


ULTRA TEC

1025 EAST CHESTNUT AVENUE, SANTA ANA, CALIFORNIA 92701-6491

TWX: 910 333 9986

TEL: 714 542 0608

ULTRA TEC OWNERS NEWSLETTER

SPRING 1989

Those of you who are new owners, be informed that this newsletter comes out every once in a while--usually when our folder gets full. Upon purchasing an Ultra Tec, you became an Ultra Tec "cousin"--and we probably write to you about as often as other members of your family do (but we don't ask to borrow money). The newsletter usually has sections on "news" (it may be a little late), product information, faceting ideas, a gem design, some "miscellaneous"--it's just nice to keep in touch.

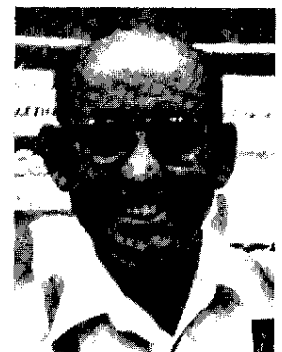
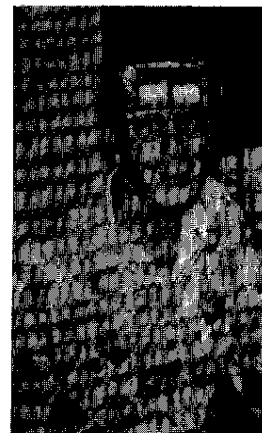
 >> News....

1988 "CHAMPS": We don't want to dwell on competitions (because most of you are interested in faceting for other reasons). BUT--we must tell you: the American Society of Gemcutters (ASG), in over 270 submittals (this was not a "competition", it was rather to establish individual evaluations), found the top rated professional faceter of '88 to be Stephan

Kotlowski of Kremenz Company of New Jersey, and the top rated amateur to be Joseph Smith of North Carolina. If you guessed that they are both Ultra Tec faceters, you guessed right.

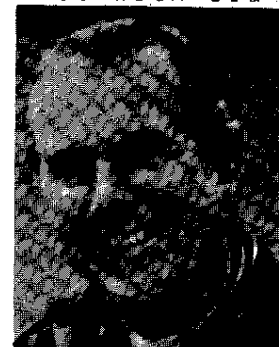
CONGRATULATIONS to Stephan and Joe! Further congratulations to Bill Horton, who was tops in the cabachon category

(Bill, also an Ultra Tec faceter, made that top level cabachon on an Ultra Tec faceting machine--more about that later on in this letter).

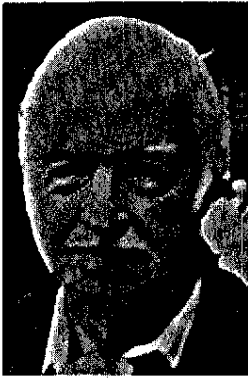


LEFT TO RIGHT...
KOTLOWSKI,
SMITH, &
HORTON

AT THE SHOWS: The International Faceters Fair was in Sacramento this year at the Cal Expo Fairgrounds. The show was bustling! The Faceters Guild of Northern Cal. and their President Dave Rosin, really deserve everyone's thanks ...As usual, it was a chance to meet with old friends and swap a few half-truths, and what could be better than that?---This year (after two years of no winner!) there was a winner of the Best Case Ultra Tec Award--Glenn Klein, an Ultra Tec faceter, and a frequent award winner. Another familiar name, winning for the best piece of jewelry (the Facetron Award) for the second year in a row, was Ultra Tec faceter John Stacy. Charles Hettich won the single stone award, showing (not very often shown) that you don't have to own an Ultra Tec to win an award. Congratulations to all those winners.



>>The Tucson Show this year was a dizzying beehive of activity --and, that's great--but it means that it was difficult to do as much "visiting" as I would like (we are trying to plan an extra day in Tucson next year to remedy this). Nevertheless, I spoke to many Ultra Tec owners and dealers. It is fun to meet someone whom you previously only have spoken to on the phone--the real person rarely looks like the imagined person. One of those "first-timers" was dealer Don Dunn (Ultra Tec facetors around Dayton know Don). I'd like to list everybody, but it would take a whole page--one of these years I'm going to take lots of photos, and print them all--and the cousins will have a photo album (rogues gallery ?) to look through.



--Some of the gemstones we saw were really special:

>> Art Grant, of Rochester, NY (our dealer there) had an outstanding case, showing a 4000 carat (!) fluorite, along with many other fluorites. Fluorite has a hardness of 4. Imagine polishing stones that soft (there was an article about this in the Sept.'88 issue of the Lap. Journal). I was going to say "the harder the faceting job, the more Art loves it"--but it should be "the softer" etc.

>> The Old Pueblo Faceters Guild (of Tucson) had an attractive case of faceted stones--a super group effort.

>> And, a display lent by the Smithsonian: an extraordinary topaz of 23000 carats (!!), cut by Leon Agee of Walla Walla (yes, an Ultra Tec cutter, but that huge topaz was cut on specially prepared equipment--there was an article about it in the Dec.'88 Lap. Journal). Leon reports that it took 1000 hours over a 3 year period. The stone was beautifully cut, and was impressive for that as well as its size.

>>--And, Justina Wright of "Justina", of Fallbrook, California, showed something "new"--Pink Spinel from the Soviet Union (a nice "spinoff" of improved relations). As usual, Justina's work was super--the Pink Spinel looked great. We'll surely hear more about it in the future.

NEW STUFF.....

>> A 77 Index Gear...At the Sacramento show, a faceter showed me several stones that were exceptionally brilliant--and he showed me why--they were cut with seven-fold symmetry. I had read about the advantages of odd-numbered symmetry--for example, in Vargas' Diagrams for Faceting, Vol. III, in a section devoted to seven-sided "Heptagons", Glenn Vargas writes: "...heptagons are surprisingly brilliant...due to light rays reflecting from a flat facet onto two or more facets. The rays are broken up, and are reflected in different directions....". Reading that was one thing, but it wasn't until I took a good look at the stones that I really understood.

The gentleman wasn't there just for my entertainment--he was there to complain that there wasn't any Index Gear to cut a seven sided stone. "How about a 63 Index Gear?" he said, and I said "You're right--we'll do it." --So, in Tucson we announced a 63 Index Gear, --and a faceter said "Why don't you make a 77 Index Gear? That would do sevens and elevens" and I said "You're right,--we'll do that." --Back in Santa Ana, I broached the question with our gearcutter and he said he indeed

could broach us a 77 gear. (Now you know the depth of analysis that goes into some engineering decisions.)

And so, we announce the availability of the 77 Index Gear.

7-sided Designs? Well there is the Vargas "Heptagon" chapter. And, keep in mind that almost any symmetrical eight can be cut as a symmetrical seven. Try it, if your eyes can handle the dazzle.

>> Not exactly new, but sort of--We have made the flex-tube downspout standard on new Drip Tanks (it had been an add-on). It allows placing the water anywhere on the lap by positioning the spout, and, it minimizes splashing since the droplet is not falling and atomizing on the lap surface. The flex spout is still available as an add-on to older tanks--it threads on. The higher post that we provide for mounting the tank allows more convenience in positioning the spout.

>> So-what-else is new department--Prices are up, about the amount of the Government reported inflation. We've learned that if we ignore the years of "low inflation", they add up and then bite us. Some of the inflation is not so low--as you may know, the price of aluminum cans is now 85 cents a pound--imagine what has happened to our metal costs.

>> Not-really-new (but you didn't likely know about it) department--Some facetors who visited us in Tucson noticed a "different" Ultra Tec, and asked us to tell about it. What they saw was a type of unit that we ship to overseas factories (that's why we show it in Tucson--where we meet with people from Asia, South America, and Africa). The biggest difference is the spindle system. There is no dop chuck--the dops insert directly into the spindle. The dops are keyed for both depth and rotational position. The design allows the processing of groups of stones, handling them from machine to machine. The design has been in use overseas for over 10 years.

Having made these units for a long time now, we've gotten the manufacturing techniques to where the accuracy is as good as the Custom Faceting machines with which you are familiar. We have even given thought to making it the standard domestic Ultra Tec (now, you dop-chuck users and lovers have no fear--we will always supply your needs, in line with our "non-obsolescence" pledge).

I don't want to take up too much space with this--I just wanted to get out an explanation for those folks who see it and say "What's that!". If the idea of it particularly appeals to you, write or call, and we'll tell you more.

A FEW TIPS...keeping one's ear to the ground....

>> In speaking to Justina, she said that she uses warm water in her drip tank when cutting tourmaline. It tends to prevent the possible fracture that can occur with cold water.

>> Bob Steele (who is a chemist), also discussed what goes into the drip tank: He said it is a good idea to use a detergent additive, but rather than just adding a few drops now and then into the Drip Tank, the mixture should be constant from time to time. Consequently, it is best to make a larger quantity (say, a gallon at a time). He suggests using an ounce (about two tablespoons) of detergent to a gallon of water (if you have filtered water, that's better than tap water). The

detergent should be a non-cloudy type (like "Joy"). There are benefits to the faceting process and cleaner laps last longer.

>> Remember I mentioned Bill Horton's topping the ASG field with his cabachon...cut on his Ultra Tec? It was a Tricolor Brazilian Agate, which had to be 38mm round, 8mm max. thickness, and a girdle thickness of 1.5mm. This is the sequence Bill used:

a) Made a flat back--by hand, using a 260 bonded diamond-bonded lap, followed by a copper lap with 3000 diamond, followed by a felt surface lap with cerium oxide. [This same lap sequence is used for the subsequent operations.]

b) Dopped the stone onto the back surface, inserted it into the Ultra Tec spindle, set it into freewheeling, and rotated it (Bill used a motorized rotator--similar to the one we offer), getting the girdle round, and of precise required dimension.

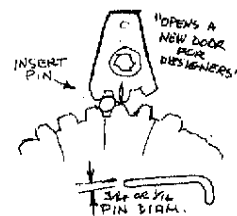
c) Made the backside chamfer--this is a little tricky--he raised the lap high enough so that it would make contact with the stone, with the spindle pointed up 45 degrees. See the sketch (it's easier to show you than tell it). Bill used a Jacobs Chuck as a riser, as shown (but other risers could be devised). After this operation, he removed the special raised-lap setup, returning the machine to its usual configuration--and mounted the 260 lap for the next step.

d) He set the angle dial at 70 degrees, and, again in freewheeling, rotated the stone against the lap, getting a perfect face "preform", and precisely controlling the required girdle thickness.

e) And, with everything "under control", he finished the domed top surface by hand.

(Now, I could do that, but would I get the top score? Nah.

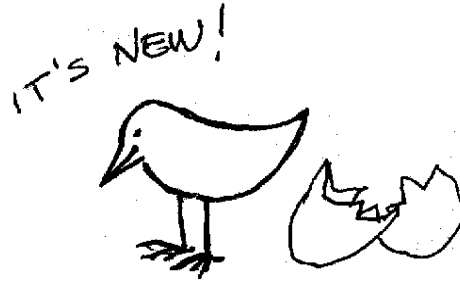
>> A nice little idea comes from Bob Hall, of Pinellas Park, Florida (Bob is designer of the enclosed gem diagram). He calls it Hall's Half-Index Gismo. It is a small-diameter rod (he bends a little handle onto it, so it doesn't get lost easily), which can be inserted between the detent (gear segment) and the teeth of the index gear, providing an exact 1/2 index position--see the sketch--this is another easier to show than tell. A 3/64 diameter would work nicely with a 96, and a 1/16 with a 64--both standard dowel pin sizes. Bob knows of only one design for half-index positions ((Howard Vible's Darius Triangle, [Facets])), but can more be far behind?



MISCELLANEOUS....In Tucson, we took an extra day, after the show, to rest and to visit the Desert Museum. If you visit Tucson next year, set aside a day for that--you'll love it.....After Tucson, the factory enjoyed a visit from Emil Muller, who teaches faceting at the Young Harris school in Georgia.....Do you have a design, or a few tips for this newsletter? Send them--we promise undying fame.....Jimmy Perez (our "master" in base-alignment) worked the Sacramento show, and we think he's got the show "bug"--so you'll probably see him at the So. Cal. Faceters Fair..... So long for now...

BEST WISHES....from all of us at Ultra Tec

77 index gear...



THIS INDEX GEAR DOES 7 FOLD SYMMETRY AND 11 FOLD SYMMETRY!

ODD_NUMBER SYMMETRY RESULTS IN A PARTICULARLY BRILLIANT STONE!

As Glenn Vargas points out (in a discussion of seven-sided gems), "This...is due to light rays reflecting off from one flat surface onto two or more facets. The rays are broken up and are reflected in different directions, resulting in a scattering of the rays."

TRY IT !!!

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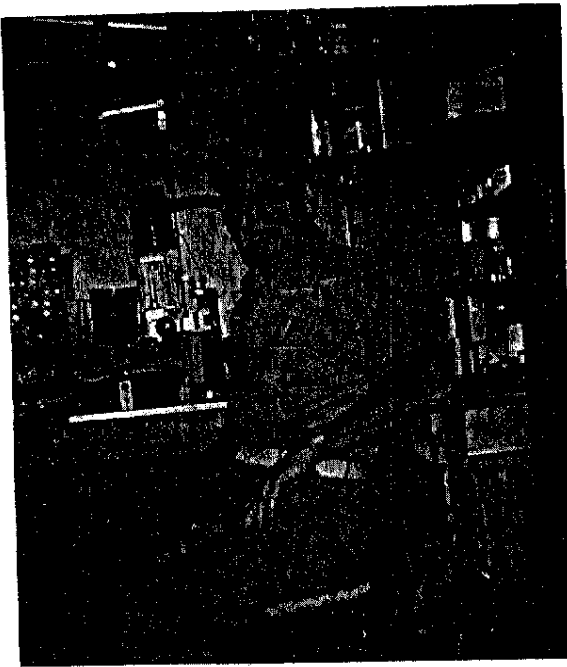
SHOWS AND CONFERENCES OF SPECIAL INTEREST.....All of these include lectures and discussions about practical aspects of faceting--you will find them informative and enjoyable.

- 1989 NORTHWEST FACETERS CONFERENCE, Memorial Day Weekend...
May 27-28, at the Red Lion/Lloyd Center, Portland, Ore.
There are Novice, Advanced, and Master competitions--and mail-in entries are accepted. These are all single stone, judged on workmanship only. For info. call: Don Patton (503) 668-8927

- FACETERS GUILD OF SOUTHERN CALIFORNIA, 10TH FACETERS GEM FAIR
at the Orange County Fairgrounds, Costa Mesa, California.
September 30 & October 1
Show info: Dennis Anderson (714) 532-5412
Competition info: Ken Leifeste (714) 630 1447

- MIDWEST FACETERS GUILD--Fifth Faceters Gem and Jewelry Fair, October 27-29, at the Dearborn Civic Center, Dearborn, Michigan.
Show Chairman: George Judd (313) 928-5660
This show has many competitions, including competitions that are judged on workmanship only (for which mail-in entries are permitted)--single stone (several), 3-stone, 4-stone, 5-stone.
Info: Ed Daniels (313) 624-1089.

- BIG SKY FACETERS GUILD--11TH BIG SKY GEM SHOW,
at the Sheraton Inn, Great Falls, Montana.
OCTOBER 8-9
Single stone and 3-stone competitions, judged on workmanship only. For info: Walt Schneider (406) 727-2315



Bob Hall is a retired engineer (Civil Engr; US Navy). Bob writes "I have been faceting 15 years and still don't know it all, but it is the most satisfying hobby that I know of."

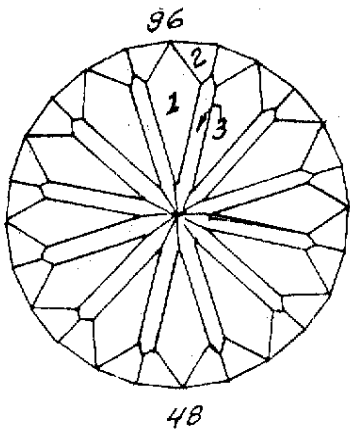
Doing facet designs is the most rewarding portion of the hobby. Most of my designs have been published by "Facets" (Columbia-Willamette Facet Guild). Two have been selected among the best 12 of the year-- "Quadriion" 1983 & "Trilite" 1987. As you can see in the photo my shop is very small and a real mess except I know where everything is. Actually, it is a closet with accordion doors that I close rather than straighten things up to keep my wife happy"

And here is Bob's "Rheims Window". It was inspired by the beautiful Rose Window in the west end of the Rheims Cathedral, France.

RHEIMS WINDOW
96 INDEX

PAVILION

48 facets PF-90° - 02-06-10-14-18-22-26-30
34-38-42-46-50-54-48-62
66-70-74-78-82-86-90-94

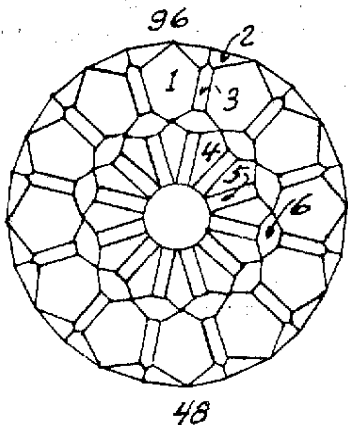


- 1. -43° -08-16-24-32-40-48-56
64-72-80-88-96
- 2. -46° SAME AS PF
- 3.*-42° -04-12-20-28-36-44
52-60-68-76-84-92
*(slight angle change may be required)

- 1. 38° -08-16-24-32-40-48-56
64-72-80-88-96

CROWN

85 FACETS



- 2. 45° -02-06-10-14-18-22-26-30
34-38-42-46-50-54-58-62
66-70-74-78-82-86-90-94
- 3.*-37 1/2° -04-12-20-28-36-44
52-60-68-76-84-92
- 4. 23° - SAME AS 1.
- 5. *22 1/2° - SAME AS 3.
- 6 29 1/2° - SAME AS 3.
- 0 - TABLE - SMALL