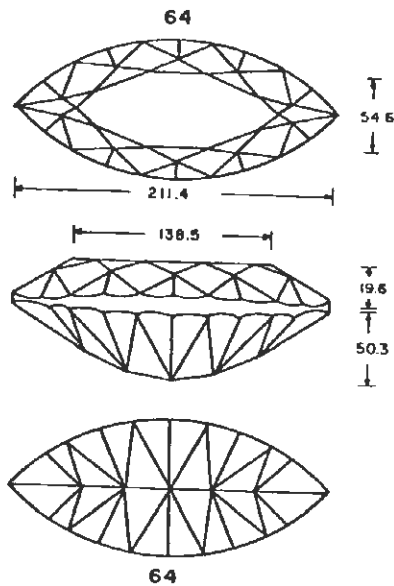


CORRIGENDA

Reference: Van Sant, Fred W; "Faceting the Marquis Barion", Gems & Minerals, May 1979, p 50-52

4 MAIN MARQUIS BARION



There are some "good" points and some "bad" points about this article by Mr Van Sant. He does have workable formulae for the "L/W" ratio which he calls "S" and for the limiting central angle which he calls "A" (we call it β). However, his implication that one can cut all of the break facets "B" on the pavilion at the same elevation angle and all the main facets "A" at another angle and still come out with the plan view as shown with the "B" facets the same width at the girdle line is very wrong. The diagram at the left is one of Mr Van Sant's designs for which he gave explicit directions in the article. Consider the pavilion main facets. Although they are symmetrical they are not directly opposite each other, therefore their intersection is not a level line. The result is that the "mains and breaks" meetpoints are at different heights relative to a level girdle line. If we decide to have equal "main" angles for the "A" facets, then the "B" facets interfacing with each main must be at different angles on opposite sides of the same "A" facet. The discrepancy becomes greater as we move outward from the center facets to the break facets on the ends.

A similar problem exists on the crown, with the angles as given it is not possible to obtain good meetpoints.

Preform for this cut is the "offset head" method which generates a smooth arc of a circle as the outline. It also **guarantees** an uneven girdle when this portion of a cylinder is intersected by a series of flat facets. I took a few liberties with the crown instructions, adjusting the angles to give an approximate level girdle because the angles as given were so unworkable.

Another confusing (to me) feature of this article is the indexing given for designs "A", "B", and "C". To have an even facet width for the break facets "B" with whole number indexing, it is essential that each segment have exactly the same number of gear teeth.

Combinations such as 2-6-10-14-18... or 1-3-5-7-9 are acceptable, but 2-4-8-10-14... or 1-5-7-11-13-17 are not. Robert Long and I are going to discuss some of these problems with Navette shapes in Volume 2 of our book on "FACET DESIGNS". In conjunction with the book I worked out meetpoint designs for faceted girdle designs similar to the diagrams in Mr Van Sant's article. Two of these are shown in this issue. Break facets in both designs are exactly equal and the girdles should be level.