

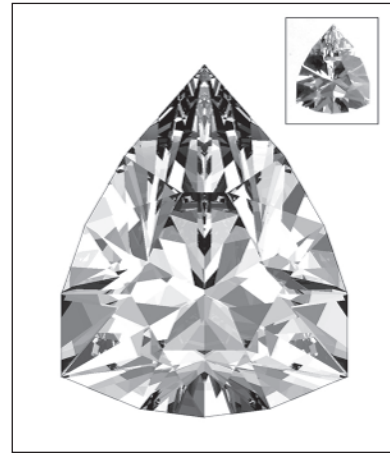
### 16.5.4 Size and Distribution of Sparkle

Whether symmetric or random, the reflection pattern will be more pleasing when there is an even distribution of sparkle action across the stone. For example, many square designs suffer from a mix of large flashes at the center of the gem and tiny flashes in the corners. Teardrop and pear cuts are also notorious for gathering busy, tiny, flashes in the narrow part of the stone (Figure 16-25). The great gem designer Fred van Sant warned us all about such corners: they can act as a light funnel, either concentrating visual impact and pinfire (see page 252) or sucking the life out of your gem.

Note that in practical design terms, a uniform distribution of facet sizes does not necessarily yield a uniform distribution of reflection! Combining and/or splitting pavilion facets may help (see Figure 16-1), but the effect can be unpredictable. Some designers recommend reducing the number of facets in the corners, but there is no guarantee that this will improve the situation. As always, check your work in your favourite gem-rendering program (Chapter 15) before putting stone to lap.

An exception to the rule of uniform reflection pattern is the observation that a variety of flash sizes can produce a pleasing effect, provided of course that the different sizes are well mixed. This variety ensures that the body colour of the gem comes through in the larger flashes, while the smaller ones provide visual interest, scintillation, and in the case of dispersive materials, pinfire (see next section). Again, there is no prescription for producing this effect. Experience and testing on the computer are the way to go.

*Figure 16-25 An uneven distribution of sparkle produces a less appealing gem. The reflection pattern is tiny and busy at the top of this Gem-Ray image, contrasting sharply with the larger flashes from the center of the stone. The cut gem (inset) shows the same problem.*



#### Deliberately Bad Design – The Deck Prism

I love maritime museums, and one of the best of them is lurking in Pennsylvania on the south shore of Lake Erie, about halfway between Buffalo, New York and Cleveland, Ohio (the fact that three major states share this 200 mile (300 km) stretch of shoreline is a measure of the importance of waterways to early North America). The Erie Maritime Museum offers its visitors a unique perspective on early 19th century shipbuilding and the role of wooden sailing vessels in the War of 1812..

It also offers a unique perspective on bad gemstone design.

Let me explain. Before the advent of iron ships and electricity, life could be pretty dark below decks. Oil lamps were an expensive and potentially flammable option, but many vessels opted for a more elegant approach: the deck prism. A deck prism is essentially a glass gemstone with a very deep pavilion and no crown (Figure 16-26). By now, you should recognize immediately that this configuration will never work well as a gem: