The MARPG is moving forward into 2012 with new plans and directions to be implemented by our dedicated and hardworking Board of Directors. Building upon the success of the recent Education Seminar that was offered at the West Pharmaceutical Facility in Lionville, PA where 150 attending people were most enthusiastic about the program, and the knowledge that they took from their time there. The program was "top notch" the excellent presentations from well qualified instructors, and it was offered at a very minimal cost to those attending. This type of program is one of the directions we would like to continue with. Another direction is to incorporate our technical programs whenever possible with plant tours from companies in our area, which is something that has also worked out well with past educational seminars.

The upcoming MARPG Spring Meeting on March 15th will feature a tour of the Reliable Rubber & Plastics Machinery Facility and relevant discussions following at a nearby restaurant where a social hour with hor d'oeuvres instead of a 'sit down" dinner will keep the time away from work to a minimum, which is a concern for all of us in these times. Also at a cost of $20.00 for it all, it should be a most reasonable expense to justify. Preparations for the Fall Technical Meeting are underway for a September 20th Plant Tour and Technical Meeting. In addition another Educational Seminar is scheduled for November 7th at another one of our member's facilities. It will offer the "Basics of Rubber" Seminar that is so well received, and hosted by one of our supporting local companies. A final note on activities would be the intent to join the Connecticut Rubber Group for a joint Golf Outing. We are interested to see if the number of golfers could be enhanced by getting together with our colleagues in Connecticut.

To sum up our new directions, we are trying to bring people out into the field to interesting facilities with various technical topics while still being cognizant of the time constraints that we all now exist with. We want to keep the meetings as brief as is practical from a quality aspect, and keep the costs to a minimum which in many cases is basically a commitment fee, so we can work out the logistics based upon the number of people attending. So ... powerful, brief, inexpensive and diverse with a quality “take away experience" seem to be just right for these times.

James Gayler, III
2012 MARPG Chair
Finances
The end of year projection for the Division was exceeded with the IUPAC Conference contributing unanticipated revenue of $32K. The Division’s total revenue over expenses for 2011 was approximately $464K.

Appointments
Joe Walker has been sworn in as the 2012 Division Chair with Leo Goss installed as Division Secretary and Paul Glasgow as the 2012 Director’s Rep Elect.

Joe Walker’s mission for the Division is to *Re-Define, Re-Energize and Re-Build* with goals for generating a 20K meeting surplus from the 2012 Spring Technical Meeting with 350 attendees as well as a meeting surplus for the 2012 fall meeting in Cincinnati, OH.

Meeting News
The Spring 2012 technical program will consist of 32 technical presentations over a three day period (April 23-25) plus 7 Science & Technology Award Winners presentations. The search for a keynote speaker is underway.

A Call for Papers for the fall 2012 technical program has been sent out and abstracts are being accepted through May 18th.

The 2013 Rubber Expo & Advanced Materials in Health Care will not be hosted by Medical Mart changes required by the Division they were unable to concede. The Steering Committee voted to cease negotiations with Medical Mart and begin negotiations with the I-X Center for the 2013 exposition.

Fall 2014 Meeting - The Exhibits & Meeting Sites Committee moved to approve that the 2014 Fall Meeting of the Rubber Division be held in Nashville, Tennessee at the Nashville Convention Center, pending successful contract negotiations.

Other Developments and Notables
Discussions held between the Tire Society and the Rubber Division regarding the Division’s continued management of the Tire Society’s logistics culminated in non-renewal of their contract. The Tire Society has begun a new agreement with an association management company called Third Eye.

The Division submitted a self-nomination for the ChemLuminary Award to ACS in light of its inaugural Rubber Expo & Advanced Materials in Health Care event last Fall.

Education & Publication
Since January 1st, the Division has sold $5,180 in publications and 45 online correspondence courses totaling $20,505 and is viewed as a good indicator that our community’s response will continue in 2012.

The deadline for Undergraduate Scholarships submittal is March 1st.

Kim Dempsey Miller
Area Director
Compounding for Different Modulus at Equivalent Hardness

Most rubber technologists are familiar with the typical plot of polymer properties as a function of filler loading. Some properties such as tensile strength, properties go through a maximum as shown below for carbon black and mineral fillers in Royalene® 512 EPDM.

![Graph showing tensile strength vs. carbon black loading](image1)

Other properties are a mainly linear function of filler loading. Hardness examples are shown below for carbon blacks in Royalene® 512 EPDM and SBR 1500. Based on this linear correlation, carbon black suppliers have provided the parts of various grades of carbon black required for a 10 point increase in compound hardness.

![Graph showing hardness vs. carbon black loading](image2)

When compounding to meet a product specification, it is often desirable to know how vulcanize properties will be affected at a given hardness. For example, it is well known that elongation at break decreases as hardness increases. The ASTM D2000 and equivalent SAE J200 test methods recognize this correlation and have a lower minimum elongation at break as hardness increases.
Examples of the correlation between hardness and elongation at break are shown for SBR \(^3\) and NR \(^4\) in the following graphs.

Some automotive specifications have a specific modulus requirement in addition to a specific range of hardness. Compounding to meet this modulus can be a challenge at times because there is a tight correlation between hardness and modulus for black filled compounds as shown below for EPDM \(^1\), SBR \(^3\) and NR \(^4\).
In order to adjust modulus at a given hardness, the incorporation of mineral fillers can be one approach. In particular, the use of calcium carbonates can lower modulus while more reinforcing fillers can give higher modulus as shown in the charts below. With the reinforcing mineral fillers, the inclusion of a silane that is compatible with one’s particular cure system, e.g. vinyl silanes with peroxides or tetrasulfide silanes with sulfur cures, can further increase modulus at a given hardness.
References

1 Carbon Blacks in Royalene® EPDM, Lion Copolymer technical literature.
2 Mineral Fillers in Royalene® EPDM, Lion Copolymer technical literature.

Article Submitted by Bob Ohm, Lion Copolymer
Thursday, March 15, 2012 is the date and Reliable Rubber & Plastic Machinery Company will be the focus of the meeting. Tom Liccardo is most excited about hosting the members of the MARPG on a tour of their facilities in North Bergen, New Jersey. Their web site is www.reliable-machinery.com.

Reliable Rubber & Plastic Machinery Co prides themselves on the slogan ‘The Reliable Difference’ because of their track record over the years in delivering machinery solutions that meet the everyday challenges of our industry and exceed them. Teamwork is the ‘Reliable difference’ and has been for over seventy years.

This tour and resultant understanding of used equipment will be of value to you to understand what their business and capabilities are all about. They are a world-class player and renowned for what they do and this is a wonderful opportunity to see it in action and be able to get answers to the questions that you have or will have in the future.

The plan is to have a complete tour of their facilities in mid-afternoon on March 15, followed by a meeting at a local hotel/restaurant where we will have an opportunity to discuss what we saw and ask questions of Tom and his team to get a better understanding of what they can do for you. This will be followed by a reception with the intent to get everyone back on the road at a reasonable hour.

Don Slowicki
2012 MARPG Vice-Chair

A file containing the MARPG Technical Meeting Announcement is attached

Education Committee Report

Education Seminar Held at West

A most successful training seminar was presented on November 17, 2011 at West Pharmaceutical Services in Lionville, Pa. This full day seminar, The Basics of Rubber, attracted a total of 150 participants with most from West who, through our Kim Dempsey-Miller’s efforts, enabled us to take advantage of the wonderful facilities and hospitality. Jeffrey Hunt, President of West, stopped in to say hello and stayed to hear some of the presentations. West’s Andre Janssen, from Eschweiler, Germany, came and presented the section on Elastomers.

The catering service at West did an excellent job of keeping us full, including Continental Breakfast, breaks and lunch.

We charged $25 per participant ($15 each for 3 or more from the same company. The income was $2230; expenses were $3772 for a cost to MARPG of $1442 (approx. $10 per participant).
Chairing the seminar was Kim Dempsey-Miller (West) who also made a presentation. Other presenters were Don Slowicki (Home Rubber/Ivanhoe), Andre Janssen (West), Bob Ohm (Lion Copolymer), Peter Dluzneski (Arkema) and Richard Grossman (Banbury Operator).

Bob Ohm developed a Course Survey that 78 participants turned in. Summarizing the results: The 78 ratings (Very Good, Satisfactory, Needs Improvement) were 99% positive for Meeting Site (Very Good 68; Satisfactory 9), Course Content (Very Good 65; Satisfactory 12) and Speakers (Very Good 75; Satisfactory 2). Wow!

Special thanks to all who contributed to the success including R.T. Vanderbilt Co through Marty Sheridan who provided a copy of the previous edition of the Vanderbilt Handbook to everyone.

Dick Grossman presented as scheduled in spite of his recent loss of Chris and Chris’s sister, Daryl, actually took the registration role that Chris was going to do along with Jim Gayler.
Bob Ohm, Lion Copolymer, Making Presentation to the Attendees

Peter Dluzneski, Arkema, Inc., Making Presentation to the Attendees
‘Basics of Rubber’ Seminar
Following on the success of the November Seminar we are scheduling another Basics Course on November 7, 2012 in conjunction with the Green, Tweed & Co. in Hatfield, PA. Ron Campbell, Green, Tweed & Co., will be working with Don Slowicki (Home Rubber/Ivanhoe) to put the finishing touches on the details but we do know that it will be similar to the November Seminar in content, being geared to the newcomers in the Rubber Industry.

Each of you can help by starting to spread the word to your colleagues and management that this course is available for them to take advantage of for their people. We will be following up with more information suitable for posting on your bulletin boards. This ‘early warning’ can only help to maximize attendance. Preliminary information and answers to questions can be obtained via e-mail to Don Slowicki at don@homerubber.com.

Don Slowicki, Education Committee

Solicitations Committee

The MidAtlantic Rubber & Plastics Group invites the support of our academic scholarship fund from our member companies through the Corporate Associate Contributor (CAC) solicitation fund drive through contributions of $250.00 or more. This scholarship was established to encourage continued growth of the rubber industry and allows the MARPG to continue to offer scholarships to deserving students from area universities.

The MARPG appreciates the continued generosity of these corporate contributors to the MAR&PGBP Academic Scholarship fund, total contributions for 2011 were $ 2,750.00.

<table>
<thead>
<tr>
<th>Company</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burgess Pigment</td>
<td>19</td>
</tr>
<tr>
<td>Carlisle SynTec Corp.</td>
<td>28</td>
</tr>
<tr>
<td>R.E. Carroll, Inc.</td>
<td>20</td>
</tr>
<tr>
<td>Greene, Tweed &amp; Co.</td>
<td>26</td>
</tr>
<tr>
<td>Holly Frontier Refining &amp; Marketing</td>
<td>32</td>
</tr>
<tr>
<td>HM Royal Inc.</td>
<td>21</td>
</tr>
<tr>
<td>Pelmor Laboratories</td>
<td>18</td>
</tr>
<tr>
<td>Struktol</td>
<td>12</td>
</tr>
<tr>
<td>Solvay Solexis</td>
<td>11</td>
</tr>
<tr>
<td>West Pharmaceutical Services</td>
<td>31</td>
</tr>
<tr>
<td>Zeon Chemicals</td>
<td>9</td>
</tr>
</tbody>
</table>

The MAR&PGBP recognizes these supporting corporate partners and in recognition post these company’s logos and internet links on the MAR&PGBP webpage, the MAR&PGBP appreciates the continued support from the industry.

Joe Martin
2011 Solicitations Committee
**Golf Outing**

Plans are to have the 2012 MARPG golf outing on June 21, 2012 at a course to be determined. You will be kept posted on specifics as the plan is developed.

**Scholarship Report**

**LAST CALL FOR APPLICATIONS!!!! DEADLINE EXTENDED TO MARCH 7TH**

Know a Worthy Student who can use Financial Help?

Attached is the *MARPG Scholarship Application Form for 2012*. Please note that this form needs to be completed and returned to Jim Kuhn by March 7, 2012 if you are interested in presenting a candidate.

Please also note that only Emeritus members and members who have paid their 2011 MARPG dues are eligible to sponsor the student. If you didn’t pay your 2011 dues you should consider paying your 2012 dues in order to qualify for the 2013 Scholarship.

Jim Kuhn
Scholarship Committee

**Membership Report**

Excerpts from e-mail to membership dated 1/4/2012:

Dear MARPG Members and Associates,

Happy New Year!

Hopefully you’ve recovered from the holidays and are happy to be back to the old grind, so this may be a good time to renew your MARPG membership for 2012.

Attached is the *2012 MAPRG Application and Renewal Form*. Please note the changes in Officers and Directors for 2011, as well as the continued inclusion of PayPal as an alternative means for paying dues.

The Board of Directors will appreciate your completed form (including our *Emeritus* members) and dues payment being returned to me by February 15th. Remember if you use PayPal
please be sure to email me your completed 2012 MAPRG Application and Renewal Form, regardless of your current membership status, so that I have your latest information.

Thanks again for your time and consideration, and have a healthy and prosperous 2012.

Sincerely,
Marty Sheridan
MARPG Membership Director

Attached is the 2012 Membership Application & Renewal Form

---

2012 Upcoming MARPG Dates to Remember

- MARPG Technical Meeting
  Reliable Rubber Plastic & Machinery Co.
  2008-14 Union Turnpike
  North Bergen, NJ 07047
  www.reliable-machinery.com
  March 15, 2012

- 181st Technical Meeting & Educational Symposium
  Crowne Plaza Riverwalk, San Antonio, TX
  http://www.rubber.org/181-technical-meeting
  April 22-25, 2012

- MARPG Annual Golf Outing
  Location to be determine
  June 21, 2012

- Rubber Expo, 182nd Technical Meeting & Educational Symposium
  Duke Energy Center, Cincinnati, OH
  http://www.rubber.org/2012-rubber-expo
  October 9-11, 2012

- ‘Basics of Rubber’ Seminar
  Greene, Tweed & Co. Corporate Headquarters
  Kulpsville, PA  19443
  November 7, 2012