SOLUTION

Nine if by UFO

by Kevin Wald

The Boston Massacre site marker, like the puzzle diagram, contains 13 wedges each divided into 7 ring sections. The inner ring sections (the inner three in sectors 9 and 10, and the inner four in all others) each contain one brick, and all the rest have two bricks; thus, the corresponding "ship counts" in the diagram have one or two digits, respectively. This information, along with the given ship counts and "ship destruction marker" colors, enables the solver to deduce all the ship counts and ship destruction numbers in the diagram. The deduction might run as follows (with each ring section denoted by (sector, minute), and with the ship destruction markers in each sector lettered a–f from the outside in):

1. Since we can't destroy more ships than exist, 1d = 0, 1e = 0, 1f = 0, 4f =2, 5e = 3, 5f = 2, 7e = 1, 7f = 1, 9f = 1, 12d = 2, 12e = 0, and 12f = 0.
2. Since (8, 3) has one digit, 8c = 11 and (8, 3) = 8 (so 8d = 2, 8e = 2, and 8f = 1). Also, that means 12c ≠ 11, so to give (12, 2) two digits 12c = 7 and (12, 2) = 10, and getting from there to (12, 0) requires that 12a = 8 and 12b = 7.
3. Since (1, 2) has two digits, 1c = 8 and (1, 2) = 10. So (as above) 1a = 8 and 1b = 7.
4. Similarly, to get down from (0, 0) to (0, 2), 0a = 7 and 0b = 7. That uses up all the 7's, so 4b, 4c, 4d, 5a, 5b, 8a, 8b, and 10c are all 3. So to get (4, 3) and (5, 3) to be one-digit numbers, 4a and 5c must be 10, so 4e = 1 and 5d = 2.
5. With both 10's used up, 11b = 6 and 11a = 8, using up the last 8. So 0c, 2c, 3c, 7c, and 11c are all 4 (since they span the "digit boundary"). Then (2, 2), (3, 2), and (7, 2) are less than 14, so 2a, 3b, and 7a are 9 and 2b, 3a, and 7b are 6.
6. With the 9's used up, 6a, 6b, and 6c must be 6, 5, and 5 to get to a one-digit (6, 3). Also, with (10, 3) = 15, 10d must be 6. The 6's are now used up, so 7d, 10b, 11d, and 11f are 2.
7. To get from (10, 0) to (10, 2) 10a = 5. To get from (9, 0) to (9, 5) 9a = 4, 9b = 4, 9c = 5, 9d = 5, and 9e = 5. To get from (10, 2) to (10, End), 10e = 4 and 10f = 5. The 4's and 5's are now used up, so all remaining black markers are 0 and all remaining dark gray markers are 1. We now have all the marker values, and can fill in all remaining ring sections.

The complete set of values is given in this chart. The values in the "End" (innermost) ring, when punctuated as in the diagram, say "4, 2 to 5; 5, 3 to 2; 8, 2 to 3; 10, 3 to 1." Taking each "x, y to z" to mean "The numbers in sector x from y min to z min," we get the number sequences 12-9-6-5, 9-19, 19-8, and 15-18-20; putting them all together and translating into letters gives the solution, **LIFE IS SHORT**.

	Sector												
	0	1	2	3	4	5	6	7	8	9	10	11	12
0 min	25	25	25	25	25	25	25	25	25	25	25	25	25
a	7	8	9	6	10	3	6	9	3	4	5	8	8
1 min	18	17	16	19	15	22	19	16	22	21	20	17	17
b	7	7	6	9	3	3	5	6	3	4	2	6	7
2 min	11	10	10	10	12	19	14	10	19	17	18	11	10
c	4	8	4	4	3	10	5	4	11	5	3	4	7
3 min	7	2	6	6	9	9	9	6	8	12	15	7	3
d	1	0	1	0	3	2	1	2	2	5	6	2	2
4 min	6	2	5	6	6	7	8	4	6	7	9	5	1
e	1	0	0	1	1	3	0	1	2	5	4	0	0
5 min	5	2	5	5	5	4	8	3	4	2	5	5	1
f	1	0	0	0	2	2	0	1	1	1	5	2	0
(End)	4,	2 to	5;	5,	3 to	2;	8,	2 to	3;	1	0,	3 to	1.