HOW MANY People Were at Your Event?

by Vern Biaett, Jr. CFEE, Faculty Associate – Arizona State University

"In the magical festival industry of OZ there are many Scarecrows desiring a brain when it comes to calculating attendance figures at large events."

When understanding large numbers the average person is innumerate – they lack ability to deal rationally with large numbers. In *INNUMERACY, Mathematical Illiteracy and its Consequences*, John Allen Paulos contends most people fear mathematics. If this describes you, there is hope.

To estimate attendance we must first admit we use two types of figures in our industry. I label them as "marketing figures" and "operational figures." Marketing are virtual numbers created to attract press and satisfy big egos. Operational are the actual numbers critical to the effective use of limited resources. Are we being straight forward using two figures? You decide, but ask, "Who is affected, will they be influenced in future situations, and who's asking, anyhow?" Bottom line – many festivals use two sets of attendance figures.

My suggestion for marketers is to replace numbers with meta syntactic terms – words used to describe numbers. An example is the word zillion, defined as "an undetermined large number." Festival producers are creative people. The use of meta syntactic terms should be more common place.

Accurate operational figures are required to do everything from providing emergency service personnel and restrooms to site lay out for efficient traffic flow to ordering souvenir merchandise. To estimate them create a plan in advance, monitor what's happening during your event, collect data from your guests, and use the gathered facts to estimate genuine figures, as opposed to trying to guesstimate figures after the fact.

A difficulty in our industry has been accurately estimating attendance at non-gated, unfenced, open seating, free events including parades. In 1983 a battle ensued between the Tournament of Roses Parade and the Doo-Dah Parade (http://gaspee.com/CrowdEstimates.htm). In 1995 the National Park Service estimated the Million Man March at only 400,000 and Boston University using satellite photos became involved (http://www.eomonline.com/Common/Archives/February96/baz.htm). Mathematics was used to estimate crowd size and provided insight into a "*maximum possible crowd size*" method.

Crowds reach critical densities at one person per 5.38 sq', can only shuffle and move as a group at 4.95 sq' per person, and at 4 sq' per person potentially dangerous psychological pressures occur. Understanding how many people can potentially occupy space is key to estimating attendance. Imagine the crowd at a rock concert. Fans at the front are packed occupying a space 2' by 2' or 4 sq'. To empirically understand, mark off this space on the floor and stand in the middle observing how you fill this space.

Use this basic 4 sq' per person to estimate your maximum possible crowd size. Take time and measure your site to determine the total square footage. Take out places people can't occupy. Divide the total by 4 sq' to determine the maximum possible crowd on your site at one time. Break your site into smaller, natural, grids and determine their maximum possible crowd size. You'll be shocked the numbers are smaller than predicted.

Additionally, survey your guests to gather data on their average length of stay to determine your turnover ratio. Also find out how many arrived by car with the average people per car as well as how many arrived by public transit or walked.

During your event observe, estimate and record attendance in your grids at regular time intervals. Combine this data with survey turnover data to accurately estimate attendance. Knowing the maximum possible crowd size prevents over-estimation. A method to confirm this estimate incorporates parking, mass transit and walk-up data. How many parking spaces are available? Monitor parking at regular intervals and combine with data on turnover and guests per car. Add data on guests who arrived by public transit and walked for a total attendance estimate, which should be comparable to your earlier estimate.

What about aerial photography? It provides attendance only at a specific time. Photos taken at angles can be obscured by structures and when taken directly overhead, people, shadows, chairs, etc. are hard to distinguish. And quality photos are expensive and take valuable staff hours counting heads.

In conclusion, festival and event attendance figures are … what they are. If an accurate estimate of participants is important to your organization, then make the required effort to accurately measure. If you invest the time and energy you will create the usable data necessary for an accurate estimate of your attendance.