

# Letters

## to the Editor

### “Figuring Physics” on the Web

For more than a decade, “Figuring Physics” has been a monthly feature in this magazine, and it will continue to be. Now all examples of “Figuring Physics,” old and new, are also available on the web at <http://www.arborsci.com>, under Conceptual Physics. There they are called “Next-Time Questions,” which better state their best use—to elicit student thinking, not quick-time, but “next-time,” for extended thought. I used to post several of them at a time in a glass case outside my lecture hall—without answers—with a wait time of one week for answers. Perhaps I should have more appropriately called them “Next-Week Questions.”

My hope is that after teachers pose the questions, they withhold answers to a “next time,” perhaps the next class meeting. Their educational value is enhanced by the long wait time. (Perhaps answers in this magazine should have a wait time of one month, and be published in following issues rather than at the back of the magazine? Let Editor Karl Marmola know your thoughts on this!)

In sharing with your students, please DO NOT show questions and answers in the same class period! Or worse, please don't use them as quickie quizzes with short wait times in your lecture. This easy and careless route misses your opportunity for increased student learning. In my experience, students benefit from the discussions, and sometimes arguments, about answers. When they'd ask me for early “official” answers, I'd tell them to confer with friends. When friends weren't helpful, I'd suggest they seek new friends! It is in such discussions that learning occurs.

You may wish to project *Figuring Physics* or *Next-Time Questions* rather than post them. One or two projected at the end of a class session is fine, with answers waiting until a “next time” the class meets—or at some interval where wait time is at least a day.

These are the outcome of my long and wonderful teaching career and are now yours at the click of a mouse. I hope you'll use them as suggested. For those of you who contribute ideas for new ones, please keep doing so.

**Paul G. Hewitt**

[Pghewitt@aol.com](mailto:Pghewitt@aol.com)

### Using Physics to Solve a Mystery

I found some good physics in a 1949 British mystery-adventure by Manning Coles, “Diamonds to Amsterdam.” The problem involves a furniture van that has been stolen at one place, taken to an unknown destination, and then left at a second place. The van has been driven 83 miles, but the direct route is only 50 miles. To locate the unknown destination, a Scotland Yard superintendent puts pins into a map at the starting and stopping points, and connects the pins with a piece of thread scaled to 83 miles. He then draws an ellipse with a pencil held taut against the thread, and the unknown destination is assumed to be close to the inside of the ellipse. This example adds to the repertoire of examples of this construction, which is used in the design of ellipsoidal theater lights<sup>1</sup> and the reflection of sound.<sup>2</sup>

### References

1. Thomas B. Greenslade Jr. and Steven G. Heisler, “Stage lighting instru-

ments,” *Phys. Teach.* **13**, 548–551 (Dec. 1975).

2. Thomas B. Greenslade Jr., “Whispering galleries,” *Phys. Teach.* **18**, 52–53 (Jan. 1980) and “The Foley acoustic wave front slides,” *Phys. Teach.* **42**, 231–235 (April 2004).

**Thomas B. Greenslade Jr.**

*Kenyon College, Gambier, OH 43022*  
[GREENSLADE@KENYON.EDU](mailto:GREENSLADE@KENYON.EDU)

### Don't Try this at Home?

I enjoyed Tom Concannon's recent article about cornstarch fireballs. A few years ago I saw a similar demo using powdered dairy creamer. I was at a party for the stage crew and friends of a local theater, about 30–40 people, most of whom were involved with props and effects for staging plays. The party was held in the props warehouse. At the height of the party, they demonstrated the “Cremora wall of fire.” Using a one-cup scoop taped to the end of a long pole, one person climbed a tall ladder and held the pole with the scoop filled with powdered Cremora® coffee creamer. A candle was placed on the floor. The person on the ladder, situated a good horizontal distance from the candle and almost two stories high, lightly shook the powered coffee creamer from the scoop at the end of the pole so that a cloud of Cremora formed, slowly sinking earthward. When the bottom of the cloud of Cremora reached the candle, a huge fireball formed, going up about three stories. It was really impressive. I was told they used this for special effects purposes in staging plays.

**Kyle Forinash**

*Indiana University Southeast*  
[kforinash@ius.edu](mailto:kforinash@ius.edu)