



## Rubber Band Gymnastics

Travis Williams

1st place, contrived category, 1995

These two views of a rubber band in flight were recorded by eight color flashes as the band was shot from a rubber band gun. The shutters of two cameras, one to the side and the other above, were held open during the action. Just after the band was released, it passed through a photogate, initiating a computer-controlled timing sequence which discharged the flash units 2.50 milliseconds apart.

The images where the band is still in contact with the gun show the formation of a trapezoidal shape. The last point in contact with the clothespin, the release point, is the midpoint of the smaller base of the trapezoid. In the fourth image this smaller base is moving at 51 m/s. Due to its inertia, the last point in contact with the barrel of the gun, the barrel point, remains stationary as the band leaves the gun. In the fifth image the momentum of the release point allowed it to glide well past the barrel point. By the sixth image the release point and the barrel point had almost switched their roles, and in the seventh image an approximate rectangle had formed as a new trapezoid began to take shape on the barrel point side of the band. In the final image, the release point, with a velocity of 40 m/s, was still moving faster than the barrel point. It was the pull produced by the faster point that caused the collapse of the rectangle formation.