A new computer game from CREATIVE COMPUTING Magazine.....

DEPTH CHARGE

DESCRIPTION

In this program, you are captain of the destroyer, USS Digital. An enemy submarine has been causing trouble and your mission is to destroy it. You may select the size of the "cube" of water you wish to search in. The computer then determines how many depth charges you get to destroy the submarine.

Each depth charge is exploded by you specifying a trio of numbers; the first two are the surface coordinates, the third is the depth. After each depth charge, your sonar observe r will tell you where the explosion was relative to the submarine.

PROGRAM AUTHOR

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USING THE PROGRAM

1. Type in the DEPTH CHARGE program on your computer. Convert it, if necessary, to your dialect of BASIC.

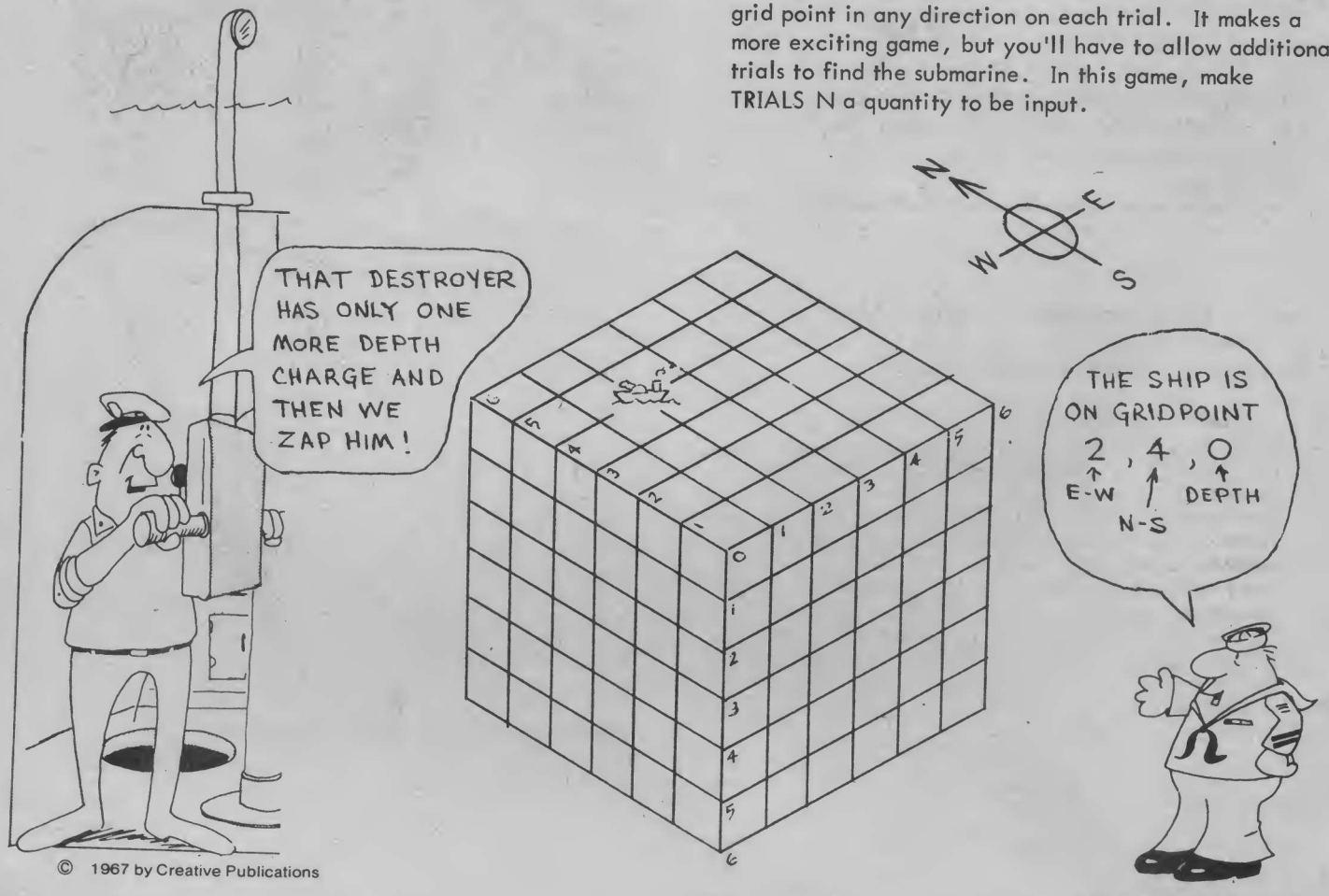
2. Divide into teams of 2 or 3 players and play the game. Try to come up with an optimal guessing strategy for a search area with a dimension of 10, of 100, of 1000.

3. Statement 30 sets the maximum number of trials allowed for search areas with different dimensions. Make a table like this:

SEARCH AREA SIZE	TRIALS ALLOWED
1	
2	
.	
.	
.	
100	

What does this tell you?

4. Modify the program to allow the submarine to move one grid point in any direction on each trial. It makes a more exciting game, but you'll have to allow additional trials to find the submarine. In this game, make TRIALS N a quantity to be input.



PROGRAM LISTING

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LISTNH
10 PRINT "DEPTH CHARGE GAME" \ PRINT
20 INPUT "DIMENSION OF SEARCH AREA";G \ PRINT
30 N=INT(LOG(G)/LOG(2))+1 \ RANDOMIZE
40 PRINT "YOU ARE CAPTAIN OF THE DESTROYER USS DIGITAL."
50 PRINT "AN ENEMY SUB HAS BEEN CAUSING YOU TROUBLE; YOUR"
60 PRINT "MISSION IS TO DESTROY IT.  YOU HAVE"N"SHOTS."
70 PRINT "SPECIFY DEPTH CHARGE EXPLOSION POINT WITH A"
80 PRINT "TRIO OF NUMBERS -- THE FIRST TWO ARE THE"
90 PRINT "SURFACE COORDINATES; THE THIRD IS THE DEPTH."
100 PRINT \ PRINT "GOOD LUCK !" \ PRINT
110 A=INT(G*RND) \ B=INT(G*RND) \ C=INT(G*RND)
120 FOR D=1 TO N \ PRINT \ PRINT "TRIAL #"D; \ INPUT X,Y,Z
130 IF ABS(X-A)+ABS(Y-B)+ABS(Z-C)=0 THEN 300
140 GOSUB 500 \ PRINT \ NEXT D
200 PRINT \ PRINT "YOU HAVE BEEN TORPEDOED! ABANDON SHIP!"
210 PRINT "THE SUBMARINE WAS AT"A","B","C \ GOTO 400
300 PRINT \ PRINT "B O O M ! !  YOU FOUND IT IN"D"TRIES!"
400 PRINT \ PRINT \ INPUT "ANOTHER GAME (Y OR N)";A$
410 IF A$="Y" THEN 100
420 PRINT "OK.  HOPE YOU ENJOYED YOURSELF." \ GOTO 600
500 PRINT "SONAR REPORTS SHOT WAS ";
510 IF Y>B THEN PRINT "NORTH";
520 IF Y<B THEN PRINT "SOUTH";
530 IF X>A THEN PRINT "EAST";
540 IF X<A THEN PRINT "WEST";
550 IF Y<>B OR X<>A THEN PRINT " AND";
560 IF Z>C THEN PRINT " TOO LOW."
570 IF Z<C THEN PRINT " TOO HIGH."
580 IF Z=C THEN PRINT " DEPTH OK."
590 RETURN
600 END
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SAMPLE RUN

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RUNNH
DEPTH CHARGE GAME

DIMENSION OF SEARCH AREA? 10

YOU ARE CAPTAIN OF THE DESTROYER USS DIGITAL.
AN ENEMY SUB HAS BEEN CAUSING YOU TROUBLE; YOUR
MISSION IS TO DESTROY IT.  YOU HAVE 4 SHOTS.
SPECIFY DEPTH CHARGE EXPLOSION POINT WITH A
TRIO OF NUMBERS -- THE FIRST TWO ARE THE
SURFACE COORDINATES; THE THIRD IS THE DEPTH.

GOOD LUCK


TRIAL # 1 ? 5,5,5
SONAR REPORTS SHOT WAS SOUTHEAST AND TOO HIGH.


TRIAL # 2 ? 3,7,7
SONAR REPORTS SHOT WAS SOUTHEAST AND DEPTH OK.


TRIAL # 3 ? 1,9,7
SONAR REPORTS SHOT WAS NORTHEAST AND DEPTH OK.


TRIAL # 4 ? 0,8,7

B O O M ! !  YOU FOUND IT IN 4 TRIES!
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Computers Help Watch For Corn Blight

PURDUE UNIVERSITY, LAFAYETTE, IN – Mrs. Susan Schwingendorf, LARS Computer Analyst, marks fields on a photo work copy to assist in locating data in the multispectral analysis. The computer listing indicates the crops grown in each field. Biweekly data from ten corn fields checked for blight by Extension Agents are also made available to her and the other data analysts. The Corn Blight Watch Experiment is being conducted by the U. S. Department of Agriculture, NASA, and the Agricultural Experiment Stations and Extension Services of seven states, in cooperation with Purdue University's Laboratory for Applications of Remote Sensing (LARS) and the University of Michigan's Institute for Science and Technology (IST). (Photo courtesy NASA).

COMPUTERS HELP WATCH FOR CORN BLIGHT