

# THE MIDWEST FACETER



December 1997  
Volume 17 Issue 5

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## The Midwest Faceter

Co-Editor  
11630 S. Gera Road  
Birch Run, MI 48415

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JOANN M. RICE  
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1998

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### *Inside This Issue*

- \* December Meeting Information
  - \* Great Cutting Diagrams
  - \* Angles Article
- 

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# The Midwest Faceter

Volume 17 Number 5

December 1997

## **MIDWEST FACETERS GUILD**

*\* Membership  
Information*

*\* Newsletter  
Deadlines*

## **A Publication of the Midwest Faceters Guild**

**E** ditors: **Kathleen Myers**  
**Bill Horton**

Send all Articles to:

**THE MIDWEST FACETER**  
11630 S. Gera Road  
Birch Run, MI 48415

Deadline:

The 10th of the month  
preceding publication.

**THE MIDWEST FACETER** is not not forwardable. For membership application or change of address contact: **Membership Chairman: Ray Becker 29802 Rosebriar Street, St. Clair Shores, MI 48082-2634.**

**THE MIDWEST FACETER** is the the official publication of the **MIDWEST FACETERS GUILD** and is published five times each year available to members only as a portion of their annual membership dues. Statements appearing in **THE MIDWEST FACETER** are those of the authors and not necessarily those of the **THE MIDWEST FACETERS GUILD**, **MWFG** Board of Directors, or **THE MIDWEST FACETER** editors. The editors reserve the right to edit all material submitted for publication. Permission to reprint any material published in **THE MIDWEST FACETER** is granted provided full credit is given to **THE MIDWEST FACETER** and to the author.

## **THE MIDWEST FACETERS GUILD**

**\* ORGANIZED JULY 14, 1979**

### **PURPOSES**

- \* TO PROMOTE EDUCATION AND RECREATION**
- \* TO DEVELOP THE ART OF FACETING**
- \* TO EXCHANGE INFORMATION RELATED TO FACETING**
- \* TO PROVIDE MEETING FOR THOSE OF LIKE INTERESTS**
- \* TO PROMOTE THE ACHIEVEMENT OF INDIVIDUALS**

### **MEMBER OF:**

**THE MIDWEST FEDERATION OF MINERALOGICAL AND GEOLOGICAL SOCIETIES**

**THE AMERICAN FEDERATION OF MINERALOGICAL SOCIETIES**

## MIDWEST FACETERS GUILD

### B OARD OF DIRECTORS

**President "Arizona" Rice**  
122 Lois Lane  
Mt. Clemens, MI 48043-2243  
(810) 463-5972

**Treasure Lester Medlen**  
3639 Hiawatha Blvd.  
Fort Wayne, IND 46809-1227  
(219) 747-4985

**Secretary Jacquie Swain**  
5806 Old Town Street  
Detroit, MI 48224-2027  
(419) 729-3407

**Vice-Pres. Bill Schell**  
26320 Chippendale Street  
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(810) 775-3397

**Past Pres. Bill Gardiner**  
4515 Sandstone Drive  
Williamston, MI 48895  
(517) 655-3608



### COMMITTEE CHAIRPERSONS

**Competition** Ed Myers email kmyers@tir.com  
11630 South Gera Road Birch Run, MI 48415 (517) 624-9178

#### Education

**Historian** Susan Hiltner  
16445 Pellett Fenton, MI 48430 (810) 634-5104

#### Hospitality

**Librarian** Carman Eiche  
852 Wright Toledo, OH 43609-3058 (419) 382-4862  
**Mailing** Fran Bush  
931 Bricker Street Toledo, OH 43608 (419) 729-3407  
**Membership** Ray Becker  
29802 Rosebriar Street, St. Clair Shores, MI 48082-2634

**Meeting Hostess** Jane Holt  
6758 Erie Street Sylvania, OH 43560 (419) 882-1492

**Parliamentarian** Virginia Steele  
250 E. Bristol Street #A7 Elkhart, IN 46514 (219) 264-4830

**Rules** Dick Fairless  
506 Alice Street East Tawas, MI (517) 362-5748

#### Seminar

**Show 1998** Don Sahr  
29435 Seaway Ct. Mt. Clemens, MI 48045 (810) 465-3622

#### Special Display

### THE MIDWEST FACETER

#### Co-Editors

William J. Horton  
2589 Hughes Road Howell, MI 48843 (517) 546-2159  
email wjhorton@tir.com  
Kathleen Myers  
11630 S. Gera Road Birch Run, MI 48415 (517) 624-9178  
email kmyers@tir.com

**GUILD MEETING January 17, 1998**

**The Royal Fork Restaurant  
Okemos, Michigan**

**Board Meeting 10:00 A.M.**

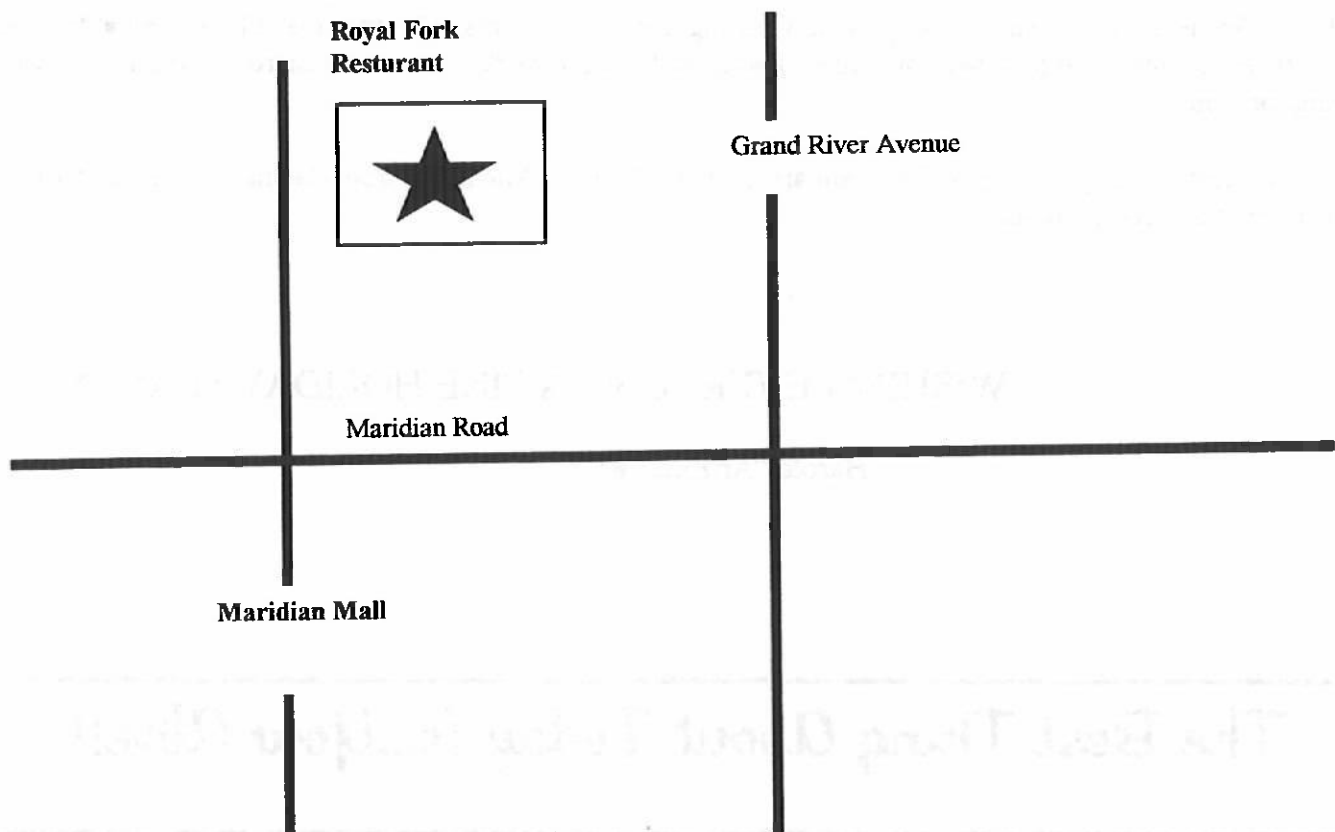
**Morning Session - All Welcome 10:00 - 11:30A.M.**

**Lunch at 11:30 - all welcome to join**

**Regular Meeting 1:00 P.M.**

**Program:**

**Joe Manina - Always Great and Informative!**



**From the President's Pen...**

Harold "Arizona" Rice

We have had a very fruitful summer and fall, what with the Picnic, Seminar, and Show. A lot of time and effort was donated by a few members in order that the aims and goals of the Guild could be achieved.

The usual picnic site was booked to someone else, but Bill and Shirley Horton graciously invited us to use their place for our gathering. The Horton's put forth a lot of time and effort to make us feel welcome, comfortable, and happy. We thank them for their generosity and hospitality.

The Seminar was a huge success this year with Bill Horton doing the lion's share of the work. (Kathleen Myers did her usual fine job lining up great instructors and putting together the Special Seminar Edition of THE MIDWEST FACETER but was unable to attend because of a family emergency). The Seminar was very successful and there was a lot of camaraderie present throughout the Seminar. A special thank-you to Bill for all his excellent hard work - a job very well done!

The annual Show was also very successful. Don Sahr, the Show Chairman did an excellent job pulling the entire show together. Thank-you Don and all those who helped for your hard work - great job!

In two years we will be in the 21st Century. Our Hobby is moving right along. All things change and one thing we need to remember is that the Guild is yours. It belongs to you. To make things continue to run smooth, we all must have input. EVERY member is important. It is easy to sit back and criticize and never get involved. Please remember, there are a few people putting forth a lot of time and effort to make the Guild functional for you. There is an old saying that before you criticize anyone, you must first walk in his moccasins for one mile. We need the help of each and every individual member if we are to have continued success.

I wish to thank all the volunteers who helped with all our endeavors. It was a BIG JOB for a few members. We need more help in setting up and tearing down our events. It is true that all are tired at the end of the meetings, seminars, and shows, but many hands make light work. PLEASE be there to volunteer - we are counting on you!

Our next meeting will be held on January 17th at Okemos, Michigan. Joe Manina will be our host and a fine program has been prepared.

**WISHING EVERYONE A FINE HOLIDAY SEASON.**

Harold "Arizona" Rice

**The Best Thing About Today Is...Your Alive!!**

**Rules Notes...**

*Dick Fairless*  
**MWFG Rules Chairman**

The show was outstanding! There were only four gemstones in competition. That's disappointing! We are one of the few clubs in this area that still encourages competition. Each year it seems to dwindle to less and less. Competition is only competitive when someone enters. Only two people entered this year. Each of them are to be congratulated for their efforts.

Phillip Grim entered three gemstones in three different categories. He took home two GOLD Medallions and one SILVER Medallion for his efforts. These are inscribed and given by the Guild. They will last forever as a memento of his achievement! They will never be taken from him. His gemstones were gorgeous!

Vincent Bishop entered in one category, and came away with the GOLD Medallion. Vince proved his abilities with his entry, it was spectacular!

Great Job of cutting from both of you!

|          |              |        |
|----------|--------------|--------|
| Class 13 | Phil Grim    | Gold   |
| Class 14 | Phil Grim    | Gold   |
| Class 16 | Vince Bishop | Gold   |
| Class 16 | Phil Grim    | Silver |

**From The Rolls...**

*Ray Becker, Membership Chairman*

**MIDWEST FACETERS GUILD MEMBERSHIP**

Dues \$5.00 - includes subscription to The Midwest Faceter

Fiscal year is January 1st through December 31st. Dues are \$ 5.00 per fiscal year or portion of a year.

Name \_\_\_\_\_

Street \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

Zip Code \_\_\_\_\_ Phone (\_\_\_\_) \_\_\_\_\_ Country \_\_\_\_\_

Email \_\_\_\_\_

Do you teach faceting ? \_\_\_\_\_ What type of machine do you have ? \_\_\_\_\_

Make all checks payable to Midwest Faceters Guild and send to:

**Ray Becker**  
**29802 Rosebrier Street**  
**St. Clair Shores, MI 48082-2634**  
**(810) 771-0022**



RENEW TODAY.....RENEW TODAY..... RENEW TODAY.....RENEW TODAY

**SECRETARY'S MINUTES...**

October 4, 1997

Fran Bush was absent for this meeting due to a health problem. This was probably the first meeting Frances has missed since the formation of the MWFG. Frances, we all missed you very much. Bill Horton filled in for this meeting. We will welcome the new Secretary, Jacquie Swain at the next meeting.

The meeting was opened by President Harold Rice, at 10:00, at The Village Inn, in Dearborn.

Bill Horton gave the treasurer's report. It was accepted by a motion by Tom Gibbs and seconded by Bill Gardiner.

Ray Becker, the membership chairperson gave his report. We are currently at 321 members through 1996. He compiled a list of members paid through 1997. This list is enclosed in this bulletin. If your name is not on this list, you will be dropped from the rolls, unless your dues are paid. This list has 160 members paid up through 1997.

Harold rice reported that the positions of Education, Historian, Hospitality, Seminar, Special Display, and Meeting Hostess are open. He requested volunteers to fill those vacancies. (Harold Rice has been temporary Educational Chairman for this year and has produced some of the finest programs ever given to the MWFG. Great Job Harold!)

Bernard Bush reported that he will continue the mailing, and could use some help.

Don Sahr gave a report of progress for the Annual Show. There will not be any cases borrowed from the Dearborn Club. We must furnish our own. Table covering was discussed. Bernard Bush will bring the necessary covering. The mailing list will be updated by Ray Becker. Flyers have been sent to all local clubs. Security has been covered with Argus Security Inc. Jacquie and Glenn Swain are handling the advertising. Bill

Minutes continued on page 7

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**MWFG Membership Badge...**

First Name \_\_\_\_\_

Last Name \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Street Address \_\_\_\_\_

Phone \_\_\_\_\_ Zip \_\_\_\_\_

Mail to: **A-Frame Awards**  
**414 S. Dort Hwy.**  
**Flint, MI 48450**

**Total cost \$ 6.50**  
**(includes shipping)**



**\*\*Note: Specify a date you need when ordering**



## SECRETARY'S MINUTES... Continued

Gardiner and Frank Sheppard are to assist in the advertising. It was agreed to give Don Sahr an additional \$3000.00 for advertising. Don Sahr will procure the necessary ribbons need at the Show. Currently, we have 14 prizes for the raffle. Tom Gibbs will be in charge of the demonstrators. Everyone needs to bring food for the hospitality room.

Bill Gardiner, as the Chairman of the nominating committee, reported the following people had agreed to fill the following positions:

|                |               |
|----------------|---------------|
| President      | Harold Rice   |
| Vice President | Bill Schell   |
| Secretary      | Jacquie Swain |
| Treasurer      | Lester Medlen |

Bill Horton reported an error in the awarding of the Dave Miller Trophy for 1997. Gary Henson won this prestigious award and never received his permanent trophy. Our apologies to Gary Henson. His trophy has been sent to him, and the traveling trophy has been up-dated. It will be on display at the Annual Show. Gary suggested it be shown at the seminars to encourage more participation in the competition for this award.

Harold Rice reported that the MURRAY AWARD would go to James Schlottman.

**The 1998 meetings will be held in the following cities:**

|                  |                                                        |
|------------------|--------------------------------------------------------|
| January 17, 1998 | Lansing (Okemos), Michigan (The Royal Fork Restaurant) |
| March 14, 1998   | Toledo, Ohio (HJ'S Prime Cut Restaurant)               |
| May 9, 1998      | Flint, Michigan (Flint Show)                           |
| June 20, 1998    | Howell, Michigan (Horton's back yard picnic.)          |
| August 22, 1998  | Hartland, Michigan (Seminar Site)                      |
| October 17, 1998 | Dearborn, Michigan (City Tavern)                       |

Tom Gibbs made a motion for a new Guild Directory for the 1998 year. Seconded and passed.

Motion to adjourn, seconded and passed.

**Membership Meeting Minutes**

The membership meeting was called to order by President Harold Rice at 1:00.

Tom Gibbs made a motion to accept the minutes of the last meeting as presented in the bulletin, Don Sahr seconded. Passed.

Bill Horton presented the treasurers report. A motion to accept the report as presented was made by Bill Schell, seconded by Art Kalinski. Passed.

Ray Becker gave the membership report. He reported we have 321 members, but only 160 have paid up through 1997. He reported a listing of paid up current members, to be published in the next bulletin. Non paid members will be deleted from the directory.

Only five members in attendance received their bulletins in advance of the meeting. Harold Rice made a mailing to assist in getting more people to the meeting. Bill Horton responded that the bulletin mailing would be moved up to help the problem. It appears the local post offices do not move the bulletins in a timely fashion.

President Harold Rice reported the need to fill the positions of Historian, Education, Hospitality, Meeting Hostess, Seminar, and Special Display.

Harold Rice was commended for his excellent programs this year. He has filled in as Education Chairman.

Don Sahr gave his report on the progress of the Annual Show. Bernard Bush will bring the table covering. There will not be any cases borrowed from the Dearborn Club. We must provide our own. The mailing is to be updated by Ray Becker. Flyers have been sent to the local clubs. Don has been given permission to spend an additional \$3000.00 on advertising.

Secretary's Minutes continued...

Security for the Show will be provided by the Argus Security Inc. Jacquie and Glenn Swain will handle the advertising, with assistance from Bill Gardiner and Frank Sheppard. We have a contract for the 1998 Annual Show with the Dearborn Civic Center. Don asked for volunteers to set-up and teardown the show. Nine people volunteered. He also asked everyone to bring food for the hospitality room. Don will procure quartz crystals to give to children at the door. We will also give away a CZ in 14k gold for each day of the show, the drawing coming from the questionnaires filled out at the door. Members are to assist as part of the security. Bernard Bush reported mailing costs are going up. He will continue the mailing but could use some help. He reported there are 15 prizes for the raffle.

The Seminar needs a new venue. Tom Gibbs reported the college in Monroe is not available on the weekend. Bill Gardiner is to look into using the school facility in Williamston. Frank Beaven had checked the U of M extension in Flint, and indicated it might be available. Bill Horton is to get the necessary paper work to go back to Hartland if nothing else is available.

It was reported that Paul Billet, from Pennsylvania had passed away, and it has been requested from his family to strike his name from the rolls, and eliminate further bulletins. The scholarship fund will be awarded the usual donation money in his name.

The meeting dates for 1998 were established. Harold Rice asked that the host of each of the meetings arrange for the program. If they could not provide a program, they were to let him know as soon as possible.

**The meeting dates and venues are as follows:**

|                          |                                                               |
|--------------------------|---------------------------------------------------------------|
| <b>January 17, 1998</b>  | <b>Lansing, Michigan (Okemos @ The Royal Fork Restaurant)</b> |
| <b>March 14, 1998</b>    | <b>Toledo, Ohio (HJ's Prime Cut Restaurant)</b>               |
| <b>May 9, 1998</b>       | <b>Flint, Michigan (Flint Show)</b>                           |
| <b>June 20, 1998</b>     | <b>Howell, Michigan (Picnic in Horton's back yard)</b>        |
| <b>August 22, 1998</b>   | <b>Seminar Site (?)</b>                                       |
| <b>October, 17, 1998</b> | <b>Dearborn, Michigan (City Tavern Restaurant)</b>            |

Tom Gibbs moved that we issue a new directory for 1998. Seconded and passed.

Bill Schell inquired as to the whereabouts of his wooden replica's? He asked that whoever has them to please return them to him.

Bill Gardiner, nominating committee chairperson, presented the following slate of officers for 1998:

|                       |                      |
|-----------------------|----------------------|
| <i>President</i>      | <i>Harold Rice</i>   |
| <i>Vice President</i> | <i>Bill Schell</i>   |
| <i>Secretary</i>      | <i>Jacquie Swain</i> |
| <i>Treasurer</i>      | <i>Lester Medlen</i> |

There were no nominations from the floor. Gail Sahr moved that all other nominations be closed. The above slate were elected unanimously.

Motion was made to adjourn, seconded, and passed.

Respectfully Submitted,  
Bill Horton, Secretary Pro-tem

**There's No Time Like The Present!**

## NORTHWEST INTERNATIONAL FACETING CONFERENCE

The annual Northwest International Faceting Conference will be held in Mount Vernon, Washington, on Friday, May 22, Saturday, May 23, and Sunday, May 24, 1998. Preparations and setup will begin on Friday afternoon, with the evening hours (6 to 8:30 p.m.) being spent in informal gatherings including some demonstrations, displays and dealers. The dealers this year will be B & B Gems from Butte, Montana with faceting rough and finished gemstones, and Alpha Supply from Bremerton, Washington, which will bring faceting equipment and supplies.

Saturday, May 23rd and Sunday, May 24th there will be a series of interesting and informative presentations by artisans such as Larry Winn, Marie Claire Dole, Cliff Jackson, Carl Unruh, gemologist Roger Frost, and others

There will be a single stone competition for Novice, Master, Champion, and Past Champion trophies to be presented at an awards luncheon on Saturday, May 23. For additional information, contact Carroll Dillon at (360)856-5581.

The last bulletin contained angles to be used as a reference for materials by Refractive Indices. The following letter is from Jerry Capps.

Bill or Kathleen,

October 1, 1997

In the most recent issue of Midwest Faceter, there appeared some angle recommendations by "Jerry" Carroll from California. These angles are misleading if the maximum brightness is expected. I have enclosed an abbreviated version comparing the Carroll angles with GemCad analysis. There is a considerable difference in most useable materials. (Diamond RI is high enough to "forgive" a fairly wide variance.) I hope readers with a computer will use GemCad and GemFrame instead of an arbitrary set of angles.

(Many of us missed Kathleen at the Seminar, but understand.)

| TILT | REFR  | COS  | ISO  | PM ANGLE               | CM ANGLE | STAR |
|------|-------|------|------|------------------------|----------|------|
| 20   | 2.41* | 65.1 | 84.0 | 40.74                  | 34.12    | 12   |
| 0    | 2.41* | 67.8 | 83.5 | (Jerry Carroll Angles) |          |      |
| 20   | 2.41  | 65.6 | 86.5 | 38.8                   | 27.8     | 12   |
| 0    | 2.41  | 76.6 | 91.6 | (GemCad Angles)        |          |      |
| 20   | 2.13* | 65.3 | 81.1 | 41                     | 35.39    | 12   |
| 0    | 2.13* | 72.0 | 84.4 | (Jerry Carroll Angles) |          |      |
| 20   | 2.13  | 68.6 | 86.2 | 39                     | 29.9     | 12   |
| 0    | 2.13  | 79.0 | 90.9 | (GemCad Angles)        |          |      |
| 20   | 1.79* | 57.9 | 70.6 | 41.99                  | 35.32    | 12   |
| 0    | 1.79* | 77.2 | 85.8 | (Jerry Carroll Angles) |          |      |
| 20   | 1.79  | 64.2 | 75.9 | 39                     | 30.8     | 12   |
| 0    | 1.79  | 85.9 | 92.1 | (GemCad Angles)        |          |      |

continued on page 10

Jerry Capps letter...Continued

| TILT | REFR  | COS  | ISO  | PM ANGLE | CM ANGLE               | STAR |
|------|-------|------|------|----------|------------------------|------|
| 20   | 1.63* | 54.0 | 64.1 | 42.61    | 35.28                  | 12   |
| 0    | 1.63* | 66.6 | 72.7 |          | (Jerry Carroll Angles) |      |
| 20   | 1.63  | 61.0 | 70.8 | 39       | 35                     | 12   |
| 0    | 1.63  | 87.5 | 93.0 |          | (GemCad Angles)        |      |
| 20   | 1.54* | 50.2 | 59.0 | 43.02    | 35.26                  | 12   |
| 0    | 1.54* | 48.9 | 54.7 |          | (Jerry Carroll Angles) |      |
| 20   | 1.54  | 53.1 | 61.0 | 40.8     | 34.8                   | 12   |
| 0    | 1.54  | 87.6 | 93.1 |          | (GemCad Angles)        |      |

(Random RI's were selected

Table size was a constant 50.5 % on all designs used for the analysis. Star angles were tried at 12 to 16 degrees, with little difference, so 12 degrees was used on all designs for general faceup brightness superiority. No "Break" facets were used (simplifying the analysis). The custom of making "Break" facets 2 degrees greater than Mains doesn't always produce the best results, so Breaks were omitted. The analysis represents an improvement — not the optimum brightness for faceup or tilted 20 degrees. Table size, symmetry, Break angles — all contribute to "BRIGHTNESS" analysis. No angle increase was allowed for  
\*DISPERSION.

**RECOMMENDATION:** Use GenCad's support program "GEMFRAME" to analyze your designs if you have a "486" chip computer and math coprocessor (or better).

**Editors note:** Thanks Jerry for your article. I'm not sure all of our readers have a computer, or GEMCAD programs. Those that do not, keep on cutting!! Use whatever information works to your benefit. More often than not, the size and shape of the material will dictate your cutting angles. Kenyon Painter sent me an additional chart that is a composite of no less than seven authorities on angles for material. He wrote the article for the bulletin "ANGLES".

**The 1998 meetings will be held in the following cities:**

|                         |                                                      |
|-------------------------|------------------------------------------------------|
| <b>January 17, 1998</b> | <b>Lansing (Okemos), Michigan (The Royal Fork</b>    |
| <b>March 14, 1998</b>   | <b>Toledo, Ohio (HJ'S Prime Cut Restaurant)</b>      |
| <b>May 9, 1998</b>      | <b>Flint, Michigan (Flint Show)</b>                  |
| <b>June 20, 1998</b>    | <b>Howell, Michigan (Horton's back yard picnic.)</b> |
| <b>August 22, 1998</b>  | <b>Hartland, Michigan (Seminar Site)</b>             |
| <b>October 17, 1998</b> | <b>Dearborn, Michigan (City Tavern)</b>              |

## CROWN &amp; PAVILION ANGLES BY VARIOUS AUTHORS

| MATERIAL     | HARDNESS  | CRITICAL<br>ANGLE | INDEX OF<br>REFRACTION | AUTHORITY |          |
|--------------|-----------|-------------------|------------------------|-----------|----------|
|              |           |                   |                        | CORNWAL   | SCHLAGEL |
| Actinolite   | 5 - 6     | 38°24'            | 1.61 - 1.64            | 42 / 35   | 40 / 36  |
| Amblygonite  | 6         | 38°03'            | 1.61 - 1.64            | 42 / 35   | 40 / 36  |
| Andalusite   | 7.5       | 37°55'            | 1.63 - 1.64            | 42 / 35   | 39 / 35  |
| Apatite      | 5         | 37°45'            | 1.632 - 1.646          | 42 / 35   | 39 / 35  |
| Apophyllite  | 4.5 - 5   | 40°39'            | 1.535 - 1.537          | 44 / 37   | 42 / 38  |
| Augelite     | 5         | 39°31'            | 1.570 - 1.590          | 43 / 36   | 41 / 37  |
| Axinite      | 6.5 - 7   | 36°32'            | 1.678 - 1.688          | 42 / 35   | 39 / 35  |
| Barite       | 2.5 - 3.6 | 37°41'            | 1.636                  | 42 / 35   | 39 / 35  |
| Benitoite    | 6 - 6.5   | 34°42'            | 1.757 - 1.804          | 40 / 34   | 40 / 36  |
| Beryl        | 7.5 - 8   | 39°13'            | 1.575 - 1.583          | 43 / 36   | 41 / 37  |
| Berylone     | 5.5 - 6   | 40°07'            | 1.552 - 1.562          | 44 / 37   | 42 / 38  |
| Brazilianite | 5.5       | 38°44'            | 1.598 - 1.617          | 43 / 36   | 41 / 37  |
| Calcite      | 3         | 42°15'            | 1.486 - 1.658          | 45 / 39   | 42 / 38  |
| Cassiterite  | 6 - 7     | 30°03'            | 1.997 - 2.093          | 38 / 33   | 41 / 37  |
| Celestine    | 3 - 3.5   | 38°03'            | 1.622 - 1.631          | 42 / 35   | 40 / 36  |
| Chrysoberyl  | 8.5       | 34°56'            | 1.746 - 1.755          | 40 / 34   | 40 / 36  |
| Corundum     | 9         | 34°37'            | 1.760 - 1.770          | 40 / 34   | 40 / 36  |
| Crocoite     | 2.5 - 3   | 29°30'            | 2.310 - 2.660          | 39 / 34   | 42 / 38  |
| Danburite    | 7 - 7.25  | 37°50'            | 1.630 - 1.636          | 42 / 35   | 39 / 35  |
| Datolite     | 5 - 5.5   | 37°58'            | 1.626 - 1.669          | 42 / 35   | 39 / 35  |
| Diamond      | 10        | 24°25'            | 2.419                  | 39 / 34.5 | 42 / 38  |
| Diopside     | 5 - 6     | 36°46'            | 1.680                  | 42 / 35   | 39 / 35  |
| Diopase      | 5         | 37°28'            | 1.644 - 1.658          | 42 / 35   | 39 / 35  |
| Enstatite    | 5 - 6     | 37°18'            | 1.658 - 1.670          | 42 / 35   | 39 / 35  |
| Epidote      | 6 - 7     | 35°20'            | 1.754                  | 41 / 34   | 39 / 35  |
| Euclase      | 7.5       | 37°18'            | 1.654 - 1.673          | 42 / 35   | 39 / 35  |
| Feldspar     | 5 - 6.5   | 41°12'            | 1.518 - 1.588          | 44 / 37   | 42 / 38  |
| Fluorite     | 4         | 44°13'            | 1.434                  | 46 / 40   | 45 / 41  |
| Almandine    | 7 - 7.5   | 33°45'            | 1.800                  | 41 / 34   | 40 / 36  |
| Andradite    | 6.5       | 31°57'            | 1.890                  | 39 / 34   | 41 / 37  |
| Grossularite | 7.25      | 35°05'            | 1.735                  | 41 / 34   | 39 / 35  |
| Pyrope       | 7.25      | 34°56'            | 1.746                  | 41 / 34   | 39 / 35  |
| Rhodolite    | 7.25      | 34°37'            | 1.760                  | 40 / 34   | 40 / 36  |
| Spessartite  | 7.25      | 33°45'            | 1.800                  | 40 / 34   | 40 / 36  |
| Uvarovite    | 7.50      | 33°07'            | 1.830 - 1.870          | 41 / 34   | 41 / 37  |

## CROWN AND PAVILION MAINS BY VARIOUS SOURCES

| SINKANKAS    | SOUKUP  | VARGAS  | WYKOFF  | CARROLL      |
|--------------|---------|---------|---------|--------------|
| 40 / 40      | 39 / 43 | 42 / 41 | 43 / 39 | 42.6 / 35.3  |
| 40 / 40      | 39 / 43 | 43 / 42 | 43 / 39 | 42.7 / 35.3  |
| 40 / 40      | 39 / 43 | 42 / 41 | 43 / 39 | 42.6 / 35.3  |
| 40 / 40      | 39 / 43 | 42 / 41 | 43 / 39 | 42.6 / 35.3  |
| 43 / 40 - 50 | 43 / 42 | 43 / 42 | 43 / 39 | 43.0 / 35.3  |
| 43 / 40 - 50 | 43 / 42 | 43 / 42 | 43 / 39 | 42.8 / 35.3  |
| 40 / 40      | 39 / 43 | 42 / 40 | 42 / 39 | 42.4 / 35.3  |
| 40 / 40      | 39 / 43 | 43 / 41 | 43 / 39 | 42.6 / 35.3  |
| 40 / 40      | 42 / 37 | 41 / 39 | 42 / 39 | 42.0 / 35.3  |
| 43 / 40 - 50 | 43 / 42 | 43 / 41 | 43 / 39 | 42.8 / 35.3  |
| 43 / 40 - 50 | 43 / 42 | 43 / 42 | 43 / 39 | 42.9 / 35.3  |
| 40 / 40      | 43 / 42 | 42 / 41 | 42 / 39 | 42.7 / 35.3  |
| 43 / 40 - 50 | 45 / 42 | 44 / 43 | 44 / 42 | 43.5 / 35.3  |
| 39 / 30 - 40 | 41 / 35 | 40 / 36 | 42 / 35 | 41.3 / 35.4  |
| 40 / 40      | 39 / 43 | 43 / 41 | 43 / 39 | 42.7 / 35.3  |
| 40 / 40      | 42 / 37 | 42 / 39 | 42 / 38 | 42.1 / 35.3  |
| 40 / 40      | 42 / 37 | 42 / 39 | 42 / 38 | 42.1 / 35.3  |
| 39 / 30 - 40 | 41 / 35 | 41 / 35 | 41 / 34 | 40.8 / 33.4  |
| 40 / 40      | 39 / 43 | 42 / 41 | 43 / 39 | 42.6 / 35.3  |
| 40 / 40      | 39 / 43 | 42 / 41 | 43 / 39 | 42.6 / 35.3  |
|              | 41 / 35 | 41 / 35 | 41 / 34 | 40.75 \ 34.0 |
| 40 / 40      | 39 / 43 | 42 / 40 | 42 / 39 | 42.4 / 35.3  |
| 40 / 40      | 39 / 43 | 42 / 41 | 42 / 39 | 42.5 / 35.5  |
| 40 / 40      | 39 / 43 | 42 / 41 | 42 / 39 | 42.5 / 35.3  |
| 40 / 40      | 42 / 37 | 42 / 39 | 42 / 39 | 42.1 / 35.3  |
| 40 / 40      | 39 / 43 | 42 / 41 | 42 / 39 | 42.5 / 35.3  |
| 43 / 40 - 50 | 43 / 42 | 43 / 42 | 44 / 42 | 43.0 / 35.3  |
| 43 / 40 - 50 | 45 / 41 | 45 / 44 | 45 / 42 | 45.0 / 29.5  |
| 40 / 40      | 42 / 37 | 41 / 39 | 42 / 39 | 42.0 / 35.3  |
| 40 / 40      | 42 / 37 | 41 / 39 | 42 / 35 | 41.7 / 35.3  |
| 40 / 40      | 42 / 37 | 41 / 40 | 42 / 39 | 42.2 / 35.3  |
| 40 / 40      | 42 / 37 | 41 / 40 | 42 / 39 | 42.1 / 35.3  |
| 40 / 40      | 42 / 37 | 41 / 40 | 42 / 39 | 42.1 / 35.3  |
| 40 / 40      | 42 / 37 | 41 / 39 | 42 / 39 | 42.0 / 35.1  |
| 40 / 40      | 42 / 37 | 41 / 39 | 42 / 35 | 41.7 / 35.3  |

## CROWN AND PAVILION MAINS BY VARIOUS AUTHORS

| MATERIAL      | HARDNESS  | CRITICAL<br>ANGLE | INDEX OF<br>REFRACTION | AUTHORITY   |          |
|---------------|-----------|-------------------|------------------------|-------------|----------|
|               |           |                   |                        | CORNWAL     | SCHLAGEL |
| Idocrase      | 6.5       | 36°02'            | 1.700 - 1.720          | 41 / 34     | 39 / 35  |
| Iolite        | 7 - 7.5   | 40°41'            | 1.534 - 1.551          | 44 / 37     | 39 / 35  |
| Kornerupine   | 6.5       | 36°55'            | 1.665 - 1.682          | 42 / 35     | 39 / 35  |
| Kyanite       | 4,5,7     | 35°44'            | 1.712 - 1.731          | 41 / 34     | 39 / 35  |
| Opal          | 5 - 6.5   | 43°36'            | 1.450                  | 45 / 39     | 45 / 41  |
| Peridot       | 6.5 - 7   | 37°18'            | 1.654 - 1.690          | 42 / 35     | 39 / 35  |
| Phenakite     | 7.8 - 8   | 37°18'            | 1.654 - 1.670          | 42 / 35     | 39 / 35  |
| Pollucite     | 6.5       | 38°02'            | 1.520                  | 44 / 37     | 43 / 39  |
| Prehnite      | 6 - 6.5   | 38°15'            | 1.615 - 1.645          | 42 / 36     | 40 / 36  |
| Proustite     | 2 - 2.5   | 21°               | 2.790 - 3.090          | 45 / 39     | 43 / 39  |
| Quartz        | 7         | 40°20'            | 1.544 - 1.553          | 44 - 36     | 42 / 38  |
| Rhodochrosite | 3.5 - 4.5 | 38°48'            | 1.597 - 1.826          | 41 / 34     | 40 / 36  |
| Rutile        | 6 - 6.5   | 22°31'            | 2.616 - 2.903          | 42 / 37     | 42 / 38  |
| Scapolite     | 5 - 6     | 39°52'            | 1.560 - 1.580          | 43 / 35     | 42 / 38  |
| Scheelite     | 4.5 - 5   | 38°15'            | 1.910                  | 39 / 34     | 41 / 37  |
| Sphalerite    | 3.5 - 4   | 24°58'            | 2.368 - 2.374          | 39 / 34     | 42 / 38  |
| Sphene        | 5 - 5.5   | 32°02'            | 1.885 - 2.050          | 38 / 33     | 41 / 37  |
| Spinel        | 8         | 35°36'            | 1.718                  | 41 / 34     | 39 / 35  |
| Spodumene     | 6.5 - 7   | 37°02'            | 1.660 - 1.676          | 42 / 35     | 39 / 35  |
| Staurolite    | 7 - 7.5   | 34°51'            | 1.740 - 1.760          | 40 / 34     | 40 / 36  |
| Topaz         | 8         | 37°50'            | 1.630 - 1.638          | 42 / 35     | 40 / 36  |
| Tourmaline    | 7 - 7.5   | 38°01'            | 1.624 - 1.644          | 42 / 35     | 40 / 36  |
| Willemite     | 5.5       | 36°17'            | 1.650 - 1.720          | 40 / 34     | 39 / 35  |
| Wulfenite     | 4 - 4.5   | 25°11'            | 2.300 - 2.400          | 39 / 34     | 42 / 38  |
| Zincite       | 4 - 4.5   | 29°47'            | 2.013 - 2.029          | 38 / 33     | 41 / 37  |
| a Zircon      | 7.5       | 31°23'            | 1.925 - 1.991          | 38 / 32     | 40 / 36  |
| x Zircon      | 6.5       | 33°32'            | 1.810 - 1.840          | 40 / 34     | 40 / 36  |
|               |           |                   |                        | Ideal       |          |
| CZ            | 8.5       | 27°26'            | 2.170                  | 38.7 / 41.5 |          |
| G.G.G.        | 6.5       | 30°30'            | 1.965                  | 39.5 / 47.0 |          |
| Strontium     | 5.5 - 6   | 24°31'            | 2.410                  |             |          |
| Titanate      |           |                   |                        |             |          |
| Y.A.G.        | 8.25      | 33°7'             | 1.830                  | 43.0 / 34.0 |          |

## CROWN AND PAVILION MAINS BY VARIOUS SOURCES

| SINKANKAS    | SOUKUP  | VARGAS  | WYKOFF  | CARROLL     |
|--------------|---------|---------|---------|-------------|
| 40 / 40      | 39 / 43 | 42 / 40 | 42 / 39 | 42.3 / 35.3 |
| 43 / 40 - 50 | 43 / 42 | 43 / 42 | 43 / 39 | 43.0 / 35.3 |
| 40 / 40      | 39 / 43 | 43 / 40 | / 39    | 42.4 / 35.3 |
| 40 / 40      | 42 / 37 | 42 / 40 | 42 / 39 | 42.2 / 35.3 |
| 43 / 40 - 50 | 45 / 41 | 44 / 43 | 44 / 42 | 44.5 / 31.2 |
| 40 / 40      | 39 / 43 | 42 / 40 | 42 / 39 | 42.4 / 35.3 |
| 40 / 40      | 39 / 43 | 42 / 40 | 42 / 39 | 42.5 / 35.3 |
| 43 / 40 - 50 |         | 43 / 42 | 44 / 42 | 43.0 / 35.3 |
| 40 / 40      | 39 / 43 | 42 / 41 | 43 / 39 | 42.6 / 35.3 |
| 39 / 30 - 40 |         | 40 / 33 | 40 / 33 | 41.5 / 27.8 |
| 43 / 40 - 50 | 43 / 42 | 43 / 42 | 43 / 42 | 43.0 / 35.3 |
| 40 / 40      | 43 / 42 | 42 / 41 | 42 / 35 | 41.9 / 35.3 |
| 39 / 30 - 40 | 41 / 34 | 40 / 39 | 41 / 34 | 41.0 / 31.3 |
| 43 / 40 - 50 | 43 / 42 | 43 / 42 | 43 / 39 | 42.9 / 35.3 |
| 40 / 40      | 41 / 35 | 41 / 38 | 42 / 35 | 41.6 / 35.4 |
| 39 / 30 - 40 | 41 / 35 | 41 / 35 | 41 / 34 | 42.6 / 35.3 |
| 39 / 30 - 40 | 41 / 35 | 41 / 37 | 42 / 36 | 41.6 / 35.4 |
| 40 / 40      | 42 / 37 | 42 / 40 | 42 / 39 | 42.2 / 35.3 |
| 40 / 40      | 39 / 43 | 42 / 40 | 42 / 39 | 42.5 / 35.3 |
|              |         | 42 / 39 | 42 / 37 | 42.1 / 35.3 |
| 40 / 40      | 39 / 43 | 42 / 41 | 42 / 39 | 42.6 / 35.3 |
| 40 / 40      | 39 / 43 | 42 / 41 | 42 / 39 | 42.6 / 35.3 |
| 40 / 40      | 39 / 43 | 42 / 40 | 42 / 39 | 42.4 / 35.1 |
| 39 / 30 - 40 | 41 / 35 | 41 / 35 | 41 / 34 | 40.6 / 35.0 |
| 39 / 30 - 40 | 41 / 35 | 41 / 37 | 42 / 35 | 41.3 / 35.4 |
| 40 / 40      | 41 / 35 | 41 / 37 | 42 / 35 | 41.6 / 35.3 |
| 40 / 40      | 42 / 37 | 42 / 39 | 42 / 35 |             |
|              |         |         |         | 40.9 / 35.4 |
|              |         |         |         | 41.4 / 35.5 |
|              |         |         |         | 40.7 / 34.5 |
|              |         |         |         | 41.9 / 35.2 |



The following have paid through 1997. Dues are due! If your name is not on this list, you have not paid your dues and will be dropped from the rolls.

AGNELLO, ANTHONY  
ANDRUSZ, CASEY  
AUGUST, STEVE R.  
AYRES, ROBERT  
BAGLEY, CHARLES  
BALTHAZOR, LARRY J  
BARLAGE, JOHN R.  
BARRINGER, WILLIAM  
BEAVEN, FRANK J.  
BEAVEN, SHIRLEY  
BEHM, HAROLD N.  
BILLCOOK, FRED G.  
BLANCHARD, DANIELLE  
BLIZARD, KAREN  
BLUE, JOHN W.  
BODEK, JOHN  
BROWER, FRANK  
BROWER, LOUISE  
BRYAN, GARRY W.  
BUFLER, RAY T.  
BUSH, FRANCES CM  
BUSH, BERNARD CM  
CARDINAL, SAMUEL J.  
CARSS, WALTER L.  
CHRISTIANSON, JOHN  
CHRISTIANSON, JOHN A.  
COLEMAN, DUANE  
CONNOR, JOAN CM  
COOK, E. DON  
CRUZE, CHALMER D.  
CUNNINGHAM, AL  
DANIEL, EDWARD A.  
DARE, JACK T.  
DE GROFF, VIVIAN R.  
DENNE, A.J. DR.  
DENSEM, PAUL H.  
DOMORSKY, GAYLE  
DEMORSKY, LEONARD  
DONAHUE, RALPH  
DONOVAN, RALPH  
DUFFIELD, GORDON L.  
DURITSKY, BONIFACE  
EMERSON, RICHARD E.  
FANALE, PETER A.  
FEIRTAG, JOHN  
FIELD, HUBERT V.  
FIELD, MARY L.  
FORSYTHE, JOHN C.  
GARDNER, O. KEITH  
GARLAND, ARDOTH  
GARLAND, MALCOLM  
GEGENHEIMER, JOHN  
GEORGE, HARRIET DUKE  
GIBSON, HARRY L.

GILLESPIE, BOB  
GOERDT, ANTHONY A.  
GOODNUFF, VINCENT A.  
GOTT, DELIA  
GRAHAM, DAVID  
GRAVELDINGER, DENNIS  
GRIMM, PHILIP  
GROVE, RITA  
HARRIS, BILL  
HASLUP, JACK E.  
HATHAWAY, JOHN D.  
HENSEN, GARY M.  
HILL, BILL  
HILL, LINDA  
HILTNER, SUSAN  
HOADLEY, TIM  
HYDE, GERRY  
JAMES, DAVID W.  
JENSEN, ROLAND C.  
KANABY, LANCE  
KINSVATER, DAVE  
KOCHER, GARY  
KOSSACK, JOSEPH  
KURZ, BEVERLY  
LA FON, GRANT  
LAHR, JACK  
LANGHAM, WILLIAM T.  
LEFTON, MITCHELL  
MACK, BETTY  
MALONE, IRENE  
MANESTAR, AL  
MANGELSDORF, JOE H.  
MANINA, ALBERTA  
MANINA, JOSEPH  
MARSH, JOHN A.  
MASTERSON, JOSEPH B.  
MC FALL, HARRY D.  
MC VETY, WILLIAM  
MORALES, FRANK  
NEWELL, SCHERAN  
NEWTON, RONALD  
OTLEWSKI, AMBROSE  
PAINTER, KENYON  
PAINTER, NORMA  
PICHAN, HARVEY  
POWERS, SCOTT E.  
PRICE, CHRISTOPHER  
RACKE, DANIEL A.  
RAINS, COYT A.  
RAMSHAW, JUNE  
REED, KATHRYN  
REIGELMAN, ALLEN  
REIGLE, GERALD

RICE, JOANN M.  
RICE, HAROLD "ARIZONA"  
RICHEY, JAMES  
ROSE, CLIFTON L.  
ROSEN, TONY  
ROSS, MARY  
ROSS, WILFRED  
RUSSELL, JAMES F.  
RUSSELL, SHERRY  
SAUNIER, GLEN B.  
SCOTT, JOSEPH E.  
SEEBON, CAROL  
SEGER, JACK E.  
SHANGRAW, MARION J.  
SHARKEY, CHARLES  
SHARKEY, LINDA  
SHEPPARD, FRED  
SHULER, BILL  
SINCOX, CHARLES H. MD.  
SOWRY, CLAUDE  
STALLINGS, JOE B.  
STRIETER, ARTHUR E.  
STUTTS, DEBRA  
SWEAZY, JOHN  
SZENTESI, FERENC J.  
SZUBA, WALTER  
TAKIS, ALEXANDERIA  
TAKIS, JOHN  
TJIOK, DAVID  
TOLLEY, PAUL  
TOMANSKI, CAROLINE  
TRIPP, RAYMOND F.  
UNDERWOOD, SUZANNE  
URDZELA, JOSEPH A.  
WADE, ROBERT  
WALDROP, VERNON  
WALTER, GEORGE  
WATSON, ALICE L.  
WATSON, LLOYD M.  
WATTERS, SUZANNE  
WEEKS, MILTON D.  
WEINGARTNER, ROBBIN  
WEST, ROGER A.  
WILCHEK, KEN  
WILLHOITE, CHARLES  
WISNIEWSKI, FRANCIS B.  
WODARAK, ROBERT  
WOODRUFF, F. DANIEL

**ROUND STONE - SHIELD TABLE**

BY MRS. NORMA PAINTER

**72 INDEX GEAR****PAVILION:**

Round the girdle of the stone at 90 degrees.

Index 4 - 8 - 12 - 16 - 20 - 24 - 28 - 32 - 36 - 40 - 44 - 48 - 52 - 56 - 60 - 64 - 68 - 72 at 43 degrees

Polish above facets.

Back-cut the stone on index 6 at 94 degrees.

Transfer the stone.

**CROWN:**

Align the stone on index 6 at 86 degrees.

Index 6 - 14 - 22 - 30 - 38 - 46 - 54 - 62 - 70 at 54 degrees.

Do not polish the above facets at this time. Cut a temporary table approximately 50 %.

Mark the facets cut on index 6 - 30 - 54 with an alluminum marking pen or a water proof ink pen. Remove the dop and stone from the quill.

Place a riser under the mast of the faceting machine.

Set the off-set attachment on 4.

Place the off-set attachment on the faceting machine and align the 3/8" Guide Pin of the off-set attachment at index 72.

With the angle set at 54 degrees, insert the dop and the stone into the off-set attachment.

Rotate the dop and stone until one of the marked facets is level on the lap at index 72 and tighten.

Set angle to 20 degrees.

Snap the machine into free wheeling.

With the dop below the faceting machine dop spindle, rock the stone one facet to the left and one facet to the right of the marked facet.

Note: If one over cuts, it can be corrected balancing the other two cuts made with the off-set attachment.

The off-set cut will cut into the break facets and will align with the facet junction.

Polish the cut made with the off-set attachment after each cut is made.

Repeat the above instructions using another marked facet.

Then repeat the above instructions using the last marked facet.

If any of the cuts made with the off-set attachment are uneven, re-cut and polish.

Remove the riser and the off-set attachment.

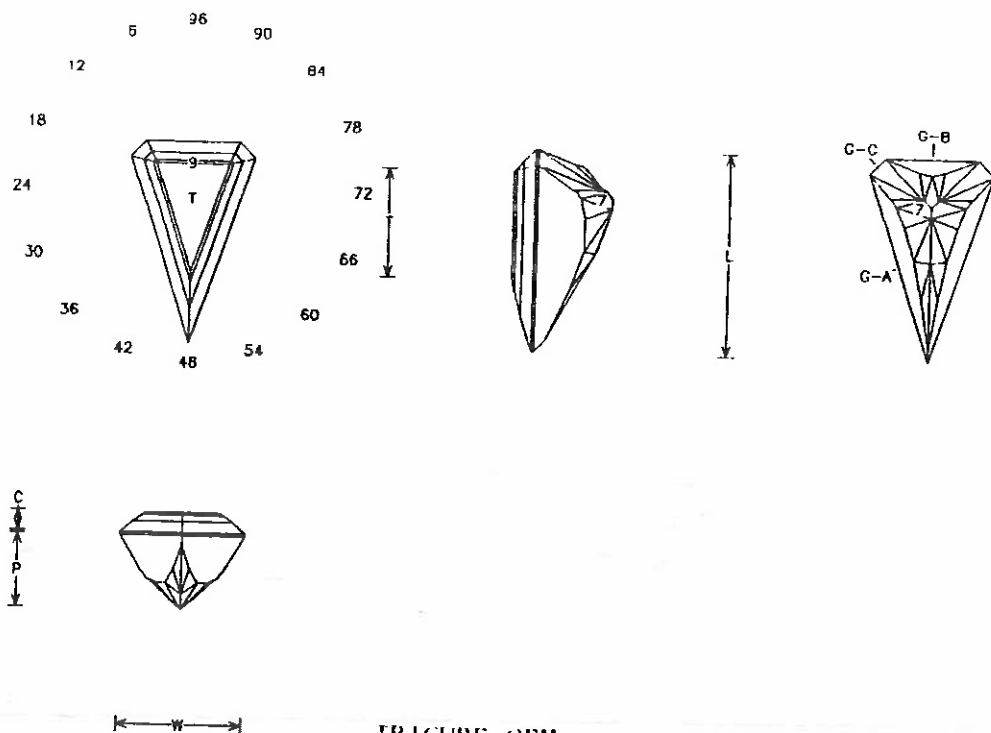
Remove the stone from the off-set attachment and place in the faceting machine.

Set the angle at 54 degrees and align the stone for polishing on Index 6 - 14 - 22 - 30 - 38 - 46 - 54 - 62 - 70.

Cut the table at 90 degrees and polish.

Polish the girdle. You will have a shield table on a round stone

Modified for cube by Bill Schell



TRICUBE.GEM

Angles for R.I. = 2.15

42 facets + 5 facets on girdle = 47

1-fold, mirror-image symmetry

96 index

$L/W = 1.599$   $T/W = 0.854$   $T/L = 0.534$

$P/W = 0.582$   $C/W = 0.157$

$H/W = (P+C)/W+0.02 = 0.758$

$P/H = 0.767$   $C/H = 0.207$

$Vol./W^3 = 0.328$

Modified for cubic by Bill Schell

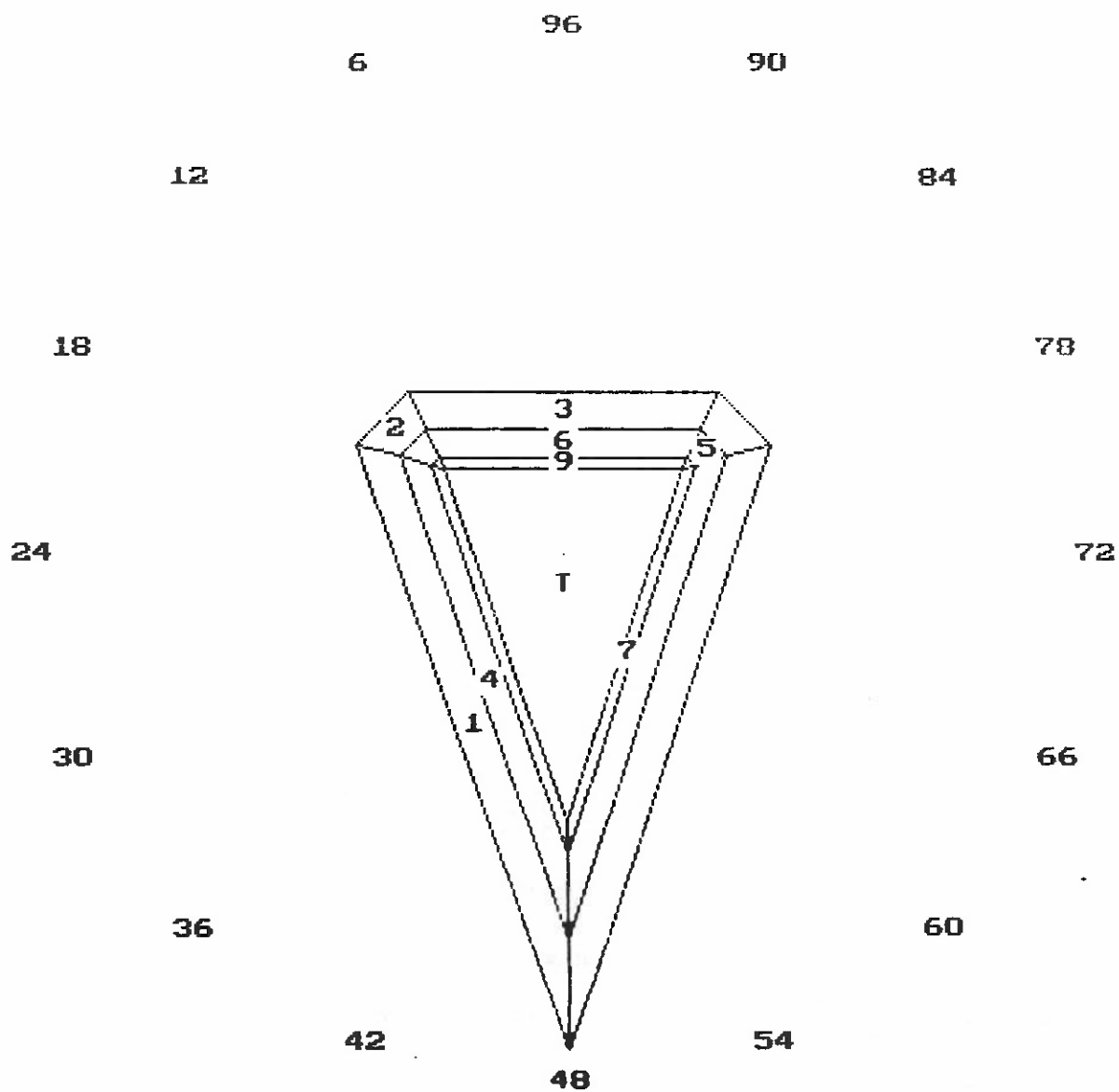
PAVILION

|     |       |          |
|-----|-------|----------|
| G-A | 90.00 | 29-67    |
| G-B | 90.00 | 96       |
| G-C | 90.00 | 12-84    |
| 1   | 70.00 | 29-67    |
| 2   | 49.20 | 12-84    |
| 3   | 70.00 | 96       |
| 4   | 49.63 | 09-87    |
| 5   | 47.77 | 15-81    |
| 6   | 48.33 | 07-89    |
| 7   | 41.00 | 96-24-72 |
| 8   | 44.05 | 20-76    |
| 9   | 43.18 | 27-69    |
| a   | 42.89 | 29-67    |
| b   | 39.00 | 31-65    |
| c   | 42.00 | 33-63    |
| d   | 37.64 | 36-60    |

CROWN

|   |       |       |
|---|-------|-------|
| 1 | 44.00 | 29-67 |
| 2 | 43.02 | 12-84 |
| 3 | 44.00 | 96    |
| 4 | 38.94 | 29-67 |
| 5 | 38.00 | 12-84 |
| 6 | 38.94 | 96    |
| 7 | 33.83 | 29-67 |
| 8 | 32.93 | 12-84 |
| 9 | 33.83 | 96    |
| T | 0.00  | Table |

TOP

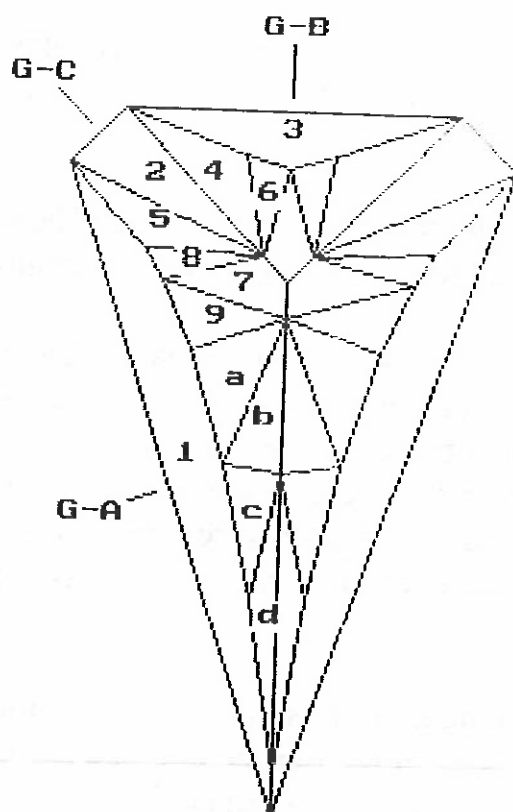


CROWN

|   |       |       |
|---|-------|-------|
| 1 | 44.00 | 29-67 |
| 2 | 43.02 | 12-84 |
| 3 | 44.00 | 96    |
| 4 | 38.94 | 29-67 |
| 5 | 38.00 | 12-84 |
| 6 | 38.94 | 96    |
| 7 | 33.83 | 29-67 |
| 8 | 32.93 | 12-84 |
| 9 | 33.83 | 96    |
| T | 0.00  | TABLE |

**Tri-Cube**

Modified for cube by Bill Schell

**PAVILION**

|     |       |          |
|-----|-------|----------|
| G-A | 90.00 | 29-67    |
| G-B | 90.00 | 96       |
| G-C | 90.00 | 12-84    |
| 1   | 70.00 | 29-67    |
| 2   | 49.20 | 12-84    |
| 3   | 70.00 | 96       |
| 4   | 49.63 | 09-87    |
| 5   | 47.77 | 15-81    |
| 6   | 48.33 | 07-89    |
| 7   | 41.00 | 96-24-72 |
| 8   | 44.05 | 20-76    |
| 9   | 43.18 | 27-69    |
| a   | 42.89 | 29-67    |
| b   | 39.00 | 31-65    |
| c   | 42.00 | 33-63    |
| d   | 37.64 | 36-60    |

**Editors' Gems...**

*Kathleen Myers  
Bill Horton*

- ♦ Winter already - time for the snow birds to leave us again. We have had an early dose of COLD and SNOW perhaps a sign of what is to come. I hope you have time for that faceting machine this winter and perhaps that special piece of rough you have been saving - go for it!
- ♦ The Midwest Faceters Gem and Jewelry Fair was a great success - thanks Chairman Don Sahr and everyone who helped - your hard work is appreciated. The membership benefits all year from the moneys generated from the show (newsletters, programs, etc.).
- ♦ Ray Becker (new Membership Chairman) like old Santa Claus, checked that membership list and caught several of us guilty of not paying our dues (both co-editors included!) we better pay up or his black pen will cross us off the list! He is now adding Email addresses to the membership rolls so they can be printed in the new Membership booklet - those of you "on-line" please remember to send your email address to him. If you know your 5 plus 4 zip code include that also - the post office likes those plus 4 numbers. (the best source is your utility bill address label.)
- ♦ Several volunteers are needed for Chairman positions please seriously consider donating some of your time - **we need you!** Most of the jobs do not take too much time and there are people willing to help you get started. Contact "Arizona" Rice.
- ♦ The date for next year's meetings are printed three times in this issue - take the time right now to put them on your calendar so you won't miss a meeting.
- ♦ The Annual Seminar is needing a place, new coordinators, and program ideas - how about you - any ideas??
- ♦ Have you read a good article lately, or heard a good speaker, or met a someone who might like to join? Please share your good fortune with all of us!
- ♦ Have a GREAT NEW YEAR!!

**Ahhhh.... Today!**