

The NEMES Gazette

NEW ENGLAND MODEL ENGINEERING SOCIETY INC.

No. 189

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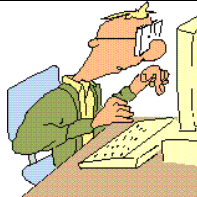
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Editor's Desk

Frank Hills

Folks, I'd be a selfish fool not to give up my space for this!! But I'll be back next month! Take it away Mike Boucher!

Frank

Hi folks,

On October 23rd, I was using my table saw to cut a few pieces of 2x4 exactly 2 7/8" long. I needed 4 all the same size. Turns out, I was using my table saw incorrectly, as I successfully cut piece #1, but piece #2 got bound between the fence and the "back" of the blade and quickly turned into a projectile. Bounced off the right side of my face, pretty much a direct hit on my cheekbone and the safety glasses.

The final score:

- 1 pair of safety glasses where the lens popped out of the frames. The force of the hit knocked the glasses right off my head, landing about 5 feet away from me. I still haven't found the lens, no clue where it went. I'm assuming that the lens got pushed back into my face, but didn't break.

Continued next page.

Next Meeting

Thursday, Jan. 5th, 2012

7:00 PM. Meetings held at:
 Charles River Museum of Industry
 154 Moody Street
 Waltham, Massachusetts

Membership Info

New members welcome! Annual dues are \$25 (mail applications and/or dues checks, made payable to "NEMES", to our Treasurer Richard Koolish, see right) Annual dues are for the calendar year and are due by December 31st of the prior year (or with application).

Missing a Gazette? Send mail or email to our publisher.

Addresses are in the left column.

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They still protected the eye, as the glasses/lens would have been stuck between my face and the wood, at least until the wood was done bouncing off my face.



- 2 cuts that required stitches. 1 on my right eyebrow taking 3 stitches and 1 on my right cheek taking 5 stitches. I think the cheek was from the wood itself, and the eyebrow was from the glasses!
- A hell of a black eye. Eye was completely swollen shut on Monday. Took quite a while for it to fully fade away. I suspect this was due to the lens getting shoved into the soft tissue around the eye. I even had a small bruise on the left side of the bridge of my nose from the impact of the frames
- 1 eye test, at the E.R. before the eye swelled completely shut (about 2 hours after initial injury) which had me still being able to read the 6th line down, which is 20:20.
- 1 cat scan to verify that I didn't fracture my cheekbone.

Even with all that, I still consider this a victory for safety glasses. I took a direct hit with no injury to the eye itself, just some "collateral damage" around the eye. I can only imagine the damage that would have been done if I hadn't been wearing them...

So, I'm going to let my pain be your gain. I'll show you what I did, and then the right way to make this cut on a table saw.

The "real" right way is to use a chop saw with a stop. But, I don't have one of those, so I used the table saw.

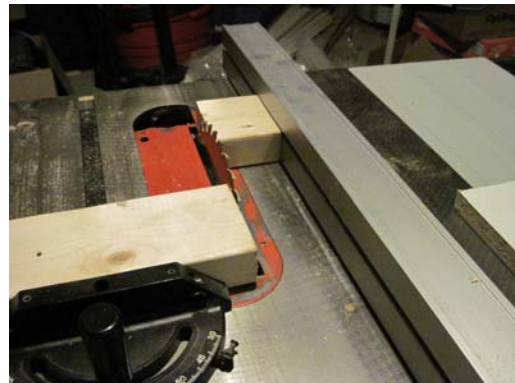
The first thing I did wrong was to not have all the safety equipment in place, I had

taken off the blade guard to do some dado cuts on a large piece of plywood, and you can't do a dado with the blade guard in the way. After switching back to the regular blade, I figured that since I only had 4 cuts to make, I would leave it off. I was hurrying as the sun was going down and I wanted to finish. That was a bad decision. I'm not convinced the flimsy plastic blade guard would have done anything, but it might have deflected it away from me.

The second thing I did wrong was to use both the miter gauge and the fence at the same time. That is just asking for trouble.

The third thing I did wrong was to use a thin pusher stick to clear the wood from behind the blade. If this wasn't in the exact center, the pressure is going to force the wood to cock one way or the other once it's not wedged between the blade and fence. And that is what made the blade grab the piece. Since the fence was there, it had no place to go but up and over the blade.

Here's basically what it looked like just before the accident

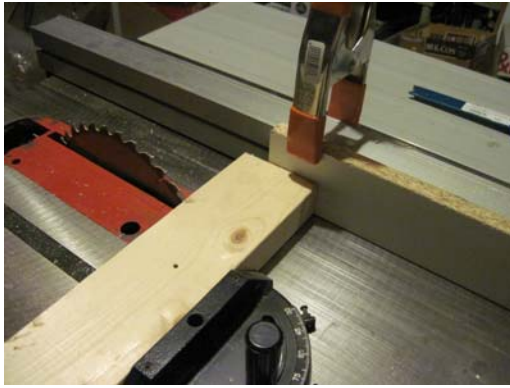


It is easy to see that the only place that piece of wood can go is up.

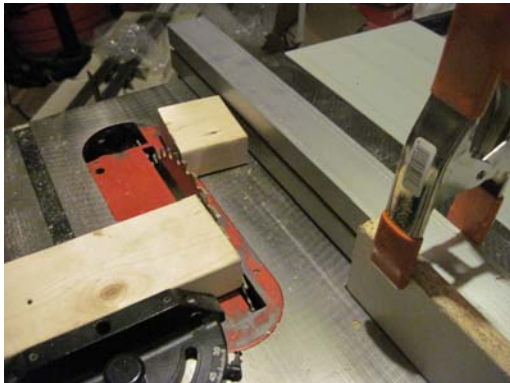
So, how do you make this cut without using both? Clamp a short, sacrificial piece of smooth, straight wood to the fence as a spacer. This should be clamped in place so by the time the wood hits the blade, it is no longer in contact with the fence. Make sure you account for the width of this spacer when setting the fence!

What this does is give you a lot of wiggle room between the spinning blade and the fence. Once the wood is cut, it's easy to just push it away from the blade, to the fence, and out of the way. Doing this, even if the wood makes contact with the blade, it won't be trapped, and will either just get deflected back to the fence, or if off the table. The theory is that now the wood has other places to go instead of the teeth digging into the wood and throwing it.

Here's the setup:

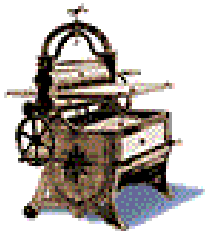


And here is what it looks like after the cut. There is much more room for the wood to clear the blade.



I don't know how many woodworkers there are in the group, but I hope my experience will help some people prevent an injury.

BTW - my wife has declared that I'm going to purchase a full-face shield as well as a new pair of safety glasses.



NEMES Gazette Editorial Schedule

<u>Issue</u>	<u>closing date for contributions</u>
February 2012	January 20, 2012
March 2012	February 17, 2012
April 2012	March 23, 2012
May 2012	April 20, 2012
June 2012	May 25, 2012
July 2012	June 22, 2012
August 2012	July 20, 2012



President's Corner

Dick Boucher

The Meeting

As always, the January meeting is one of our two "Poster Sessions". as founder Ron Ginger named them. This gives us a chance to have a casual meeting, without hauling out all the audio-visual equipment and setting up the chairs. We can just talk to each other and enjoy showing our latest projects or checking out whatever other members have brought to discuss. So please make a concerted effort to bring along something of interest.

Miscellaneous Ramblings

The show season for outside activities is at an end for 2011 but as has been the case for many years, we have some really big events to look forward to in the winter part of the New Year. As I write this, it isn't even winter yet and the temperature is in the 20s at 3PM and will get even colder as the sun sets. But we have the Waushakum Live Steamers New Year's Day first run of the new year. Last year we had considerable snow but a couple of hearty crew had cleared the ground line of snow and it was a truly magic ride through the woods on that day. While the trains were running on the main line, another few hearty members were bucking snow in the freight yard with a wedge plow they had built. Real snow fighting in 1½ inch scale 7¼ gauge. They push the snow back up then take another run at it. It's great fun to watch.

The next event is Cabin Fever and our bus trip. We still have plenty of seats on the bus but the motel is booked solid for the weekend so accommodations might be a bit of a hassle. I suspect that the New England Model Engineering group is the largest exhibitor at the event. It is a great event but the show is being moved further into the year next year and the decision hasn't been made by your organizers yet whether to follow it to the new date. Some food for thought among the participants might be to find a new group to arrange the trip if the desire is there to continue going.

For those that motor down themselves I look forward to seeing you at the show.

Another area of special interest is our founder Ron Ginger is giving a seminar on CNC work. The cost of the seminar is \$60.00 and it will be held on Friday, January 13. The great thing about the seminar is one of the participants will be going home with a CNC bench mill complete. For more information check out the Little Machine Shop web site at info@littlemachineshop.com

Our youngest member, David Baker, has completed his foundry furnace and has made a number of castings. David did the project as a part of his chemistry course at Northern Essex Community College, giving a demonstration of metal casting on the campus grounds a week ago. David's classmates were quite fascinated and I heard the instructor say that in all his years of teaching, he had never seen a presentation as well done as David's.

Last but not least it is not too early to start talking about our own show in February. Our exhibitors have fallen off a bit in recent years and there is no need for this as our membership is steady. I know one of the reasons we tend not to attend is because we haven't built anything new lately. That doesn't matter. There are always new people coming to check out the exhibits and they most likely haven't seen your model yet. If you are working on a major undertaking, bring it along. I remember Wayne Singer showing the beginnings of his magnificent Climax locomotive at the early shows. Unfortunately it had become too heavy to bring to the show, but I have seen it completed and I have recently had the pleasure of getting a ride around the track on the completed engine.

Speaking of large projects I am looking forward to seeing the progress Bruce Murray has made on his Jaguar 6 cylinder dual overhead cam engine at the show, an example of a work in progress that brings interest to our show. So even if you have a model that you have shown before or a work-in-progress, bring it out for others to see.

One last thought: I haven't received a current installment of the series of aircraft engines that Jim Johnston has been writing (it may have gone directly to Frank Hills). Jim is suffering from throat cancer and when last we communicated his chemo treatments were really dragging him down so we wish him our best.

Since this will probably not be getting to you until the first of the year, I hope you had a Happy Hanukah a Merry Christmas and the best Holiday wishes to all of you.

Dick B.

2012 NEMES Membership

Please send a check for \$25.00 made out to NEMES to:

Richard Koolish
212 Park Ave.
Arlington MA 02476
PLEASE PRINT NEATLY!

Name _____

Street _____

City _____

State _____ ZIP+4 _____

Home Phone _____

Work Phone _____

Email _____



Tool Corner
By Frank Dorion

Every once in a while a legitimate tool bargain comes along. Most of us have been burned buying imported tools of one sort or the other. However, here and there, quality tools are becoming available to discriminating shoppers at very attractive prices. One example of this is a vernier protractor made in China and imported to Europe and the US for the last few years. Here's what it looks like:



If you are accustomed to the classic vernier protractor made by Starrett and Brown & Sharpe for the last few generations, this Chinese caliper is a strange looking duck at first. It's an exact copy of a vernier protractor still made in Russia today. Let's take a look at some of its features.

First, it can be used in a dizzying array of configurations. As shown, it will measure angles from zero to 50 degrees. Its full range is from zero to 320 degrees. At the end of this column is a chart showing the various other configurations that can be set. In fact, this thing can be set up in so many different ways that it will challenge your spatial reasoning ability to figure out how best to set it up for any job.

I've had one for a couple of years and have had plenty of time to look it over. Mine came in a nicely-made wooden box. I don't remember the exact price, but I'm sure it was less than \$50 new. I couldn't believe how well-made it was – stainless steel components with high-quality engraved graduations on the scale and the vernier. There is a very handy fine-adjustment gear and rack mechanism that lets you set an angle easily and with great precision. The vernier scale, graduated in 2 minute increments, is large and easy to read with the naked eye.



Accuracy is the main consideration, so I set the vernier to exactly 90 degrees and checked the protractor with my best knife-edge square, holding both in front of a bright light. There was full, light-tight contact between the square's blade and the protractor.

How does this import stack up against the competition? For years, just about the only new universal bevel protractor has been Starrett's Model 359, currently selling for over \$500 and shown below:



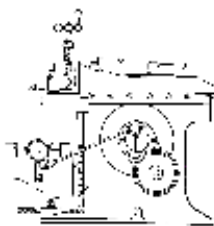
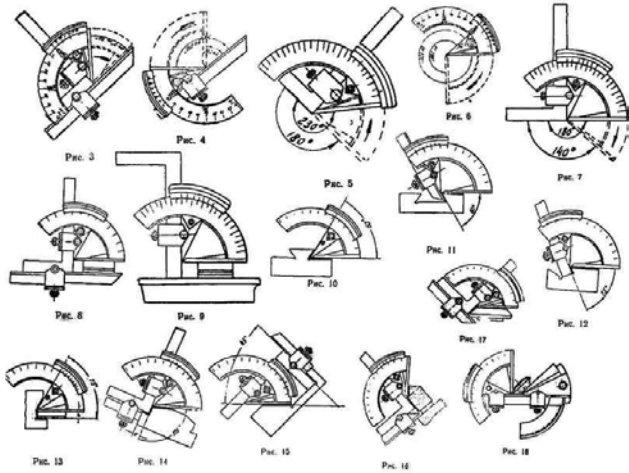
As provided, the Starrett 359 claims a range of 360 degrees vs. 320 degrees for the import. However there are many small angles you can't measure with the 359 unless you get the acute angle attachment (also shown in the above photo) at a hefty additional price of \$212. The vernier on the 359 is tiny, impossible to read accurately without magnification. Vernier graduations are in 5 minute increments vs the import's 2 minute increments.

Some of you may be surprised to learn that the 359 has a fine adjustment feature. I've had one for about 30 years and never knew about the fine adjustment feature until I researched this article. However, it's not the easiest thing to use. There are three knurled knobs in the center of the 359. To use the fine adjustment mechanism, you have to hold the protractor in one hand and use the other to loosen the large bottom knob, then press down with the tips of two fingers on the middle knob to engage the gear and rack while you try to read the micro-engraved graduations to set the angle. It's awkward to use and if you don't have independently-supported magnification to read the graduations, frustrating as well. By contrast, the fine adjustment knob on the import protractor comes easily to hand and lets you set the desired angle more accurately than the 359 and without magnification.

Just as another point of information, the Russian-made version of the Chinese protractor currently sells a bit over \$500, about the same price as the Starrett 359.

So, was I just lucky to get a good one when I bought my import? I've looked through a few internet discussions on these protractors and saw occasional mention of having to remove burrs or other minor fixes, but no one said they were unhappy with their purchase. Right now there are many listings for these protractors on eBay, with a representative price being \$34.99 plus free shipping. Just search on "protractor" in the Business and Industrial section. They also show up in import tool

vendors' catalogs, usually at somewhat higher prices than eBay. Apparently most ship directly from Hong Kong and usually arrive within a couple of weeks of placing the order. It's too late for Christmas, but, hey, we've got a whole new year ahead of us!



Metal Shapers

By Kay Fisher

R. G. Sparber's Gingery Shaper - Part 20

The Link



Drilling Links Photo by R. G. Sparber

As with the ram clamp, I first cut the two parts on the saw but did not mill them to finished length since they will later be rounded on the ends. Above you see the first hole being drilled. The top link was drilled for clearance, the bottom hole for tapping.



Tapping Link Photo by R. G. Sparber

I then ran the tap using the flywheel trick. It went all the way through without any fuss. I would not try this with a hand tap but the spiral point taps are designed to run under power. Chips are ejected out the bottom of the hole.



2nd Hold Photo by R. G. Sparber

After running a screw through the first threaded hole, I center drilled the second hole, followed by a clearance drill, and tap.



Milling Link Ends Photo by R. G. Sparber

The next part was fun. I ran screws through both holes and then screwed one end to a threaded bar. The bar is clamped into my vise. The cutter was run into the end of the bar to cut the finished overall

length and zero was set on the X axis. I then backed the cutter away such that it did not touch the corner of the link as it was swung out 45 degrees.



Rounding Link Ends Photo by R. G. Sparber

By taking .02" cuts and having a 12" lever arm clamped to the links, I was able to freehand round the ends.



Link Results Photo by R. G. Sparber

The results look good. Alas, my best looking parts are hidden deep inside and the screw-ups are on the outside.



Link Parts Photo by R. G. Sparber

The top pivot point on the yoke has a $\frac{3}{4}$ " bore. I turned a cylinder from 12L14 with a $\frac{1}{4}$ " ID. You see it here on the link stud.

Rather than using cap screws, I threaded lengths of 12L14 rod. Both ends of each rod were threaded. Red Loctite[®] was used to secure the studs to the threaded link plus used to secure the $\frac{3}{4}$ " cylinder to the stud. I want the cylinder to move relative to the bronze bearing, not relative to the stud.

I'm not sure why Gingery permits steel on steel between the ram clamp block and the link stud but I did not question it. If there is a problem, I can always add a bronze bearing later.



Link Assembly Photo by R. G. Sparber

Here you see the link loosely assembled. The nylon insert nuts keep things together yet are easy to remove if there is a problem.

Stay Tuned for part 21 from R. G. Sparber next month.

Keep sending me email with questions and interesting shaper stories.

My email address is:
KayPatFisher@gmail.com

Kay



For Sale

NEMES Tee Shirts

NEMES tee shirts and sweat shirts are available in sizes from S to XXXL. The tee shirts are gray, short sleeve shirt, Hanes 50-50. You won't shrink this shirt! The sweat shirts are the same color, but long sleeve and a crew neck. Also 50-50, but these are by Lee. The sweat shirts are very comfortable!

Artwork by Richard Sabol, printed on front and back:



Rear



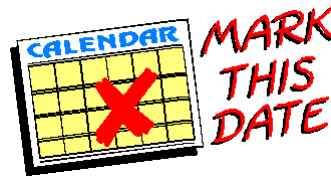
Front

Prices:

	Tee Shirts	Sweat Shirts
S - L	\$12.00	\$22.00
XXL	\$14.00	\$24.00
XXXL	\$15.00	\$25.00

Add \$5 shipping and handling for the first tee shirt, \$1 for each additional shirt shipped to the same address. Sweat shirts are \$7 for shipping the first, and \$1.50 for each additional sweat shirt. Profits go to the club treasury.

Mike Boucher
10 May's Field Rd
Lunenburg, MA 01462-1263
mdbouch@hotmail.com



Upcoming Events

Bill Brackett

Bill

Calendar of Events

To add an event, please send a brief description, time, place and a contact person to call for further information to Bill Brackett at thebracketts@verizon.net or 508-393-6290.

Jan 1st New Years Day run
Waushakum Live Steamers
Holliston MA
<http://www.waushakumlivesteamers.org/>

Jan 5th Thursday 7PM
NEMES Monthly club meeting
Charles River Museum of Industry
Waltham, MA 781-893-5410
<http://www.neme-s.org>

Jan 13th- 15th
Cabin Fever Expo Bus trip
Contact Dick Boucher 978-352-6724
<http://www.cabinfeverexpo.com/>

Jan 28th-29th
Amherst Railway Society Big Railroad Hobby Show
Eastern States Exposition, West Springfield, MA.
<http://www.amherstrail.org/>

Feb 2nd Thursday 7PM
NEMES Monthly club meeting
Charles River Museum of Industry
Waltham, MA 781-893-5410
<http://www.neme-s.org>

Feb 18th 10AM-4PM
16th Annual NEMES Model Engineering Show
Charles River Museum of Industry
Waltham, MA 781-893-5410
<http://www.crmi.org/>