !! THAT WAS THE WOMENS RESTROOM.
    HURRY, HE'S MOVING . . ."
990 PRINT:GOTO 900
1000 X$=INKEY$:IF X$=" " THEN 1000
1010 CLS:RETURN
1020 REM GET BANDITS MOVE
1030 I=INT(4*RND(0)+1)
1040 BM$=H$(I)
1050 RETURN
1060 PRINT:PRINT"SSSSHH !! BE QUIET, YOU'VE GOT TO
    FIGURE OUT WHICH"
1070 PRINT"ROOM HE'S HIDING IN. LUCKY YOU. SOMEBODY
    NUMBERED THE"
1080 PRINT"DOORS IN THIS HOUSE (FROM 1 TO 5)."
1090 REM GET ROOM
1100 GR=INT(5*RND(0)+1)
1110 PRINT:PRINT"WELL WHICH DOOR ARE YOU GOING TO
    TRY";
1120 INPUT WD
1130 IF WD < > GR THEN 1150
1140 GOTO 760
1150 ON WD GOTO 1160,1180,1200,1221
1160 PRINT"LOOKS LIKE AN EMPTY BATHROOM !!"
1170 PRINT:GOTO 1220
```

```
1180 PRINT"THERE'S AN EMPTY BEDROOM (NICE COLOR)"
1190 PRINT:GOTO 1220
1200 PRINT"GOOD CAPTURE ! WOULD YOU LET HIM GO; HE
     LIVES"
1210 PRINT"IN THIS HOUSE YOU'VE RAIDED !!"
1215 PRINT"IT'S THE OWNER, DUMMY !! YOU HAVEN'T GOT
     THE BANDIT !!"
1220 PRINT"HE'S CHANGED ROOMS NOW . . . . ":GOTO 1100
1221 PRINT"ISN'T THAT NICE, A KITCHEN WITH A STEEL
     DOOR."
1225 PRINT:GOTO 1110
1230 PRINT"TRY THIS GAME AGAIN";
1240 INPUT GM$
1250 IF LEFT$(GM$,1)="Y" THEN RESORE:GOTO 10
1260 PRINT:PRINT"JUST AS WELL YOU WORE YOUR HAT
     PRETTY SLOPPY ANYWAY."
1270 END
```

Heist



You'll be given an establishment where you'll try to pull off your heist. You'll have to pass a few obstacles before you can claim the loot. Unlock the front door - by inputting the right number; get past the "electronic eyes"; and input the combination to the safe. If you can do all that without tripping the alarm the bread is your s (computer bread, that is).

Sample Run

```
DO YOU NEED INSTRUCTIONS? YES
THIS IS THE GAME OF HEIST . . . . .
YOU WILL BE GIVEN AN ESTABLISHMENT WHERE YOU
WILL TRY TO PULL OFF YOUR HEIST. IN THIS ESTABLISHMENT
WILL BE SOME 'ELECTRONIC EYES' WHICH, WHEN TRIPPED,
WILL TRIGGER AN ALARM. THESE 'EYES' RANGE FROM 5 INCHES
TO 1 FOOT ABOVE THE FLOOR. TO
GET INSIDE THIS ESTABLISHMENT, YOU'LL HAVE TO UNLOCK
THE FRONT DOOR.
THIS PART IS SIMPLE, ALL YOU HAVE TO DO IS SELECT
A NUMBER BETWEN 1 AND 5, GUESS IT AND YOU'RE IN:
MISS IT, AND IT'S ALARM TIME.
FURTHER INSTRUCTIONS WILL BE LISTED AS YOU PROGRESS.
PRESS ANY KEY TO BEGIN . . . . .
VISUALIZE YOURSELF STANDING IN FRONT OF A DEPARTMENT
STORE
TO YOUR RIGHT THERE IS A PUSHBUTTON PANEL WITH
FIVE NUMBERS RANGING FROM 1 TO 5.
```

```
YOU MUST PRESS THE CORRECT NUMBER, YOU'LL HAVE
THREE ATTEMPTS BEFORE THE ALARM SOUNDS.
INPUT YOUR NUMBER 3
WELL GOODIE-GUMDROPS YOU'VE GOTTEN THE DOOR OPEN.
NOW, TIME TO DO SOMEMORE 'LABOR'. LOOKING STRAIGHT
DOWN THE HALL (ABOUT 20 FEET) YOU'LL SEE THE VAULT.
LYING FLAT ON YOUR BELLY, HOW HIGH
DO YOU THINK THE HIGHEST PART OF YOUR BODY WILL BE.
LET'S HAVE IT? 2
COME ON TURKEY !! WHAT ARE YOU, A LIZARD?
LET'S HAVE IT? 7
HONK !!!
HONK !!!
HONK !!!
HONK !!!
HONK !!!
YOU BLEW IT MUGSY !!!
WOULD YOU LIKE TO TRY THIS GAME AGAIN? NO
MAYBE SOME OTHER TIME—MUGSY.
END*
```

* If 4 chances at the combination (line 1065) aren't enough you could change lines 1065 and 1090 to any amount you wish. 4 was just a random number selected by a computer (of course). See Fig. 5-7 for the flowchart for this program.

Program Listing

```
 10 DIM D$(20),M(40)
 20 CLS
 30 INPUT"DO YOU NEED INSTRUCTIONS";A$
 40 IF A$="YES" THEN 60
 50 GOTO 180
 60 PRINT"THIS IS THE GAME OF HEIST . . . . ."
 70 PRINT: 'YOU WILL BE GIVEN AN ESTABLISHMENT
    WHERE YOU"
 80 PRINT"WILL TRY TO PULL OFF YOUR HEIST. IN THIS ES-
    TABLISHMENT"
 90 PRINT"WILL BE SOME ELECTRONIC 'EYES' WHICH, WHEN
    TRIPPED WILL"
100 PRINT"TRIGGER AN ALARM. THESE 'EYES' TO RANGE
    FROM"
105 PRINT"5 INCHES TO 1 FOOT FROM THE FLOOR."
110 PRINT"GET INSIDE THIS"
```

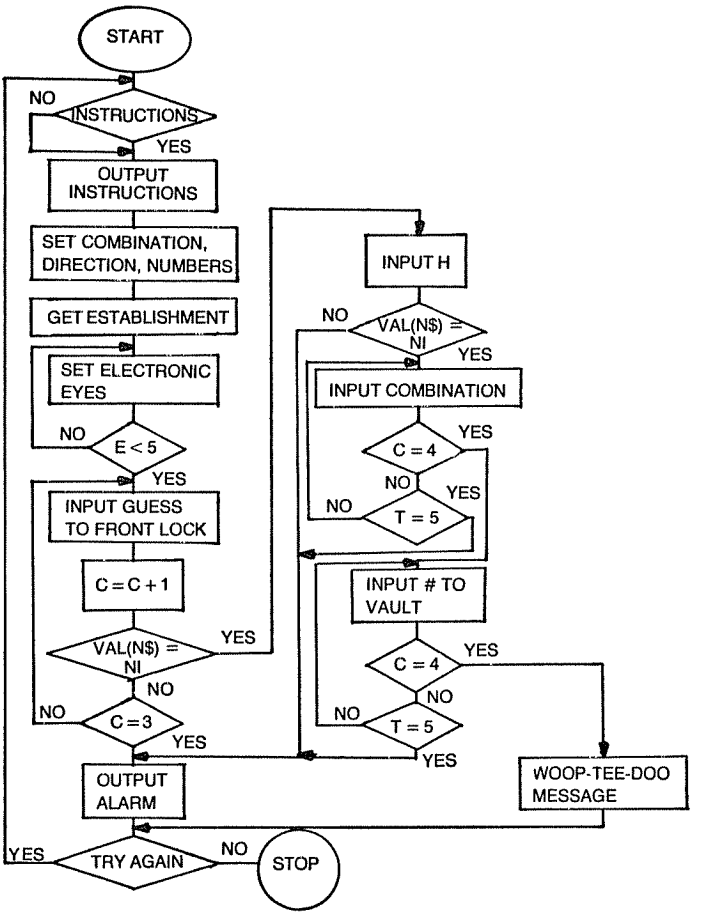


Fig. 5-7. The flowchart for Heist.

```
120 PRINT"ESTABLISHMENT YOU'LL HAVE TO UNLOCK"
130 PRINT"THE FRONT DOOR."
140 PRINT"THIS PART IS SIMPLE, ALL YOU HAVE TO DO IS
    SELECT"
150 PRINT"A NUMBER BETWEEN 1 AND 5, GUESS IT AND
    YOU'RE IN,"
160 PRINT"MISS IT AND IT'S ALARM TIME."
170 PRINT"FURTHER INSTRUCTIONS WILL BE LISTED AS YOU
    PROGRESS."
180 PRINT"PRESS ANY KEY TO BEGIN . . . . ."
190 A$=INKEY$:IF A$=" " THEN 190
200 REM GET LEFT-RIGHT FOR TUMBLERS
```

```
210 L$="LEFT"
220 R$="RIGHT"
230 REM NOW THE COMBINATION
240 FOR I=1 TO 4:READ N (I):NEXT
250 DATA 21,30,12,65
260 REM NOW THE ESTABLISHMENT
270 FOR I=1 TO 4:READ E$(I):NEXT
280 DATA BANK, FINANCE COMPANY, JEWELRY STORE, DE-
    PARTMENT STORE
290 REM SET ELECTRONIC 'EYES'
300 E=INT(12*RND(0)+1):IF E <5 THEN 300
310 REM SET NUMBER FOR FRONT LOCK
320 NI=INT(5*RND(0)+1)
330 REM SET FOUR POSITIONS LEFT-RIGHT
340 X=4
350 I=INT(2*RND(0)+1)
355 ON I GOTO 360,370
360 L$(X)=L$
365 GOTO 380
370 R$(X)=R$
380 X=X-1:IF X < > 0 GOTO 350
390 FOR I=1 TO 4:A$(I)=L$(I)+R$(I):NEXT
395 C=0:C1=4:T=1
400 REM RESET NUMBERS FOR TUMBLERS
405 B=INT (5*RND(0)+1)
405 B=INT (5*RND(0)+1)
410 N(1)=N(1)+B
420 N(2)=N(2)+B
430 N(3)=N(3)+B
440 N(4)=N(4)+B
450 REM GET RANDOM ESTABLISHMENT
460 ES$=E$(INT(4*RND(0)+1):IF ES$=" "THEN 460
470 REM THE GAME NOW?
480 CLS:PRINT
490 PRINT"VISUALIZE YOURSELF STANDING IN FRONT OF A
    ";ES$
500 PRINT"TO YOUR ";R$;"THEIR IS A PUSHBUTTON PANEL
    WITH"
510 PRINT"FIVE NUMBERS RANGING FROM 1 TO 5."
520 PRINT"YOU MUST PRESS THE CORRECT NUMBER, YOU'LL
    HAVE"
530 PRINT"THREE ATTEMPTS BEFORE THE ALARM
    SOUNDS."
```

```
550 PRINT"INPUT YOUR NUMBER"
560 N$=INKEY$:IF N$=" " THEN 560
570 IF VAL(N$) =NI THEN 590
575 C=C+1:IF C=3 GOSUB 1530:GOTO 1120
580 PRINT"WRONG NUMBER—THAT WAS TRY NUM-
    BER";C:GOTO 550
600 CLS:PRINT
610 PRINT"WELL GOODIE-GUMDROPS YOU'VE GOTTEN THE
    DOOR OPEN."
620 PRINT"NOW, TIME TO DO SOME MORE 'LABOR'. LOOKING
    STRAIGHT"
630 PRINT"DOWN THE HALL (ABOUT 20 FEET) YOU'LL SEE
    THE VAULT."
650 PRINT"LYING FLAT ON YOUR BELLY, HOW HIGH"
660 PRINT"DO YOU THINK THE HIGHEST PART OF YOUR BODY
    WILL BE."
690 PRINT"LET'S HAVE IT?"
700 N$=INKEY$:IF N$=" " THEN 590 C=0 700
710 IF VAL (N$) < 5 PRINT "COME ON TURKEY!! WHAT ARE
    YOU A LIZARD?":GOTO 690
720 IF VAL(N$)<E GOTO 740
730 IF VAL(N$)> E GOSUB 1530:GOTO 1120
740 CLS:PRINT
750 PRINT"THIS MUST BE TOO EASY, EITHER THAT OR YOU
    SEEN THE 'EYES'."
760 PRINT"OKAY RABBIT, OR IS IT MUGSY ? YOU'VE MADE IT
    ALL"
770 PRINT"THE WAY TO THE VAULT. THERE'S 50 GRAND IN-
    SIDE THAT"
780 PRINT"VAULT, ALL YOU HAVE TO DO NOW IS CRACK THE"
790 PRINT"COMBINATION. KEEP IN MIND THIS IS A COMPU-
    TER VAULT,"
800 PRINT"MEANING THE TUMBLERS COULD BE SET IN ANY
    DIRECTION."
810 PRINT"LIKE LEFT-RIGHT OR RIGHT-LEFT OR MAYBE
    LEFT-LEFT"
811 PRINT "OR EVEN RIGHT-RIGHT."
815 PRINT"PRESS ANY KEY . . . . ."
818 N$=INKEY:IF N$=" "THEN 818
819 CLS:PRINT
840 PRINT"FIRST YOU'LL INPUT THE DIRECTIONS. THE COM-
    PUTER WILL"
```

```
 850 PRINT"REMEMBER, THERE ARE 4 DIRECTIONS TO THIS
 860 PRINT"WHICH ONES."
 880 PRINT""REMEMBER, THERE ARE 4 DIRECTIONS TO THIS
     VAULT."
 890 PRINT"PRESS ANY KEY TO START . . . . ."
 900 N$=INKEY$:IF N$=" " THEN 900
 910 CLS
 920 PRINT
 930 PRINT"ALRIGHT 'CRACKER' INPUT YOUR DIRECTIONS."
 940 FOR I=1 TO 4
 950 INPUT D$(I)
 960 IF D$(I)=LEFT$(A$(I),1)THEN C=C+1:GOTO 980
 970 C1=C1-1
 980 NEXT
 990 IF C=4 THEN 1160
1050 PRINT"WELL YOU MISSED";4-C1;"OF THEM SOME-
     WHERE."
1060 T=T+1
1065 IF T=5 THEN 1100:IF T> 3 THEN 1080
1070 PRINT"HERE COMES TRY #";T;"ARE YOU READY?"
1075 C=0:C1=4:GOTO 890
1080 PRINT"THIS IS YOUR FINAL TRY - YOU MUST GET IT THIS
     TIME !!"
1090 C=0:C1=4:IF T < > 5 THEN 890
1100 PRINT:PRINT"THAT'S IT !! YOU DIDN'T MAKE IT. THERE'S
     NO POINT"
1110 PRINT"IN TACKLING THE NUMBERS. LOOKS LIKE CRIME
     DOESN'T PAY !!"
1115 PRINT"BUT . . . . . ."
1120 PRINT"WOULD YOU LIKE TO TRY THIS GAME AGAIN";
1130 INPUT N$
1140 IF N$ < > "YES" THEN PRINT"MAYBE SOME OTHER
     TIME—MUGSY.":END
1150 RESTORE:GOTO 20
1160 PRINT
1170 PRINT"EXCELLENT MUGSY . . . YOU'VE GOT THE DIREC-
     TIONS RIGHT!!!"
1180 PRINT"NOW YOU MUST TACKLE THE NUMBERS (ISN'T
     THIS A STRANGE SAFE?)."
1190 PRINT"YOU HAVE A TOTAL OF 4 NUMBERS AND THIS
     TIME YOU'LL
1200 PRINT"HAVE 10 TRIES TO GET THE NUMBERS . . . . ."
```

```
1210 PRINT"YOU'LL INPUT 4 NUMBERS, THEN THE COMPU-
     TER"
1220 PRINT"WILL TELL YOU HOW MANY YOU MISSED (IF ANY)."
1230 PRINT"WHEN READY, PRESS A KEY . . . . ."
1240 N$=INKEY$:IF N$=" " THEN 1240
1270 CLS:PRINT:C=0:C1=4:T=1
1280 PRINT"INPUT THE NUMBERS . . . . ."
1290 FOR I=1 TO 4
1300 INPUT M(I)
1310 IF M(I)=N(I) THEN C=C+1:GOTO 1330
1320 C1=C1-1
1330 NEXT:IF C=4 THEN 1490
1400 T=T+1
1410 IF T=10 THEN 1450
1415 IF T=11 THEN 1470
1420 PRINT"YOU MISSED";4-C1;"ON THIS ROUND . . . MUGSY."
1430 PRINT"HERE COMES TRY #";T
1440 C=0:C1=4:GOTO 1280
1450 PRINT"THIS IS YOUR FINAL TRY TO REACH THE BREAD,
     MUGSY."
1460 C=0:C1=4:GOTO 1280
1470 PRINT"SORRY MUGSY . . . . NO MONEY THIS TIME. TRY
     USING A FILE ON YOUR FINGERS."
1480 GOTO 1120
1490 PRINT:PRINT"WOOP-TEE-DOO MUGSY !!!!!"
1500 PRINT"YOU'VE GOT THE BREAD !!"
1510 PRINT"NOW WHAT, SOUTH AMERICA, THE FAR EAST OR
     ---"
1520 GOTO 1120
1530 CLS:PRINT
1540 FOR I=1 TO 4
1550 PRINT"HONK !!!"
1560 NEXT
1570 PRINT"YOU BLEW IT MUGSY !!"
1580 RETURN
```

Big Game Animal Hunt

Working for the city zoo, you're on a trip to Africa to capture a big game animal, using tranquilizer darts. Watch out if your dart supply runs out before the animal is down!

Sample Run

```
                BIG GAME ANIMAL HUNT

IN THIS GAME YOU'LL BE WORKING
FOR YOUR CITY ZOO AND YOU HAVE ORDERS TO BRING BACK
A LIVE ANIMAL. YOU'LL HAVE AT LEAST 20 TRANQUILIZER
DARTS TO BRING THE ANIMAL DOWN. IF YOU RUN OUT OF
DARTS . . . WATCH OUT !!!
THE COMPUTER WILL SET THE HAIRS ON YOUR SCOPE
THEN YOU MUST MATCH THESE NUMBERS (X AND Y). THEN
ADD THEM TOGETHER. AFTER YOU INPUT THE FINAL RESULT
YOUR GUN WILL FIRE . . . . . GOOD LUCK !!
(X AND Y WILL BE ANYWHERE BETWEEN 1 AND 10).
PRESS ANY KEY TO BEGIN HUNT . . . . .
DISTANCE TO ANIMAL IS 9 YARDS.
I DON'T NEED TO TELL YOU, THAT'S PRETTY CLOSE.
THE ANIMAL CHOSEN FOR YOU TO CAPTURE IS THE
RHINOCEROS
ARE YOU SATISFIED WITH THIS CHOICE? YES
```

YOU HAVE 22 TRANQUILIZER DARTS TO CAPTURE YOUR GAME ANIMAL.
SO WITHOUT FURTHER WASTE OF TIME INPUT X AND Y THEN ADD THEM TOGETHER AND INPUT THE CENTER.
ENTER X? 1
YOUR X SETTING IS OFF.
ENTER X? 3*
NOW ENTER Y? 5
YOUR Y SETTING IS OFF.
NOW ENTER Y? 6
YOUR Y SETTING IS OFF.
NOW ENTER Y? 4*
ENTER THE TOTAL X+Y? 6
YOU MISSED DUMMY - CAN'T EVEN ADD !
ENTER THE TOTAL X+Y? 7
THE RHINOCEROS YOUR TRYING TO GET IS VERY ANGRY.
IT'S STAGGERING BUT ISN'T DOWN YET . . .
ENTER X? 3
YOUR X SETTING IS OFF.
ENTER X? 4 *
NOW ENTER Y? 2
YOUR Y SETTING IS OFF.
NOW ENTER Y? 3 *
ENTER THE TOTAL X+Y? 7

* Denotes that each time you correctly enter x and y the screen clears.

GOOD SHOT, BUT THE RHINOCEROS ISN'T DOWN YET.
YOU DIDN'T HIT A VITAL AREA . . . . .
YOU STILL HAVE 20 SHOTS LEFT.
ENTER X? 5
YOUR X SETTING IS OFF.
ENTER X? 9*
NOW ENTER Y? 10*
ENTER THE TOTAL X+Y? 19
VERY GOOD THE RHINOCEROS IS DOWN AND OUT. YOU CAN MOVE IN NOW AND LOAD IT UP, YOU STILL HAD 19 SHOTS LEFT . . . . .
DO YOU WANT TO RUN ANOTHER ROUND OF BIG GAME ANIMAL HUNT? NO
CHICKEN !!
END

Most messages in this game are randomly selected. Depending on which messages are selected, the game could last for quite awhile. That is providing you don't run out of tranquilizer darts. See Fig. 5-8 or the flowchart for this program.

Program Listing

```
 10 CLS:RANDOM
 20 PRINT:PRINT TAB(20);"BIG GAME ANIMAL HUNT"
 30 PRINT"IN THIS GAME YOU'LL BE WORKING"
 40 PRINT"FOR YOUR CITY ZOO AND YOU HAVE ORDERS TO
    BRING BACK"
 50 PRINT"A LIVE ANIMAL. YOU'LL HAVE AT LEAST 20 TRAN-
    QUILIZER"
 60 PRINT"DARTS TO BRING THE ANIMAL DOWN. IF YOU RUN
    OUT OF"
 70 PRINT"DARTS . . . WATCH OUT !!!
 80 PRINT:PRINT"THE COMPUTER WILL SET THE HAIRS ON
    YOUR SCOPE"
 90 PRINT"THEN YOU MUST MATCH THESE NUMBERS (X AND
    Y). THEN"
100 PRINT"ADD THEM TOGETHER. AFTER YOU INPUT THE
    FINAL RESULT"
110 PRINT"YOUR GUN WILL FIRE . . . . . GOOD LUCK !!
120 PRINT"(X AND Y WILL BE ANYWHERE BETWEEN 1 AND
    10)."
130 PRINT"PRESS ANY KEY TO BEGIN THE HUNT . . . . ."
140 N$=INKEY$:IF N$=" " THEN 140
150 CLS
200 M=0:R=0:REM MOVES
210 REM GET ANIMALS
220 FOR I=1 TO 5:READ A$(I):NEXT
230 DATA ELEPHANT, TIGER, GORILLA, CHEETAH,
    RHINOCEROS
235 IF R=1 GOTO 350
240 REM SET AMOUNT OF TRANQUILIZER DARTS
250 D=INT(20 *RND(0)+10):IF D < 20 THEN 250
260 REM SET SCOPE / DISTANCE TO ANIMAL
270 X=INT(10*RND (0)+1)
280 Y=INT(10*RND(0)+1):YY=Y+5
300 FOR I=1 TO 3
310 X(I)=Y
320 Y(I)=X
```

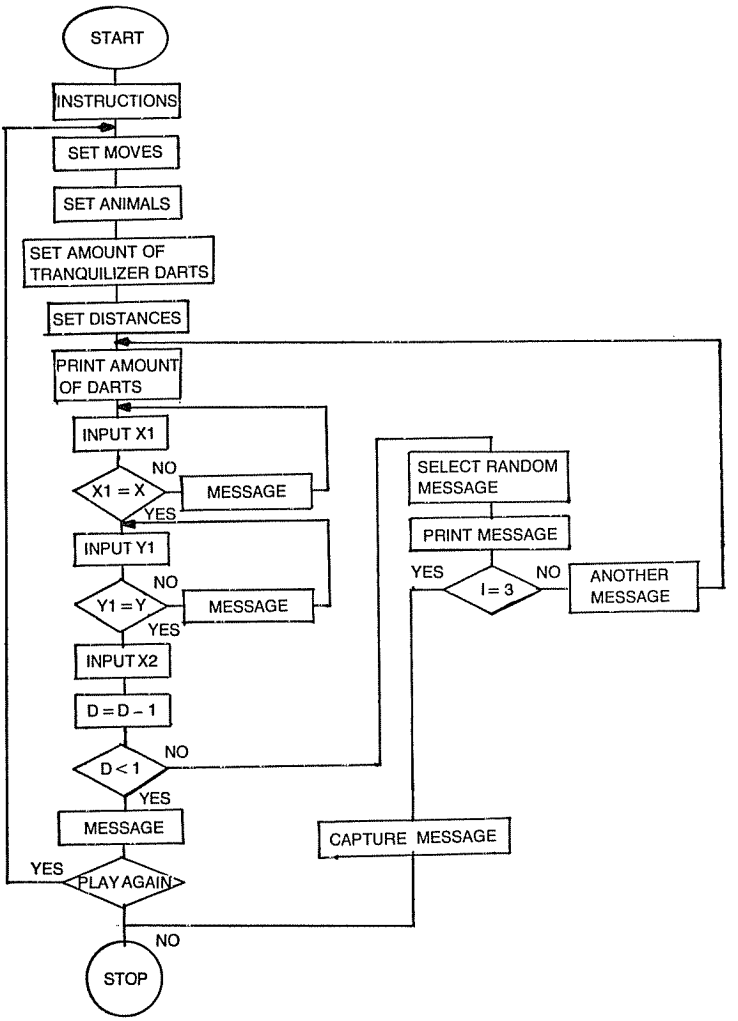


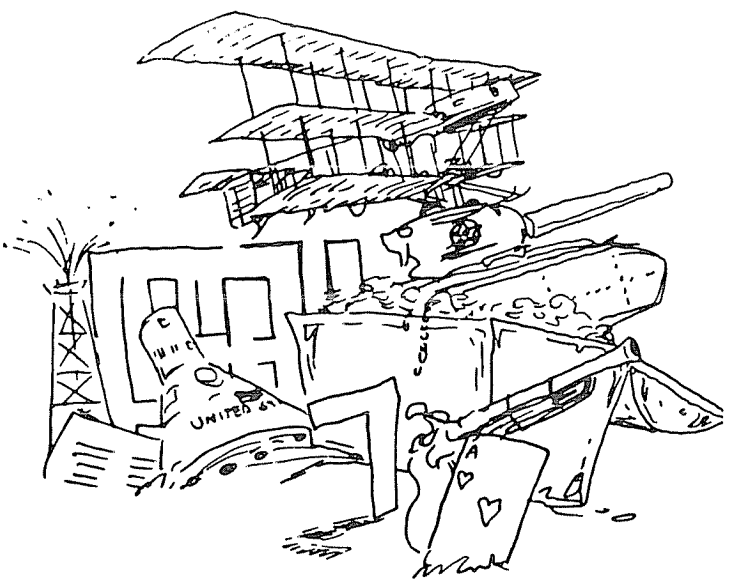
Fig. 5-8. The flowchart for Big Game Animal Hunt.

```
330  XX=X(I)+Y(I)
340  NEXT:IF XX <5 OR XX> 20 THEN 260
345  IF R=1 GOTO 570
350  REM GET RANDOM ANIMAL
360  AN$=A$(INT(5*RND(0)+1)):IF LEN(AN$)=L THEN RE-
     STORE:GOTO 210
370  PRINT:PRINT"DISTANCE TO ANIMAL IS";YY;"YARDS.":IF
     YY> 9 THEN 390
```

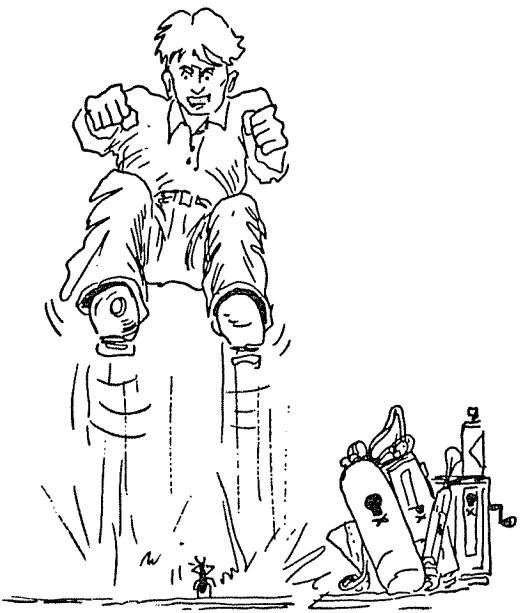
```
380 PRINT"I DON'T NEED TO TELL YOU, THAT'S PRETTY
    CLOSE."
390 PRINT"THE ANIMAL CHOSEN FOR YOU TO CAPTURE IS
    THE ";AN$
400 PRINT"ARE YOU SATISFIED WITH THIS CHOICE";
410 INPUT C$
420 IF LEFT$(C$,1)="N" THEN RESTORE:R=1:L=LEN(AN$)
    :GOTO 210
430 PRINT"YOU HAVE";D;"TRANQUILIZER DARTS TO CAP-
    TURE YOUR"
440 PRINT"GAME ANIMAL."
550 PRINT"SO WITHOUT FURTHER WASTE OF TIME INPUT X
    AND Y"
560 PRINT"THEN ADD THE TWO TOGETHER AND INPUT THE
    CENTER."
570 INPUT"ENTER X";X1
580 IF X1 < > X THEN PRINT"YOUR X SETTING IS OFF.":GOTO
    570
585 GOSUB 1000
590 INPUT"NOW ENTER Y";Y1
600 IF Y1 < > Y THEN PRINT"YOUR Y SETTING IS OFF.":GOTO
    590
610 GOSUB 1000
620 PRINT
630 PRINT"ENTER THE TOTAL X+Y";
640 INPUT X2
650 D=D-1:IF D < 1 GOTO 930
660 IF X2 < > XX THEN PRINT"YOU MISSED DUMMY—CAN'T
    EVEN ADD !"
    :GOTO 620
670 IF XX > 10 THEN XY=INT(5*RND(0)+1):GOTO 680
675 IF X2=XX THEN 690
680 IF M > 3 THEN 890
685 IF X < > XY OR Y < > XY THEN 820
690 I=INT(3*RND(0)+1)
700 ON I GOTO 710,760,780
710 PRINT:PRINT"GOOD SHOT, BUT THE ";AN$;"ISN'T DOWN
    YET."
720 PRINT"YOU DIDN'T HIT A VITAL AREA . . . . ."
730 PRINT"YOU STILL HAVE";D;"SHOTS LEFT."
740 IF D=5 GOTO 860
750 GOTO 260
```

```
760 PRINT:PRINT"THE ";AN$;" YOUR TRYING TO GET IS VERY
    ANGRY."
770 PRINT"IT'S STAGGERING BUT ISN'T DOWN YET...":GOTO
    740
780 PRINT:PRINT"VERY GOOD THE ";AN$;" IS DOWN AND
    OUT. YOU CAN"
790 PRINT"MOVE IN NOW AND LOAD IT UP, YOU STILL HAD";D
800 PRINT"SHOTS LEFT .....":Q=1
810 GOTO 965
820 PRINT:PRINT"OOPS—THE DURN ";AN$;" MOVED, YOUR
    SHOT COMPLETELY"
830 PRINT"MISSED IT—SORRY SHERLOCK .... YOU'LL HAVE
    TO TRY"
840 PRINT"IT AGAIN, MAYBE IT WON'T MOVE THIS TIME."
850 M=M+1:GOTO 740
860 PRINT:PRINT"YOU'D BETTER DO SOMETHING FAST—
    THE ANIMAL IS"
870 PRINT"CHARGING AND YOU ARE DOWN TO 5 SHOTS....."
880 R=1:GOTO 260
890 PRINT:PRINT"I REALLY DON'T KNOW WHAT WE'RE GOING
    TO DO ABOUT"
900 PRINT"THAT";AN$;""THIS IS THE";M;"THIS TIME IT'S
    MOVED..."
920 GOTO 880
930 PRINT:PRINT"YOU'RE OUT OF TRANQUILIZER DARTS !!!!"
935 PRINT"THE ";AN$;" IS CHARGING YOUR TRUCK !!"
940 GOSUB 1000:GOTO 985
965 PRINT:PRINT"DO YOU WANT TO RUN ANOTHER ROUND
    OF"
970 PRINT"BIG GAME ANIMAL HUNT";
975 INPUT N$
980 IF N$="YES" THEN RESTORE:R=0:GOTO 200
982 IF Q=1 THEN 991
985 PRINT:PRINT"THAT ";AN$; "IS GOING TO HAVE A GOOD
    SUPPER"
990 PRINT"TONIGHT ..... YOU !!!!":GOTO 995
991 PRINT"CHICKEN !!"
995 END
1000 PRINT:PRINT"PRESS ANY KEY....."
1010 N$=INKEY$:IF N$=" " THEN 1010
1020 CLS:R=1:RETURN
```

Chapter 6
Games of Calculation



Exterminator



Put some combat boots on—here's a game that'll need them. You're the local exterminator, but you won't be using any sprays; all you'll be using is your foot—to stomp out the crawlers. Of course, before you can stomp them you must get close enough to their location to make the stomps effective. 10 good stomps and you'll get to take a break.

Sample Run

```
EXTERMINATOR
YOU ARE AN EXTERMINATOR, NOT THE KIND THAT
EXTERMINATES PEOPLE EITHER. YOU ARE OUR LOCAL BUG
MAN,
YOU'LL BE ABLE TO KEEP ALL YOU CUSTOMERS SMILING.
YOU WON'T BE USING ANY FLUOROCARBONS, NO SMELLY
SPRAYS, NO NOSTRIL BURNING CHEMICALS . . . .
YOU'LL BE USING ONLY A BROOM, A DUST PAN,
AND YOUR FAST LITTLE FOOT !!
YOU MUST STOMP 10 CONSECUTIVE CREEPY CRAWLERS
IN A ROW. THE AMOUNT OF CRITTERS, NAME AND LOCATION
WILL BE CHOSEN AT RANDOM. TO BEGIN YOUR REIGN
```

AS AN EXTERMINATOR . . . .
JUST PRESS ENTER/RETURN?
THIS IS A NORMAL SIZE 3 BEDROOM HOME.
MR. EXTERMINATOR, THE AMOUNT OF CRAWLERS HAS
BEEN SELECTED, YOU'LL HAVE TO DEAL WITH OUR LITTLE
FRIEND THE CRICKET . . . . .
OKAY, YOUR CRITTER (OR CRITTERS) ARE ABOUT SO, SO
INCHES FROM THE BEDROOM. IF YOU'RE READY LET'S STOMP !!
YOU ARE LOCATED IN THE LIVINGROOM.
HOW MANY STEPS (FROM YOUR LOCATION) DO YOU
WANT TO TAKE, BEFORE YOU START STOMPING? 9
YOU'RE NOT GONNA REACH THEM BEFORE YOU STOMP.
HOW MANY STEPS (FROM YOUR LOCATION) DO YOU
WANT TO TAKE, BEFORE YOU START STOMPING? 19
COME NOW . . . YOU'VE PASSED THE CRITTERS UP, SURELY
WE CAN DO BETTER . . . STEP . . . STEP . . . STOMP.
HOW MANY STEPS (FROM YOUR LOCATION) DO YOU
WANT TO TAKE BEFORE YOU START STOMPING? 16
VERY GOOD, NOW YOU'RE WITHIN STOMPING RANGE, YOU'LL
HAVE TO THINK FAST AND MOVE SWIFT, LET ME KNOW
NOW, HOW MANY STOMPS YOU WILL MAKE? 6
VERY GOOD STOMPING, YOU'VE STOMPED THE LOT OF
THEM. EXTERM', YOU'RE CLOSER TO YOUR SODA-POP BREAK.
. . . . . TOTAL CRAWLERS STOMPED 4
MR. EXTERMINATOR, THE AMOUNT OF CRAWLERS HAS
BEEN SELECTED, YOU'LL HAVE TO DEAL WITH OUR LITTLE
FRIEND THE TERMITES . . . . .
OKAY, YOUR CRITTER (OR CRITTERS) ARE ABOUT SO, SO
INCHES FROM THE LIVINGROOM. IF YOU'RE READY LET'S
STOMP !!
YOU ARE LOCATED IN THE HALL.
HOW MANY STEPS (FROM YOUR LOCATION) DO YOU
WANT TO TAKE, BEFORE YOU START STOMPING? 10
VERY GOOD, NOW YOU'RE WITHING STOMPING RANGE, YOU'LL
HAVE TO THINK FAST AND MOVE SWIFT, LET ME KNOW
NOW, HOW MANY STOMPS YOU WILL MAKE? 9
YOU'VE STOMPED A TOTAL OF 15 CRAWLERS !!
TIME FOR A SODA-POP BREAK EXTERM' MAN.
THEN WE'LL GO STOMP AGAIN.
YOU WILL STOMP AGAIN, WON'T YOU? NO
THEY'RE GONNA GET YOU IN BED TONIGHT !!!
END

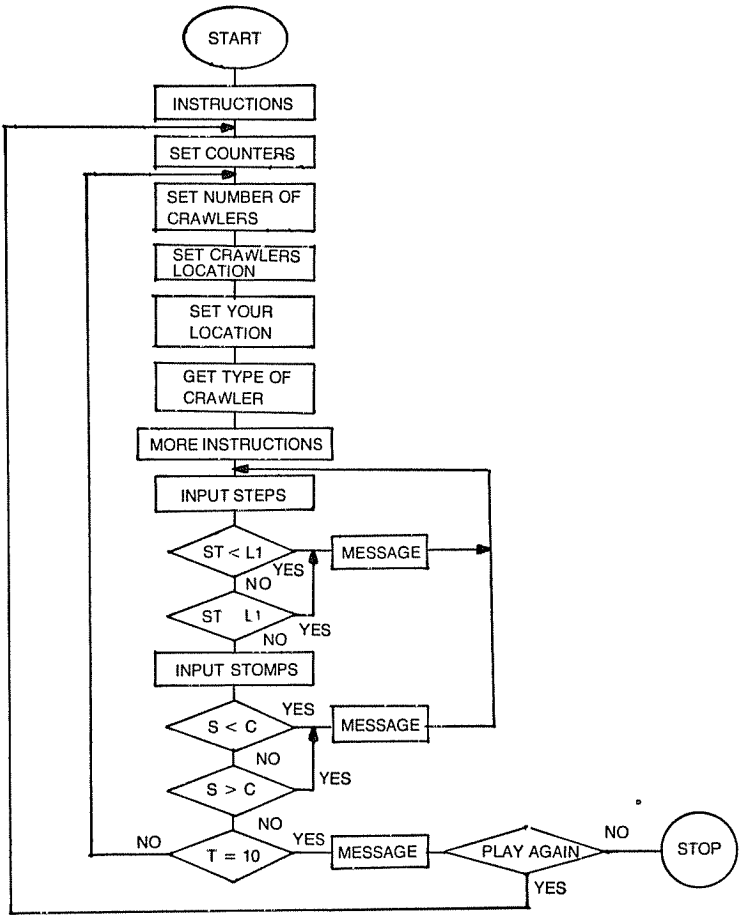


Fig. 6-1. The flowchart for Exterminator.

If the user wanted to make the game even longer you could exend the amount of crawlers needed to be stomped from 10 to somewhere around 50. That is, if someone's nerves could take it that long! See Fig. 6-1 for the flowchart for this program.

Program Listing

```
10 CLS:PRINT
20 PRINT TAB(10);"EXTERMINATOR"
30 PRINT
40 PRINT"YOU ARE AN EXTERMINATOR, NOT THE KIND
   THAT"
```

```
 50 PRINT"EXTERMINATES PEOPLE EITHER. YOU ARE OUR
    LOCAL BUG MAN,"
 60 PRINT"YOU'LL BE ABLE TO KEEP ALL YOUR CUSTOMERS
    SMILING."
 70 PRINT"YOU WON'T BE USING ANY FLUOROCARBONS, NO
    SMELLY"
 80 PRINT"SPRAYS, NO NOSTRIL BURNING CHEMICALS . . . ."
 90 PRINT"YOU'LL BE USING ONLY A BROOM, A DUST PAN."
100 PRINT"AND YOUR FAST LITTLE FOOT !!"
150 PRINT"YOU MUST STOMP 10 CONSECUTIVE CREEPY
    CRAWLERS"
160 PRINT"IN A ROW. THE AMOUNT OF CRITTERS, NAME AND
    LOCATION"
170 PRINT"WILL BE CHOSEN AT RANDOM. TO BEGIN YOUR
    REIGN"
180 PRINT"AS AN EXTERMINATOR . . . . ."
210 INPUT"JUST PRESS ENTER/RETURN";X
220 REM SET COUNTERS
230 T=0:M=0:D=0:R=0:B=0
240 REM GET NUMBER OF CRAWLERS
250 C=INT(15*RND(0)+1):A=INT(15*RND(0)+1):I=INT(15*RND
    (0)+1)
260 REM GET LOCATION OF CRAWLERS
270 FOR I=1 TO 5:READ W$(I):NEXT
271 RESTORE
275 REM GET YOUR LOCATION
277 FOR I=1 TO 5:READ Y$(I):NEXT
280 DATA KITCHEN, LIVINGROOM, HALL, BEDROOM,
    BATHROOM
290 REM GET TYPE OF CRAWLER
300 FOR I=1 TO 5:READ T$(I):NEXT
310 DATA ROACH, SPIDER,ANT,CRICKET,TERMITE
320 REM GET RANDOM CRAWLER
330 U$=T$(INT(5*RND(0)+1))
340 REM RANDOM LOCATION
350 V$=W$(INT(5*RND(0)+1))
355 REM YOUR LOCATION
356 Z$=Y$(INT(5*RND(0)+1))
360 L=LEN(U$):L1=L+A:IF R> 1 THEN 580
361 IT=INT(4*RND(0)+1):IF II=1 THEN II=2
362 IF V$=Z$ THEN L1=INT(3*RND(0)+1)
363 IF V$="KITCHEN" THEN L1=INT(20*RND(0)+10)
364 IF Q=2 THEN 420
```

```
365 PRINT"THIS IS A NORMAL SIZE";II;"BEDROOM HOME."
410 FOR I=1 TO 1000:NEXT
420 CLS:PRINT:PRINT"MR. EXTERMINATOR, THE AMOUNT
    OF CRAWLERS HAS"
430 PRINT"BEEN SELECTED, YOU'LL HAVE TO DEAL WITH
    OUR LITTLE"
440 PRINT"FRIEND THE ";U$;". . . . ."
450 IF L=8 THEN 530
460 IF L=7 THEN 560
470 IF L=5 THEN 500
480 IF L=3 THEN 530
500 PRINT:PRINT"THESE CRITTERS, ONCE STOMPED, CAN
    BE VERY MESSY"
510 PRINT"SO KEEP THE BROOM AND DUST PAN HANDY !!"
520 GOTO 580
530 PRINT:PRINT"MOST OF THESE SPECIES ARE VERY
    SMALL, AS YOU"
540 PRINT"LEARNED THROUGHOUT EXTERM' TRAINING."
550 GOTO 580
560 PRINT:PRINT"HOP . . . HOP, THAT'S WHAT THESE SUB-
    JECTS ARE GOOD"
570 PRINT"FOR. BUT ONCE STOMPED, WELL, KEEP THE PAN
    HANDY."
580 PRINT:PRINT"OKAY, YOUR CRITTER(OR CRITTERS) ARE
    ABOUT SO, SO"
590 PRINT"INCHES FROM THE ";V$;". IF YOU'RE READY LET'S
    STOMP !!"
595 PRINT"YOU ARE LOCATED IN THE ";Z$;".":PRINT
596 IF V$="BEDROOM' AND Z$="BEDROOM"THEN 598
597 GOTO 600
598 PRINT"YOU MIGHT BE IN THE SAME BEDROOM WITH THE
    CRAWLER !!"
600 PRINT"HOW MANY STEPS (FROM YOUR LOCATION) DO
    YOU"
610 PRINT"WANT TO TAKE, BEFORE YOU START STOMPING";
620 INPUT ST
625 Q=2
630 IF ST < L1 THEN 640
635 GOTO 660
640 PRINT:PRINT"YOU'RE NOT GONNA REACH THEM BEFORE
    YOU STOMP.":PRINT
650 B=B+1:IF B > 6 THEN 655
```

```
651 GOTO 600
655 GOSUB 1050
658 GOTO 600
660 IF ST > L1 THEN 670
665 GOTO 700
670 PRINT:PRINT"COME NOW . . . YOU'VE PASSED THE CRIT-
    TER UP, SURELY"
680 PRINT"WE CAN DO BETTER . . . STEP . . . STEP . . . STOMP."
690 B=B+1: IF B > 6 THEN 695
691 GOTO 600
695 GOSUB 1050
698 GOTO 600
700 M=M+1
710 PRINT:PRINT"VERY GOOD, NOW YOU'RE WITHIN STOMP-
    ING RANGE, YOU'LL"
720 PRINT"HAVE TO MOVE FAST AND MOVE SWIFT, LET ME
    KNOW"
730 PRINT"NOW, HOW MANY STOMPS YOU WILL MAKE";
740 INPUT S
750 REM WERE THEY STOMPED
760 IF S < C OR S > C THEN 850
790 REM OUTPUT WOOP-TEE-DOOS
800 T=T+C-INT(3*RND(0)+1):IF T > = 10 THEN 960
805 IF T < 1 THEN T=1
810 PRINT
815 PRINT"VERY GOOD STOMPING, YOU'VE STOMPED THE
    LOT OF"
820 PRINT"THEM. EXTERM', YOU'RE CLOSER TO YOUR
    SODA-POP BREAK."
830 PRINT" . . . . . TOTAL CRAWLERS STOMPED";T
840 FOR I=1 TO 1500:NEXT:RESTORE:B=0:GOTO 240
850 REM STOMPED OUT
860 D=D+C
870 X=0
880 PRINT
885 PRINT"STOMP"
890 PRINT
900 X=X+1:IF X < 3 THEN 880
910 PRINT"WELL EXTERM' MAN, YOU DIDN'T DO SO GOOD
    WITH YOUR"
920 PRINT"FOOT WORK. STOMP HARDER NEXT TIME, THOSE
    LITTLE"
```

```
930  PRINT U$;"WILL GET YOU IF YOU MISS ANY MORE STOMPS
     !!"
950  FOR I=1 TO 1500:NEXT:RESTORE:R=R+1:T=0:GOTO 340
960  PRINT
965  PRINT"YOU'VE STOMPED A TOTAL OF";T;"CRAWLERS."
970  PRINT"TIME FOR A SODA-POP BREAK EXTERM' MAN."
975  PRINT"THEN WE'LL GO STOMP AGAIN."
980  PRINT"YOU WILL STOMP AGAIN, WON'T YOU";
990  INPUT A$
1000 IF A$="YES" THEN RESTORE:GOTO 220
1010 PRINT
1020 PRINT"THEY'RE GONNA GET YOU IN BED TONIGHT !!!"
1030 END
1050 FOR I=1 TO 1500:NEXT:CLS
1055 PRINT
1060 PRINT"GOOD GRIEF MAN !! YOU'VE MADE";B;"ATTEMPS"
1070 PRINT"AND HAVEN'T GOT THE FOOTWORK RIGHT YET !!"
1080 B=0:RETURN
```

Interstate

Test your driving ability with this game, by meeting or exceeding the computer's estimated miles per tank. You'll have a four-speed compact; you can change gears and input different speeds.

Simple, right? Just don't blow the engine, transmission, run out of fuel or cause the engine to sputter and stop completely!!

Sample Run

```
                *** INTERSTATE 21 ***
THIS IS THE GAME OF INTERSTATE - WHERE YOU'LL BE
GIVEN A CAR AND A FULL TANK OF GAS. THE OBJECT
OF THE GAME IS TO GET AS MANY MILES AS YOU CAN,
FROM THE TANK OF GAS.
YOU'LL BE EQUIPPED WITH THE FOLLOWING:
A FOUR-SPEED COMPACT.
A 16-GALLON FUEL TANK.
AVERAGED AT 29 MILES PER GALLON,
COMPUTER'S ESTIMATED MILES-PER-TANK IS: 461
YOU MUST MEET OR EXCEED THIS AMOUNT . . . . .
PRESS ENTER/RETURN?
```

```
YOUR CAR HAS BEEN STARTED . . . . .
INPUT GEAR (1,2,3, OR 4)? 1
INPUT SPEED (UP TO 65 M.P.H.)? 20
STATUS:
YOU ARE TRAVELLING AT 20 MILES PER HOUR.
YOU ARE IN 1ST GEAR.
DO YOU WANT TO SHIFT (Y/N)? Y
INPUT SPEED (UP TO 65 M.P.H)? 40
STATUS:
YOU ARE TRAVELLING AT 40 MILES PER HOUR.
YOU ARE IN 3RD GEAR.
DO YOU WANT TO SHIFT (Y/N)? Y
INPUT GEAR (1,2,3, OR 4)? 4
INPUT SPEED (UP TO 65 M.P.H.)? 55
STATUS:
YOU ARE TRAVELLING AT 55 MILES PER HOUR.
YOU ARE IN 4TH GEAR.
DO YOU WANT TO SHIFT (Y/N)? N
TOTAL FUEL CONSUMED: 3.7931 GALLONS
FUEL LEFT IN TANK: 12.2069 GALLONS
MILES TRAVELLED: 89.7011
DO YOU WANT TO SHIFT (Y/N)? Y
INPUT GEAR (1,2,3, OR 4)? 4
INPUT SPEED (UP TO 65 M.P.H.) ? 60
IF YOU'RE NOT PASSING, YOU REALLY SHOULD SLOW DOWN
THE SPEED LIMIT HASN'T BEEN INCREASED EVERYWHERE.
STATUS:
YOU ARE TRAVELLING AT 60 MILES PER HOUR.
YOU ARE IN 4TH GEAR.
DO YOU WANT TO SHIFT (Y/N)? N
TOTAL FUEL CONSUMED: 5.86207 GALLONS
FUEL LEFT IN TANK: 10.1379 GALLONS
MILES TRAVELLED: 136.472
DO YOU WANT TO SHIFT (Y/N)? N
TOTAL FUEL CONSUMED: 7.93104 GALLONS
FUEL LEFT IN TANK: 8.06897 GALLONS
MILES TRAVELLED: 191.097
DO YOU WANT TO SHIFT (Y/N)? N
TOTAL FUEL CONSUMED: 10 GALLONS
FUEL LEFT IN TANK: 6 GALLONS
MILES TRAVELLED: 245.429
DO YOU WANT TO SHIFT (Y/N)? Y
```

```
INPUT GEAR (1,2,3, OR 4)? 4
INPUT SPEED (UP TO 65 M.P.H.)? 50
STATUS:
YOU ARE TRAVELLING AT 50 MILES PER HOUR.
YOU ARE IN 4TH GEAR.
DO YOU WANT TO SHIFT (Y-N)? N
TOTAL FUEL CONSUMED: 11.7241 GALLONS
FUEL LEFT IN TANK: 4.27586 GALLONS
MILES TRAVELLED: 284.326
YOU ARE 176.674 MILES AWAY FROM COMPUTER'S ESTIMATION.
THERE'S A GAS STATION 5 MILES UP THE ROAD.
START GEARING DOWN . . . . .
DO YOU WANT TO SHIFT (Y/N)? N
TOTAL FUEL CONSUMED: 13.4483 GALLONS
FUEL LEFT IN TANK: 2.55172 GALLONS
MILES TRAVELLED: 324.191
YOU ARE 136.809 MILES FROM COMPUTER'S ESTIMATION.
WOULD YOU LIKE TO REFUEL (Y/N)? N
TOTAL FUEL CONSUMED: 15.1724 GALLONS
FUEL LEFT IN TANK: .827586
YOU ARE 99.6863 MILES AWAY FROM COMPUTERS' ESTIMATION.
WOULD YOU LIKE TO REFUEL (Y/N)? N
YOU'D BETTER SLOW DOWN THEN.
DO YOU WANT TO SHIFT (Y/N)? N
TOTAL FUEL CONSUMED: 16 GALLONS
FUEL LEFT IN TANK: 0 GALLONS
MILES TRAVELLED: 396.895
SO SORRY TO TELL YOU . . . . . BUT YOU'RE COMPLETELY
OUT OF FUEL . . . . .
YOU'VE MISSED THIS ROUND . . . YOUR TOTAL MILES WERE
396.895
COMPUTERS' ESTIMATED MILES WERE 461
A DIFFERENCE OF 64.1055 MILES.
ARE YOU READY TO TRY AGAIN (Y/N)? N
WE'LL TRY A MORE ECONOMICAL CAR NEXT TIME . . . . .
MR. SPEED !
END
```

See Fig. 6-2 for the flowchart for this program.

Program Listing

```
20  RANDOM:CLS:M=0:IF R=2 THEN 60
30  REM RANDOM INTERSTATE
```

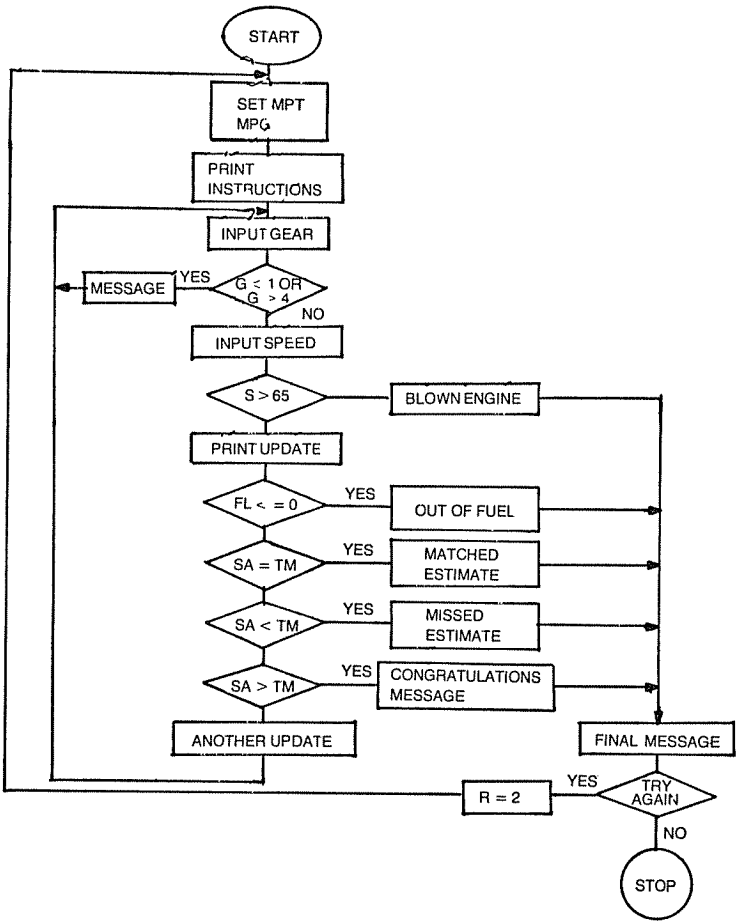


Fig. 6-2. The flowchart for Interstate.

```
40  I=INT(50*RND(0)+1)
50  PRINT:PRINT TAB(20);"*** INTERSTATE ";I;"***"
60  PRINT:GOSUB 1000:TM=MP*GA-INT(4*RND(0)+2):SA=0:IF
    R=2 THEN 190
70  PRINT"THIS IS THE GAME OF INTERSTATE—WHERE
    YOU'LL BE"
80  PRINT"GIVEN A CAR AND A FULL TANK OF GAS. THE
    OBJECT"
90  PRINT"OF THE GAME IS TO GET AS MANY MLES AS YOU
    CAN,"
95  PRINT"FROM THE TANK OF GAS."
```

```
100 PRINT
190 PRINT"YOU'LL BE EQUIPPED WITH THE FOLLOWING:"
200 PRINT"A FOUR-SPEED COMPACT."
220 PRINT"A":GA;"-GALLON FUEL TANK."
230 PRINT"AVERAGED AT";MP;"MILES PER GALLON,"
240 PRINT"COMPUTER'S ESTIMATED MILES PER TANK IS:
    ";TM
250 PRINT"YOU MUST MEET OR EXCEED THIS AMOUNT....."
260 INPUT"PRESS ENTER/RETURN";A$
270 CLS:PRINT
300 PRINT"YOUR CAR HAS BEEN STARTED....."
305 PRINT"INPUT GEAR (1,2,3, OR 4)";
307 INPUT G:IF G> 4 THEN 320
310 PRINT"INPUT SPEED (UP TO 65 M.P.H.)";
311 INPUT S:IF S=60 THEN PRINT:GOTO 700
315 GOTO 330
320 PRINT"THAT'S A GEAR YOU DON'T HAVE":GOTO 305
330 IF G=1 AND S > 30 THEN 510
340 IF G=4 AND S < 30 THEN 540
360 REM BLOWN ENGINE
370 IF S > 65 THEN PRINT"TURKEY !! YOU'VE JUST BLOWN A
    $500.00 ENGINE !!":GOTO 760
390 REM OUTPUT STATUS
400 PRINT:PRINT"STATUS:"
410 PRINT"YOU ARE TRAVELLING AT";S;"MILES PER HOUR."
420 PRINT"YOU ARE IN";G;
425 GOSUB 1030
430 PRINT:INPUT"DO YOU WANT TO SHIFT (Y/N)";G$
440 IF G$="Y" THEN 305
445 Q=Q+1:IF Q=4 AND G < > 4 THEN GOSUB 1150
450 GOSUB 1080: IF Q=5 AND G < > 4 THEN 510
455 IF FL < 1 THEN FL=0:FC=GA
460 PRINT:PRINT"TOTAL FUEL CONSUMED: ":FC;
    "GALLONS."
470 PRINT"FUEL LEFT IN TANK: ";FL;"GALLONS."
480 PRINT"MILES TRAVELLED: ";SA
485 IF FL > 0 AND FL < 8 THEN PRINT"YOU ARE";(TM-
    SA);"MILES AWAY
    FROM COMPUTER'S ESTIMATION."
490 IF FL <= 0 THEN 690
495 IF FL <= 4 THEN 730
500 IF FL=5 THEN 580
```

```
505 GOTO 430
510 PRINT:PRINT"YOU SHOULD'VE CHANGED GEARS . . . . ."
520 PRINT"YOU HAVE JUST BLOWN UP THE TRANSMISSION !!"
530 GOTO 760
540 PRINT:PRINT"IF YOU'RE GOING TO TRAVEL SO SLOW,
    WHY DIDN'T"
550 PRINT"YOU GEAR IT DOWN . . . THE ENGINE JUST SPUT-
    TERED . . . "
560 PRINT". . . AND STOPPED . . . . ."
570 GOTO 760
580 IF T=1 THEN 610
600 I=INT(2*RND(0)+1):PRINT:ON I GOTO 610,640
610 PRINT"YOUR FUEL IS AT";FL; "GALLONS, YOU JUST
    PASSED UP"
620 PRINT"A GAS STATION";(S-10);"MILES BACK !!"
630 GOTO 505
640 PRINT"THERE'S A GAS STATION";(S-S)+5;"MILES UP THE
    ROAD"
650 PRINT"START GEARING DOWN . . . . ."
660 T=1:GOTO 505
670 PRINT:PRINT"SO SORRY TO TELL YOU . . . BUT YOU'RE
    COMPLETELY"
680 PRINT"OUT OF FUEL . . . . ."
690 GOTO 850
700 PRINT"IF YOU'RE NOT PASSING, YOU REALLY SHOULD
    SLOW DOWN."
710 PRINT"THE SPEED LIMIT HASN'T BEEN INCREASED
    EVERYWHERE."
720 GOTO 360
730 PRINT:INPUT"WOULD YOU LIKE TO REFUEL (Y/N)";R$
740 IF R$ < > "Y" THEN PRINT"YOU'D BETTER SLOW DOWN
    THEN":GOTO 430
750 GOTO 860
760 PRINT:PRINT"WELL THAT'S THE END OF INTERSTATE
    . . . . ."
770 PRINT"ARE YOU READY TO TRY AGAIN (Y/N)";
780 INPUT A$
790 IF A$ < > "N" THEN R=2:GOTO 20
800 PRINT
805 PRINT"WE'LL TRY A MORE ECONOMICAL CAR NEXT TIME
    . . . . ."
810 PRINT"MR. SPEED !!"
```

```
820 END
850 REM
860 REM SELECT STATEMENT FOR ROUND
870 IF SA=TM THEN 900
880 IF SA < TM THEN 940
890 IF SA > TM THEN 970
895 GOTO 770
900 PRINT
910 PRINT"HEY!! THAT'S REALLY GREAT, YOU'VE WORKED IT
    OUT AND"
920 PRINT"MET THE COMPUTER'S ESTIMATED MILES PER
    TANK FULL . . . . ."
930 GOTO 760
940 PRINT
945 PRINT"YOU'VE MISSED THIS ROUND . . . YOUR TOTAL
    MILES WERE";SA
950 PRINT"COMPUTER'S ESTIMATED MILES WERE";TM
955 PRINT"A DIFFERENCE OF";TM-SA;"MILES."
960 IF FL > 0 THEN 990
965 GOTO 760
970 PRINT
975 PRINT"YOU SHOULD BECOME A RACE-CAR DRIVER,
    YOU'VE GOTTEN";SA-TM
980 PRINT"MORE MILES THAN COMPUTER'S ESTIMATED
    MILES PER TANK !!"
985 GOTO 770
990 PRINT"YOU STILL HAD";FL;"GALLONS OF FUEL LEFT . . .
    YOU SHOULD'VE"
995 PRINT"GONE FOR A FEW MORE MILES . . . . .":GOTO 760
1000 MP=INT(35*RND(0)+1):IF MP < 15 THEN 1000
1010 GA=INT(20*RND(0)+):IF GA <12 THEN 1010
1020 RETURN
1030 IF G=1 PRINT "ST GEAR."
1040 IF G=2 PRINT "ND GEAR."
1050 IF G=3 PRINT "RD GEAR."
1060 IF G=4 PRINT "TH GEAR."
1070 RETURN
1080 M=M+S
1090 FC=M/MP
1110 FL=GA-FC
1120 SA=S+SA-(10*RND(0)+5)
1130 FOR I=1 TO S STEP .5:NEXT
```

```
1140 RETURN
1145 REM CHANGE GEARS !!
1150 PRINT
1160 PRINT"YOU ARE GOING DOWN AN INTERSTATE—NOT
     THROUGH"
1170 PRINT"DOWNTOWN TRAFFIC—CHANGE GEARS, THE
     TRANSMISSION"
1180 PRINT"IS GETTING HOT !!"
1190 PRINT:Q=0:RETURN
```

Freedom

You'll get to work your way out of a maze with this game. The computer will print a series of asterisks on the screen; you must guess the location of the last one correctly. That will take you one day closer to your freedom. When you're ready to input a number press the 'M' key to stop the computer. Have fun!!

Sample Run

```
                **** FREEDOM ****

INSTRUCTIONS? YES
YOU ARE LOCKED INSIDE A MAZE, TO REACH YOUR FREEDOM
YOU MUST ENTER A NUMBER THAT WILL ALMOST MATCH
WHERE THE COMPUTER HAS PRINTED AN ASTERISK. WHEN
THE COMPUTER PRINTS THE FIRST ASTERISK IT WILL
PRINT ITS LOCATION ABOVE IT - AFTER THAT YOU'RE ON
YOUR OWN. TO THE LEFT YOU WILL SEE COMPUTER'S
MOVES - DON'T LET IT REACH 10, DOING SO STARTS YOUR DAYS
OVER. FOR EACH CORRECT ENTRY, HOWEVER, YOU WILL BE
ONE DAY CLOSER TO YOUR FREEDOM.
```

```
FOR EACH INCORRECT ENTRY THE
COMPUTER WILL ADD ONE MORE DAY.
PRESS ENTER/RETURN TO CONTINUE?
WHEN YOU'RE READY TO INPUT A NUMBER, PRESS THE
M KEY. ENTER A NUMBER WHERE YOU THINK THE ASTERISK
IS LOCATED, EITHER ONE NUMBER BELOW OR ONE NUMBER
ABOVE.
EXAMPLE: IF YOU THINK THE ASTERISK IS LOCATED AT 20
THEN ENTER 19 OR 21. IF YOU ENTER 20 THEN THE COMPUTER
WILL HAVE A MESSAGE FOR YOU !!
THE SMALLEST NUMBER YOU'LL NEED TO ENTER IS 10; THE
HIGHEST IS 40. . . .WHEN YOUR DAYS LEFT ARE 0
YOU'LL HAVE YOUR FREEDOM. . . . . GOOD LUCK !!
PRESS ENTER/RETURN TO BEGIN?
               *********** DAYS LEFT 20 ***********
COMPUTER
MOVES:
1                                         36
2        *                                *
3                 *
4                    *

(Press M)
YOUR NUMBER? 32
SORRY . . . . .THAT NUMBER ONLY ADDED ANOTHER DAY.
               *********** DAYS LEFT 21 ***********
COMPUTER
MOVES:
                                   28
1                                  *
2                                          *
3                             *
4              *
5                     *
6                                          *
7                                  *

(Press M)
YOUR NUMBER? 34
ONLY 20 DAYS LEFT, KEEP IT UP !!

               *********** DAYS LEFT 20 ***********
COMPUTER

MOVES:
```

```
1                  15
2                   *
3                     * *
4        *
5                          *
```

(Press M)
YOUR NUMBER? 34
SORRY . . . . .THAT NUMBER ONLY ADDED ANOTHER DAY.

*********** DAYS LEFT 21 ***********

```
COMPUTER
MOVES:
1                      27
2                      *
               *
```

(Press M)
YOUR NUMBER? 24
ONLY 20 DAYS LEFT, KEEP IT UP !!

*********** DAYS LEFT 20 *********

```
COMPUTER
MOVES:                   27
1                        *
2                    *
3                              *
```

(Press M)
YOUR NUMBER? 31
LOOKING REAL GOOD NOW, ONLY 19 DAYS.

*********** DAYS LEFT 19 ***********

```
COMPUTER
MOVES:                   34
1                         *
2             *
3                               *
4                   *
```

(Press M)
YOUR NUMBER? 24
LOOKING REAL GOOD NOW, ONLY 18 DAYS.
STOP

As you can see from this partial run, depending on how many days you start out with, it could take you awhile to reach your freedom.

Just remember to stop the computer use the M key; enter a number representing where you think the last asterisk is located. You can also challenge your friends to see who can gain their freedom in the least amount of days. See Fig. 6-3 for the flowchart for this program.

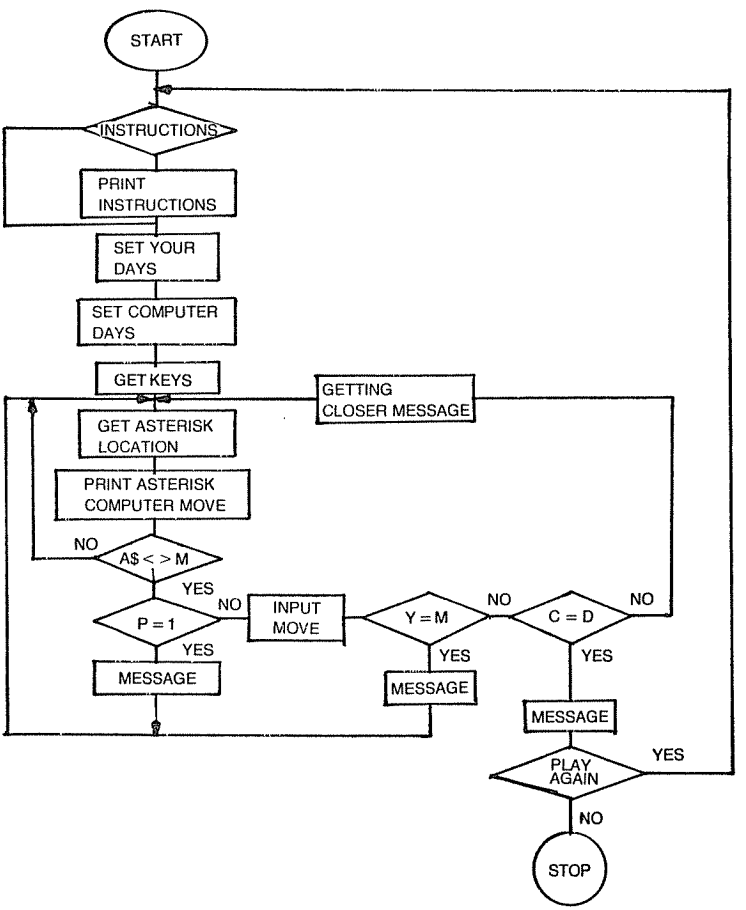


Fig. 6-3. The flowchart for Freedom.

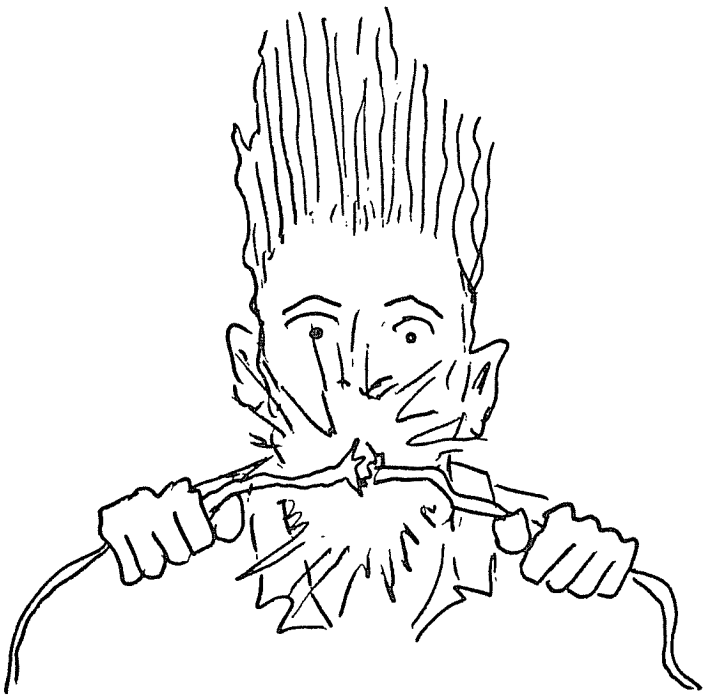
Program Listing

```
100  CLS:PRINT:PRINT TAB(20); "**** FREEDOM ****"
150  PRINT
200  INPUT"INSTRUCTIONS";I$
250  IF $ <> "YES" THEN 350
300  GOSUB 2900; REM INSTRUCTIONS
350  REM YOUR DAYS
400  C=0
450  REM COMPUTER SET DAYS
500  D=INT(50*RND(0) +5):IF D < 20 THEN 500
550  CLS
600  PRINT TAB(10);"**********  DAYS LEFT" ;(D-C);
     "**********"
650  PRINT TAB(0); "COMPUTER"
660  PRINT "MOVES:"
700  A$=INKEY$
750  IF A$ <> "M" THEN 850
800  GOTO 1150
850  GOSUB 2750:IF P=10 GOTO 2500
900  REM GET ASTERISK "*" LOCATION
950  M=INT(40*RND(0) +1):IF M < 10 THEN 950
1000 P=P+1:IF P < 2 PRINT TAB (M-1);M
1050 PRINT TAB(0);P TAB(M);"*"
1100 GOTO 700
1150 IF P=1 THEN PRINT"WAIT 'TIL AFTER MY FIRST MOVE
     !!:GOSUB 2750: P=0:GOTO 550
1200 INPUT"YOUR NUMBER"; Y
1250 IF Y=M THEN PRINT"DUMMY !! THAT'S MY LOCATION !!":
     GOSUB 2750: P=0:GOTO 550
1300 IF ABS(Y-M) >1 THEN 1400
1350 C=C+1:GOTO 1500
1400 PRINT"SORRY.....THAT MOVE ONLY ADDED ANOTHER
     DAY."
1450 GOSUB 2750:D=D+1:P=0:GOTO 550
1500 IF (D-C) >30 THEN 1850
1550 IF (D-C) <10 THEN 1700
1600 IF (D-C) > 10 AND (D-C) < 20 THEN 1750
1650 IF (D-C) > 21 AND (D-C) < 30 THEN 1800
1700 PRINT"ONLY";(D-C);"DAYS LEFT, KEEP IT UP !!:GOTO
     1900
1750 PRINT"LOOKING REAL GOOD NOW, ONLY";(D-C);
     "DAYS.":GOTO 1900
```

```
1800 PRINT"NOT BAD . . . . .YOU'RE GETTING CLOSER AND
     CLOSER.": GOTO 1900
1850 PRINT"RIGHT ON THE MONEY !!"
1900 REM LOOP AGAIN IF D <> C
1950 IF C=D THEN 2050
2000 GOSUB 2750:P=0:GOTO 550
2050 GOSUM 2750
2100 CLS:PRINT
2150 PRINT"YEA !! YOU'VE DONE IT - YOU HAVE YOUR FREE-
     DOM NOW"
2200 PRINT"WELL BUSTER, YOU SEEM TO BE SO GOOD AT THIS
     . . . . . "
2250 PRINT"WOULD YOU THINK ABOUT TRYING IT AGAIN";
2300 INPUT I$
2350 IF I$="YES" THEN 100
2400 PRINT"I NOTICED YOU KEPT ADDING DAYS, INSTEAD OF
     SUBTRACTING !!"
2450 END
2500 PRINT"LOOKA' HERE BUSTER . . . . ."
2550 PRINT"I'VE MADE";P;"MOVES - YOU HAVEN'T DONE ANY-
     THING."
2600 PRINT"YOUR TOTAL DAYS START OVER NOW !!"
2650 FOR I=1 TO 2000:NEXT
2700 C=0:P= 0:GOTO 550
2750 FOR I=1 TO 1000:NEXT
2800 RETURN
2900 CLS:PRINT
2910 PRINT"YOU ARE LOCKED INSIDE A MAZE, TO REACH
     YOUR FREEDOM"
2920 PRINT"YOU MUST ENTER A NUMBER THAT WILL ALMOST
     MATCH"
2930 PRINT"WHERE THE COMPUTER HAS PRINTED AN AS-
     TERISK. WHEN"
2940 PRINT"THE COMPUTER PRINTS THE FIRST ASTERISK IT
     WILL"
2950 PRINT"PRINT ITS LOCATION ABOVE IT - AFTER THAT
     YOU'RE ON"
2960 PRINT"YOUR OWN, TO THE LEFT YOU WILL SEE COMPU-
     TER'S"
2970 PRINT"MOVES — DON'T LET IT REACH 10, DOING SO
     STARTS YOUR DAYS"
```

```
2980 PRINT"OVER. FOR EACH CORRECT ENTRY, HOWEVER,
     YOU WILL"
2990 PRINT"BE ONE DAY CLOSER TO YOUR FREEDOM."
3000 PRINT"FOR EACH INCORRECT ENTRY THE"
3010 PRINT"COMPUTER WILL ADD ONE MORE DAY."
3015 PRINT:INPUT"PRESS ENTER/RETURN TO CONTINUE";
     X$:CLS:PRINT
3020 PRINT"WHEN YOU'RE READY TO INPUT A NUMBER,
     PRESS THE"
3030 PRINT"M KEY. ENTER A NUMBER WHERE YOU THINK THE
     ASTERISK"
3040 PRINT"IS LOCATED - EITHER ONE BELOW OR ONE
     NUMBER ABOVE"
3050 PRINT"EXAMPLE: IF YOU THINK THE ASTERISK IS LO-
     CATED AT 20"
3060 PRINT"THEN ENTER 19 OR 21, IF YOU ENTER 20 THE COM-
     PUTER"
3070 PRINT"WILL HAVE A MESSAGE FOR YOU!!"
3080 PRINT"THE LEAST NUMBER YOU'LL NEED TO ENTER
     IS 10 THE"
3090 PRINT"HIGHEST IS 40..... WHEN YOUR DAYS LEFT ARE"
3100 PRINT"0 YOU'LL HAVE YOUR FREEDOM. . . . .GOOD
     LUCK !!"
3110 PRINT:INPUT"PRESS ENTER/RETURN TO BEGIN";X$
3120 RETURN
```

Electrician



You are faced with a control box of up to 16 connections and up to 10 loose wires. Connecting them will be easy as long as you don't connect a live wire with the power on. You see—all the wires are grounded except for two; all wires must be connected with the power on, except for the two 'live' ones. You must turn the power off before connecting those or you'll blow the fuses and have to start from scratch.

Good Luck!

Sample Run

```
                *** ELECTRICIAN ***
INSTRUCTIONS WILL BE LISTED AS YOU PROGRESS, EACH TIME
A WIRE OR CONNECTION IS USED, IT WILL BE REPLACED
WITH A 0 (ZERO).
PRESS A KEY TO BEGIN CONNECTIONS . . . . .
THE CONTROL BOX CONTAINS 13 CONNECTIONS. YOU
HAVE 10 WIRES TO CONNECT TO THIS BOX.
CONNECTIONS 1 2 3 4 5 6 7 8 9 10 11 12 13
WIRES: 1 2 3 4 5 6 7 8 9 10
```

ALL WIRES ARE GROUNDED EXCEPT FOR TWO. THE TWO WIRES THAT ARE LIVE SHOULDN'T BE CONNECTED UNTIL YOU TURN THE POWER OFF. THE OTHERS MUST BE CONNECTED WITH THE POWER ON. IF YOU CONNECT A LIVE WIRE WITH POWER ON, YOU'LL HAVE TO START OVER WITH ANOTHER BOX AND CONNECTIONS. . . . .
PRESS A KEY TO BEGIN CONNECTIONS . . . . .
THE CONTROL BOX CONTAINS 13 CONNECTIONS. YOU HAVE 10 WIRES TO CONNECT TO THIS BOX.
CONNECTIONS: 1 2 3 4 5 6 7 8 9 10 11 12 13
WIRES: 1 2 3 4 5 6 7 8 9 10
INPUT WIRE # ? 3
TO CONNECTION # ? 5
YOU'RE SAFE . . . SO FAR. IF YOU THINK YOU'RE READY TO CONNECT THE LIVE WIRES INPUT YES; OTHERWISE INPUT NO? NO
LET'S CONTINUE THEN . . . . .
THE CONTROL BOX CONTAINS 12 CONNECTIONS. YOU HAVE 9 WIRES TO CONNECT TO THIS BOX.
CONNECTIONS: 1 2 3 4 0 6 7 8 9 10 11 12 13
WIRES: 1 2 0 4 5 6 7 8 9 10
INPUT WIRE # ? 8
TO CONNECTION # ? 2
YOU'RE SAFE . . . SO FAR. IF YOU THINK YOU'RE READY TO CONNECT THE LIVE WIRES INPUT YES; OTHERWISE INPUT NO? NO
LET'S CONTINUE THEN . . . . .
THE CONTROL BOX CONTAINS 11 CONNECTIONS. YOU HAVE 8 WIRES TO CONNECT TO THIS BOX.
CONNECTIONS: 1 0 3 4 0 6 7 8 9 10 11 12 13
WIRES: 1 2 0 4 5 6 7 0 9 10
INPUT WIRE # ? 9
TO CONNECTION # ? 11
YOU'RE SAFE . . . SO FAR. IF YOU THINK YOU'RE READY TO CONNECT THE LIVE WIRES INPUT YES; OTHERWISE INPUT NO? NO
LET'S CONTINUE THEN . . . . .
THE CONTROL BOX CONTAINS 10 CONNECTIONS. YOU HAVE 7 WIRES TO CONNECT TO THIS BOX.
CONNECTIONS: 1 0 3 4 0 6 7 8 9 10 0 12 13
WIRES: 1 2 0 4 5 6 7 0 0 10
INPUT WIRE # ? 10

```
TO CONNECTION # ? 8
YOU'RE SAFE . . . SO FAR. IF YOU THINK YOU'RE READY
TO CONNECT THE LIVE WIRES INPUT YES; OTHERWISE INPUT
NO? NO
LET'S CONTINUE THEN . . . . .
THE CONTROL BOX CONTAINS 9 CONNECTIONS. YOU
HAVE 6 WIRES TO CONNECT TO THIS BOX.
CONNECTIONS: 1 0 3 4 0 6 7 0 9 10 0 12 13
WIRES: 1 2 0 4 5 6 7 0 0 0
INPUT WIRE # ? 6
TO CONNECTION # ? 12
YOU'VE JUST CONNECTED A LIVE WIRE WITHOUT TURNING
THE POWER OFF !! . . . .YOU'VE BLOWN THE FUSES !!
NOW YOU'LL HAVE TO START OVER . . . . SORRY.
PRESS A KEY TO BEGIN CONNECTIONS . . . . .
THE CONTROL BOX CONTAINS 8 CONNECTIONS. YOU
HAVE 6 WIRES TO CONNECT TO THIS BOX.
CONNECTIONS: 1 2 3 4 5 6 7 8
WIRES: 1 2 3 4 5 6
INPUT WIRE # ? 4
TO CONNECTION # ? 4
YOU'VE JUST CONNECTED A LIVE WIRE WITHOUT TURNING
THE POWER OFF !! . . . . YOU'VE BLOWN THE FUSES !!
NOW YOU'LL HAVE TO START OVER . . . . SORRY.
PRESS A KEY TO BEGIN CONNECTIONS . . . . .
STOP
```

It is possible to complete the connections, as long as the two 'live' wires are connected last, with the power off. By the way, you can't turn the power off with more than two wires left . . . so I wouldn't try it. See Fig. 6-4 for the flowchart for this program.

Program listing

```
50  DIM A(18),W(11)
55  CLS:PRINT
60  PRINT:PRINT TAB(20);"*** ELECTRICIAN ***"
70  PRINT
75  PRINT "INSTRUCTIONS WILL BE LISTED AS YOU PRO-
    GRESS, EACH TIME"
80  PRINT"A WIRE OR CONNECTION IS USED, IT WILL BE RE-
    PLACED"
90  PRINT"WITH A 0 (ZERO)."
```

```
 95 GOSUB 700:CLS
100 REM GET WIRING
110 FOR W=1 TO INT(10*RND(0)+1):NEXT
120 REM CHECK FOR ENOUGH WIRES
130 IF W <5 THEN 100
140 REM GET TWO 'LIVE' WIRES
150 FOR I=1 TO 2
160 L(I)=W-INT(5*RND(0))
170 LW(I)=L(I)-2:IF LW(I) < 1 THEN 100
180 NEXT
190 REM OVERLOAD?
200 IF L(1) > W THEN 100
210 IF L(1)=LW(2) THEN 100
220 REM THE REST ARE SAFE FOR CONNECTION
230 REM NOW GET CONNECTIONS
240 C=(W+3)
245 WW=W:CC=C
250 REM MAKE TWO DUMMY CONNECTIONS
260 D(1)=L(1)+INT(3*RND(0))
270 D(2)=LW(2)+INT(3*RND(0))
280 IF D(1) > W OR D(2) > W THEN 100
285 FOR I=1 TO C:READ A(I):NEXT:RESTORE
286 FOR I=1 TO W:READ W(I):NEXT
290 PRINT:PRINT"THE CONTROL BOX CONTAINS";CC;"CON-
    NECTIONS, YOU"
300 PRINT"HAVE";WW;"WIRES TO CONNECT TO THIS BOX."
310 PRINT:PRINT"CONNECTIONS: ";
320 FOR I=1 TO C:PRINT A(I);:NEXT
330 PRINT:PRINT
340 PRINT"WIRES: ";
350 FOR I=1 TO W:PRINT W(I);:NEXT:PRINT
360 REM SKIP INSTRUCTIONS IF R > 1
370 IF R > 1 THEN 450
380 PRINT:PRINT"ALL WIRES ARE GROUNDED EXCEPT FOR
    TWO. THE TWO"
390 PRINT"WIRES THAT ARE LIVE SHOULDN'T BE CONNECTED
    UNTIL YOU"
400 PRINT"TURN THE POWER OFF. THE OTHERS MUST BE
    CONNECTED"
410 PRINT"WITH THE POWER ON. IF YOU CONNECT A LIVE
    WIRE WITH"
420 PRINT"POWER ON, YOU'LL HAVE TO START OVER WITH
```

```
    ANOTHER BOX"
430 PRINT"AND CONNECTIONS . . . . .":GOSUB 700
440 R=2:GOTO 290
450 PRINT:PRINT"INPUT WIRE #";
460 INPUT WR :IF WR > W THEN PRINT"YOU HAVEN'T THAT
    MANY WIRES":
    PRINT:GOTO 450
465 IF W(WR)=0 THEN PRINT"YOU'VE USED THAT WIRE . . . .
    ":GOTO 450
470 REM W(WR)=0 DELETE WIRE IF SAFE
```

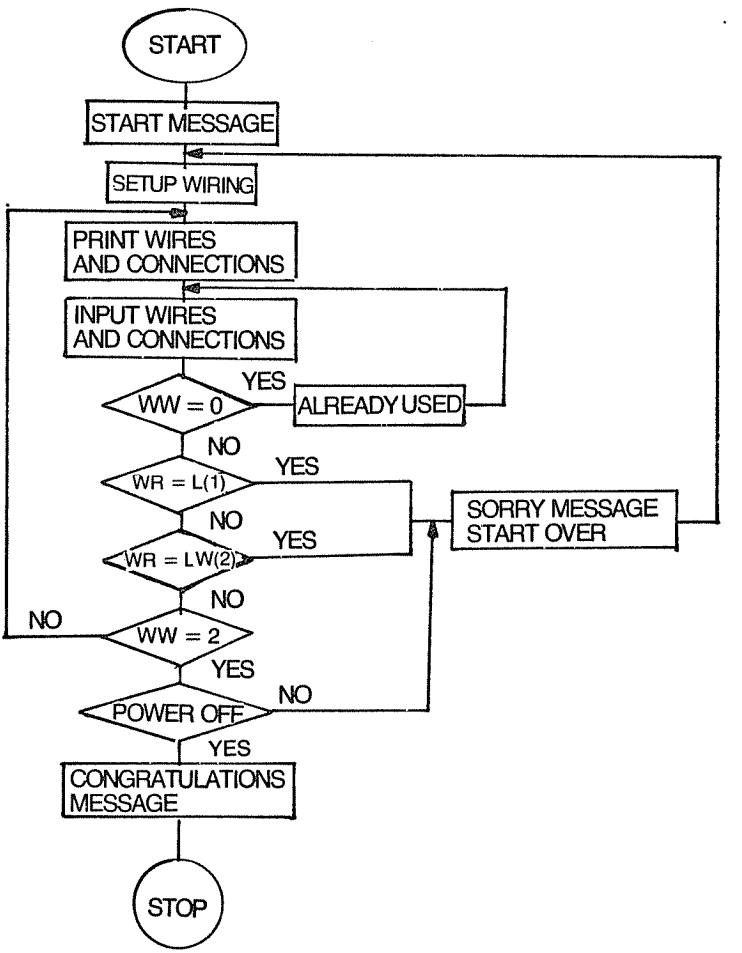


Fig. 6-4. The flowchart for Electrician.

```
475 PRINT"TO CONNECTION #";
480 INPUT CN:IF CN > C THEN PRINT"DO YOU SEE A NUM-
    BER";CN;"TO CONNECT TO?":PRINT:GOTO 475
490 IF A(CN)=0 THEN PRINT"THAT CONNECTION HAS BEEN
    TAKEN . . .":GOTO 475
500 REM A(CN)=0 DELETE CONNECTION IF USED
530 IF WR=L(1) OR WR=LW(2) THEN 640
540 IF CN=D(1) OR CN=D(2) THEN 680
545 WW=WW-1:CC=CC-1
550 PRINT:PRINT"YOU'RE SAFE . . . SO FAR. IF YOU THINK
    YOU'RE READY"
560 PRINT"TO CONNECT THE LIVE WIRES INPUT YES; OTHER-
    WISE INPUT NO";
570 INPUT A$
580 IF A$ < > "YES" THEN 595
590 GOTO 750:REM CONNECTIONS READY
595 IF WW < 3 THEN 830
600 PRINT:PRINT"LET'S CONTINUE THEN . . . . ."
620 W(WR)=0:A(CN)=0:REM DELETE WIRE AND CONNECTION
630 GOTO 290
640 PRINT:PRINT"YOU'VE JUST CONNECTED A LIVE WIRE
    WITHOUT TURNING"
650 PRINT"THE POWER OFF !! . . . . YOU'VE BLOWN THE FUSES
    !!"
660 PRINT"NOW YOU'LL HAVE TO START OVER . . . . SORRY."
670 GOSUB 700:RESTORE:GOTO 100
680 PRINT:PRINT"SORRY . . . THERE ARE TWO DUMMY CON-
    NECTIONS,"
690 PRINT"AND #";CN;"IS ONE OF THEM.":PRINT:GOTO 475
700 PRINT"PRESS A KEY TO BEGIN CONNECTIONS . . . . ."
710 A$=INKEY$:IF A$=" " THEN 710
720 CLS:PRINT:RETURN
750 REM CHECK WIRES—OUTPUT STATEMENT
755 IF WW=2 THEN 860
760 IF WW < > 2 THEN I=INT(2*RND(0)+1)
770 ON I GOTO 780,800
780 PRINT:PRINT"YOU'RE NOT READY YET, YOU STILL
    HAVE";(WW-2)
790 PRINT"GROUNDED WIRES THAT NEED CONNECTED FIRST
    . . . .":W(WR)=0 A(CN)=0:PRINT:GOTO 290
800 PRINT:PRINT"WELL YOU'VE DONE IT NOW—CUT THE
    POWER WHEN YOU"
```

```
810 PRINT"STILL HAD";(WW-2);"GROUNDED WIRES TO BE
    CONNECTED !!"
820 GOTO 660
830 PRINT:PRINT"DUMMY !! YOU ONLY HAD TWO WIRES LEFT
    !!"
840 PRINT"WHY DIDN'T YOU TURN THE POWER OFF ??"
850 GOTO 660
860 PRINT:PRINT"VERY WELL DONE !! YOU'VE CONNECTED
    ALL THE"
870 PRINT"WIRES AND DIDN'T BLOW A FUSE, CONGRATULA-
    TIONS ARE"
880 PRINT"IN ORDER. HAVE YOU THOUGHT OF LANDING A
    POSITION
890 PRINT"WITH A LARGE FIRM . . . TO CONNECT RANDOM
    WIRES ???"
900 END
940 DATA 1,2,3,4,5,6,7,8, 9, 10,11,12,13,14,15,16
950 DATA 1,2,3,4,5,6,7,8,9,10
```

Treasure

You want to find a treasure? This is the game for it. You'll be moving around trying to overcome about eight obstacles. If you can do that you'll have the treasure you've been looking for. Just don't reach the eight obstacles!

Sample Run

```
INSTRUCTIONS: YOU ARE LOOKING FOR A LOST TREASURE.
TO FIND THAT TREASURE YOU'LL HAVE TO OVERCOME SOME
OBSTACLES. TO OVERCOME THESE OBSTACLES ALL YOU HAVE
TO DO IS MOVE AROUND THEM. ENTERING A NUMBER FROM
0 TO -5 WILL MOVE YOU BACK, LEFT, RIGHT OR
STRAIGHT AHEAD, SLOW.
ENTERING A NUMBER FROM 0 TO 5 WILL MOVE YOU
STRAIGHT AHEAD.
TO PROCEED PRESS ENTER/RETURN?
AFTER YOU INPUT YOUR MOVE, THE COMPUTER
WILL OUTPUT YOUR LOCATION (MAYBE).
INPUT YOUR MOVE? 3
YOU'RE GETTING CLOSER, ONLY 12.3169 FEET AND YOU'LL
HAVE
```

THE TREASURE YOU'VE BEEN LOOKING FOR. JUST WATCH THE OBSTACLES. THEY'RE STILL FLOATING AROUND OUT THERE.
INPUT YOUR MOVE? -1
YOU'RE GETTING CLOSER, ONLY 11.8169 FEET AND YOU'LL HAVE
THE TREASURE YOU'VE BEEN LOOKING FOR. JUST WATCH THE OBSTACLES. THEY'RE STILL FLOATING AROUND OUT THERE.
INPUT YOUR MOVE? 3
THAT DIDN'T WORK !!
YOU HAVE 8 OBSTACLES TO OVERCOME.
IF YOU DON'T LOCATE THE TREASURE BEFORE THE LAST OBSTACLE, YOU'LL HAVE TO START OVER.
OBSTACLE #1
THERE IS A LARGE SNAKE OVER YOUR HEAD, IF IT STRIKES YOU—UGH--GOODBYE CHARLIE !!
INPUT YOUR MOVE? -4
THAT DIDN'T WORK !!
OBSTACLE #2

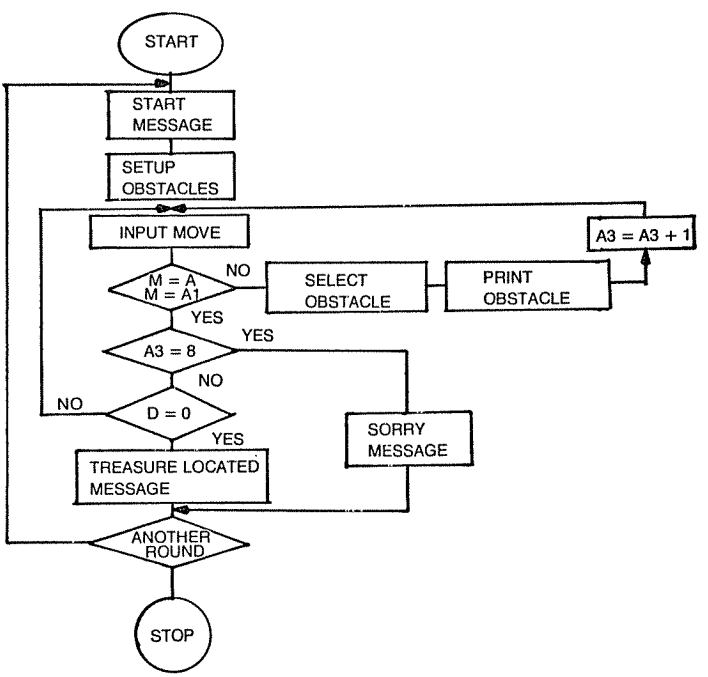


Fig. 6-5. The flowchart for Treasure.

```
UH—OH . . . GUESS WHAT'S GOT YOU SURROUNDED?
ABOUT 8 HEADHUNTERS !! GUESS WHO'S HEAD THEY'LL HAVE
IF YOU DON'T GET OUT OF THIS ONE?
INPUT YOUR MOVE? -2
YOU'RE GETTING CLOSER, ONLY 11.3169 FEET AND YOU'LL
HAVE
THE TREASURE YOU'VE BEEN LOOKING FOR. JUST WATCH THE
OBSTACLES. THEY'RE STILL FLOATING AROUND OUT THERE.
INPUT YOUR MOVE? 3
YOU'RE GETTING CLOSER, ONLY 10.8169 FFET AND YOU'LL
HAVE
THE TREASURE YOU'VE BEEN LOOKING FOR. JUST WATCH THE
OBSTACLES.
INPUT YOUR MOVE? 2
THAT DIDN'T WORK !!
OBSTACLE #3
STOP! SOP!
YOU ARE ABOUT TO STEP INTO SOME QUICKSAND, DON'T STEP
FORWARD
OR YOU'LL NEVER SEE THE TREASURE !!
INPUT YOUR MOVE?
STOP
```

This is only a partial run. The game doesn't end until you have used all eight obstacles or you reach the treasure. If you find yourself in a jam, try entering 0 for a move. See Fig. 6-5 for the flowchart for this program.

Good Luck!!

Program listing

```
10  CLS:B=0:PRINT
30  PRINT TAB(20);"T R E A S U R E"
40  PRINT:IF R=1 THEN 130
50  PRINT"INSTRUCTIONS: YOU ARE LOOKING FOR A LOST
    TREASURE."
60  PRINT"TO FIND THAT TREASURE YOU'LL HAVE TO
    OVERCOME SOME"
70  PRINT"OBSTACLES. TO OVERCOME THESE OBSTACLES
    ALL YOU HAVE"
80  PRINT"TO DO IS MOVE AROUND THEM. ENTERING A
    NUMBER FROM"
90  PRINT"0 TO -5 WILL MOVE YOU BACK, LEFT, RIGHT OR"
95  PRINT"STRAIGHT AHEAD SLOW."
```

```
100 PRINT"ENTERING A NUMBER FROM 0 TO 5 WILL MOVE
    YOU"
110 PRINT"STRAIGHT AHEAD."
130 REM SET AMOUNT OF OBSTACLES—GET CORRECT MOVE
140 A2=8:A3=A2-7
150 GOSUB 770
155 IF R=2 THEN FOR T=1 TO 1000:NEXT:GOTO 190
170 PRINT:INPUT"TO PROCEED PRESS ENTER/RETURN";X$
180 CLS:PRINT
190 PRINT"AFTER YOU INPUT YOUR MOVE, THE COMPUTER"
200 PRINT"WILL OUTPUT YOUR LOCATION (MAYBE)."
205 D=A+(15*RND(0)):IF D < 9 THEN 205:REM DISTANCE TO
    TREASURE
210 PRINT"INPUT YOUR MOVE";
220 INPUT M
230 IF M < - 5 OR M > 5 THEN PRINT"DUMMY!! CAN'T YOU
    REMEMBER THE
    NUMBERS???":GOTO 220
240 B=B+1
250 IF ABS (M-A1)> 1 AND ABS (M-A)> 1 THEN 265
260 GOSUB 280:GOTO 300:REM DECREASE DISTANCE—
    OUTPUT MESSAGE
265 IF A3=9 THEN 890
270 PRINT:PRINT"THAT DIDN'T WORK !!"
275 GOTO 320
280 IF M=0 THEN D=D:GOTO 300
290 M1=(M-M)+.5:D=D-M1:RETURN
300 IF D <=0 THEN 830
310 IF D >0 THEN 780
320 REM OBSTACLES
330 IF A3 > 1 THEN 380
340 PRINT:PRINT"YOU HAVE";A2;"OBSTACLES TO OVER-
    COME."
350 PRINT"IF YOU DON'T LOCATE THE TREASURE BEFORE
    THE LAST"
360 PRINT"OBSTACLE, YOU'LL HAVE TO START OVER."
380 PRINT
390 PRINT"OBSTACLE #";A3
400 ON A3 GOTO 410,440,480,520,550,590,630,670
410 PRINT"THERE IS A LARGE SNAKE OVER YOUR HEAD, IF IT
    STRIKES"
420 PRINT"YOU—UGH—GOODBYE CHARLIE !!"
```

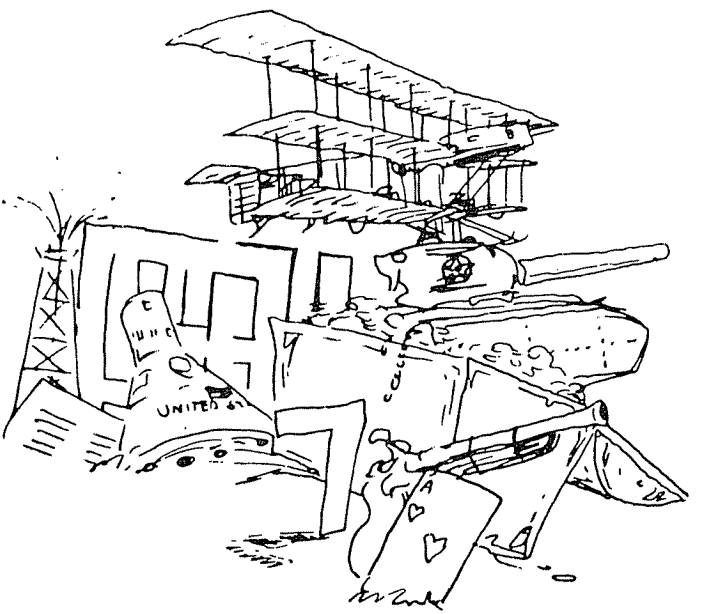
```
430 GOTO 740
440 PRINT"UH—OH . . . GUESS WHAT'S GOT YOU SUR-
    ROUNDED?"
450 PRINT"ABOUT";A+5;"HEADHUNTERS !! GUESS WHO'S
    HEAD THEY'LL"
460 PRINT"HAVE IF YOU DON'T GET OUT OF THIS ONE?"
470 GOTO 740
480 PRINT"STOP! STOP!"
490 PRINT"YOU ARE ABOUT TO STEP INTO SOME QUICK-
    SAND, DON'T STEP FORWARD"
500 PRINT"OR YOU'LL NEVER SEE THAT TREASURE !!"
510 GOTO 740
520 PRINT"NOW GUESS WHAT? ABOUT";A+3;"LARGE SPID-
    ERS ARE ABOUT TO"
530 PRINT"COME DOWN ON YOUR HEAD, A SPECIES THAT
    THRIVES ON EYES !!"
540 GOTO 740
550 PRINT"WOULD YOU BELEIVE? A POOL OF MAN-EATING
    FISH?"
560 PRINT"YOU'D BETTER, 'CAUSE IF YOU STEP INTO THEM"
570 PRINT"THEY'LL GREET YOU WITH OPEN MOUTHS !!"
580 GOTO 740
590 PRINT"OUCH !!"
600 PRINT"YOU JUST RAN INTO A SOLID WALL, I MUST'VE
    TURNED"
610 PRINT"YOU IN THE WRONG DIRECTION, ON THE LAST
    MOVE."
620 GOTO 740
630 PRINT"LOOK OUT !!"
640 PRINT"RIGHT INTO A WALL OF FIRE. DOESN'T THAT
    MAKE YOUR FINGERS"
650 PRINT"TINGLE? DIDN'T YOU FEEL THE HEAT BEFORE
    NOW?"
660 GOTO 740
670 PRINT"YOUR LAST AND FINAL OBSTACLE. IF YOU DON'T
    LOCATE THE"
680 PRINT"TREASURE AFTER THIS ONE, YOU'LL START OVER
    !!"
690 PRINT
700 PRINT"YOU ARE STANDING IN FRONT OF A PACK OF WILD
    DOGS !!"
710 PRINT"THEY'RE ALL SHOWING THEIR NICE WHITE
    TEETH."
```

```
720 PRINT"WHITE . . . FROM CHEWING BONES !!"
740 REM DELETE ONE OBSTACLE
745 A3=A3+1
760 GOSUB 770:REM GET AWAY?
765 GOTO 210
770 A=INT(6*RND(0)+1):A1=A-5
775 RETURN
790 PRINT"YOU'RE GETTING CLOSER, ONLY";D;"FEET AND
    YOU'LL HAVE"
800 PRINT"THE TREASURE YOU'VE BEEN LOOKING FOR.
    JUST"
810 PRINT"WATCH THE OBSTACLES.";:IF B < 6 THEN
    PRINT"THEY'RE STILL FLOATING AROUND OUT THERE."
820 GOSUB 770:GOTO 210
830 PRINT
840 PRINT"C O N G R A T U L A T I O N S ! ! ! "
850 PRINT"THAT MUST'VE BEEN YOUR LUCKY STEP. YOU'RE
    STANDING RIGHT"
860 PRINT"ON TOP OF THE TREASURE. ABOUT 2 MILLION
    DOLLARS WORTH"
870 PRINT"OF GOLD AND SILVER !!!"
880 GOTO 960
890 PRINT
900 PRINT"WELL";:GOSUB 1060
910 PRINT"IT LOOKS LIKE";:GOSUB 1060
920 PRINT"YOU'RE NOT GOING TO";:GOSUB 1060
930 PRINT"FIND THE TREASURE THIS TIME";:GOSUB 1060
940 PRINT"LOOKS AS THOUGH YOU GOT CLOSE, BUT,";:
    GOSUB 1060
950 PRINT"NOT CLOSE ENOUGH";:GOSUB 1060
960 PRINT
970 PRINT"YOU ARE READY TO TRY AGAIN, RIGHT";
980 INPUT A$
990 IF A$ < >"YES" AND A$ < > "NO" THEN 1010
1000 GOTO 1020
1010 PRINT"WON'T RESPOND TO THAT ANSWER . . . . . ":
     GOTO 980
1020 IF A$="YES" THEN RESTORE:R=2:GOTO 20
1030 PRINT
1040 PRINT"CHICKEN!! COULDN'T HANDLE THE OBSTACLES
     ??"
1050 END
```

```
1060  A$="................"
1070  FOR I=1 TO LEN (A$):PRINT LEFT$(A$,1);:FOR T=1 TO
      25:NEXT T,I
1080  FOR N=1 TO 600:NEXT
1090  PRINT:PRINT:RETURN
```

Chapter 7

Games of Speed & Order



Scrambled Eggs

This is called scrambled eggs, but you'll soon wonder why it wasn't entitled scrambled fingers, why? Because with each category and each question you'll only have roughly 30 seconds to answer. Points are based on different things which will become apparent in the program list.

You must remember one thing: DO NOT BACKSPACE !! If you do the computer will interpret it as a letter !! Because of questions and answers no sample run is provided. See Fig. 7-1 for the flowchart for this program.

Program Listing

```
10 CLS:DIM A$(91)
20 PRINT:RANDOM
30 PRINT TAB(15), "SCRAMBLED EGGS"
40 PRINT
50 PRINT"THIS IS THE GAME OF SCRAMBLED EGGS."
60 PRINT"WHERE YOU'LL SOON SEE THAT A MORE"
70 PRINT"FITTING TITLE WOULD BE SCRAMBLED"
80 PRINT"FINGERS. YOU'LL BE GIVEN QUESTIONS"
```

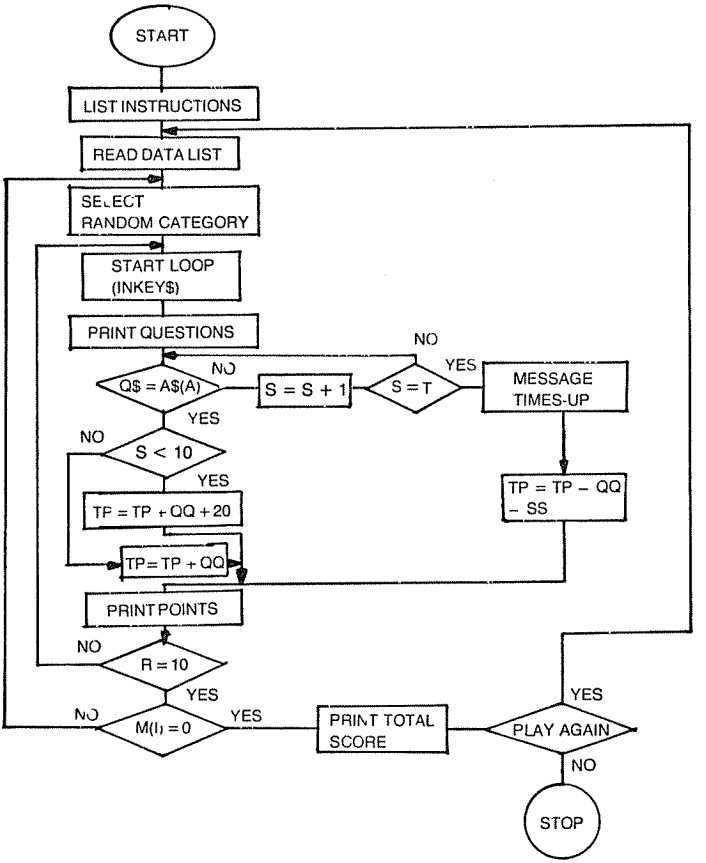


Fig. 7-1. The flowchart for Scrambled Eggs.

```
 90 PRINT"SELECTED FROM FOUR CATEGORIES."
100 PRINT"THE CATEGORY WILL BE RANDOMLY"
110 PRINT"SELECTED."
120 GOSUB 5000
130 CLS:PRINT
140 PRINT"ANSWERS WILL BE ENTERED USING"
150 PRINT"ONLY THE LETTERED KEYS."
160 PRINT"ENTER/RETURN KEY WILL NOT BE USED."
170 PRINT"YOU'LL HAVE ROUGHLY 30 SECONDS PER"
180 PRINT"QUESTION. EACH POINT IS WORTH $1.00"
190 PRINT"AND FIGURED AS FOLLOWS:"
210 PRINT"EACH LETTER PER ANSWER IS WORTH 1 POINT."
220 PRINT"IF YOU ANSWER INCORRECTLY (YOU ONLY"
```

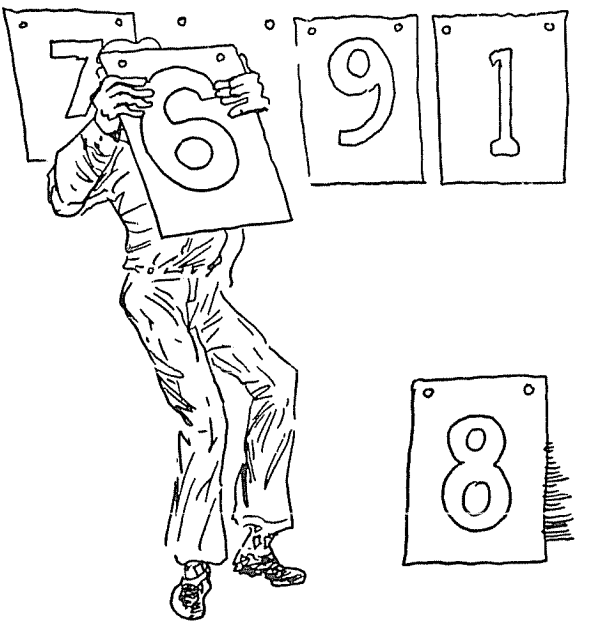
```
230 PRINT"GET ONE CHANCE PER QUESTION), YOU"
240 PRINT"WILL BE CHARGED THAT MANY POINTS"
250 PRINT"AGAINST THE CORRECT ANSWER IN MEMORY,"
255 PRINT"PLUS THE SECONDS YOU TOOK TO ANSWER IT."
260 GOSUB 5000:CLS
270 PRINT
280 PRINT"CORRECT ANSWERS:"
290 PRINT"YOU CAN OBTAIN THE HIGHEST POINTS BY"
300 PRINT"ANSWERING CORRECTLY WITHIN 10 SECONDS."
310 PRINT"EXAMPLE: IF YOUR ANSWER IS CORRECT WITHIN"
320 PRINT"10 SECONDS YOU WILL GAIN 20 POINTS(TIME"
330 PRINT"REMAINING), AND A POINT FOR EACH LETTER."
340 PRINT"OTHERWISE A CORRECT ANSWER WILL GAIN YOU"
350 PRINT"A POINT FOR EACH LETTER IN THE ANSWER."
360 PRINT"IF YOUR ALLOTED TIME EXPIRES AND YOU
    HAVEN'T"
370 PRINT"ANSWERED, POINTS LOST WILL BE 30 (FOR SEC-
    ONDS),"
380 PRINT"AND A POINT FOR EACH LETTER IN THE COR-
    RECT"
390 PRINT"ANSWER IN MEMORY."
395 GOSUB 5000:CLS:PRINT
397 PRINT"REMEMBER, ENTER THE ANSWER USING ONLY
    THE"
398 PRINT"LETTER KEYS. THEN PRESS THE ASTERISK (*) TO
    STOP"
400 PRINT"THE CLOCK AND COMPARE YOUR ANSWER."
405 PRINT"YOU'LL SOON CATCH ON. . . . . "
410 GOSUB 5000:CLS
415 FOR Z=1 TO 4:M(Z)=Z:PT(Z):NEXT
420 P=30:T=350:E=10:TP=0:R$="?":D$="$":F$=".00"
430 I=INT(5*RND(0)+1)
435 IF M(1)=0 AND M(2)=0 AND M(3)=0 AND M(4)=0 THEN 1200
440 IF M(I)=0 THEN 430
445 ON I GOTO 450,460,470,480
450 C$="ANIMALS":Z$="268.00":M=1:GOTO 490
460 C$="MIXED":Z$="$265.00":M=2:GOTO 490
470 C$="INSECTS":Z$="$254.00":M=3:GOTO 490
480 C$="DICTIONARY":Z$="$278.00":M=4
490 IF R > 0 THEN 790: REM READ DATA LIST IF NOT DONE
500 FOR A=1 TO 40:READ A$(A):NEXT
505 DATA ELEPHANT, GIRAFFE, CHEETAH, HIPPOPOTAMUS,
    RHINOCEROS, DOG, TIGER, COW, GORILLA, MACACO
```

```
515 DATA IRRATIONAL , HOAX, ENDURE, DIET, MECHANISM,
    CALIFORNIA, TRANSISTOR, GAMES, TUBE, APPLE
525 DATA SPIDER, FLEA, FLY, ANT, TICK, LOCUST, CEN-
    TIPEDE, LADYBUG, ROACH, TERMITE
535 DATA IMPOSTER, COEFFICIENT, BETRAY, STORAGE, VO-
    CATION, TRINAL, SUPPOSE, POSTSCRIPT, MEASURE, AF-
    FIDAVIT
580 REM READ CATEGORY QUESTIONS
590 FOR Q=51 TO 90:READ A$(Q):NEXT
600 DATA LARGEST LAND ANIMAL, TALLEST OF ALL QUAD-
    RUPEDS
610 DATA HUNTING LEOPARD OF INDIA, THE RIVER HORSE
620 DATA ONE OR TWO HORNS ON THE SNOUT, A DOMESTI-
    CATED ANIMAL
630 DATA A LARGE FIERCE RAPACIOUS QUADRUPED, GIVES
    MILK
640 DATA LARGEST APE KNOWN, RINGTAILED LEMUR
650 DATA ABSURD, PRACTICAL JOKE, PUT UP WITH, SPECIAL
    REFERENCE TO FOOD
660 DATA PARTS OF A MACHINE, WESTERN STATE
670 DATA A SMALL COMPONENT REPLACING THE TUBE, FUN
    - FROLIC
680 DATA A PIPE, A RED TREE FRUIT
690 DATA HAS EIGHT LEGS, BLOOD-SUCKING PARASITIC, A
    TWO-WINGED INSECT
700 DATA INVADES PICNICS, ANOTHER BLOOD-SUCKING
    PARASITIC
710 DATA DESTRUCTIVE WINGED INSECT, SUPPOSED TO
    HAVE ONE HUNDRED LEGS
720 DATA MARKED WITH BLACK SPOTS, PART OF THE CARP
    FAMILY
730 DATA THE WHITE ANT
740 DATA AN ASSUMED CHARACTER, COOPERATING WITH
    ANOTHER
750 DATA DECEIVE,SPACE FOR GOODS, OCCUPATION, PER-
    TAINING TO THREE
760 DATA TO IMAGINE, A PARAGRAPH ADDED TO THE END OF
    A LETTER
770 DATA VOLUME OR EXTENT OF ANYTHING COMPARED
780 DATA SWORN STATEMENT IN WRITING
790 REM PRINT QUESTION - START LOOP
795 PRINT"DON'T TYPE TOO FAST AND DON'T BACKSPACE."
```

```
796 PRINT
797 PRINT"CATEGORY: ";C$
798 PRINT"HIGHEST AMOUNT TO WIN, THIS CATEGORY: ";Z$
800 PRINT
805 PRINT"IF READY ?":GOSUB 5000:CLS:PRINT
810 ON M GOTO 820, 1050, 1070, 1090
820 Q=51:S=1:A=1:Q$=" "
830 PRINT
835 PRINT A$(Q);R$
840 X$=INKEY$:IF X$="*" THEN SS=INT(S/10):GOTO 890
850 N$=" "
870 L$=L$+X$:Q$=MID$(L$, 1, 1)
875 N$=N$+X$:PRINT N$;
880 S=S+1:IF S<>T THEN 840
885 QQ=LEN(A$(A)):GOSUB 4100:GOSUB 4200:GOTO 940:REM
    OUT OF TIME
890 Q$=L$:QQ=LEN(A$(A)):CQ=LEN(Q$)
900 REM COMPARE STRINGS
910 IF Q$=A$(A) THEN 930
920 GOSUB 4050:GOSUB 4200:GOTO 940:REM INCORRECT
930 GOSUB 4000:GOSUB 4200:REM CORRECT
940 S=1:A=A+1:Q=Q+1
950 IF M=1 AND Q <> 61 THEN 830
960 IF M=2 AND Q <> 71 THEN 830
970 IF M=3 AND Q <> 81 THEN 830
980 IF M=4 AND Q <> 91 THEN 830
1020 PT(I)=TP:M(I)=0:R=1:GOTO 420:REM ANOTHER CATE-
    GORY
1050 Q=61:S=1:A=11:Q$=" ":L$=" "
1060 GOTO 830
1070 Q=71:S=1:A=21:Q$=" ":L$=" "
1080 GOTO 830
1090 Q=81:S=1:A=31:Q$=" ":L$=" "
1100 GOTO 830
1200 GOSUB 5000:CLS:PRINT
1210 PRINT"OUT OF 40 QUESTIONS,"
1220 PRINT"THE TOTAL AMOUNT OF MONEY YOU"
1230 PRINT"ACCUMULATED WAS: ";D$;
1240 FOR I=1 TO 4
1245 PP=PP+PT(I):NEXT:PRINT PP;F$
1250 PRINT
1255 HP=1065
```

```
1260  PRINT"HIGHEST POSSIBLE AMOUNT WAS: ";D$;HP;F$
1270  PRINT
1280  PRINT"WOULD YOU FEEL LIKE THINKING, SOME MORE";
1290  INPUT IN$
1300  IF IN$ <>"NO" THEN 1320
1310  GOTO 1330
1320  RESTORE:R=0:PP=0:GOTO 410
1330  PRINT
1340  PRINT"SO LONG . . . . ."
1350  PRINT"END OF GAME."
1360  END
4000  PRINT:PRINT
4010  PRINT"CORRECT !!"
4020  IF SS < 10 THEN TP=TO+QQ+20
4025  GOTO 4040
4030  TP=TP+QQ
4040  L$=" ":Q$=" ":RETURN
4050  PRINT:PRINT
4060  PRINT"INCORRECT RESPONSE !!"
4070  TP=TP-QQ-SS
4080  L$=" ":Q$=" ":RETURN
4100  PRINT:PRINT
4105  SS=30
4120  TP=TP-QQ-SS
4125  IF TP=0 THEN TP=+QQ+SS
4130  L$=" ":Q$=" "
4140  RETURN
4200  REM AMOUNT ACCRUED
4210  IF TP>0 THEN PRINT"AMOUNT ACCRUED:";D$;TP
      ;F$:GOTO 4230
4220  PRINT"AMOUNT LOST: ";D$;TP;F$
4230  RETURN
5000  PRINT"PRESS A KEY . . . . . "
5010  X$=INKEY$:IF X$=" " THEN 5010
5020  RETURN
```

Renumber



This is the game of renumber, where you will have to figure a sequence of numbers in the computer's memory. The numbers will be from 1 to 10 but won't be in their correct order. You will have an allotted amount of rounds to complete the sequence of numbers in its correct order. The first five rounds should be easy, the computer will tell you which numbers are correct and if they are in the right spaces; after that you are on your own.

Sample Run

```
THIS IS NOT A PROGRAM TO RENUMBER
OTHER PROGRAM LINES, BUT
A NUMBER GAME. THE COMPUTER
WILL HAVE IN ITS MEMORY A SET OF
NUMBERS FROM 1 THROUGH 10. THESE
NUMBERS WILL BE PRINTED, BUT NOT IN
THEIR CORRECT ORDER; ORDERING THEM IS YOUR
JOB. PRESS ENTER/RETURN?
```

```
AN EXAMPLE MIGHT BE:
10 4 3 5 7 1 2 6 9 8 (COMPUTER LIST).
YOU MUST RENUMBER THE LIST TO MATCH
THE COMPUTER'S CORRECT LIST. THE
ANSWER MIGHT BE:
10 3 4 7 2 1 8 9 6 5 (YOUR LIST).
AND YOU MUST DO IT IN AN AMOUNT OF
MOVES THE COMPUTER ALLOWS YOU (RANDOM
UP TO 30—NOT LESS THAN 15).
PRESS ENTER/RETURN TO RECEIVE THE
FIRST LIST IF YOU ARE READY?
YOU'LL HAVE 30 ROUNDS TO ENTER
THE CORRECT ORDER OF NUMBERS.
MORE THAN ENOUGH . . . . .
HERE IS THE COMPUTER'S RANDOM LIST:
2 10 1 3 8 5 7 9 6 4
(NOTE: THE RANDOM LIST IS ONLY TO SHOW YOU WHAT
KIND OF ARRANGEMENT THE NUMBERS MIGHT BE IN).
NOW IT'S YOUR TURN, ENTER THE NUMBERS
IN WHICH YOU THINK THE CORRECT ORDER
MIGHT BE.
PRESS ENTER/RETURN?
ENTER YOUR NUMBER 1  CHOICE? 1
ENTER YOUR NUMBER 2  CHOICE? 9
ENTER YOUR NUMBER 3  CHOICE? 8
ENTER YOUR NUMBER 4  CHOICE? 5
ENTER YOUR NUMBER 5  CHOICE? 3
ENTER YOUR NUMBER 6  CHOICE? 2
ENTER YOUR NUMBER 7  CHOICE? 7
ENTER YOUR NUMBER 8  CHOICE? 4
ENTER YOUR NUMBER 9  CHOICE?10
ENTER YOUR NUMBER 10 CHOICE? 6
COMPUTER'S RANDOM LIST:
2 10 1 3 8 5 7 9 6 4
YOUR LIST:
1 9 8 5 3 2 7 4 10 6
THE 'HELP' LIST NOTES THAT YOU ARE 9 NUMBERS OFF.
0 0 0 0 0 0 0 0 1 0
THE NUMBER (1) INDICATES YOUR CORRECT NUMBER(S).
THIS WILL BE YOUR NUMBER 2 ATTEMPT.
PRESS ENTER/RETURN?
ENTER YOUR NUMBER 1 CHOICE? 9
```

```
ENTER YOUR NUMBER 2 CHOICE?  5
ENTER YOUR NUMBER 3 CHOICE?  7
ENTER YOUR NUMBER 4 CHOICE?  1
ENTER YOUR NUMBER 5 CHOICE?  2
ENTER YOUR NUMBER 6 CHOICE?  4
ENTER YOUR NUMBER 7 CHOICE?  8
ENTER YOUR NUMBER 8 CHOICE?  3
ENTER YOUR NUMBER 9 CHOICE? 10
ENTER YOUR NUMBER 10 CHOICE? 6
YOUR LIST:
9 5 7 1 2 4 8 3 10 6
THE 'HELP' LIST NOTES THAT YOU ARE 6 NUMBERS OFF.
1 0 1 0 0 0 1 0 1 0
THE NUMBER (1) INDICATES YOUR CORRECT NUMBER(S).
THIS WILL BE YOUR NUMBER 3 ATTEMPT.
PRESS ENTER/RETURN?
ENTER YOUR NUMBER 1 CHOICE?  9
ENTER YOUR NUMBER 2 CHOICE?  1
ENTER YOUR NUMBER 3 CHOICE?  7
ENTER YOUR NUMBER 4 CHOICE?  3
ENTER YOUR NUMBER 5 CHOICE?  6
ENTER YOUR NUMBER 6 CHOICE?  5
ENTER YOUR NUMBER 7 CHOICE?  8
ENTER YOUR NUMBER 8 CHOICE?  2
ENTER YOUR NUMBER 9 CHOICE? 10
ENTER YOUR NUMBER 10 CHOICE? 4
YOUR LIST:
9 1 7 3 6 5 8 2 10 4
THE 'HELP' LIST NOTES THAT YOU ARE 6 NUMBERS OFF.
1 0 1 0 0 0 1 0 1 0
THE NUMBER (1) INDICATES YOUR CORRECT NUMBER(S).
THIS WILL BE YOUR NUMBER 4 ATTEMPT.
PRESS ENTER/RETURN?
STOP
```

As you can see from only 3 rounds you could become quite involved with the numbers. The 'help' list is only printed 5 times. It will (after 5 rounds) tell you how many you're off, but not which ones. See Fig. 7-2 for the flowchart for this program.

Program Listing

```
100  CLS:DIM A(11)
110  PRINT:PRINT
```

```
120 PRINT TAB(15),"RENUMBER"
130 PRINT
140 PRINT"THIS IS NOT A PROGRAM TO RENUMBER"
150 PRINT"OTHER PROGRAM LINES, BUT"
160 PRINT"A NUMBER GAME. THE COMPUTER"
170 PRINT"WILL HAVE IN ITS MEMORY A SET OF"
180 PRINT"NUMBERS FROM 1 THROUGH 10. THESE"
190 PRINT"NUMBERS WILL BE PRINTED, BUT NOT IN"
```

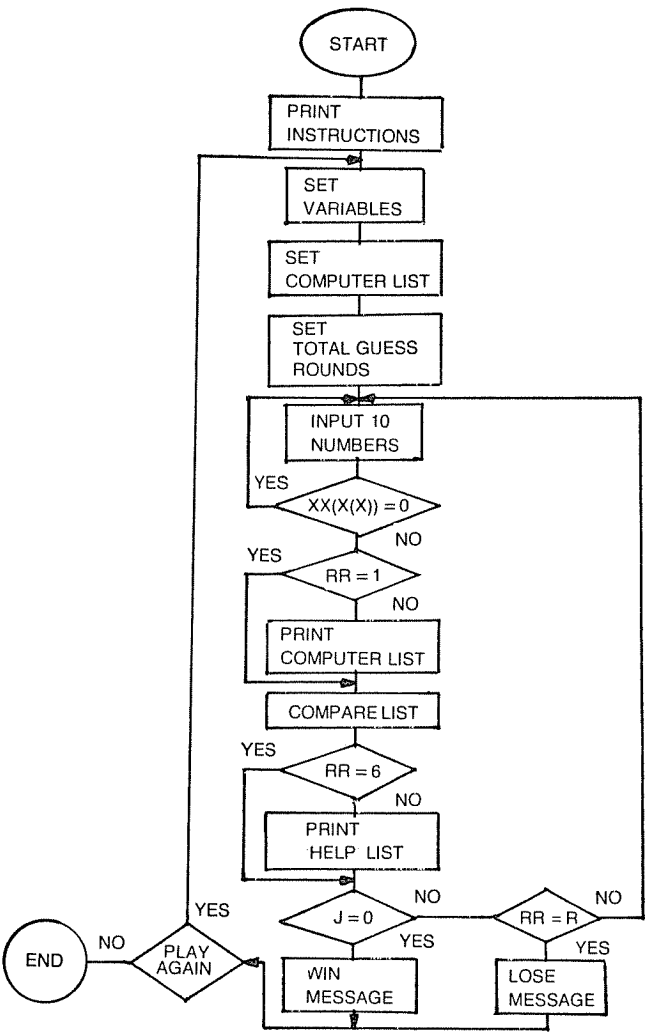


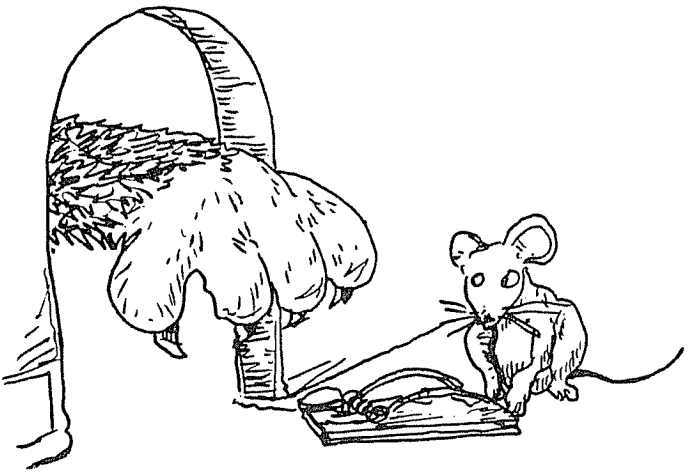
Fig. 7-2. The flowchart for Renumber.

```
200 PRINT"THEIR CORRECT ORDER; ORDERING THEM IS
    YOUR"
210 PRINT"JOB. PRESS ENTER/RETURN";
212 INPUT R$:CLS:PRINT:PRINT
215 PRINT"AN EXAMPLE MIGHT BE:"
220 PRINT"10 4 3 5 7 1 2 6 9 8 (COMPUTER LIST)."
230 PRINT"YOU MUST RENUMBER THE LIST TO MATCH"
240 PRINT"THE COMPUTER'S CORRECT LIST. THE"
250 PRINT"ANSWER MIGHT BE:"
260 PRINT"10 4 3 7 2 1 8 9 6 5 (YOUR LIST)."
270 PRINT"AND YOU MUST DO IT IN AN AMOUNT OF"
280 PRINT"MOVES THE COMPUTER ALLOWS YOU (RANDOM"
290 PRINT"UP TO 30—NOT LESS THAN 15)."
300 PRINT"PRESS ENTER/RETURN TO RECEIVE THE"
310 PRINT"FIRST LIST IF YOU ARE READY";
330 INPUT R$
340 REM SET VARIABLES
350 FOR I=1 TO 10:Z(I)=I:NEXT
360 REM SET COMPUTER LIST
370 I=1:J=0:RR=0:WS=INT(2*RND(0)+1)
380 N=INT(10*RND(0)+1):IF Z(N)=0 THEN 380
390 NN(I)=N:A(I)=NN(I-1)
410 Z(N)=0
420 I=I+1
430 IF I< > 11 THEN 380
435 IF A(I-10)=0 THEN A(I-10)=NN(I-1)
440 REM SET COMPUTER PRINTING LIST
450 FOR I=1 TO 10:C(I)=I:NEXT
460 I=1
470 CN=INT(10*RND(0)+1):IF C(CN)=0 THEN 470
480 NC(I)=CN
490 C(CN)=0
500 I=I+1
510 IF I< >11 THEN 470
520 REM SET AMOUNT OF GUESS ROUNDS
530 R=INT(30*RND(0)+1)
540 IF R< 15 THEN 530
550 CLS:PRINT
560 PRINT"YOU HAVE";R;"ROUNDS TO ENTER"
570 PRINT"THE CORRECT ORDER OF NUMBERS."
580 IF R>=20 THEN PRINT"MORE THAN ENOUGH . . . . ."
590 PRINT
600 PRINT"HERE IS THE COMPUTER'S RANDOM LIST:"
```

```
605 REM PRINT COMPUTER PRINTING LIST
610 FOR I=1 TO 10
615 IF WS=2 THEN PRINT NN(I);:GOTO 630
620 PRINT NC(I);
630 NEXT:PRINT
635 PRINT"(NOTE: THIS RANDOM LIST IS ONLY TO SHOW YOU
    WHAT"
636 PRINT"KIND OF ARRANGEMENT THE NUMBERS MIGHT
    BE IN)."
640 PRINT
650 PRINT"NOW IT'S YOUR TURN, ENTER THE NUMBERS"
660 PRINT"IN WHICH YOU THINK THE CORRECT ORDER"
670 PRINT"MIGHT BE."
673 PRINT"PRESS ENTER/RETURN";:INPUT R$:CLS:PRINT
675 FOR I=1 TO 10:XX(I)=I:NEXT
680 I=1:PRINT
690 PRINT"ENTER YOUR NUMBER";I;"CHOICE";
700 INPUT X(I):IF XX(X(I))=0 THEN PRINT"TRY AGAIN—
    YOU'VE
    USED THAT NUMBER.":GOTO 690
710 XX(X(I))=0:I=I+1
720 IF I < > 11 THEN 690
725 FOR LL=1 TO 1000:NEXT:CLS
730 PRINT
735 IF RR>0 THEN 770:REM SKIP COMPUTER LIST FOR ROUND
    > 1
740 PRINT"COMPUTER'S RANDOM LIST:"
750 FOR I=1 TO 10
755 IF WS=2 THEN PRINT NN(I);:GOTO 765
760 PRINT NC(I);
765 NEXT
770 PRINT
780 PRINT"YOUR LIST:"
790 FOR I=1 TO 10
800 PRINT X(I);:NEXT
810 REM COMPARE LISTS
820 FOR I=1 TO 10
830 IF X(I) < > A(I) THEN J=J+1:(I)=0:GOTO 850
840 J=J:J(I)=1:NEXT:IF J=0 THEN 1050
845 GOTO 860
850 NEXT
860 PRINT
```

```
870 PRINT"THE 'HELP' LIST NOTES THAT YOU ARE";J;"NUM-
    BERS OFF."
875 IF RR >=5 THEN 920
880 FOR I=1 TO 10
890 PRINT J(I);
900 NEXT:PRINT
910 PRINT"THE NUMBER (1) INDICATES YOUR CORRECT
    NUMBER(S)."
915 IF RR=4 THEN PRINT"THIS IS THE LAST 'HELP' LISTING OF
    NUMBERS."
920 RR=RR+1
930 IF RR < > R THEN 950
940 FOR LL=1 TO 1200:NEXT:GOTO 1300:REM CONT/END
950 PRINT
960 PRINT"THIS WILL BE YOUR NUMBER";RR+1;"ATTEMPT."
970 PRINT"PRESS ENTER/RETURN";
980 INPUT R$
990 CLS
1000 J=0:GOTO 675
1050 FOR U=1 TO 1000:NEXT:CLS:PRINT
1060 PRINT"VERY GOOD !!!"
1070 PRINT"AND YOU'VE DONE IT WITHIN THE COMPUTER'S"
1080 PRINT"ALLOTTED AMOUNT OF ROUNDS."
1090 PRINT
1100 PRINT"LET'S BACK UP NOW AND TRY SOMEMORE,"
1110 PRINT"RENUMBER, O.K.";
1120 INPUT R$
1130 IF R$="YES" THEN 1150
1140 GOTO 1160
1150 GOTO 320:REM PLAY AGAIN
1160 PRINT
1170 PRINT"TOO BAD, DID THE NUMBERS GIVE YOU"
1180 PRINT"SOME SORT OF HEADACHE ???"
1190 FOR LL=1 TO 5000:NEXT:CLS
1200 END
1300 CLS:PRINT
1310 PRINT"THAT WAS YOUR LAST AND FINAL ATTEMPT !!"
1320 PRINT"AND TO SAY THE LEAST YOU DIDN'T GET"
1330 PRINT"THE CORRECT SEQUENCE OF NUMBERS."
1340 PRINT"MAYBE YOU SHOULD TRY AND UNSCRAMBLE"
1350 PRINT"SOMETHING LESS COMPLICATED, LIKE"
1360 PRINT"YOUR FINGERS, OR . . . . . "
1370 GOTO 1100
```

Kat & Mouse



Using only 'S' key, you will attempt to slap a mouse. The computer will move you along a 20 foot wall, if you think you are at the mouse house - press the 'S' key and see what happens!

Sample Run

```
ARE INSTRUCTIONS REQUIRED? YES
THIS IS THE GAME OF KAT & MOUSE. IN WHICH YOU (THE KAT)
WILL TRY THAT AGE OLD PROBLEM OF CATCHING A MOUSE.
THE MOUSE HOUSE WILL BE LOCATED ALONG ONE LONG
20 FOOT WALL. THE COMPUTER WILL MOVE YOU (THE KAT)
ALONG THIS WALL, ANYTIME YOU'RE READY TO SLAP, JUST
PRESS THE 'S' KEY. SO REMEMBER ALL YOU HAVE TO DO
IS SLAP YOUR PAW AT THE RIGHT MOUSE HOUSE !!
THE COMPUTER WILL START YOU MOVING ALONG THE WALL.
IF AT ANYTIME YOU THINK YOU'RE AT THE MOUSE HOUSE
AND READY TO SLAP - PRESS THE 'S' KEY.
YOU'RE MOVING . . . . .
(press s)
COME 'ON BUSTER YOU JUST PASSED IT UP ONLY 2
FEET BACK; WATCH YOUR PAW !!
YOUR'RE MOVING . . . . .
(key not pressed in for a period of time)
ALL RIGHT KAT, YOU'VE HAD PLENTY OF TIME TO SLAP
```

```
THAT MOUSE, BUT YOU'VE DONE NOTHING BUT PACE FROM
ONE
END TO THE OTHER . . . GET YOURSELF IN GEAR, THIS IS
ATTEMPT NUMBER 2
YOU'RE MOVING . . . . .
(press s)
COME ' ON BUSTER YOU JUST PASSED IT UP ONLY 8
FEET BACK; WATCH YOUR PAW !!
YOU'RE MOVING . . . . .
(press s)
THAT WASN'T TOO BAD BUSTER, ANOTHER 8 FEET AND
YOU WOULD'VE HAD THAT MOUSE . . . OR MAYBE ITS TAIL !!
YOU'RE MOVING . . . . .
(Press S)
THAT WASN'T TOO BAD BUSTER,
ANOTHER 1 FEET AND YOU
WOULD'VE HAD THAT
MOUSE . . . OR MAYBE
ITS TAIL !!
THIS IS GONNA BE YOUR 5TH SLAP KAT. YOU BETTER
START THINKING. DID I FORGET TO TELL YOU THE MOUSE
HOUSE
MOVES EVERYTIME YOU SLAP? WELL, YOU KNOW IT NOW !
YOU'RE MOVING . . . . .
(press s)
O U C H !
POOR MOUSE, YOU JUST SLAPPED IT THROUGH THE WOOD-
WORK !
BUT IT DID TAKE YOU 6 ATTEMPTS TO GET IT.
WELL BUSTER, WOULD YOU LIKE TO TRY A COMMERCIAL
MOUSETRAP
OR JUST TRY THIS GAME AGAIN? NO
WENT TO THE MOUSE TRAP, HUH?
CHICKEN !!
```

You'll notice from the sample run that it might be somewhat difficult to slap the mouse, after several tries you'll become a regular pro. See Fig. 7-3 for the flowchart for this program.

Program Listing

```
10 CLS:RANDOM
20 PRINT
```

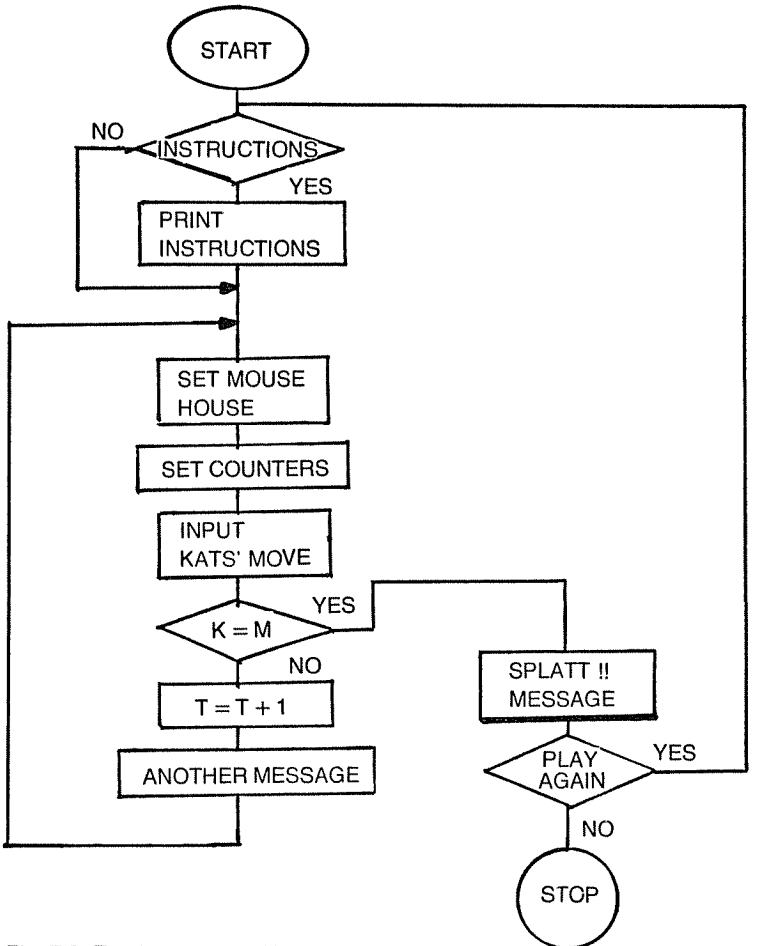


Fig. 7-3. The flowchart for Kat & Mouse.

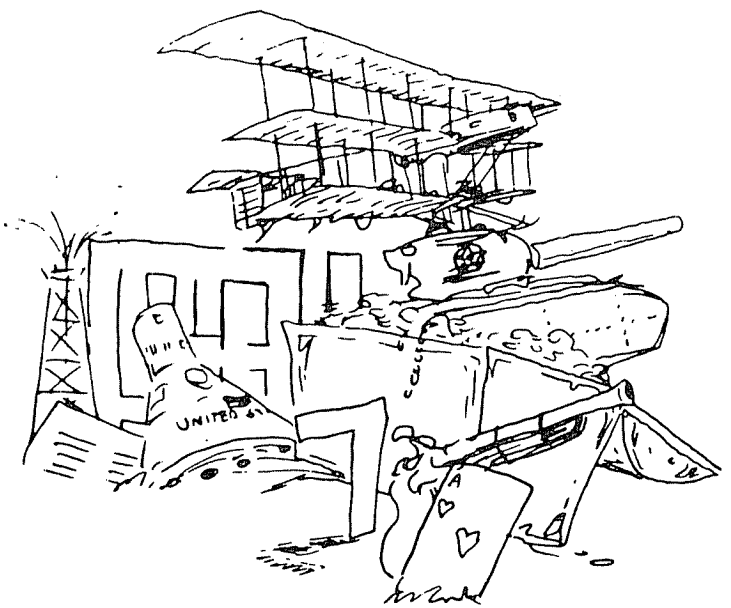
```
25  PRINT TAB(20);"K A T & M O U S E"
30  PRINT
35  PRINT"ARE INSTRUCTIONS REQUIRED";
40  INPUT A$
50  IF A$ < >"YES" AND A$ < >"NO" THEN PRINT"DUMMY" !!
    TRY YES
    OR NO":GOTO 30
60  IF A$="NO" THEN 170
70  CLS:PRINT
80  PRINT"THIS IS THE GAME OF KAT & MOUSE. IN WHICH YOU
    (THE KAT)"
```

```
 90 PRINT"WILL TRY THAT AGE OLD PROBLEM OF CATCHING
    A MOUSE."
100 PRINT"THE MOUSE HOUSE WILL BE LOCATED ONE LONG"
110 PRINT " 20 FOOT WALL. THE COMPUTER WILL MOVE
    YOU (THE KAT)
120 PRINT"ALONG THIS WALL, ANYTIME YOU'RE READY TO
    SLAP, JUST"
130 PRINT"PRESS THE 'S' KEY. SO REMEMBER ALL YOU HAVE
    TO DO"
140 PRINT"IS SLAP YOUR PAW AT THE RIGHT MOUSE HOUSE!!"
160 FOR U=1 TO 8500:NEXT:CLS:PRINT
165 REM CHANGE LOOP IS USER NEEDS LONGER/SHORTER
    INSTRUCTION TIME
170 REM SET THE ROUND COUNTER
180 R=0:RR=10:S=0:Q=0
190 REM SET THE MOUSE HOUSE
200 MH=INT(20*RND(0)+1)
205 IF R > 0 GOTO 270
210 REM THE MOUSE HOUSE WILL MOVE
220 REM WITH EACH KAT'S SLAP
230 REM NOW SET UP THE KAT
235 PRINT
240 PRINT"THE COMPUTER WILL START YOU MOVING ALONG
    THE WALL"
250 PRINT"IF AT ANYTIME YOU THINK YOU'RE AT THE MOUSE
    HOUSE"
260 PRINT"AND READY TO SLAP—PRESS THE 'S' KEY."
270 FOR I=1 TO 3000:NEXT
275 PRINT:PRINT"YOU'RE MOVING.....":R=R+1:REM ROUND
    +1
280 FOR M=0 TO MH
290 FOR J=0 TO 20
300 FOR I=1 TO 5
305 T=R
310 S$=INKEY$
320 FI S$="S" THEN 340
330 NEXT I,J,M
335 GOTO 370
340 IF J=MH THEN 430
350 IF J < MH THEN 510
360 IF J > MH THEN 610
370 PRINT
```

```
375 PRINT"ALL RIGHT KAT, YOU'VE HAD PLENTY OF TIME TO
    SLAP"
380 PRINT"THAT MOUSE, BUT YOU'VE DONE NOTHING BUT
    PACE FROM ONE"
390 PRINT"END TO THE OTHER . . . GET YOURSELF IN GEAR,
    THIS IS"
400 PRINT"ATTEMPT NUMBER";R
410 IF T=5 GOSUB 750
415 REM CONTINUE IF R < > RR
420 IF R < > RR GOTO 200
430 REM MOUSE GOT SLAPPED
440 CLS
450 PRINT
460 PRINT" O U C H !"
470 PRINT"POOR MOUSE, YOU JUST SLAPPED IT THROUGH
    THE WOODWORK !!"
480 PRINT"BUT IT DID TAKE YOU";R;"ATTEMPTS TO GET IT."
490 IF R < 3 THEN PRINT"THAT'S NOT BAD AT ALL."
495 REM STOP/CONT LOOP
500 GOTO 790
510 REM SLAP TOO SHORT
520 IF (MH-J) < 10 THEN 540
530 IF (MH-J) > 10 THEN 570
540 PRINT
545 PRINT"THAT WASN'T TOO BAD BUSTER, ANOTHER";(MH-
    J);"FEET AND"
550 PRINT"YOU WOULD'VE HAD THAT MOUSE . . .";:Q=Q+1
555 IF Q < 3 THEN PRINT"OR MAYBE ITS TAIL !!"
560 PRINT
565 GOTO 410
570 PRINT
575 PRINT"THAT'S INEXCUSEABLE !!";(MH-J);"FEET !!"
580 PRINT"SURELY A KAT OF YOUR DISPOSITION CAN AND
    SHOULD DO"
590 PRINT"BETTER THAN THAT."
600 GOTO 410
610 IF (J-MH) < 10 THEN 630
620 IF (J-MH) > 10 THEN 660
630 PRINT:REM PASSED IT UP STATEMENTS
635 PRINT"COME'ON BUSTER, YOU JUST PASSED IT UP,
    ONLY";(J-MH)
640 PRINT"FEET BACK; WATCH YOUR PAW !!"
```

```
650 GOTO 410
660 PRINT
665 PRINT"PASSED IT UP THAT TIME BY";(J-MH);"FEET, I
    HAVE"
670 PRINT"A FEELING THAT MOUSE IS GONNA HAVE KATS
    PAW FUR"
680 PRINT"SUPPA TONIGHT . . . . ."
690 GOTO 410
700 PRINT
705 PRINT"THAT'S IT BUSTER";R;"SLAPS AND YOU DIDN'T
    EVEN GET"
710 PRINT"THE TAIL OF THAT MOUSE. MAYBE YOU SHOULD
    CONSIDER"
720 PRINT"INVESTING IN A COMMERCIAL MOUSE TRAP, HOW
    ABOUT A"
730 PRINT"ONE OWNER SHOTGUN ??"
740 REM STOP/CONT LOOP
745 GOTO 790
750 PRINT
755 PRINT"THIS IS GONNA BE YOUR";T;"TH SLAP KAT, YOU
    BETTER"
760 PRINT"START THINKING. DID I FORGET TO TELL YOU THE
    MOUSE HOUSE"
770 PRINT"MOVES EVERYTIME YOU SLAP ? WELL, YOU KNOW
    IT NOW !"
780 FOR I=1 TO 2000:NEXT
785 T=0:RETURN
790 REM STOP/CONT
800 PRINT
810 PRINT"WELL BUSTER, WOULD YOU LIKE TO TRY A COM-
    MERCIAL MOUSE TRAP"
820 PRINT"OR JUST TRY THIS GAME AGAIN";
830 INPUT A$
840 IF A$="YES" THEN 10
850 PRINT
860 PRINT
870 PRINT"WENT TO THE MOUSE TRAP, HUH ?"
880 PRINT
890 PRINT"CHICKEN !!"
900 END
```

Chapter 8
Games Using Graphics



These last games (PLAY THE NUMBERS, HIGHER/LOWER, MAZE AND CHANNEL) are designed specifically for the TRS-80™ COMPUTER SYSTEM. Because of the graphics used, these programs will not run on a PET® or APPLE computer.

Play The Numbers

This is a numbers game that you must score 500 points (or better) to win. If you decide to play by yourself the computer will ask if (it) can play also; if you input yes, you'll have to give the computer a name, but the computer will place (its) own bets.

If you bet 20 and only draw 10, you will lose the difference (10 points). If, on the other hand, you bet 20 and drawn 20 you will receive 40 points. The closer you bet to what you think the random number will be, the more points you'll make. If you draw a JOKER, you will lose all points placed on that bet. The first one to score 500 points wins the game. See Fig. 8-1 for the flowchart to this program.

Program Listing

```
5 CLS: PRINT"THIS IS ANOTHER NUMBERS GAME, IN WHICH
  YOU"
6 PRINT"MUST SCORE 500 (OR BETTER) POINTS BEFORE
  YOUR OPPONENT"
7 PRINT"DOES. THERE WILL BE 5 RANDOM NUMBERS
  DRAWN FOR EACH"
```

8 PRINT"PLAYER, THESE NUMBERS WILL THEN BE ADDED TOGETHER. IF"
9 PRINT"YOUR BET DOES NOT EXCEED THIS NUMBER, YOU WILL GAIN BY"

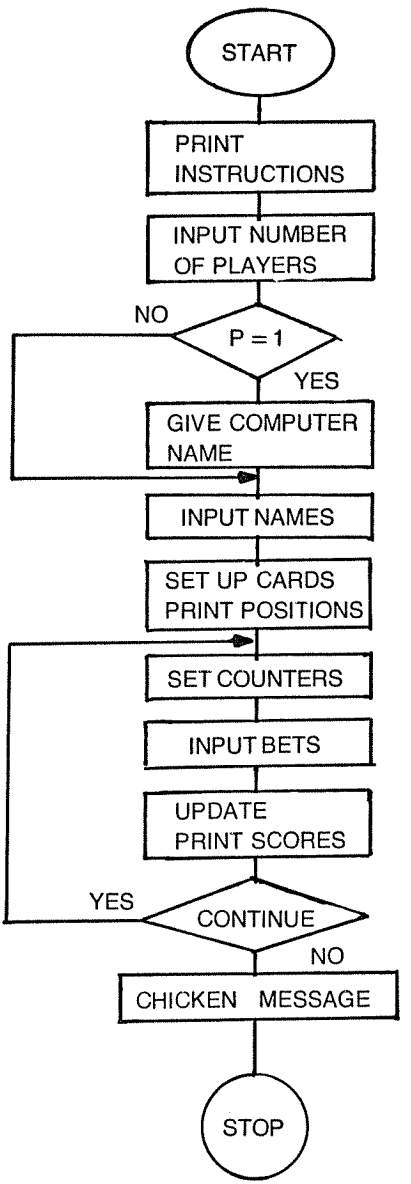


Fig. 8-1. The flowchart for Play the Numbers.

```
10 PRINT"THAT MANY POINTS(PLUS WHAT YOU'VE BET). IF
   YOUR NUMBER"
11 PRINT"DOES EXCEED THAT RANDOM NUMBER AMOUNT,
   YOU WILL LOSE ALL"
12 PRINT"THE DIFFERENCE. IF YOU DRAW A JOKER, YOU
   WILL LOSE ALL"
13 PRINT"THAT YOU'VE BET ON THAT ROUND. YOUR BET
   CAN BE ANYWHERE"
14 PRINT"BETWEEN 1 AND 50, AND UP TO 3 PEOPLE CAN
   PLAY."
15 PRINT"REMEMBER, IF YOU BET 20 AND DRAW 30 (WITH-
   OUT A JOKER)"
16 PRINT"YOU WILL GAIN 50 POINTS." :INPUT"PRESS EN-
   TER";X:CLS
17 PRINT"IF YOU'RE PLAYING BY YOURSELF, THE COMPUTER
   WILL ASK"
18 PRINT"IF (IT) CAN PLAY TOO. IF YOU CHOOSE YES, YOU'LL
   HAVE"
19 PRINT"TO GIVE (IT) A NAME." :INPUT "PRESS ENTER";X
20 RANDOM
30 CLS:PRINT:INPUT"NUMBER OF PLAYERS";P:IF P < 1 OR P >
   3 THEN 30:
   ELSE IF P=1 THEN 31:ELSE 40
31 PRINT"WELL THERE'S ONLY ONE OF YOU, SO CAN I"
32 PRINT"PLAY AGAINST YOU. I WON'T CHEAT !!!"
33 INPUT D$
34 IF D$="YES" THEN P=2 ELSE P=1:PRINT:PRINT"CHICKEN
   !!" :GOTO 40
35 PRINT"YOU HAVE TO GIVE ME A NAME, BUT I'LL MAKE MY
   OWN BETS."
40 PRINT"INPUT";P;"PLAYERS FIRST NAMES":IF P=3:INPUT
   A$
50 IF P > = 2: INPUT B$
60 INPUT C$
61 GOSUB 390
65 A=258:AB=48:A1=(A+AB):Z3=129:N=11
70 CLS:GOSUB 80:GOSUB 350:GOTO 130
80 FOR C=1 TO 5:FOR B=1 TO 3 STEP 4-P
90 K=(C-1)*16:J=K+14:Y=(B-1)*12+9:H=Y+9
100 FOR Z=K TO J:SET(K,Y):SET(K,H):NEXT Z:K=J-14
110 FOR X=Y TO H:SET(K,Y):SET(J,Y):NEXT X
120 NEXT B,C:RETURN
```

```
130 FOR I=1 TO 5
150 D=RND(N)
160 IF D=11 THEN D=1000:IF D=1000 PRINT @ A1, "JOK-
    ER";:A(0)=0:GOTO 180
170 PRINT @A,D;:A(0)=D+A(0):A=A+8:NEXT I
180 IF P > = 2 THEN 190 ELSE 280
190 A2=770:A3=(A2+AB)
200 FOR I=1 TO 5:E=RND(N)
210 IF E=11 THEN E=1000:IF E=1000 PRINT @A3,
    "JOKER";:A(1)=0:GOTO 230
220 PRINT @A2,E;:A(1)=E+A(1):A2=A2+8:NEXT I
230 IF P=3 THEN 240 ELSE 280
240 A4=514:A5=(A4+AB)
250 FOR I=1 TO 5:F=RND(N)
260 IF F=11 THEN F=1000:IF F=1000 PRINT  A5,"JOKE-
    R";:A(2)=0:GOTO 280
270 PRINT @A4,F;:A(2)=F+A(2):A4=A4+8:NEXT I
280 IF P > = 1 PRINT @Z+129,A(0);:ELSE 290
290 IF P > = 2 PRINT @ Z1+129,A(1);:ELSE 310
300 IF P=3 PRINT @Z2+129,A(2);
310 GOSUB 430:GOTO 61
350 Z=((A-AB)+32):PRINT @ Z,C$;
360 Z1=((A*3)-20):PRINT @Z1,B$;
370 Z2=((A*2)-18):PRINT @Z2,A$;
380 RETURN
390 CLS:PRINT:IF P=3 PRINT"LET'S HAVE YOUR BET ";A$:IN-
    PUT M:IF M < 1 OR M > 50 THEN 390
400 IF P > = 2:PRINT"LET'S HAVE YOUR BET ";B$:INPUT M1: IF
    M1 < 1 OR M1 > 50 THEN 400
405 IF D$="YES" THEN 406 ELSE 410
406 M2=RND((10)+40)
407 PRINT"I GUESS I'LL BET";M2;"ON THIS ROUND"
408 FOR I=1 TO 1000:NEXT:GOTO 420
410 PRINT"LET'S HAVE ";C$;" BET":INPUT M2:IF M2 < 1 OR M2
    > 50 THEN 410
420 RETURN
430 FOR I=1 TO 2000:NEXT:CLS
440 PRINT:IF P=3:PRINT A$;" 'S BET WAS";M;"AND DREW ";:IF
    A(2)=0 PRINT"A JOKER":ELSE PRINT A(2)
450 IF P > = 2:PRINT B$;" 'S BET WAS";M1;"AND DREW ";:IF
    A(1)=0 PRINT"A JOKER":ELSE PRINT A(1)
460 PRINT C$;" 'S BET WAS";M2;"AND DREW ";:IF A(0)=0
    PRINT"A JOKER":ELSE PRINT A(0)
```

```
470 PRINT:PRINT"REMEMBER, IF YOU DRAW A JOKER, YOU
    WILL LOSE"
480 PRINT"ALL BETS ON THIS ROUND.....SORRY !!"
490 IF A(2)=0 THEN M4=A(2)-M+Q(4):ELSE M4=A(2)+M+Q(4)
500 IF A(1)=0 THEN M5=A(1)-M1+Q(5): ELSE M5=A(1)+
    M1+Q(5)
510 IF A(0)=0 THEN M6=A(0)-M2+Q(6):ELSE M6=A(0)+
    M2+Q(6)
512 IF M >A(2) THEN M4=(A(2)-M)+Q(4)
514 IF M1 >A(1) THEN M5=(A(1)-M1)+Q(5)
516 IF M2 > A(0) THEN M6=(A(0)-M2)+Q(6)
520 PRINT:PRINT"CURRENT STANDINGS THUS FAR:"
525 PRINT
530 IF P=3:PRINT A$;" 'S TOTAL POINTS ";M4
540 IF P > = 2:PRINT B$; " 'S TOTAL POINTS ";M5
550 PRINT C$;" 'S TOTAL POINTS ";M6
555 IF M4 >=500 AND M4 >M5 AND M4 > M6 GOTO 620
557 IF M5 >=500 AND M5 > M4 AND M5 > M6 GOTO 640
558 IF M6 >=500 AND M6 > M4 AND M6 > M5 GOTO 660
560 FOR I=1 TO 5000:NEXT
570 A(0)=0:A(1)=0:A(2)=0
580 Q(4)=M4
590 Q(5)=M5
600 Q(6)=M6
610 RETURN
620 PRINT"LOOKS LIKE ";A$;" IS THE WINNER WITH A TOTAL"
630 PRINT"OF";M4;"POINTS, CONGRATULATIONS !!!":GOTO
    680
640 PRINT"LOOKS LIKE ";B$;" IS THE WINNER, WINNING WITH"
650 PRINT"A TOTAL OF";M5;"POINTS, GOOD SHOW !!!":GOTO
    680
660 PRINT"CONGRATULATIONS ";C$;", YOUR THE WINNER
    WITH A"
670 PRINT"GRAND TOTAL OF";M6;"POINTS, HURRAH !!"
680 PRINT:PRINT"WOULD YOU LIKE TO PLAY ANOTHER
    ROUND OF"
690 PRINT"PLAY THE NUMBERS";
700 INPUT N$
710 IF N$="YES" THEN 720 ELSE 730
720 M4=0:M5=0:M6=0:GOTO 20
730 PRINT
740 PRINT"CAN'T HANDLE ALL THESE RANDOM NUMBERS ???"
750 END
```

Higher/Lower

This is the game of HIGHER/LOWER, where you'll be using a deck of 52 cards. You'll place your bet after the first card is printed, then you'll input your guess of the next card, either HIGHER or LOWER. After all 52 cards are drawn the computer will print your total amount (won or lost). See Fig. 8-2 for flowchart for this program.

Program Listing

```
10 CLEAR 100:DEFINT A-S
15 RANDOM:DIM A(104)
20 CLS:PRINT:IF Q=1 THEN 130
30 PRINT (TAB(20);"HIGHER/LOWER"
40 PRINT:PRINT"IN THIS GAME A RANDOM CARD WILL BE
   PRINTED, YOU'LL"
50 PRINT"PLACE YOUR BET (ANY AMOUNT) AND THEN DE-
   CIDE IF THE"
60 PRINT"NEXT CARD WILL BE HIGHER OR LOWER."
70 PRINT"TO PLAY:"
```

```
 80 PRINT"THE COMPUTER WILL ASK FOR YOUR BET, THEN
    THE COMPUTER"
 90 PRINT"WILL ASK HIGHER OR LOWER "
100 PRINT"ENTER H FOR HIGHER OR L FOR LOWER. IF YOUR
    GUESS"
110 PRINT"WAS CORRECT, YOU'LL WIN THAT AMOUNT YOU'VE
    BET. IF"
120 PRINT"INCORRECT, YOU'LL LOSE THAT AMOUNT."
130 PRINT:INPUT"PRESS ENTER TO BEGIN";X
140 R=1:K=R*52:J=0:U=14:C1=:C1=0:C2=52:E=0:GOTO 160
150 B=(K-29)*2+((K-50)+401):RETURN
160 REM CARDS
170 FOR X=0 TO 1:FOR Y=1 TO 52:A(X*52+Y)=Y:NEXT Y,X
180 CLS:GOSUB 210
190 CLS:GOSUB 150
200 GOSUB 230:GOTO 240
210 PRINT CHR$(23):PRINT:PRINT:PRINT" . . . . SHUF-
    FLING":FOR L=1 TO 52:X=RND(K):Y=RND(K):S=A(X):A(X)
    =A(Y):A(Y)=S:NEXT:J=1:RETURN
220 M=(A(J)-1)/13:P=A(J)-M*13:RETURN
230 FOR T=1 TO 7:IF T > 6 THEN CLS:GOTO 190
240 GOSUB 220:GOSUB 430:GOSUB 250:GOTO 460
250 IF P=1 P=15:IF P=15 PRINT @B, "ACE";:GOTO 290
260 IF P=11 PRINT  @B, "JACK";:GOTO 290
270 IF P=12 PRINT @B, "QUEEN";:GOTO 290
280 IF P=13 PRINT @B, "KING";:GOTO 290:ELSE PRINT  B,P;
290 C=B+64: GOTO 370
300 IF P=Q PRINT  855, "THEY'RE EQUAL":E=E+1:GOTO 350
310 IF X$="H" AND Q >< PRINT  855, "COR-
    RECT":C1=C1+2:GOTO 350
320 IF X$="L" AND P < PRINT 855, "CORRECT":C1=C1
    +Z:GOTO 350
330 IF X$="H" AND P < Q PRINT  855,"INCORRECT":C1=C1-
    Z:GOTO 350
340 IF X$="L" AND Q < P PRINT @855,"INCORRECT":C1=C1-Z$
350 FOR I=1 TO 1200:NEXT I:PRINT@855
360 RETURN
370 IF M=0 PRINT @C,"HEART";:GOTO 410
380 IF M=1 PRINT @C, "SPADES";:GOTO 410
390 IF M=2 PRINT @C, "CLUBS";:GOTO 410
400 IF M=3 PRINT @C, "D 'MND";
410 GOSUB 480:J=J+1:IF J < K PRINT  1, "O U T OF
    C A R D S":FOR I=1 TO 1500:NEXT I:GOTO 530
```

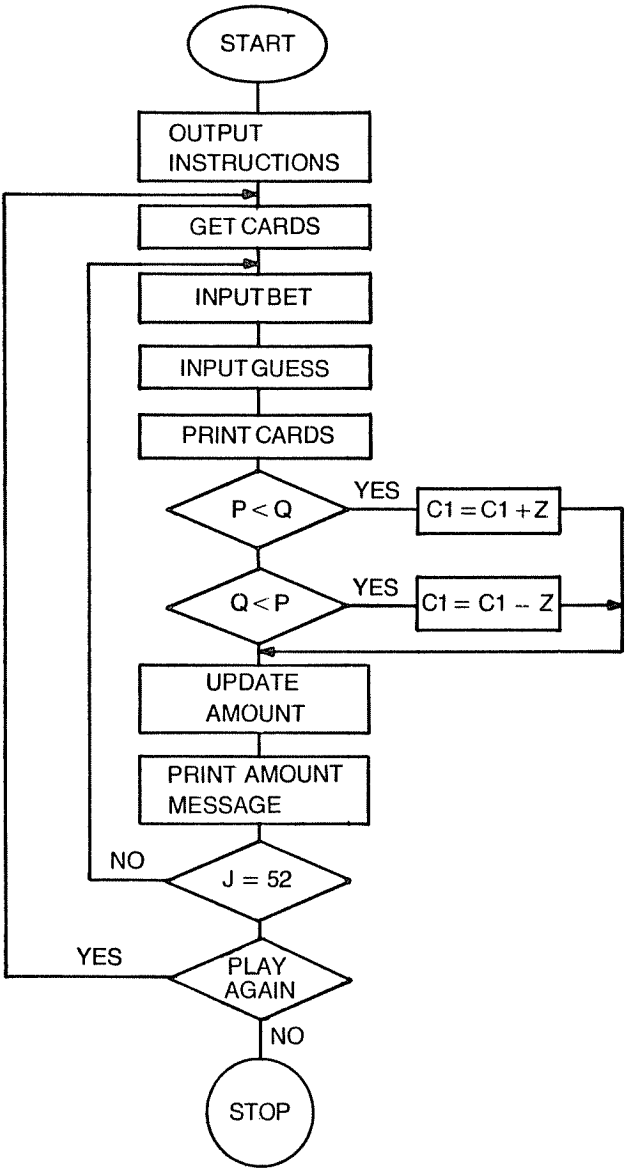
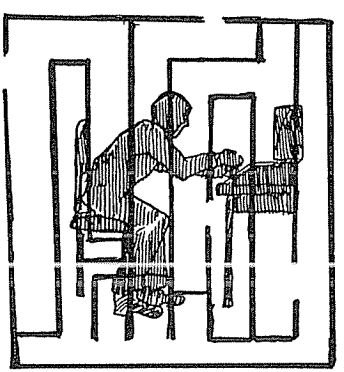


Fig. 8-2. The flowchart for Higher/Lower.

```
420  RETURN
430  X=(T-1)*22:I=X+U:Y=(T-T)*270+18:H=Y+10
440  FOR X=X TO I:SET(X,Y):SET(X,H):NEXT:X=I-14
450  FOR Y=Y TO H:SET(X,Y):SET(I,Y):NEXT:RETURN
```

```
460 Q=P
470 B=B+11:NEXT T
480 IF J > 1 GOSUB 300
490 PRINT @1,"PLACE BET";
495 INPUT Z
500 PRINT @1,"HIGHER/LOWER (H/L)";
505 INPUT X$
510 IF X$ < > "H" AND X$ < > "L" PRINT @1,"TRY AN H OR L,
    TURKEY !!";
    FOR I=1 TO 1500:NEXT I:GOTO 500
520 PRINT @1,"                    ":RETURN
530 CLS:PRINT:PRINT CHR$(23)
540 PRINT"TOTAL CARDS DRAWN: ";C2
550 PRINT"TOTAL CARDS DRAWN EQUAL: ";E
560 IF C1 < =0 THEN 590
570 PRINT"YOU'RE RICHER NOW . . ."
575 PRINT"BY $";C1;"DOLLARS !!"
580 GOTO 615
590 PRINT"YOU ARE IN THE HOLE . . ."
600 PRINT"BY $";C1;"DOLLARS."
615 PRINT:PRINT"ARE YOU READY TO TRY ANOTHER DECK";
630 INPUT A$
640 IF A$="YES" THEN Q=1:GOTO 20
650 PRINT:PRINT"IT'S ONLY COMPUTER MONEY . . ."
660 PRINT"CHICKEN !!!"
670 END
```

Maze



Designed specifically for the TRS-80™ this game uses POKE STATEMENTS to provide the high-speed graphics that make up the maze. After 8 rounds through the maze (providing you make it each time) you will be congratulated. Each time you hit a lighted

area your total count returns to zero. Speed of movement through the maze increases with each entry toward home. The four keys you'll use are:
(U)P
(D)OWN
(L)EFT
(R)IGHT

Starting position will be the lighted block at the bottom of the video screen, left corner. The HOME position is in the upper right corner. All you have to do is hit the vertical line at the 'HOME' position to win a round.

Stay in the dark area without hitting or scraping the lighted area and the computer might let you slide by, but catch the hits or scrapes as you get closer to 'HOME' position. You might want to adjust the brightness and contrast controls to clarify the maze area. Remember, each entry into the HOME position counts as one point and you must get a total of 8 points to win. See Fig. 8-3 for flowchart for this program.

Program Listing

```
 10 CLS
 20 C=191:R=0:T=225
 25 IF Z > 1 THEN 200
 30 PRINT:PRINT
 40 PRINT  148, "*** MAZE ***"
 50 PRINT:INPUT"INSTRUCTIONS";A$
 60 IF A$ < >"YES" THEN 195
 70 PRINT"THIS IS THE GAME OF MAZE:"
 75 PRINT"STARTING POSITION WILL BE THE LIGHTED
    BLOCK AT THE BOTTOM"
 76 PRINT"OF THE VIDEO SCREEN IN THE LEFT CENTER."
 80 PRINT"YOU'LL ONLY BE USING FOUR KEYS TO GET YOUR-
    SELF"
 90 PRINT"TO THE 'HOME' POSITION."
 95 PRINT
100 PRINT"(U)P"
110 PRINT"(D)OWN"
120 PRINT"(L)EFT"
130 PRINT"(R)IGHT"
135 PRINT:PRINT"PRESS ANY KEY TO CONTINUE INSTRUC-
    TIONS."
136 A$=INKEY$:IF A$=" " THEN 136
```

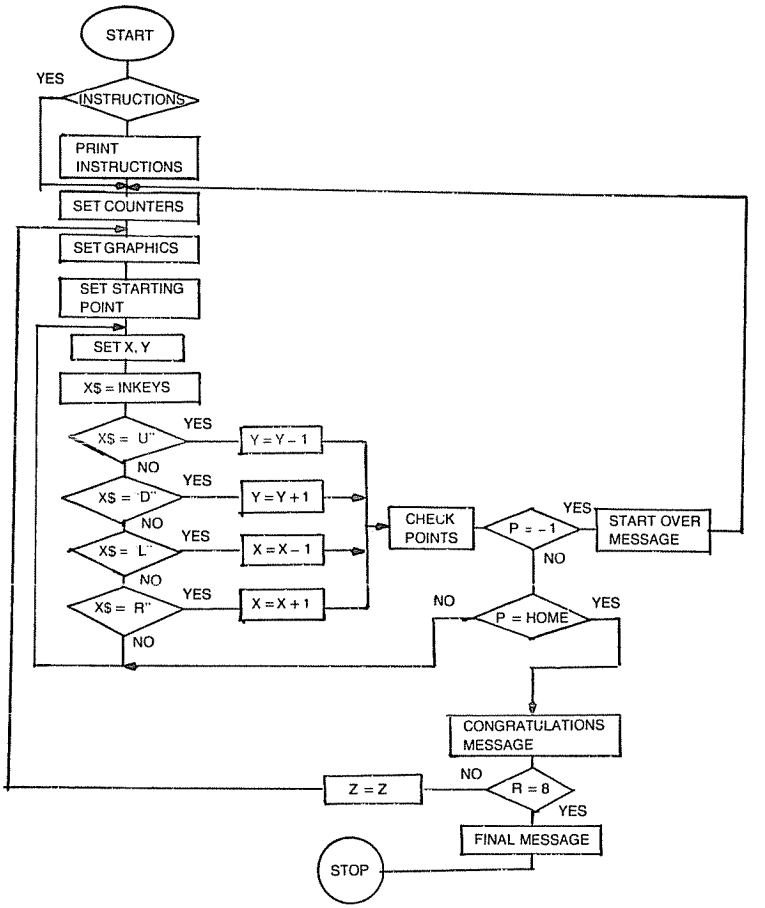


Fig. 8-3. The flowchart for Maze.

```
137 CLS:PRINT:PRINT
140 PRINT"TO SUCCESSFULLY COMPLETE THE GAME, YOU
    MUST COMPLETE"
150 PRINT"EIGHT ROUNDS WITHOUT HITTING THE LIGHTED
    AREA."
160 PRINT"EACH TIME YOU DO (HIT OR SCRAPE A LIGHTED
    AREA) YOUR"
170 PRINT"TOTAL COUNT WILL RETURN TO ZERO."
171 PRINT"IF YOU CHEAT, THE COMPUTER MIGHT NOT
    CATCH IT RIGHT OFF,"
172 PRINT"BUT WAIT UNTIL YOU THINK YOU'RE GOING TO
    MAKE IT 'HOME'."
```

```
175 PRINT"(NOTE: MOVEMENT THROUGH THE MAZE WILL
    INCREASE IN SPEED"
176 PRINT"WITH EACH CORRECT ENTRY TO 'HOME'. ALSO,
    EACH ENTRY TO
177 PRINT" 'HOME' COUNTS AS ONE POINT)."
180 PRINT"PRESS ANY KEY TO BEGIN."
190 A$=INKEY$:IF A$=" " THEN 190
195 CLS
200 FOR X=15360 TO 15402:POKE X,C:NEXT
210 FOR X=15488 TO 15489:POKE X,C:NEXT
220 FOR X=15808 TO 15823:POKE X,C:NEXT
230 FOR X=15872 TO 15900:POKE X,C:NEXT
240 FOR X=15936 TO 15964:POKE X,C:NEXT
250 FOR X=16064 TO 16078:POKE X,C:NEXT
260 FOR X=16137 TO 16142:POKE X,C+4:NEXT
270 FOR X=16192 TO 16194:POKE X,C:NEXT
280 FOR X=16320 TO 16330:POKE X,C:NEXT
290 FOR X=15492 TO 15516:POKE X,C:NEXT
300 FOR X=15562 TO 15566:POKE X,C:NEXT
310 FOR X=15690 TO 15694:POKE X,C:NEXT
320 FOR X=15626 TO 15630:POKE X,C:NEXT
330 FOR X=15633 TO 15642:POKE X,C:NEXT
340 FOR X=15697 TO 15706:POKE X,C:NEXT
350 FOR X=15761 TO 15770:POKEX,C+4:NEXT
360 FOR X=15581 TO 15595:POKE X,C:NEXT
370 FOR X=15645 TO 15659:POKE X,C:NEXT
380 FOR X=15660 TO 15678:POKE X,C-15:NEXT
390 FOR X=15470 TO 15473:POKE X,C:NEXT
400 FOR X=15478 TO 15487:POKE X,C:NEXT
410 FOR X=15534 TO 15551:POKE X,C:NEXT
420 FOR X=15598 TO 15615:POKE X,C:NEXT
430 FOR X=15732 TO 15741:POKE X,C:NEXT
440 FOR X=15831 TO 15836:POKE X,C:NEXT
450 FOR X=15773 TO 15779:POKE X,C:NEXT
460 FOR X=15780 TO 15795:POKE X,C-15:NEXT
470 FOR X=16091 TO 16084:POKE X,C:NEXT
480 FOR X=16145 TO 16148:POKE X,C:NEXT
490 FOR X=16197 TO 16208:POKE X,C-15:NEXT
500 FOR X=16209 TO 16212:OKE X,C:NEXT
510 FOR X=16269 TO 16276:POKE X,C:NEXT
520 FOR X=16339 TO 16347:POKE X,C+4:NEXT
530 FOR X=16150 TO 16156:POKE X,C:NEXT
```

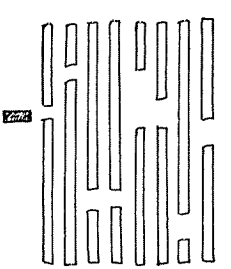
```
540 FOR X=16214 TO 16220:POKE X,C:NEXT
550 FOR X=33 TO 35:SET(44,X):SET(45,X):SET(46,X):NEXT
560 FOR X=16098 TO 16115:POKE X,C:NEXT
570 FOR X=16162 TO 16179:POKE X,C:NEXT
580 FOR X=16088 TO 16095:POKE X,C+4:NEXT
590 FOR X=16226 TO 16243:POKE X,C:NEXT
600 FOR X=16290 TO 16307:POKE X,C:NEXT
610 FOR X=36 TO 39:SET(60,X):SET (61,X):SET(62,X):SET(63,
    X):NEXT
620 FOR X=40 TO 47:SET(61,X):SET(62,X):NEXT
630 FOR X=15903 TO 15918:POKE X,C:NEXT
640 FOR X=15967 TO 15982:POKE X,C:NEXT
650 FOR X=30 TO 32:SET(62,X):NEXT
670 FOR X=15857 TO 15859:POKE X,C:NEXT
680 FOR X=15921 TO 15923:POKE X,C:NEXT
690 FOR X=15985 TO 15987:POKE X,C:NEXT
700 FOR X=16049 TO 16059:POKE X,C:NEXT
710 FOR X=16062 TO 16063:POKE X,C:NEXT
720 FOR X=16126 TO 16127:POKE X,C:NEXT
730 FOR X=16182 TO 16191:POKE X,C:NEXT
740 FOR X=16310 TO 16319:POKE X,C:NEXT
750 FOR X=16380 TO 16383:POKE X,C:NEXT
760 FOR X=0 TO 47:SET(0,X):SET(127,X):NEXT
770 X=35:Y=46:REM STARTING POINT
775 SET(X,Y)
780 PRINT @ 121,"HOME "CHR$(91);
790 X$=INKEY$
800 IF X$="D" THEN 830
810 IF X$="L" THEN 900
820 IF X$="R" THEN 1600
825 IF X$="U" THEN 1400
826 GOTO 790
830 SET(X,Y):Y=Y+1
840 GOSUB 1100
850 X$=INKEY$
855 IF POINT(94,32) OR POINT(95,32) OR POINT(64,47) OR
    POINT(65,47)
    OR POINT(66,47) OR POINT(55,20) OR POINT(56,20) THEN
    1200
860 IF X$="L" THEN 900
870 IF X$="R" THEN 1600
880 IF X$="U" THEN 1400
890 IF Y < > 47 THEN 830 ELSE 2000
```

```
 900 SET(X,Y):X=X-1
 910 GOSUB 1100:X$=INKEY$
 920 FOR A=45 TO 47:IF POINT(22,A) THEN 1200 ELSE NEXT
 925 FOR A=20 TO 22:IF POINT(104,A) THEN 1200 ELSE NEXT
 930 FOR A=15 TO 17:IF POINT(54,A) THEN 1200 ELSE NEXT
 931 IF POINT(106,18) OR POINT(107,18) THEN 1200
 935 IF X$="D" THEN 830
 940 IF X$="R" THEN 1600
 950 IF X$="U" THEN 1400
 960 IF X < > 0 THEN 900 ELSE 2000
1100 FOR I=1 TO T:NEXT:RETURN
1200 CLS:PRINT CHR$(23)
1210 PRINT:PRINT
1220 PRINT"YOU BLEW IT, TURKEY !!"
1225 PRINT"WATCH THE SCRAPING,"
1230 PRINT"AND QUIT TRYING TO CHEAT !!"
1240 FOR I=1 TO 1000:NEXT
1250 Z=2:GOTO 10
1260 CLS:PRINT CHR$(23)
1270 PRINT:PRINT:PRINT
1280 PRINT"GO THE OTHER WAY, DUMMY !!"
1290 PRINT"THERE IS MORE ROOM !!"
1300 GOTO 1240
1400 SET(X,Y):Y=Y-1
1410 GOSUB 1100
1420 X$=INKEY$
1430 IF POINT(26,45) OR POINT(27,45) OR POINT(29,37) OR
     POINT(22,42)
     OR POINT(23,42) OR POINT(24,42) THEN 1200
1440 IF POINT(10,42) OR POINT(11,42) OR POINT(34,45) OR
     POINT(35,45)
     OR POINT(36,45) THEN 1200
1450 IF POINT(1,42) OR POINT(2,42) OR POINT(3,42) OR POINT
     (4,42)
     OR POINT(5,42) THEN 1200
1460 IF POINT(6,36) OR POINT(8,36) OR POINT(10,36) OR
     POINT(12,36)OR POINT(14,36) THEN 1200
1470 IF POINT(30,30) OR POINT(31,30) OR POINT(32,30) OR
     POINT(33,30)
     THEN 1200
1475 FOR A=1 TO 11 STEP 2:IF POINT(A,20) THEN 1200:ELSE
     NEXT
```

```
1480 IF POINT(58,21) OR POINT(59,21) OR POINT(60,21) OR
     POINT(61,21) THEN 1200
1485 FOR A=33 TO 43 STEP 2:IF POINT(A,23) THEN 1200 ELSE
     NEXT
1490 IF POINT(102,45) OR POINT(103,45) OR POINT(104,33) OR
     POINT(105,33) OR POINT(118,33) OR POINT(119,33) THEN
     1200
1500 IF POINT(100,15) OR POINT(101,15) OR POINT(102,15) THEN
     1200
1510 IF POINT(106,18) OR POINT(125,18) OR POINT(126,18) THEN
     1200
1520 IF POINT(2,9) OR POINT(3,9) OR POINT(8,9) OR POINT(9,9)
     THEN1200
1530 IF POINT(3,3) OR POINT(4,3) OR POINT(5,3) OR POINT(6,3)
     THEN 1200
1535 IF POINT(87,0) OR POINT(88,0) OR POINT(89,0) THEN 1200
1540 IF POINT(58,29) THEN 1200
1550 IF X$="D" THEN 830
1560 IF X$="L" THEN 900
1570 IF X$="R" THEN 1600
1580 IF Y < > 0 THEN 1400 ELSE 2000
1600 SET(X,Y):X=X+1
1610 GOSUB 1100
1620 X$=INKEY$
1630 IF POINT(39,46) OR POINT(39,47) THEN 1260
1640 IF POINT(34,32) OR POINT(33,38) OR POINT(33,39) THEN
     1200
1650 IF POINT(63,30) OR POINT(63,31) OR POINT(63,32) THEN
     1200
1655 IF POINT(30,30) OR POINT(31,30) OR POINT(32,30) THEN
     1200
1660 IF POINT(97,21) OR POINT(97,22) OR POINT(97,23) THEN
     1200
1670 IF POINT(115,45) OR POINT(115,46) OR POINT(115,47) THEN
     1200
1680 IF POINT(123,34) OR POINT(123,35) THEN 1200
1685 IF POINT(104,33) OR POINT(105,33) THEN 1200
1690 IF POINT(90,3) OR POINT(90,4) OR POINT(90,5) OR
     POINT(90,6) OR POINT(90,7) THEN 1200
1695 IF POINT(3,3) OR POINT(4,3) OR POINT(5,3) OR POINT(6,3)
     THEN 1200
1700 IF POINT(87,0) OR POINT(88,0) OR POINT(89,0) THEN 1200
```

```
1705 IF POINT(126,0) OR POINT(126,1) OR POINT(126,2) THEN
     1800
1710 IF X$="D" THEN 830
1720 IF X$="L" THEN 900
1730 IF X$="U" THEN 1400
1740 IF X < > 127 THEN 1600 ELSE 2000
1800 CLS:R=R+1:PRINT CHR$(23)
1810 FOR I=1 TO 500:NEXT
1820 PRINT:PRINT
1830 PRINT"CONGRATULATIONS !!!"
1840 PRINT"YOU'VE MADE IT HOME !!"
1841 IF R=8 THEN 1870
1845 PRINT"THIS IS ROUND NUMBER";R
1850 IF R< >8 PRINT"YOU STILL HAVE";8-R;"ROUNDS TO GO."
1860 T=T-25:PRINT:GOTO 180
1870 PRINT"THAT TAKES CARE OF 8 ROUNDS !!"
1875 PRINT"CONGRATULATIONS . . . . ALL 8 IN A ROW !!"
1880 PRINT"LET'S TRY ANOTHER 8";
1890 INPUT A$
1900 IF A$="YES" THEN Z=2:GOTO 10
1910 PRINT:PRINT"CHICKEN!!!"
1920 END
2000 CLS:PRINT CHR$(23)
2010 PRINT:PRINT
2020 PRINT"I DON'T KNOW WHERE YOU THINK"
2030 PRINT"YOU ARE GOING TURKEY, BUT YOU'D"
2040 PRINT"BETTER KEEP IT ON THE RIGHT"
2045 PRINT"TRACK!!!"
2050 FOR I=1 TO 2000:NEXT:Z=2:GOTO 10
```

Channel



This is the challenging game of Channel. Where you'll be maneuvering a block through random openings on vertical bars. Be sure you go through the openings or you will receive an error point (12 errors possible, per run).

Each set comprises 10 runs; the block increases in speed as the runs increase. If you want to move the block to the right, press the 'M' key (you do not need to press enter) to move through the openings. Then press the 'S' key to stop right movement of the block and continue moving up/down.

After 10 runs, the total errors will be printed with a message, after which instructions will be listed for the second half of the game. Approximately the top half of the vertical bars will be in "steps" (for the second half of the game). You must figure which opening the computer has selected and move your block through it. Needless to say you must be exact, because the computer will not allow any margin for error.

You'll control the block to the right side of the video (as in the first half) and "hit" the lighted block area (this area will be about a half inch long, down the frame). This lighted area must be "hit" straight in, not up/down. If there is an opening in the last vertical bar straight across from the lighted area, you must first go up/down then "hit" the lighted area, otherwise you'll receive an error point.

As with the first half a total of 10 runs will be completed after which the total errors and a message will be printed. See Fig. 8-4 for the flowchart for this program.

Program Listing

```
100 DIM A(53) ,Z(50) ,B(20)
150 CLS:RANDOM:PRINT
200 PRINT TAB(15),"CHANNEL"
250 PRINT
300 PRINT"THIS IS THE CHALLENGING GAME OF CHANNEL."
400 PRINT"YOU'LL ONLY BE USING THE 'M' KEY AND THE 'S'."
450 PRINT"KEY. TO MOVE RIGHT PRESS THE 'M' KEY, TO"
500 PRINT"MOVE UP/DOWN PRESS THE 'S' KEY. YOU WILL
    NOTICE"
550 PRINT"THE OPENINGS ON THE VERTICAL BARS. TO BE
    SUCCESSFUL"
555 PRINT"WITHOUT ERROR, YOU MUST MAKE IT THROUGH
    ALL OPENINGS"
600 PRINT"WITHOUT TOUCHING THE TOP OR BOTTOM OF
    THE OPENINGS."
655 PRINT"AFTER GOING THROUGH ALL OPENINGS, YOU
    MUST 'HIT' THE"
700 PRINT"BLOCK STRAIGHT ON AT THE RIGHT OF THE
    VIDEO SCREEN."
755 PRINT"A TOTAL OF 10 RUNS PER SET (OF TWO SETS) WILL
    BE COM-"
800 PRINT"PLETED. AFTER EACH SET YOUR TOTAL ERRORS
    WILL BE"
850 PRINT"PRINTED. REMEMBER, ONLY GO THROUGH THE
    OPENINGS ON"
```

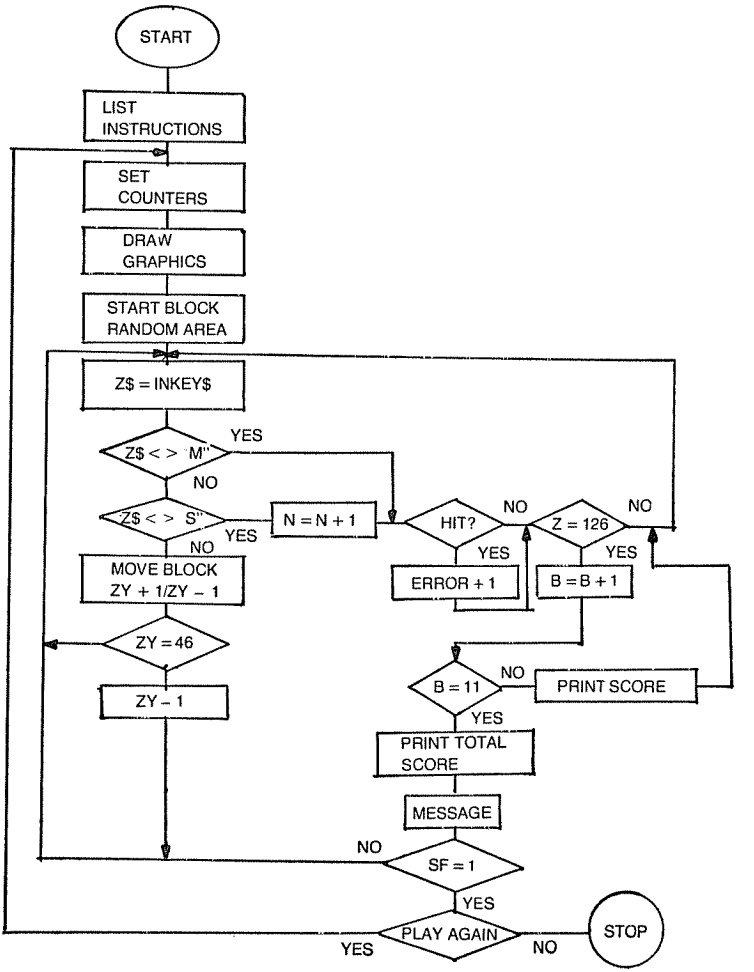


Fig. 8-4. The flowchart for Channel.

```
 855  PRINT"THE VERTICAL BARS."
 900  PRINT"PRESS ENTER TO BEGIN . . . . .";
 904  INPUT E$
 905  B=1:JK=14:T=2:GOSUB 910:IF YY < = 35 THEN
      YB=YY:ELSE YB=20
 908  GOTO 1070
 910  FOR S=0 TO 11:A(S)=S:NEXT
 920  FOR C=0 TO 47:Z(C)=C:NEXT
1000  CLS:V=8:AG=0
```

```
1001 FOR L=0 TO 47:SET(0,L):SET(127,L):NEXT
1002 FOR M=0 TO 127:SET(M,0):SET(M,47):NEXT
1010 XX=20:N=0
1012 XX=XX+V:IF XX > = 122 THEN RETURN
1015 YY=RND(37):IF Z(YY)=0 THEN 1015
1020 A(N)=YY:N=N+1:VV=N
1030 IF SF=1 THEN GOSUB 1580:GOSUB 1600:GOTO 1045:REM
     SECOND HALF
1035 FOR X=0 TO YY:SET(XX,X):NEXT
1040 Z(YY)=0:YY=YY+3
1045 IF SF=1 THEN Z(YY)=0:YY=YY+2:GOSUB 1650:GOTO 1060
1050 FOR X=YY TO 46:SET(XX,X):NEXT
1060 GOTO 1012
1070 REM START AT RANDOM AREA—LEFT SIDE OF VIDEO
1080 SET(126,YB+5):SET(126,YB+6):SET(126,YB+7)
1100 Z=RND(20):IF Z < 5 THEN 1100
1105 ZY=RND(46):N=0
1110 Z$=INKEY$:IF Z < > "M" THEN 1160
1120 Z=Z+1:SET(Z,ZY):FOR NM=1 TO JK:NEXT
1125 IF Z=126 THEN 1300
1130 RESET(Z,ZY):Z$=INKEY$:IF Z$="S" AND Z > 36 THEN
     N=N+1
1140 IF Z$ < > "S" THEN 1120
1150 IF ABS(ZY-A(N)) > T THEN 1250:ELSE A(N)=1
1160 SET(Z,ZY):FOR NM=1 TO JK:NEXT
1170 RESET(Z,ZY):IF ZY=46 THEN R=1
1180 IF R=1 THEN 1200
1190 IF ZY > = 0 THEN ZY=ZY+1:GOTO 1110
1200 IF ZY < 47 THEN ZY=ZY-1:R=1:IF ZY=0 THEN R=0:GOTO
     1190
1210 GOTO 1110
1250 PRINT @129, "ERROR";
1255 A(N)=0
1260 FOR NM=1 TO 50:NEXT
1265 PRINT @129,"       ";
1270 GOTO 1110
1300 REM CHECK FOR TOTAL ERRORS PER 1 RUN
1310 FOR I=0 TO VV-1
1315 IF A(I)=1 THEN AG=AG:ELSE AG=AG+1
1320 NEXT
1330 PRINT @ 65, "ERRORS =";AG;
1340 PRINT @ 129, "RUNS =";B;
```

```
1350 FOR LL=1 TO 1500:NEXT
1360 B(B)=AG
1365 B=B+1:JK=JK-1
1370 IF B < > 11 THEN GOSUB 910:GOTO 1070
1380 REM ADD TOTAL ERRORS PER 10 RUNS
1385 FOR I=1 TO B:TE=TE+B(I)
1389 FOR LL=1 TO 3
1390 PRINT @ 193, "TOTAL";
1395 PRINT@ 257, "ERRORS =";TE;
1400 NEXT LL,I
1410 FOR LL=1 TO 1500:NEXT
1415 PRINT:PRINT
1418 REM PRINT MESSAGE FOR TOTAL ERRORS RECEIVED
1420 IF TE >=0 AND TE <=20 THEN 1470
1430 IF TE >=21 AND TE <=40 THEN 1480
1440 IF TE >=41 AND TE <=60 THEN 1490
1450 IF TE >=61 AND TE <=80 THEN 1500
1460 IF TE >=81 THEN 1510
1470 PRINT"THAT IS A REALLY GOOD SCORE, ONLY";TE;"ER-
     RORS !!!":GOTO 1520
1480 PRINT"THAT'S NOT A BAD SCORE, JUST THINK, YOU
     COULD'VE DONE WORSE !!":GOTO 1520
1490 PRINT"REALLY GETTING UP INTO THE HIGH ERRORS ??"
1495 PRINT "WITH";TE;"ERRORS, YOU SHOULDN'T TELL ANY-
     ONE !!!":GOTO 1520
1500 PRINT"YOU MISSED THE POINT OF THE GAME, YOU
     WERE"
1505 PRINT"SUPPOSED TO GET AS FEW ERRORS AS
     POSSIBLE. . . ."
1508 PRINT"YOU ENDED UP WITH";TE;"!!!!":GOTO 1520
1510 PRINT"THAT IS SOMETHING !!!"
1515 PRINT"CAN YOU MAKE IT THROUGH YOUR OWN HOUSE,
     WITHOUT"
1517 PRINT"HITTING A WALL ??? WITH";TE;"ERRORS YOU
     PROBABLY"
1518 PRINT"FIND IT HARD, DON'T YOU ???"
1520 FOR LL=1 TO 3900:NEXT
1525 IF SF=1 THEN 1900
1530 TE=0:SF=1:B=1:T=0:JK=14
1540 GOSUB 1700:GOSUB 910:GOTO 1070
1550 REM STEP VERTICAL BAR FOR SECOND HALF
1580 FOR X=0 TO YY STEP 3:SET(XX,X):NEXT
```

```
1590 RETURN
1600 YK=YY+4
1605 IF YK > = 44 THEN YK=YY-4
1608 REM YK CAN BE USED IN PLACE OF 47 IN LINE 1650 TO
     CHANGE GRAPHIC
1610 RETURN
1650 FOR X=YY TO 47
1660 SET(XX,X):NEXT
1670 RETURN
1700 CLS:PRINT:REM INSTRUCTIONS FOR SECOND HALF
1710 PRINT"THE SECOND HALF OF THE GAME WILL BE"
1720 PRINT"SOMETHING LIKE THE FIRST, EXCEPT THE"
1730 PRINT"TOP PART OF THE VERTICAL BARS WILL BE"
1740 PRINT"IN STEPS."
1745 PRINT"YOU'LL HAVE TO FIGURE WHICH OPENING THE"
1750 PRINT"COMPUTER HAS SELECTED AS THE CHANNEL."
1755 PRINT"(YOU MUST BE EXACT)"
1760 PRINT"A TOTAL OF 10 RUNS THROUGH THE CHANNEL
     WILL"
1770 PRINT"BE COMPLETED. WITH MOVEMENT INCREASING
     AS"
1780 PRINT"THE ROUNDS INCREASE . . . . . GOOD LUCK !!!"
1800 PRINT
1810 PRINT"PRESS ENTER TO BEGIN";
1820 INPUT E$
1830 CLS:RETURN
1900 PRINT:PRINT
1910 PRINT"ARE YOU READY TO CHANNEL SOME MORE";
1920 INPUT E$
1930 IF E$="YES" THEN 1960
1940 IF E$="NO" THEN 1970
1950 PRINT"THAT WAS A YES OR NO QUESTION . . . TRY
     AGAIN":GOTO 1900
1960 TE=0:SF=0:GOTO 905
1970 CLS
1980 PRINT CHR$(23)
1990 PRINT:PRINT
2000 PRINT"CHICKEN !!"
2010 FOR LL=1 TO 5000
2020 NEXT
2030 END
```

Appendices

This section contains some of the statements used in the TRS-80™, APPLE™ and PET® COMPUTERS. Only the statements that differ from one computer to the next are listed.

Appendix A TRS-80 BASIC

Glossary For Level II Basic

ADDRESS: A value specifying the location of a byte in memory; decimal values are used in LEVEL II.
ALPHANUMERICS: The set of letters A-Z, the numerals 0-9, and various punctuation marks and special characters.
ARGUMENT: The value which is supplied to a function and then operated on to derive a result.
ARRAY: An arrangement of elements in one or more dimensions.
ASCII: American Standard Code for Information Interchange; in Level II BASIC, DECIMAL VALUES are used to specify ASCII codes.
ASSEMBLER: A program that converts a symbolic-language program into a machine-language program.

BASIC: Beginners All-Purpose Symbolic Instruction Code.
BAUD: Signaling speed in bits per second; LEVEL II's cassette interface operates at 500 baud (500 bits per second).
BINARY NUMBER: A number represented in the base-two number system using only binary digits "0" and "1".
BIT: Binary-digit, the smallest memory cell in a computer.
BYTE: The smallest memory unit that can be addressed in BASIC, consisting of 8 consecutive bits.

DECIMAL NUMBER: A number represented in the base-ten number system using the digits 0-9.

EXPRESSION: A combination of one or more operations, constants and variables.

FILE: An organized collection of related data.

HEXADECIMAL NUMBER: A number represented in the base-16 number system using the digits 0-9 plus A,B,C,D,E,F.

INTRINSIC FUNCTION: A function (usually a complicated function) that may be "built-in" to the computer's ROM and may be used directly in a BASIC statement.

LOGICAL EXPRESSION: An expression which is either True or False: if True,-1 is returned; if False, 0 is returned.

MACHINE LANGUAGE: The language used directly by the Computer, written as binary-coded instructions.

PORT: One of 256 channels through which data can be input to or output from the Computer.

RAM: Random Access Memory; memory available to the user for writing programs and storing data.
ROM: Read Only Memory; memory which is permanently programmed and may be read but not written into; LEVEL II BASIC is stored in ROM.

ROUTINE: A sequence of instructions to carry out a certain function.

STATEMENT: A complete instruction in BASIC.
STRING: A sequence of alphanumeric characters ranging in length from zero (the "null" string) to 255.
SUBROUTINE: A sequence of instructions for performing a desired function; may be accessed many times from various points in a program.

VARIABLE: A quantity that can take on any of a given set of values.
VARIABLE NAME: The label by which a given variable is addressed.

TRS-80 Level II Error Codes

CODE	ABBREVIATION	ERROR	CODE	ABBREVIATION	ERROR
1	NF	NEXT without FOR	13	TM	Type mismatch
2	SN	Syntax error	14	OS	Out of string space
3	RG	Return without GOSUB	15	LS	String too long
4	OD	Out of data	16	ST	String formula too complex
5	FC	Illegal function call	17	CN	Can't continue
6	OV	Overflow	18	NR	NO RESUME
7	OM	Out of memory	19	RW	RESUME without error
8	UL	Undefined line	20	UE	Unprintable error
9	BS	Subscript out of range	21	MO	Missing operand
10	DD	Redimensioned array	22	FD	Bad file data
11	/0	Division by zero	23	L3	Disk BASIC only
12	ID	Illegal direct			

Error Messages

NF NEXT without FOR: NEXT is used without a matching FOR statement. This error may also occur if NEXT variable statements are reversed in a nested loop.
SN Syntax Error: This usually is the result of incorrect punctuation, open parenthesis, an illegal character or a misspelled command.
RG RETURN without GOSUB: A RETURN statement was encountered before a matching GOSUB was executed.
OD Out of Data. A READ or INPUT # statement was executed with insufficient data available. DATA statement may have been left out or all data may have been read from tape or DATA.
FC Illegal Function Call: An attempt was made to execute an operation using an illegal parameter. Examples: square root of a negative argument, negative matrix dimension, negative or zero LOG arguments, etc. Or USR call without first POKEing the entry point.
OV Overflow: A value or derived is too large or small for the computer to handle.
OM Out of Memory: All available memory has been used or reserved. This may occur with very large matrix dimensions, nested branches such as GOTO, GOSUB, and FOR-NEXT Loops.
UL Undefined Line: An attempt was made to refer or branch to a non-existent line.
BS Subscript out of Range: An attempt was made to assign a matrix element with a subscript beyond the DIMensioned range.
DD Redimensioned Array: An attempt was made to DIMension a matrix which had previously been dimensioned by DIM or by de-fault statements. It is a good idea to put all dimension statements at the beginning of a program.
/0 Division by Zero: an attempt was made to use a value of zero in the denominator.
ID Illegal Direct: The use of INPUT as a direct command.

TM Type Mismatch: An attempt was made to assign a non-string variable to a string or vice-versa.

OS Out of String Space: The amount of string space allocated was exceeded.

LS String Too Long: A string variable was assigned a string value which exceeds 255 characters in length.

ST String Formula Too Complex: A string operation was too complex to handle. Break up the operation into shorter steps.

CN Can't Continue: A CONT was issued at a point where no program exists, e.g., after program was ENDed or EDITed.

NR No RESUME: End of program reached in error-trapping mode.

RW RESUME without ERROR: A RESUME was encountered before ON ERROR GOTO was executed.

UE Unprintable Error: An attempt was made to generate an error using an ERROR statement with an invalid code.

MO Missing Operand: An operation was attempted without providing one of the required operands.

FD Bad File Data: Data input from external source (i.e., tape) was not correct or was in improper sequence, etc.

L3 DISK BASIC only: An attempt was made to use a statement, function or command which is available only when the TRS-80 Mini Disk is connected via the Expansion Interface.

Saving Memory Space

1. When your program is operating properly, delete all unnecessary REM statements from your running version.

2. Do not use unnecessary spaces between statements, operators, etc.

3. When possible, use multiple-statement program lines (with a colon between each two statements). Each time you enter a new line number it costs you 5 bytes.

4. Use integer variables whenever possible, for example,

```
FOR I% = TO 10
```

Integers take only two bytes. Single precision takes 7 and double precision takes 11 bytes.

5. Using subroutines will save program space if the operation is called from different places several times. If a routine is always called from the same place, use unconditional branches (GOTOs). Each active GOSUB takes 6 bytes; a GOTO takes none at Run time.

6. Structure your calculations so as to use as few parantheses as possible. It takes 4 bytes to process parentheses. And since these operations inside parentheses are done first, the result of each parenthetical expression must be stored (this takes 12 bytes).

7. Dimension arrays sparingly. When you set up a matrix, the Computer reserves 11 subscript addresses for each DIMension, even if the space is not filled. Use the zero subscript elements, since they are always available.

8. Use DEF statements when you will be working with values other than single precision (strings, integers and double precision). A DEF statement takes 6 bytes but this is made up for fairly quickly since you don't need to use type declaration characters with the variable names.

Control, Graphics, and ASCII Codes for the TRS-80

CODE	Function	CODE	Function
0-7	None	11	Top of form (with line printer)
8	Backspaces and erases current character	12	Top of form (with line printer)
		13	Line feed/carriage return
9	None	14	Turns on cursor
10	Line feed/carriage return	15	Turns off cursor

CODE	Function
16-22	None
23	Converts to 32 character mode
24	Backspace Cursor
25	Advance Cursor
26	Downward linefeed
27	Upward linefeed
28	Home, return cursor to display position (0,0)
29	Move cursor to beginning of line
30	Erases to the end of the line
31	Clear to the end of the frame

Code	Character
32	space
33	!
34	"
35	#
36	$
37	%
38	&
39	'
40	(
41	)
42	*
43	+
44	'
45	-
46	.
47	/
48	0
49	1
50	2
51	3
52	4
53	5
54	6
55	7
56	8
57	9
58	:
59	;
60	<
61	=
62	>
63	?
64	@
65	A
66	B
67	C
68	D
69	E
70	F
71	G
72	H
73	I
74	J
75	K
76	L
77	M
78	N
79	O
80	P
81	Q
82	R
83	S
84	T
85	U
86	V
87	W
88	X
89	Y
90	Z
91	or [
92	
93	
94	
95	—
96-127	lower case for codes 64-95
128	Space

Appendix B Apple BASIC

System and Utility Commands

LOAD	Loads a program from tape.
SAVE	Saves a program on tape.
NEW	Deletes program in memory.
RUN	Executes program starting at lowest line number.
RUN 100	Executes program starting at line 100.
STOP	Halts execution—prints line number.
END	Halts execution—no message.
ctrl c	Used in immediate mode to halt program or listing.
reset	Unconditional jump to Monitor.
CONT	Continues execution of program.
TRACE	Debugging aid; lists each line number as executed.
NOTRACE	Turns off TRACE.
PEEK(X)	Returns contents, location X.
POKE X,13	Changes contents memory location X to 13.
WAIT X,Y,Z	Waits until contents of location X, when XORed with Z and ANDed with Y, gives non-zero result.
CALL X	Goes to machine-language subroutine beginning at memory location X.
USR(X)	Passes value X to a machine-language subroutine.
HIMEN:	Sets highest memory address available to APPLESOFT program use.
LOMEN:	Sets lowest memory address available to APPLESOFT program use.
LIST	Lists entire program.
List X-Y	Lists lines from X to Y.
DEL X,Y	Deletes lines from X to Y.
REM XYZ	Remarks for writing program; ignored during RUN.
VTAB Y	Moves cursor to line Y (1 to 24).
HTAB X	Moves cursor to position X (1 to 40).
TAB(X)	Only in PRINT statement; moves cursor to position X (1 to 40).
POS(0)	Returns current horizontal position of cursor (0 to 39).
SPC(X)	Only in PRINT statement; puts X spaces between last item printed and next.
HOME	Clears screen and puts cursor at top.
CLEAR	Resets all variables to zero.
FRE(0)	Returns amount of memory still available to user.
FLASH	Sets computer output to flashing.
INVERSE	Sets computer output to black on white.
NORMAL	Turns off flashing or inverse output.
SPEED=X	Sets character output rate (0 to 255).
esc A	Moves cursor one space right.
esc B	Moves cursor one space left.
esc C	Moves cursor one space down.
esc D	Moves cursor one space up.
right-arrow	Enters character under cursor into memory, and moves cursor one space right.

left-arrow Deletes one character from line being typed, and moves cursor one space left.

ctrl X Cancels line currently being typed.

Graphics and Game Controls

GR Sets low-resolution graphics; clears top 40 × 40 area to black; bottom 4 lines text.

COLOR=X Sets color (0 to 15) for next plotting.

PLOT X,Y Places colored dot at horizontal coordinate X and vertical coordinate Y. X and Y are from 0 to 39. 0,0 is top left.

HLIN X1,X2 AT Y Draws horizontal line from the point at X1,Y to the point at X2,Y.

VLIN Y1,Y2 AT X Draws vertical line from the point at X,Y1 to the point at X,Y2.

SCRN(X,Y) Returns color on the screen at the point X,Y.

High-Resolution Graphics

HGR Sets high-resolution graphics, clears top 280 × 160 area to black; bottom 4 lines text.

HGR 2 Sets high-resolution graphics, clears entire 280 × 192 screen to black.

HCOLOR =X Sets color (0 to 7) for next plotting.

HPLOT X,Y Places color dot at horizontal coordinate X and vertical coordinate Y. X is from 0 to 279; Y is from 0 to 159 (HGR) or to 191 (HGR 2). 0,0 is top left corner.

HPLOT X1, Y1 TO X2, Y2 Draws line from the point at X1, Y1 to the point at X2, Y2. Command may be extended to additional points . . . TO XN, YN.

SHLOAD Loads a shape table from tape.

DRAW 3 AT X,Y Draws shape definition #3 from a previously loaded shape table, starting at the point X,Y in color set by HCOLOR.

XDRAW 3 AT X,Y Draws shape definition #3 from shape table; color of each point plotted is complement of color on screen at that time.

ROT=X Sets rotation of shape for DRAW or XDRAW. ROT=0 is vertical, ROT=16 is 90 degrees clock-wise, ROT=32 is 180 degrees clockwise, etc.

SCALE=X Sets scale (1 to 255) of shape for DRAW or XDRAW.

Game Controls

PDL(X) Returns setting from 0 to 255 of game control X (0 to 3).

PEEK (X-16287) If > 127, button on game control X (0 to 2) is being pressed.

PEEK (-16336) "Clicks" APPLE's speaker.

Appendix C PET® BASIC

BASIC Statements

DEF The user can define built-in functions like (SQR,SGN,ABS etc.) through the use of the DEF statement. The name of the function is 'FN' followed by a legal variable name.

DIM Allocates space for matrices. All matrix examples are set to zero by the DIM statement.

END Terminates program execution without printing a BREAK message (line number).

GET This function scans the keyboard and does not wait for a carriage return to be pressed. A$=" "(null string) and A=0 after execution of these statements computer stays in loop until key has been pressed.

INPUT Request information character by character until carriage return from the keyboard.

LET Assigns a value to a variable. The "LET" function is optional.

STOP Halts program execution and prints BREAK IN LINE 100 (example).

CONT Can be executed only in a direct mode.
Resumes program execution after STOP,END or use of STOP key.

BASIC Commands

CLR Deletes all stored references to variables, arrays, functions, GOSUB, and FOR-NEXT context.

LIST Lists entire program, lists one line or lists lines 100-200 (example).

LOAD Loads first program on cassette #1. If a name is specified the computer will search for that name on the cassette.

NEW Deletes any program currently stored in memory.

RUN Begins execution of program starting at lowest line number. Run 50, begins program execution at line 50 (example).

SAVE Save BASIC text on cassette #1.

SAVE Save on 2ND cassette unit.
"NAME",2

SAVE Save and write end of tape block.
"NAME",2,1

VERIFY Compares contents of memory with file, reports success/failure of compare.

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