

Cross-Country Balloon Trip

Take flight with this very entertaining game for you and your SR-52.

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RFD 3
Putney VT 05346

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000      LBL E
002          CMs
003          - RCL 99 = x2  $\sqrt{y}$  7 = STO 99
015          1001 HLT
020      LBL A
022          RCL 99 - .2 =
029          if pos 9'
031          12 SBR 1' GTO 2'
037          LBL 9'
039          45 - 3 SBR 1'
045          if pos 2'
047          + 360 =
052          LBL 2'
054          STO 01
057          1 SUM 19
061          SBR 1' STO 00
066          ÷ 100 + RCL 01 = Fix 2
077          INV st flg 0 HLT
081      LBL B
083          if flg 0 3'
086          fix 0 D.MS STO 04
092          - 1 = X (RCL +/- +19) =
104          INV if pos 3'
107          RCL 04 PR OD 00
113          RCL 01 P/R D.MS SUM 03
121          RCL 00 D.MS SUM 02
128          (RCL 02 - 1001)x2 + RCL 03 x2 =  $\sqrt{x}$ 
146          - 15 =
150          if pos 4'
152          RCL 19 A' HLT
157          LBL 4'
159          + 15 =
163          st flg 0 HLT
166          LBL 3'
168          INV fix 1 ÷ 3 = A' HLT
176          LBL 1'
178          X 30 X ((7 yx 9 X RCL 99 X .00001) - (RCL - .5)
206          fix 0 D.MS) STO 99 = D.MS rtn

```

Initialization
Clear registers R00 thru R19
Process input and store for "seed"
Display 1001 and wait
Each press of A brings a new day . . .
Using subroutine 1', find direction
wind blows toward. Easterly is
heavily favored.

Subroutine 1' was adapted from Peter
Stark's pseudo random number
generator in "SUBMARINE"
(KILOBAUD Feb 1977 p. 70)
Store direction in R01 (⊖)
Count days (increment R19)
Find wind velocity (0 to 30) and store
Display wind direction and velocity
Authorize a launch and wait
Press B to launch the balloon
Error if launch not allowed
Round input to nearest integer and store
Check size of rounded input. Error if
less than 1 or greater than 20
Distance travelled (r) is now in R00
Convert to rect. coords. Store y in R03
Store x in R02
Compute distance from goal
Closer than 15?
If no, continue the game
Game over! Flash number of days
Game continues
Repair distance to goal
Revoke launch permit and wait
Error section
Flash .333333333
Subroutine 1'

Note: Angular mode switch must be set at "D"

Program listing.

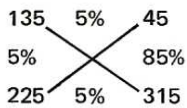
Your balloon starts 1001 miles (use kilometers if you wish) due west from your goal. Each day you are given the wind direction and velocity and decide whether or not to launch. If you choose to launch, you decide how long to stay aloft (from 1 to 20 hours). The game ends if you land closer than 15 miles from the goal. The number of days is flashed.

You will need paper, pencil, protractor and ruler. Using any appropriate scale, locate the goal 1001 miles due east from the start. The program uses the convention for directions that is shown in Fig. 1.

1. To begin a game, load the program and enter any number (6 digits or so).

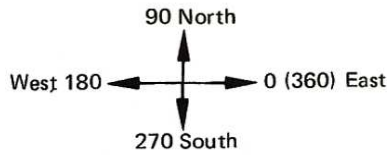
2. Press E. The display will show 1001, your distance from the goal.

3. Press A. The display shows the direction in which the wind is blowing and its velocity. The format is ddd.vv. Note: the wind blows mostly in an easterly direction. In fact, 85% of the wind direction will be between 315 and 45 (SE to NE). Of course, any game may differ from these expectations.



4. Make launch decision. If no, go to step #3 for next day's wind. If yes, enter a whole number from 1 to 20 and press B. Your balloon will travel that many hours. The display shows how far from the goal you landed. Plot your trip carefully. Go to step #3.

5. If you land closer than 15 miles from the goal, the display flashes the number of days. Press CE to stop the flashing. Go to step #2 for a new game. Flashing .333333333 indicates an error (like if you specify a 22 hour flight). Press CE and try again. ■



(In terms of rectangular coordinates, you start at 0,0; the goal is at 1001, 0.)

Fig. 1. Conventional compass directions are used to form game board.

	Enter	Press	Display	
(R99 = 0)	1977	E	1001	
		A	354.12	
	20	B	762	
		A	347.13	
	20	B	516	
		A	337.28	
		A	327.20	
		A	333.18	
		A	7.18	
	20	B	157	
		A	318.24	
		A	42.10	
		A	6.27	
	4	B	53	
		A	342.09	
		A	349.28	
		A	352.14	
		A	18.15	
		A	36.04	
	13	B	Flashing 14	You arrived within the goal circle in 14 days. Final location was (998,3).
	Enter	Press	Display	
(R99 = 0)	354	E	1001	
		A	352.23	
	20	B	549	
		A	36.19	
	20	B	286	
		A	326.06	
	20	B	167	
	A	A	205.12	
		A	2.18	
		A	23.07	
		A	10.01	
		A	269.16	
		A	325.11	
	15	B	Flashing 9	Reached the goal in 9 days. Final location: (.997, -3).
	Enter	Press	Display	
(R99 = 0)	408	E	1001	
		A	320.14	
	20	B	807	
		A	353.01	
		A	180.05	
		A	270.21	
		A	39.03	
		A	8.09	
	20	B	628	
		A	40.14	
	20	B	396	
		A	315.16	
	18	B	262	
		A	349.17	
		A	40.15	
	10	B	113	
		A	348.11	
		A	338.17	
		A	343.02	
		A	306.26	
		A	25.05	
		A	134.10	
	12	B	159	
		B	.3333333333 Flashing. Press CE	
		A	357.00	
		A	335.17	
	5	B	88	
		A	333.21	
		A	340.21	
		A	9.25	
		A	327.26	
		A	330.14	
		A	322.09	
		A	25.07	
	13	B	Flashing 25	Reached the goal in 25 days. Final location: (1001, 5)

Sample runs.