

# DECUS

## PROGRAM LIBRARY

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| DECUS NO.       | FOCAL8-169                                       |
| TITLE           | FOCAL VERSION OF THE GE BASIC ARTILLERY GAME     |
| AUTHOR          | Ronald A. Wong                                   |
| COMPANY         | Edmund Wong Company<br>San Francisco, California |
| DATE            | February 26, 1971                                |
| SOURCE LANGUAGE | FOCAL '69  |



## FOCAL VERSION OF THE GE BASIC ARTILLERY GAME

DECUS Program Library Write-up

DECUS NO. FOCAL8-169

### Abstract

In most computer games, the situation is the player vs. the computer. However, in this game, the computer is just measuring the skill of the player ---- by testing his ability with an artillery piece in coming within 100 yards of a target, whose distance was randomly selected.

### Other Programs Needed

4K Focal with extended functions

### Operating Procedures

After loading the program, type "GO", and a short introduction will be printed out. Next comes the distance, followed by an "ASK" command for the elevation.

The player can base his decision on two facts:

- 1) maximum range of the gun is 46500 yards
- 2) maximum range can be obtained with an elevation of 45 degrees. Anything greater than or less than  $45^{\circ}$  decreases the distance of the shell.

Once the decision is made, a space character terminates the "ASK" (as with all other "ASK" commands). Note that the maximum elevation is 89 degrees, and minimum is one degree. If the player enters in a zero, the computer will quit (the equivalent of self-destruct or abandoning ship).

Now that the elevation is entered, the computer calculates the result ---- and prints if the target was missed (and by how much over or under) or if the target was hit. If the shot was a miss, the elevation is asked for again.

The player finally hits the target, so bells ring and the rounds fired are printed out. The computer then proceeds to ask the player if he would like to try again. Only a "YES" or "NO" response is possible. Again, the answer may be terminated with a space bar.

## Description<sup>1</sup>

The distance is calculated by the following formula:

$$\text{SET T} = \text{FITR}(46500 * (\text{FRAN}( )/2))$$

The random number is divided in half to reduce the possibility of a number over 46500 (although there is also an "IF" statement for a double-check). For sake of clarity, let's assume that the distance is 21,722 yards. The elevation is entered, 48 degrees. Now the elevation is converted to radians:

$$\begin{aligned} \text{B2} &= 2 * (\text{B}/57.3) \\ &= 2 * (48/57.3) \\ &= 1.675 \end{aligned}$$

The distance is then calculated:

$$\begin{aligned} \text{I} &= 46500 * (\text{FSIN}(\text{B2})) \\ &= 46500 * (\text{FSIN}(1.675)) \\ &= 46246 \end{aligned}$$

Which is subtracted from the distance:

$$21722 - 46246 = -24524$$

A negative answer means the shell went over, and a positive, under.

## References

1 - Computer Decisions

Computer Games Section

March 1970

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Article by Dennis Van Tassel

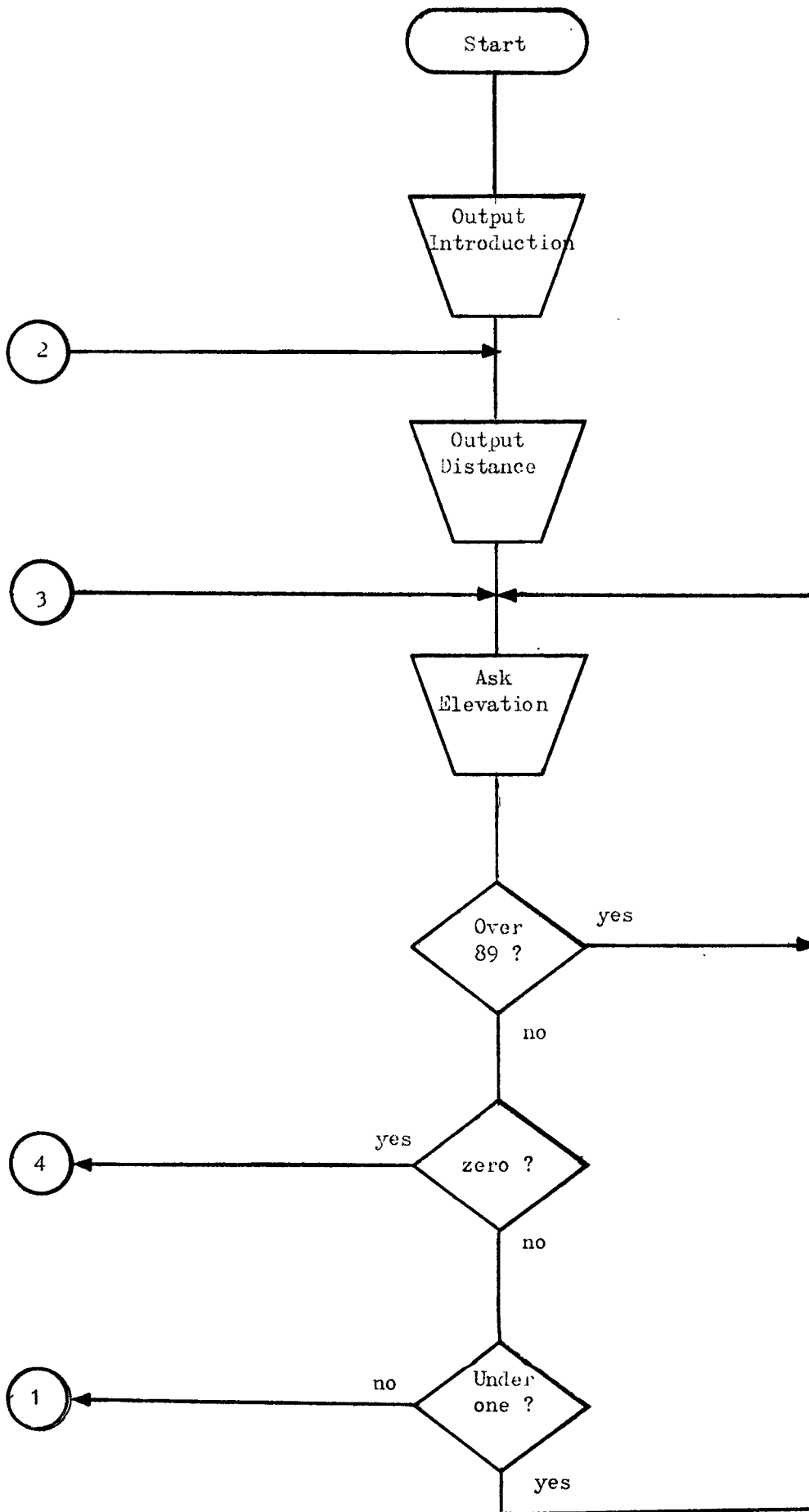
## Acknowledgements

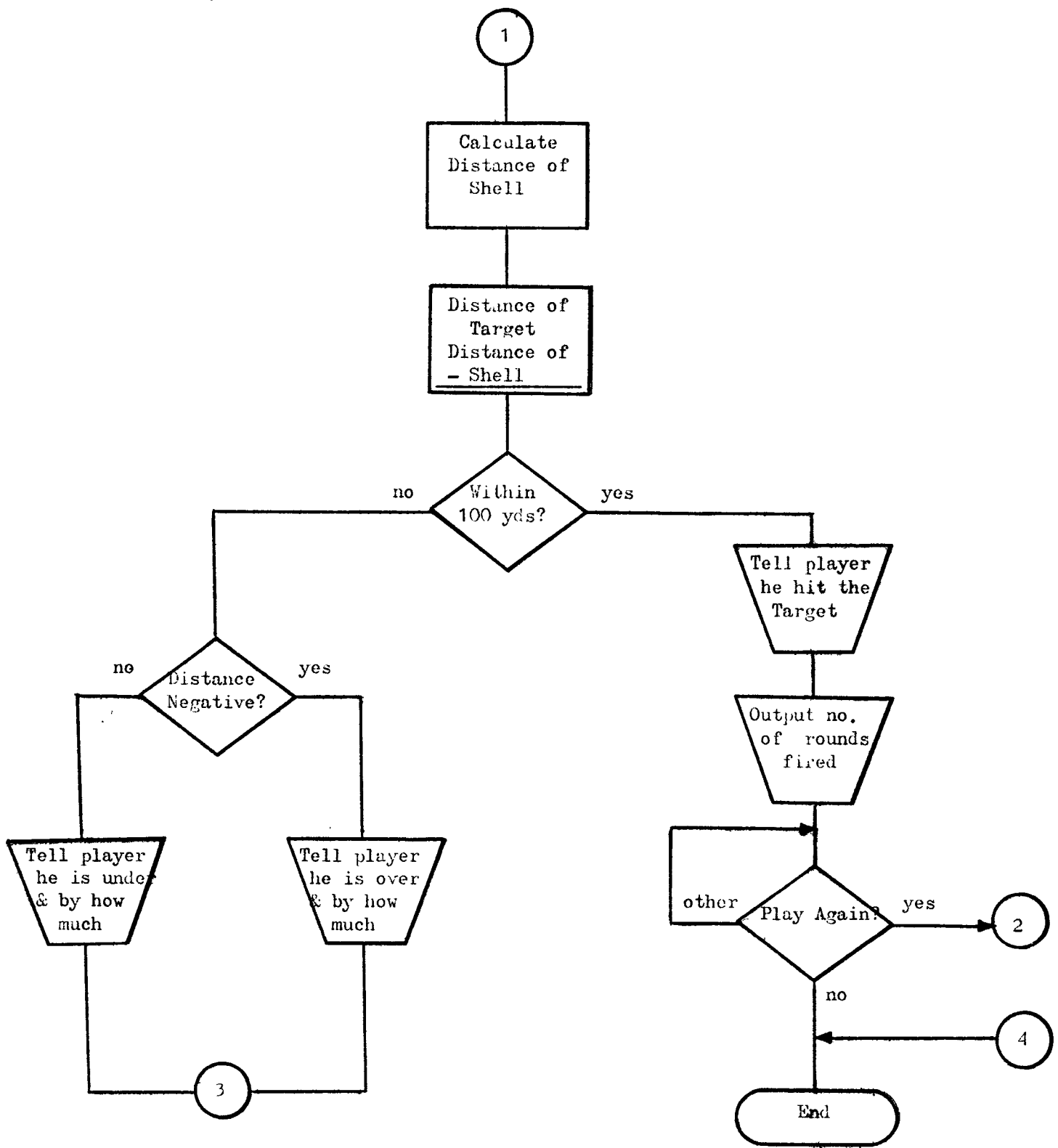
Computer Decisions

Author:Dennis Van Tassel

Language: General Electric BASIC

care of Nick Taddeo





C-FOCAL, 1969

```
01.10 I ! "THIS PROGRAM SIMULATES THE RESULTS OF FIRING A FIELD"!
01.20 I "ARTILLERY WEAPON."!
01.30 I ! "THE GAME IS FROM THE GENERAL ELECTRIC TIME-SHARING"!
01.35 I "SYSTEM,
01.40 I " AND WAS TRANSLATED INTO FOCAL BY RONALD A. WONG."!!
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```
03.10 ERASE
03.15 SET S = 0
03.20 SET T = FITR(46500 * FABS(FRAN() / 2))
03.25 IF (T - 46500) 3.3, 3.3, 3.2
03.30 I %7, "DISTANCE TO TARGET IS", T, " YARDS"!!
03.40 I "ELEVATION"; ASK B, !; IF (B - 90) 3.6
03.50 I "MAXIMUM ELEVATION OF YOUR GUN IS 89 DEGREES"!!; G 3.4
03.60 IF (B) 3.7, 6.1; IF (B - 1) 3.7, 4.1, 4.1
03.70 I "MINIMUM ELEVATION OF YOUR GUN IS 1 DEGREE"!!; G 3.4
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04.10 SET S = S + 1; SET B2 = 2 * (B / 57.3); SET I = 46500 * (F SIN(B2)); S X = T - I;
04.20 SET E = (FITR(X)); IF (FABS(E) - 100) 4.4, 4.4
04.30 IF (E) 4.6, 4.5, 4.5
04.40 I %3, "***TARGET DESTROYED***", S
04.41 I " ROUNDS EXPENDED"!!; G 5.1
04.50 I %7, "UNDER TARGET BY", E, " YARDS"!!; G 3.4
04.60 I %7, "OVER TARGET BY", FABS(E), " YARDS"!!; G 3.4
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05.10 I "CONGRATULATIONS!! WANT TO TRY AGAIN?";
05.20 ASK RE, !; IF (RE - 0YES) 5.3, 3.1
05.30 IF (RE - 0NO) 5.4, 5.5
05.40 I "PLEASE ANSWER YES OR NO "; G 5.2
05.50 QUIT
```

```
06.10 I "YOU JUST HIT SELF DESTRUCT. GOOD LUCK!"!!; QUIT
*
```

\*GO

THIS PROGRAM SIMULATES THE RESULTS OF FIRING A FIELD  
ARTILLERY WEAPON.

THE GAME IS FROM THE GENERAL ELECTRIC TIME-SHARING  
SYSTEM, AND WAS TRANSLATED INTO FOCAL BY RONALD A. WUNG.

DISTANCE TO TARGET IS 18409 YARDS

ELEVATION:12  
OVER TARGET BY 502 YARDS

ELEVATION:11  
UNDER TARGET BY 991 YARDS

ELEVATION:11.75  
OVER TARGET BY 131 YARDS

ELEVATION:11.7  
\*\*\*TARGET DESTROYED\*\*\* 4 ROUNDS EXPENDED

CONGRATULATIONS!! WANT TO TRY AGAIN?:HUH?  
PLEASE ANSWER YES OR NO : YES  
DISTANCE TO TARGET IS 22360 YARDS

ELEVATION:90  
MAXIMUM ELEVATION OF YOUR GUN IS 89 DEGREES

ELEVATION:.5  
MINIMUM ELEVATION OF YOUR GUN IS 1 DEGREE

ELEVATION:0  
YOU JUST HIT SELF DESTRUCT. GOOD LUCK!  
\*