

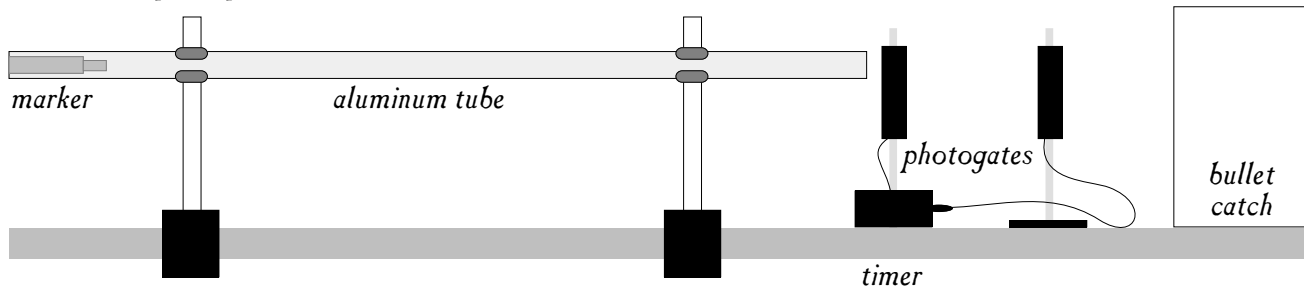
BLOWOUT!

A DEMONSTRATION OF HIGH-SPEED PHOTOGATE TIMING

Name: _____ Per: _____ Date: _____

THE SET-UP

A whiteboard marker is fired through a tube. At the end of the tube, photogates are arranged as shown. A bullet catch is also put in place.



FIRST QUESTION

How can the speed of the fired marker be determined with the arrangement shown above? What, if anything, needs to be measured? What data must be recorded? What, if anything, must be done with the data? Be as specific as possible (include photogate timer settings).

DATA AND CALCULATIONS

Record data and calculations on back. Be sure to convert speeds in m/s to speeds in mph.

SECOND QUESTION (To be answered after first calculations)

Suppose the auxiliary photogate is removed. How can the speed be calculated now? Again, be specific.

SECOND CALCULATION

Record data and calculations on back. Be sure to convert speeds in m/s to speeds in mph.