

The NEMES Gazette

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March, 1999

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*The Newsletter of the New England Model Engineering Society,
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**Our Next Meeting is at 7:00 PM March 11, 1999
at the Museum, 154 Moody Street, Waltham Ma.**

*Annual dues is \$20.00 - Please make checks payable to "NEMES" and
send to the NEMES Treasurer: Kay R. Fisher 80 Fryeville Road
Orange, MA 01364*

THE MARCH MEETING WILL BE MARCH 11, THE 2ND THURS. OF MARCH

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From the Editor's Desk:

As usual I'm getting this out right down at the wire, so I'll probably forget something again, but that's life I guess.

We all had fun on the bus to the Cabin Fever Show, and we saw a bunch of folks from the area who had made it down there on their own. I think the high point of the show was the RR Merlin in 1/271 in to the foot scale that Dick Yeagely is working on. He's been at it for six years now, "at least 40 hours a week." He says it's about 75-80 % completed at this point and the supercharger has been finished since we saw it at last year's show. Piston rings were a concern for him, and after talking with Roland Gaucher about how Roland did the rings in the BR-2 he says he guesses he's going to have to tear it down again to put new rings in. As Ron says later, we managed to bring a lot of iron home with us. Not only was it a great time, but a couple extra folks signed up at the last minute and Kay gave us all a \$13 refund. I'm looking forward to next year already.

Our show on Feb 20 was a big success. We had about 45 people exhibiting items and it seemed to me that we had even more people visiting than we did last year, although I don't have any figures from the Museum on how the admissions were for the day. We had an incredible assortment of projects, from the 1/8" bore 3/32" Stroke 4 cycle IC engines by George Luhrs to a 10 foot model airplane wing by Frank Galler and Russ Steeves's Fitchburg Northern No 5 Locomotive that's a hit where ever it goes. Ed Roger's 40 Ford Flathead V8 in 1/4 scale is coming along nicely - it's got the heads and the intake manifold on it now and all the little bits are inside where they belong. I'm looking forward to seeing and hearing it run.

If I had to pick a favorite item from the whole show I think it would have to be the builders plate that Les Russell has just finished for his Minnie traction engine. He made it in two passes on the Bridgeport he converted to CNC with stepper motors, using a program he had written by hand in G-code. He had a magnifying glass you could use to see it, and I know that I needed it to see the details.

See you a week from next Thursday -- scl.

President's Corner by Ron Ginger NEMES SHOW

Since I'm writing this the day after our show, I have to start with my thoughts about the show. Again as last year, I think it was a great day. The breadth of the interests our guys have is truly amazing. But even more so is that we can all come together, see and appreciate what each other does, and enjoy a day of such diversity. If you read the various hobby magazines you find some of the clubs are narrowly focused to the exclusion of all else. I think we are a stronger club for our interest in such wide areas. Where else will you find the likes of a concertina building jig, alongside the wing of an airplane, ship models, mechanical sculpture, a recumbent bicycle, marine engines, rotary and radial engines, clocks, steam toys, escapement demonstration models, tools and fixtures, miniature guns, etc. etc.

I wish we could have a show every month!

I saw Steve wandering around all day with his notebook, so I won't attempt to describe any of the exhibits. I'm sure he will have lots of detail in this and later newsletters.

We had a new member sign up sheet out, and had 18 people sign up. Several of them paid the half year dues (\$10) and joined. The others have been added to our list as we do with new names, and will receive 2 newsletters. We hope they decide they like us and send the \$10 to our treasurer, Kay Fisher, to join. Welcome to the new members.

A friend from work came to the show, and as I walked him and his wife around and showed them some of the exhibits, he remarked on how nice it was that Dave Robey had a small sign by several of his models, it was very helpful to visitors that didn't always know what they were looking at. I'd like us to try next year to have a sign by every item. In fact, I'd like to see a small handout sheet for many of them so people could carry away something. I'd like to see us develop a standard format (what happened to our Logo design?) and I think, the club could cover the printing costs for these handouts. We will work on this for next year.

I was very pleased with the response from some of the trade vendors for their generous offerings of raffle prizes for our exhibitors. Thanks to Steve Cushman for his efforts in contacting the vendors and securing these prizes.

This year we had the following gifts and winners.

J&L Industrial gave us a dozen baseball caps, which Steve distributed to the first 12 guys he found that were busy explaining an exhibit to a guest at the busiest part of the day. They also provided a fine optical visor which was won by Frank Stauffer.

Rich Sobol donated 2 of his fine sweatshirts with the great mechanical graphic designs. These were won by Russ Steeves and Frank Galler.

STRICTLY IC magazine, published Bob Washburn has been a supporter of our group from the start- he provided some of the mailing labels I used for the very first meeting announcement of this club. This year he provided us with 4 One Year subscriptions which were won by Stan Orlowski, Leslie Russell, Joe Warfel and Phil Goodwin. Since IC engines are one of my favorite subjects, I hope these magazines hook a couple new guys into what Bob calls the fraternity of MICE.

George Broad, the publisher of **MODELTEC** magazine, also provided a subscription that was won

by Ed Rogers. George has also been very supportive of our group, with frequent announcements of our activities in his calendar section. I spoke with George at the Cabin Fever Show, and have promised to send along some photos of our show. I only got to take a few, if any of you took some good photos and want to see them in print, let me know, I'd like to send George a selection to choose from.

Bob Cumings, the owner of **New England Brass and Tool**, is both a vendor to the hobby and a member of our club. This year he provided 3 great prizes, a bench grinder won by Tom Ritchie, a keyless drill chuch won by Denis Edkins and a jacobs type chuck won by Rich Puleo.

Our final prize was a \$300 gift certificate to one of our best local sources of used machinery, **Brothers Machinery**. This great prize was won by Mike Boucher, who I thought said he might use it to replace some of his dads tools he had misused in the past :-)

My thanks to these vendors for their continued support of our club.

I also have to extend many thanks to everyone that helped so much to make this show a great day for all. I am really amazed at how well we all work together to make this happen- without any major organizing effort we get people to help with everything from setting up the tables at 8:00AM, to the hauling out the last bag of trash at the end of the day. This is a tremendous effort by a lot of fellows and I extend sincere thanks to everyone.

And of course a very special thanks to Pat Fisher and Gail Martha and everyone else that helps with the refreshments. What would we do without a donut or cookie fix during the day?

Next MEETING, MARCH 11

Note that date- the **SECOND** Thursday of the month, since the museum has a special event on our regular night. Our meeting will feature Morgan Davis, a new member, that has built a model Gattling Gun. Morgan will describe the model and also tell us some of the interesting history of this gun.

CABIN FEVER

The bus trip to **CABIN FEVER EXPO** was again a great success. The weather was fine, a bit snowy the morning we left, but in less than 2 hours we were past the snow into clear sunshine. We returned to using the Brush Hill Tours bus and the ride was smooth, quiet and comfortable. The Inn served some fine food and drink and a number of us

sat around a very pleasant table and talked well into each night.

The show was again excellent, a bit larger, and now clearly at the capacity of the building. Gary Schoenly told me there were expansion plans for the building, so next years show should again be bigger and better.

There was a good collection of vendors on hand, and lots of great buys in used tools. Our bus driver may have thought us a strange lot as he watched us load various lumps of cast iron- but whats so unusual about loading a 15inch bandsaw onto a tour bus? Or a 12" six jaw chuck or a rotary table that took 2 guys to carry.

I am sure I'll be trying to hustle up this trip again next year- mark your calendars now from the last weekend in January, 2000.

NAMES

I dont think we can get up enough interest in making a bus trip to Detroit this year, but I have heard of a few fellows that plan to fly out for the show. If you are planning to fly out, let me know, I expect I'll be driving out with my die-hard show buddies Roland Gaucher and Norm Jones, and maybe we can work out some shuttle rides at the show so everyone doesn't have to rent cars.

WEB AND E-MAIL

Bob MacIvane has been working the deal to get us a club WEB account. We should shortly have a site and a club mail list. We will let you know the details as soon as we get it together.

As I wrote the note above about having signs on our exhibits at next years show, it occurred to me we could have a WEB SHOW. Lets try to develop a format of a page that shows a photo of a model, a description of its interesting points, and the name of the builder. We can create the Internet's first On-line Model Enigneering Show! I'm going to fix up my personal WEB pages this way, and I'm going to push for everyone in the club to have a page or more on our WEB SHOW. Watch my page, www.ultranet.com/~ginger to see this develop.

--Ron

Calendar of Events

March 7, 1999 Sunday

Cape Ann R/C Model Club Auction
Rowley VFW 978-777-1397

March 10, 1999 Wed 7:30PM

Northeast R/C Model Club Spring Auction

Georgetown MA 978-352-8640

March 11, 1999 Thur 7PM

NEMES Monthly club meeting
Waltham, Ma.

Charles River Museum of Industry 617-893-5410

March 19-21 Fri & Sat 10-6 Sun 10-4

Maine Boatbuilders Show
58 Fore St. Portland ME.
207-774-1067

April 1, 1999 Thur 7PM

NEMES Monthly club meeting
Waltham, Ma.

Charles River Museum of Industry 617-893-5410

April 23-25 1999

North American Model Engineering Exposition
NEMES bus trip to Wyandotte, MI
Ron Ginger 508-877-8217

For a listing, please sent name and brief description of event, time and place and a person to call for further information to.

Bill Brackett at wbracket@ultranet.com or 508-393-6290

Jan-1999 Treasurers Report

Previous balance -----	\$2507.68
Interest -----	1.08
Brush Hill Tours (Cabin Fever Bus) -	1985.00
Steve Lovely News Letter Postage -	77.13
Bus Trip Deposit -----	1760.00
Dues Deposit -----	60.00
Fred Ruland (Dues Overpayment) --	-10.00
Bus Trip Deposit -----	330.00
New balance -----	\$2586.63
=====	

Respectfully
Kay R. Fisher

The Meeting, February 4, 1999

Several people brought in interesting items that they had made. Frank Dorian had a brass, steel, and ebony shoulder plane in a mahogany box. The brass sides fit into the steel sole of the plane with a double dovetail formed by hammering the brass and upsetting it into the compound dovetail. Lou Hills brought in his model of the Erikson Propellor from the US Navy War Steamer "Princeton" which was built in 1842-1843 and commissioned in 1844. It was the first naval warship to have a screw propellor and the engine below the waterline. The prop weighed 12000 lb and was 14 feet in diameter. The center hub, arms,

and drum were cast bronze. Six cast bronze blades were rivetted on. Jeff del Papa had a change box he'd turned up from some 3" Brass Hex stock. The bottom had a rim turned on the top to hold the cover and a hole bored to provide the interior of the box. The cover had a flat knob turned on the top and a hole bored in the bottom to fit over the rim on the bottom. It should be very impressive on the coffee table when it's been polished up and lacquered.

Ron called the meeting to order about ten past seven. The bus trip was a success and we brought a lot of stuff home on the bus. There probably won't be a NEMES bus trip to Detroit for the NAMES show, not enough people want to go.

The next meeting, in March, will be on the 11th, not the 4th, because of the Grand Opening of the Internet Center. The Tool Shed will stay open late the 11th to match our meeting date for March.

Karen LeBlanc is going in for Surgery in the next day or so. (As of the show the word is that she is home and recovering. Get Well Soon Karen!)

Frank Geller was inspired by the talk Dave Stickler gave about rockets and volunteered to tell us about his experiences making his own small rockets at home.

Why make your own Rockets? It keeps the dream alive, is fun, and is educational. It's usually quiet, and the fuel is safer than gasoline for solid fuel. It's legal to buy the chemicals you need (you can find suppliers via the internet and order them in the mail.) Launching (with a permit) is legal. Frank designs his rockets to only go a couple hundred feet high so that everything takes place on his own property, which makes everything less complex.

For the rocket engine he uses paper filled phenolic tube that costs him about a dollar a foot. He cuts the tube to length, then roughs up the inside and uses epoxy to glue in a nozzle. Nozzles are either Al or Steel, Drilled most of the way through with a large drill, then drilled through with a smaller drill to form the opening. The phenolic case is strong, light weight, and reusable.

He uses a standard black powder made up of 75% Potassium Nitrate, 10% Sulphur, and 15% Charcoal Briquet. To the powder he adds 10% by weight of Aluminum non leafing paint pigment (it has a wax coating on it.) The aluminum improves the thrust of the motor. Then he grinds it dry in a tumbler (with a rubber container and ceramic media.) Someone recommended grinding the powder wet as being a safer alternative.

To load the rocket motor he uses an arbor press, with an anvil that fits into the nozzle and plugs the opening so the powder stays in the tube where it belongs. He squeezes it in at about 5000 psi. With the powder in the motor a ball of aluminum foil is compressed in to seal the top of the motor.

He launches gliders or fireworks up about 200 feet, with a rocket about a foot long and weighing about 2 ounces. He's made several hundred motors and has gotten very consistent results. Typical motors burn 3 to 4 seconds. To get a faster burn he drills a hole into the flat face of the motor through the nozzle. For launching his rockets he uses green safety fuse.

He says an Estes motor has much better propellant than his - he figures that the ones he makes have about half the energy of an Estes brand motor.

Frank has managed to come up with a procedure that has allowed him to safely make his rocket motors, but in today's litigious society I have to say that this is definitely in the category of "DON'T DO THIS AT HOME KIDS" because you might just blow yourself up or burn the house down or something.

Don Strang has been working the last few months on the problems of running three phase motors in the shop without a real three phase power supply coming in from the power company. Once again he has put together a comprehensive talk based on research and some solid experimental work. I don't have the time, space, or energy to do it justice here but will try to hit the high points. One of the things that varies from place to place is the actual voltage you get from the power company. If you have a meter he'd like it if you could measure the actual voltage in your shop and bring the info to the meeting. Be careful doing it - remember that Electricity will kill you if you aren't careful. (see Don't letter in the letters section of this issue for some safety guidelines) The "one hand in the pocket" rule is a good guideline. Mark's Handbook has a good chapter on electricity.

The original electrical con game was lightning rods, today it's phase convertors.

The cheapest way to start a motor is with a rope. Spin it with the rope, then turn on the power. For phase convertors you can choose between three types, Static, Rotary, and Electronic.

Motors and Transformers are closely related. In a transformer the magnetic flux transfers the power by induction without any conduction. The core of the transformer loses power by hysteresis - the

iron magnetizes and demagnetizes along different curves. (It takes more power to magnetize the core than you get back when it demagnetizes, so there is a power loss and the core heats up.) Eddy currents are also lost. A motor is a transformer with an air-gap. The secondary is the rotor, and the load is the power output shaft. Transformers are typically 98% efficient. Motors get into the high 80% at best because of the airgap that leads to leakage of flux.

This info covers WYE connected motors, not DELTA connected motors. Most of the motors in our shops are WYE connected. Three Phase Induction motors are made to run with balanced power. The three voltages need to balance. If they don't then the currents won't balance and the temperature in the motor will be hotter than it would be for the same load with the currents balanced. The unbalance of the currents is much larger than the unbalance of the voltage - 8 times the voltage unbalance is a minimum for the current imbalance. NEMA has an unbalance factor for derating the motor to keep it from dying early. (The insulation should be good for 20 years of 20000 hours of operation, although the bearings may need to be replaced earlier.)

The Motor Load Factor Derating curve due to Unbalanced Line Voltages starts at 100% rating for 0 voltage unbalance. At 5% voltage unbalance the derating factor is about 75%, and at 8% unbalance the derating factor is about 50%. So, if you keep the voltage unbalance under 10% and don't push your motor past about a third of its' rated output it should last it's allotted 20000 hours of operation.

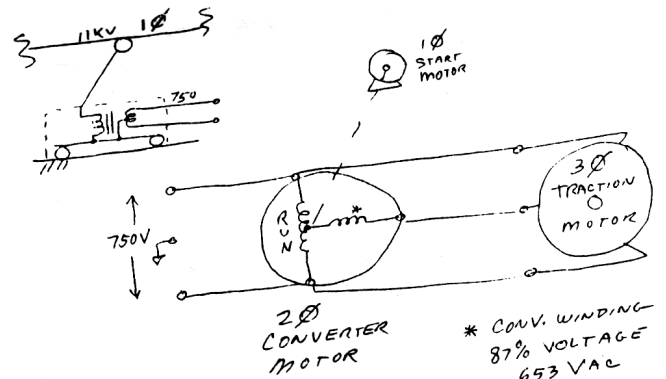
The typical motor has Class B electrical insulation. That means that the insulation is rated to withstand 130 degrees C at the hot spot in the motor. Temperature rises in the motor are all based on a 40 degree C (104 F) ambient temperature - and a nice clean motor, not one stuffed with sawdust or other crud. Dirty motors run hotter than clean motors and as a result don't last as long.

Every 10 degrees of temperature rise cuts the life of the motor in half. The single phase idle current goes up to the full load three phase current, so since the full load current is double the idle current the full load single phase current will be double the full load three phase current as well. The result of this is that if you have a motor running happily at 100% output on well balanced three phase power and you lose a phase, the current will instantly double and the motor will probably last less than 5 minutes before it cooks itself to death.

Induction motors commonly come in 1 and 3 phase versions. Up until thirty years ago or so they also were common in 2 phase versions. Why do people use polyphase motors? They are self starting. A single phase motor has to be fooled into starting. Two phase motors make better phase convertors than three phase motors but are hard to find now as two phase power systems have been gone for many years and the motors were mostly scrapped.

A three phase motor is self starting, puts out constant power, and has a constant power density. The three phases interact to produce a rotating magnetic field. The motor spins the same direction as the field as the rotor tries to catch up with the rotating field.

In 1915 the Norfolk and Western Railroad ran 1 phase 11 KV 25 Hz trolley lines for electric traction. A transformer reduced this to 750 Volts in the locomotive. This was used to run a 2 phase motor that in turn provided the three phase power to the traction motors. The traction motors had 2 speeds by changing the poles, and the torque was controlled by the power applied to their wound rotors - they also had dynamic braking.



Two phase power is readily converted to three phase, three phase converts readily to two phase, and both are easy to convert to one phase. But one phase to two or three phase it difficult.

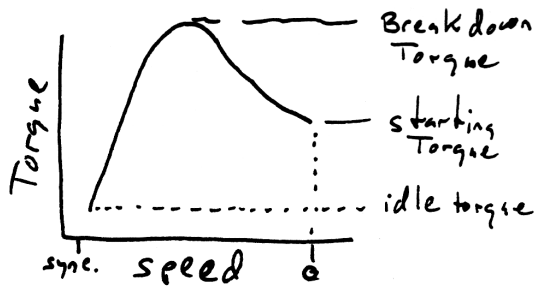
For converting single phase to three phase there are basically three approaches. Static Convertors, Rotary Convertors, and Electronic Invertors.

Static convertors break down into three approaches. 1, run the motor single phase. Spin it with a rope, switch it on, and use it. This approach is poor, you can't get nearly the rated power out of the motor without frying it, and it'll run hot and burnout way before it should even running at a tiny per cent of its rated capacity on three phases. 2. Use an

autotransformer and a run capacitor. This approach is expensive because the autotransformer is expensive, but you can safely get 100% rated power out of the motor it is designed to work with. A different motor than the one it was designed for will probably not have the third phase in the correct balance as there is no regulation of the third phase - it's balanced at the design load for the design motor and otherwise you take your chances. 3. Use just a run capacitor to provide the balance to the third leg. With the correct run capacitor the third phase of the power to the motor can be kept within the safe voltage and current limits to allow the motor to safely output 65 to 80 % of it's rated power.

With the autotransformer approach the autotransformer is used to boost the voltage, and the capacitor is used to shift its phase 90 degrees. The third phase voltage needs to be adjusted to the load with the proper autotransformer and capacitance values. When adjusted for full load the motor will run safely at 100% power.

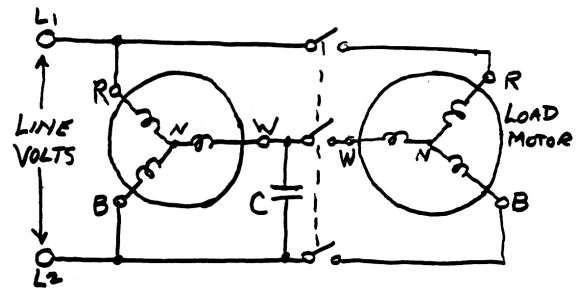
For a run capacitor only setup you need to load the motor to tell what is happening in it. Loading the motor to match the application, the proper capacitor can be selected to give safe running in those conditions. Running this way the starting torque and breakdown torque are less than they would be with three phases. If more starting torque is needed then an additional starting capacitor can be used, but that won't affect the



breakdown torque when the motor is running.

Rotary Convertors are really divertors and leave your motor running essentially single phase, which is not good. They do controll which way a motor will start when you push the button, but the three voltage will never agree so the currents never will either. Unbalanced currents in a motor put unbalanced side forces onto the bearings leading to pre-mature wear and failure. Don has done tests on a variety of rotary units and has seen cases where the motor spun up as the convertor ended up pulling power out of the "load" motor to keep itself

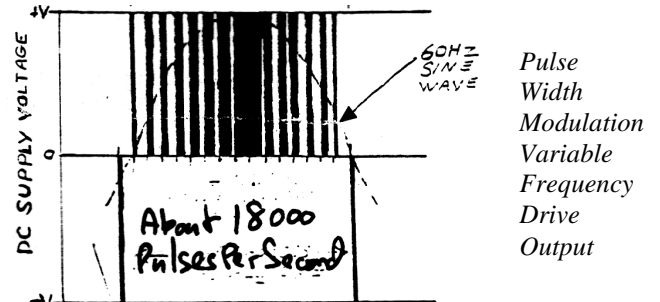
turning as the load motors characteristics were such that it worked better as a "convertor" than the convertor did.



CONV/DIV

Rotary Diverter

The Electronic Invertor takes a DC voltage and switches it on and off at very high speed to simulate the sinusoidal wave form of real AC electricity. The idea is that the DC voltage is switched on and off so fast that when you look at it with a motor it all averages out as if it really was AC. It's also all done with computer controll so you can vary the frequency that you are emulating and hence change the synchro-nous speed of the motor. This gives electronic speed controll of 3 phase AC



motors.

A TIP AND A TECHNIQUE

Ed Kingsley

THAT THREADED SINKING FEELING

Whenever possible, it is always good practice to use a centerdrill (combination drill & countersink) to spot, or start, the hole for a drill. The stiffness of the centerdrill helps to ensure the correct location of the hole, in relation to the spindle of the drill press, lathe or milling machine, and the 60 degree cutting edge provides a slippery slope to firmly guide the cutting edges of the drill.

If the hole you're drilling will be tapped, the following procedure can save you time, and possibly an extra step, or two.

The concept is to pre-countersink the hole. This facilitates an easy entry for the tap, and prevents the tap from raising a burr at the edge of the hole which you would then have had to eliminate by coun-

tersinking after you'd tapped the hole. Countersinking, after tapping, can scrunge-up the threads, thus necessitating another run-through of the tap.

You should like to countersink to a width slightly wider than the major diameter of the screw, or bolt, that you're tapping for. Choose a centerdrill with a drill diameter smaller than the tap clearance drill, and a body diameter larger than the diameter of the thread you're tapping. The size you countersink the hole to is a matter of design considerations and personal taste, but should be in the neighborhood of .050" wider than the major diameter of the screw.

For a 1/4" x 20 screw, and a #7 tap clearance drill (.201"), you would choose a centerdrill with a tip diameter smaller than .201", and a body diameter larger than 1/4". A number four centerdrill has a tip diameter of 1/8", and a 5/16" body diameter. Ummmm, just right.

It's quite useful to have a "set" of centerdrills, perhaps from #1 to #5. These five will start drills from .050" up to 1/2", (and larger), and countersink for taps from #1 to 3/8". Here's the table:

Size	Tip Dia.	Body Dia.
#1	3/64	1/8
#2	5/64	3/16
#3	7/64	1/4
#4	1/8	5/16
#5	3/16	7/16
#6	7/32	1/2
#7	1/4	5/8
#8	5/16	3/4

(There is also a #4 1/2 , with 9/64 Tip, and 3/8 Body) I could have put that in the table, but I was trying to fill up this space

For starting non-threaded holes, it's not necessary for the centerdrilled hole to be as wide as the drill. What's important is that the starting hole be wider than the web of the drill which follows, to allow the cutting edges of the drill to bite into the material first, instead of the non-cutting center portion of the drill. The latter would most likely cause the drill to "wander", or "skate", which is a frequent cause of off-center, crooked and over-sized holes. (not the only cause, to be sure, but Don Strang has covered other causes of these problems in his talks on drill lip geometry and sharpening methods - see previous newsletters)

DETAILS, DETAILS

I nabbed a Craftsman Detail Sander, on sale awhile back, with the intention of using it to purge-the-burr, or ease the edges, of freshly milled work-

pieces. I'm pleased to report that it works-a-treat. The Detail Sander of which I speak is the odd looking, portable vibrating device with the triangular sanding pad at the end. Since the pad is about 3 1/2" long, I figured it would be easy to apply to a small area, like an edge, and small enough to fit into tight spaces, like slots, grooves and cut-outs.

OK, the vibration part puts your hand to sleep, but it takes a few minutes, and you can do a lot of purging and easing in that time. The model I bought uses self-adhesive, sanding paper cutouts, but other models use a Velcro fastening system (hook & loop, they call it). I chose the self-stick because I thought it would be "flatter", and because the "hook & looper" stuff costs 3x as much. Besides, I can always glue on some hooks (or loops) if I change my mind.

There are battery powered models (heavy), and two speed models (expensive), and scraping blade attachments and probably adult-aid thingeys, too. I don't care. I just sand edges with mine, and I'm happy. I haven't seen an air powered model yet, but I haven't gotten a new Harbor Freight catalog in days.

If you think you could use one of these, check 'em out. They go as cheap as \$19 at the aforementioned Harbor Freight, and for about 2-4 times that for a brand name, cheaper on sale.

IMPORTANT AND EXPORTANT (an excuse...)

I had planned on running an article here, with a slew of slinky diagrams, skillfully sketched in AutoCAD, but I hit a wall when trying to extricate them in a format which our overworked Editor could actually use. We are working on this problem; even as you read this, and hopefully will have it solved ere the next issue. Remember, low expectations are the key to happiness.

Great news, Walt Disney is not dead, he is only in suspended animation.

--Ed

Rubber Collets by Dave Robie

Have you ever wondered how to chuck that half done, odd shaped nicely profiled and mostly finished, even polished small part of light "other end" work without damage to the rest of the part? The easy way answer is to use a RUBBER COLLET.

In this shop is a collection of different sizes heavy wall small rubber hose, mostly automotive types and mostly picked from the trash. These fin in either a Jacobs chuck or in the lathe3 or 4 jaw chuck with most of the part inside the rubber tube, which

should fit the part closely, and be squeezed by the jaws.

The rubber will conform to tapers, ball ends, hex ends, etc. and when tightened on the part of the part plus another hose if necessary, will hold it tight enough and keep it centered enough to finish.

One job here, the making of numerous profiled/tapered wooden steam whistle handles about 3/4" long could not proceed easily without this type of collet. The rubber even prevents jaw impressions on soft wood.. Another job, the final burnishing of a tiny brass valve to it's seat in a drill press holding the valve by it's rough ball top is done quickly and as a "semi" mass production operation with these junkyard collets.

Caution that this is for second or "last" operations only -- not for heavy lathe cuts. Best thing for light filing or finishing operations, below 1/4" "other end" threading, polishing, etc. IN several years of using these collets I have never had a part thrown or dinged -- only because the regular jaws get tightened securely to hold the whole thing together.

OWLS HEAD TRANSPORTATION MUSEUM

This is contributed by Bill Brackett so everyone will have a long term idea what's coming up this year at Owls Head. The individual events will be in the regular monthly Calendar of Event Bill puts together again a couple of months prior to the actual event to serve as a reminder that it's coming up.

The 1999 schedule of events has just been posted to their web site (www.ohtm.org) and has been added to our Calendar of events. The following text has been copied from their web site to provide information on the museum, how to contact them and their events.

The Owls Head Transportation Museum is recognized for its landmark pioneer collection of ground and air vehicles, an exciting schedule of special events and its educational resources.

OWLS HEAD, MAINE U.S.A.

On RT. 73, two miles south of Rockland, Maine
Across from the Knox County Regional Airport. Commercial flights from Logan, Boston.

1999 Special Events

May 29-30 "Wings, Wheels & Keels" Transportation Flea Market

June 13 Rod & Custom Show

June 26 27 A Sentimental Journey

July 11 The Fabulous 50s & Sensational 60s

July 24 25 Trucks, Tractors & Commercial Vehicles

August 7-8 25th Anniversary Transportation & Aerobatic Spectacular

August 21 22nd New England Auto Auction

September 5 Antique Motorcycle Festival

September 19 Tribute to Convertibles

October 3 Foreign Auto Festival

October 17 Ford vs. Chevy Meet

October 3 The Great Fall Auction & Open House

LOCATION: The Owls Head Transportation Museum is located in mid-coast Maine, 2 miles south of Rockland on route 73.

TELEPHONE: (207) 594-4418

FAX: (207) 594-4410

E-MAIL: ohtm@midcoast.com

HOURS: The Museum is open daily, 362 days a year. It is closed Thanksgiving, Christmas, and New Year's Day. Hours from April through October are 10 AM to 5 PM daily. Hours from November through March are 10 AM to 4 PM daily In addition, the Museum's Restoration Shop is open Thursday evenings year round from 6:30 to 9.

The Owls Head Transportation Museum is a non-profit organization founded in 1974. Its purpose is to collect, preserve and exhibit pioneer aircraft, ground vehicles and engines significant to the evolution of transportation and/or the state of Maine. As part of its educational role, it will document, research and demonstrate its collection and offer related programs and services.



Ron mentioned at the show that we ought to think about putting some pictures in the Gazette, so here's a picture that Paul Gauffin supplied of one of the half size models he had at the NEMES show on Feb. 20th.

CHESTER ON TRACK

SATURDAY MAY 22, 1999 9 A.M. to 4 P.M.

9th YEAR! **off Route 20**
*presented by the
Chester Foundation*

Chester, Mass.
RAIN or SHINE

FREE
bring the family!



RETURN OF A CLASSIC IN 1:1 SCALE

VARIETY TO MATCH THE LARGEST FESTIVAL!
* GIANT RAFFLE * CRAFT FAIR * FOOD * TOURS

CONRAIL – AMTRACK
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PIONEER VALLEY STEAMERS
SPECIAL POSTAL CANCELLATION
BERKSHIRE GAS ENGINE SOCIETY
BERKSHIRE SCENIC RAILWAY
CIVIL WAR RE-ENACTORS
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RAILRODIANA
CLASSIC ROLLING STOCK

STATE POLICE K-9 & MOTORCYCLE SQUADS
BLACKSMITH DEMOS
**GATEWAY SHOW CHOIR, JAZZ &
MARCHING BANDS**
OPERATING MODEL RAILROADS
B & A ROUNDHOUSE & COAL TOWER
HISTORICAL SOCIETY EXHIBITS
STREET BANDS
FIRST KEYSTONE ARCH R. R. BRIDGES IN AMERICA
LIBRARY BAKE & BOOK SALE
CORTLAND ABRASIVE DISPLAY
POCKET LADY PRIZE PATROL

STATION MUSEUM HOURS: JUL & AUG WEKENDS 11AM to 4PM

For more info call: 413/667-8755 or write 17 Bailey Road . Huntington, MA 01050

The Foundation reserves the right to change the program without notice.

letters

I should have had this in last month, but in the rush to get the issue out I overlooked it.

Steve:

Info for the newsletter:

1. For those who have MARKS Standard Handbook of Mechanical Engineering-- there is an excellent chapter on Electricity covering most of what I have been talking about at recent meetings.

2. It would be interesting to see what variations exists in line voltages among the members shops. For those who can, take a reading of your "230" volt outputs in the shop & bring it to the next meeting & we can tabulate results.

Do it safely PLEASE. Double check the lead wires to your voltmeter (multimeters). Wire insulation does age and crack & can get dangerous to handle. I recently had to renew the test lead wire on my digital Triplett meter (about 15 yrs old).

3. NE Wireless & steam museum info: email news@ids.net They have a web page: <http://users.ids.net/~news> On Feb 15,99 @ 9PM, WGBH (PBS) American

Experience will have a program on a ship sinking in 1909 off Nantucket involving first use of wireless. Part of this was shot at the museum.

Their 1999 steamup has been moved to Oct.2 to avoid conflict with the Winnepesaukee steamboat weekend.

The wireless weekend is in the Spring but no date given yet.

Regards Don Strang

**THE MARCH MEETING WILL
BE
MARCH 11, THE 2ND THURS.
OF MARCH**