

THE BROADAXE

NEWSLETTER
of
THE SHIP MODEL SOCIETY OF NORTHERN NEW JERSEY
Founded in 1981



Volume 22, Number 2

February, 2004

MEETING SCHEDULED FOR January 27, 2004

The meeting scheduled for January 27 was cancelled due to the snow and freezing rain predicted for that evening.

CLUB COMMUNICATIONS

When **President Ed Hegstetter** decided to cancel the January meeting, he was faced with the problem of getting the word out to all of our members in a short period of time. When the need to cancel a meeting comes up, it is very important for the club roster to be up to date and complete. The Executive Committee is in the process of updating the roster. Please make sure that any changes or additions (including e-mail addresses) to your listing are provided to **Ed** or one of the other officers.

Fortunately, last month we were able to contact about 45 club members by e-mail to announce the cancellation. This is a great deal less effort than trying to reach members by telephone. So please keep your e-mail addresses up to date and check your e-mail the day or evening of a scheduled meeting to see if there have been any changes.

SPECIAL PRESENTATION

At our meeting on February 24, a special presentation will be made to **Marilyn Roberts** as an expression of our thanks for her donation of the late **Jim Roberts'** modeling supplies to the club.

Jeff Fuglestad has made a display case for **Jim's** well-known model of a New England whaleboat. It

will be presented to **Marilyn** by **President Ed Hegstetter**.

Please make a special effort to attend the meeting to show our thanks to **Marilyn**.



FROM THE EDITOR

Barry Rudd saw the following article on the Centerline Hobbies website at

<http://www.centerlinehobbies.com/index.htm>

and passed the information on to me. Centerline Hobbies is located in Hyannis, MA on Cape Cod.

I am reproducing it here with acknowledgement and thanks to Centerline Hobbies and the Ertl Company.

This article was taken, with permission, from the May/June 1997 issue of *The Blueprinter*, a magazine published by The Ertl Company, Dyersville, IA

HOBBY HISTORY: PLASTIC MOLD INJECTION

Mainstay of the Model Kit Industry

This year, AMT will use approximately five million pounds of polystyrene plastic to create the industry's most popular model kits. To the casual observer, the process employed to create model kits may seem like a more recent invention, but the advent of plastic mold injection can be traced back 125 years. In 1872, Smith & Lock patented the earliest injection molding machine to cast the first commercially successful plastic: celluloid. A variety of products – including billiard balls, combs and photographic film - were created with celluloid.

After its initial use with the injection molding technology, however, it was realized that this tough new material - invented in 1870 by American chemist John W. Hyatt - was highly flammable and, consequently, unstable in this application.

Smith & Lock's machine would have to wait nearly 50 years for a suitable molding medium. Until then, plastic products continued to be machined, formed and assembled by craftsmen in a much more labor- and time-intensive environment.

Thermosetting would temporarily remain the mode of the day. The first fully-synthetic plastics - PVC, or polyvinyl chloride, being one of several - had been developed in the early 1800's. French chemist Henri Regnault created PVC in 1838 by solidifying this new resin in sunlight, a rather lengthy technique. This thermosetting process had been the traditional forming method utilized throughout the 19th century. During manufacture, the thermosetting plastic was poured into a mold and "cured" by heat or the addition of chemicals.

After curing, however, the plastic could no longer be shaped, even if extreme heat was applied. The arduous production of the plastic and this forming method made high output, commercial manufacture virtually impossible. By 1919, development efforts by German scientists resulted in a more thermally stable plastic called cellulose acetate.

Accompanying this new material was an injection molding machine (the U.S. version was developed by Leo Baekeland) that successfully molded the plastic. In 1909, Baekeland had already patented his

phenol-formaldehyde resin, Bakelite. It was one of the first commercially successful synthetic plastics, and is still in use today. Injection mold machine design and plastic chemistry have progressed through the subsequent decades, but the concept remains the same.

Plastic mold injection involves heating and high-pressure injection of a thermoplastic into a water-cooled mold. A thermoplastic contains properties that allow it to soften when heated and harden again when cooled. Polystyrene, a rigid material used by AMT to mold model kit parts, is one such plastic. The mold injection process applied to producing model kits has several advantages over other methods. The thermally durable qualities of the polystyrene and quick-cooling manner of the injection technique make it extremely time-efficient. The time required to complete one mold, or "shot," can be measured in mere seconds. The curing time for the thermosetting method employed by many resin kit manufacturers can span minutes if heat cured, or hours if cold cured.

The time-consuming nature of the cold method makes it ill-suited to a kit manufacturer who needs to produce large quantities of plastic parts over a relatively short time span.

AMT has utilized plastic since 1949, when the model hobby industry was revolutionized by this new technology. Suddenly, a new level of authenticity was achieved in the promotional models, and later the kits, that were being produced by AMT and its competitors. Previously, hobbyists and manufacturers worked with less pliable media, such as balsa wood and metals. Plastic offered greater detail in kit manufacturing, placing a new emphasis on accuracy. As a result, product development and research became central to creation quality model kits.

It also removed much of the drudgery from the building process. With this new man-made material, all that was needed to complete a realistic replica of a favorite car or aircraft was a tube of glue and some paint. For the modeler who was not satisfied with building "out of the box," plastic could be easily modified with sandpaper emery board or a knife. In one fell swoop, the average builder could achieve the kind of customizing that previously required a higher level of manual skill.

The same efficient principles that make it the medium of choice for model kits apply to other consumer products as well. It has become a standard for any manufacturer that needs to mass-produce plastic components quickly and cost-efficiently. Since its inception, plastic mold injection has touched just about every industry, from pharmaceuticals to automotive. Everyday products like utensils and clothes hangers are included on the extensive list.

Modelers today will continue to reap the benefits of this established method as it accompanies AMT into the next millennium, ensuring the highest quality model kits in the future

Mark Your Calendar

Greater Chicago Area Model Ship and Boat Show
March 20th 2004

Northeast Regional Conference
Port and Starboard Conference Center
New London, CT. April 24, 2004

Western Ship Model Conference
Long Beach, CA. April 29 – May 2, 2004

Nautical Research Guild Conference
Portland, ME. September 12 –19, 2004

Technical Tip

The following information about colors came from the South Bay Model Shipwrights who passed it on from another club.

Lightening a color is not always achieved by adding white. Adding white will often wash-out a color or hue, making it look milky. You must instead reduce the true color by giving it a lighter hue. The following are a few basic guidelines to change the hue:

Basic Color	To Lighten (tint)	To Darken (tone)
Blue	White	Black
Red	Scarlet	Black
Khaki	White	British Crimson
Dk. Green	Med. Green	Brown Drab
Lt. Green	Yellow	Black
Dark Blue	Lt. Blue	Dk. Green
Lt. Blue	White	Black
Blue-Gray	Lt. Blue	Dark Blue

Remember that tints and tones are achieved by adding small amounts of color.

The **'BROADAXE'** is published monthly by The Ship Model Society of Northern New Jersey, a nonprofit organization dedicated to teaching and promoting ship modeling and maritime history. Membership dues are \$20.00 for the first year and \$15.00 per year thereafter. Visit our Web Site at:

<http://www.njshipmodelsociety.org>

where a Web version of the **BROADAXE** can be found. The **BROADAXE** is distributed by both US mail and e-mail in PDF format.

Regular meetings are held on the fourth Tuesday of every month at 7:30 P.M., at the Millburn Free Public Library, 200 Glen Avenue, Millburn, New Jersey.

Guests are always welcome.

Contributions to the **BROADAXE** are always welcome, and SMSNNJ members are encouraged to participate. Articles, shop hints and news items may be submitted directly to The Editor as typed manuscript or electronic files, either on discs or by e-mail. Handwritten notes or other materials will be considered depending on the amount of editing and preparation involved.

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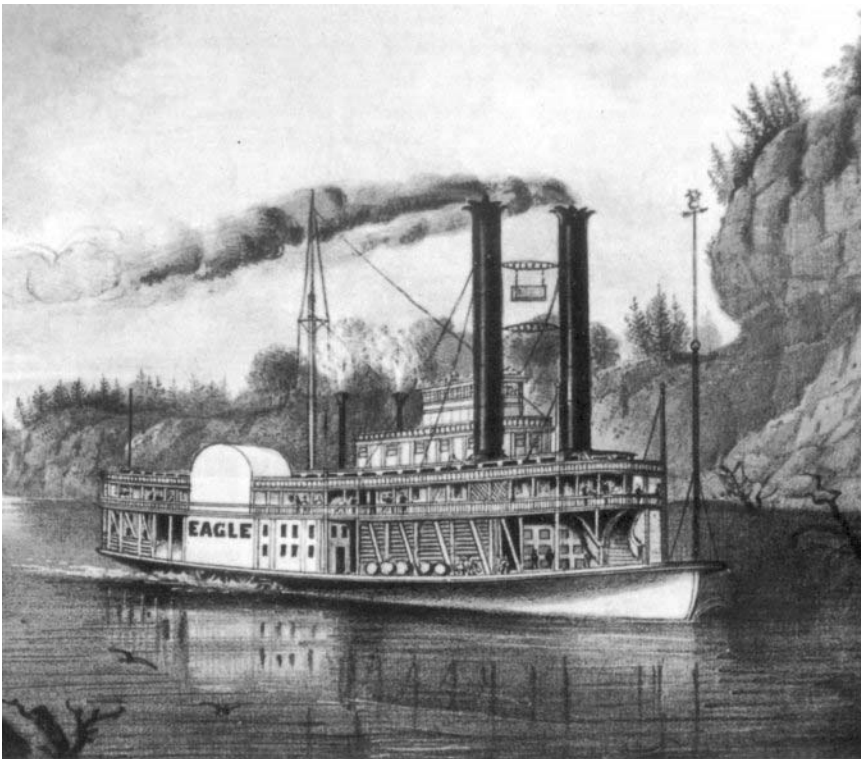
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NEXT MEETING:

February 24, 2004

7:30 PM

MILLBURN PUBLIC
LIBRARY

Tech Session:

Al Geigel

The construction of a
skylight for the
Charles W. Morgan