The
PLS GAZETTE
P.O. Box 26202
Collegeville, PA 19426-0202

FIRST CLASS

September–October 2011

The PLS GAZETTE

A newsletter of the Pennsylvania Live Steamers, Inc.

Along the Main Line

Once again I wonder to myself, where has the summer gone? Can in fact another fall be upon us?

In this issue of the *Gazette,* we reflect upon the "water incident" that occurred on August 28th now known as Hurricane Irene. I recall surveying the property that Sunday afternoon and wondering not only if we will be able to have a fall meet just five days later, and if in fact there would still be a railroad left at all! Once the waters receded, it became apparent to me that indeed the track and roadbed was built to withstand the forces of nature. In fact what did not survive were the many full sized railroad ties used to retain the ballast fill after Mercer Bridge. About a dozen of these ties floated away never to be seen again. The response was a coordinated effort and a terrific job by the crew who turned out Monday morning and worked throughout the week. The extent of work included complete cleaning of all affected signal boards, cleaning off track and roadbed, repairs to transfer tables plus other repairs and tasks too numerous to list in order get ready for the fall meet. This may have been PLS's finest hour. I am truly proud of the way those who pitched in worked together to make things right.

Irene did leave one temporary calling card — the consolidation and relocation of a huge pile of tree limbs from a nearby compost area to within our east Rahns area. The present plans call for a dumpster to be provided and

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Before and After — One Week from Irene to the Fall Meet

The end of August brought Hurricane Irene to the area. The club experienced major flooding as a result. Heavy persistent rain pounded the park and caused the adjacent Perkiomen Creek to rise 17.79 feet above flood stage (which is about 7 feet above track at its lowest level). Water in the turntable area was above three feet. Several tunnels were completely under water and many bridges seem to rest on the surface of the water. This was the second highest level for the

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August 28, 10:22 A.M. The Perkiomen Creek covers a major portion of the PLS mainline. Here water was 17.79 feet above flood stage. Photo by Bruce Saylor.

September 2, 4:23 P.M. Dave Johnson makes a run during the Fall Meet. The PLS track crew did a fantastic job clearing debris and getting the track ready in time. Photo by Allen Underkofler

Along the Main Line

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organizing a coordinated effort in the coming weeks to remove and haul away this entire pile.

Despite what Irene dumped on us, our fall meet provided what was perhaps the most fun I have had over three days ever at PLS. While the turnout was not quite as full as it could have been, those who did attend were likely captured by our visiting live steaming friends Don and Anita Sweger from High Driver Video Productions. Our new DVD will be used as a fund raising venue and to share our fall meet events. Over six hours of video was shot. The final editing will come down to an estimated 1 ½ hours. This venture should turn out to be our best public exposure to date showing our club and what we do. You can preorder your copy from Walter for $20. The final copies are anticipated either late October or November.

Once again our fall meet Pot Luck dinner was attended by over 130 persons who enjoyed the efforts of Jay Shupard and his family who worked diligently to make this event a success. Thanks Jay et al!

Lastly, there a new effort underway by the Board of Directors to actively address lease issues and the growing equipment storage situation. With an expanding waiting list for locomotive and car storage, we must again review our policies and implement management procedures that are fair and consistent for all of our members.

Surveying work continues on our East Rahns Perkiomen Branch. Our November membership meeting will require establishing a nominating committee for the 2012–2013 Board of Directors and Officers. Remember, there are always things to do around the club if you look for it.

See you at the track.

Pat Murphy, President, PLS

2011 PLS Calendar of Events

Sunday, Oct. 2	Run Day Rain Date
Saturday, Oct. 15	Board of Directors Meeting - 9:30 AM Membership Meeting - 12:30 PM
Saturday, Oct. 22	Fall Clean Up
Sunday, Oct. 23	Run Day - Members & Guests
Sunday, Oct. 30	Run Day Rain Date
Saturday, Nov. 19	Board of Directors Meeting - 9:30 AM Membership Meeting - 12:30 PM
Friday, Nov. 25	Turkey Trot Run – Gauge 1 only – (rides not available)

Donation Acknowledgements

PLS wishes to acknowledge the following for their donations during August and September: Rittenhouse Construction Co, Bruce and Mary Saylor, Dr. Leonard and Diane Medura, Robert and Joan Angeli, Mark and Mary Sowcik, and Mark and Molly Davies.

Thanks for All the Fall Meet Help

PLS had an excellent group staffing the kitchen during this year's event from set up to cleanup. Kathy Parris wishes to thank those who provided baked goods and/or volunteered in the kitchen This includes, among others: Bruce Barrett, Charlie Chermak, Sharon Connelly, George Cooper, Bob Gerhart, Alan Hansen, Al Hein, Pat Heller, John Kane, Elizabeth Kiefer, Julia Kiefer, Dave Laird, Jane McDevitt, Walt Mensch, Barb Miller, Dick Moore, Carol Quirk, Deb Rose, Terry Sardos, Bruce Saylor, Mary Saylor, Barry Shapin, Dave Taylor, Judy Taylor, Rose Ann Wagner, and Sue Webb. Special mention also of continued support by Redner's Warehouse Markets.

Walt Mensch wishes to thank Elizabeth Kiefer for her assistance at the Sales Table.

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Safety Committee Members: John Geib, chairman; Buddy Borders; Pete Brown; Pat Murphy; Bruce Saylor.

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Faces of PLS

From the Fall Meet

Clockwise Below: Sue Borders amuses with Thomas the Tank; Ron Henderson; Frank Weer and Ted Xaras.

Clockwise Right Half: Lee Nonnemacher; Dave Johnson; Savana Wagner on handcar; Sharon Connelly and Rose Ann Wagner; young visitor.

Shop Tips

Screw Sizes

Having trouble remembering the maximum size of number size screws? Just remember that ⅛" diameter (0.125") is a No. 5 screw and that 0.013" is the size increment between each numbered screw size.

Number	Diameter	Number	Diameter	Number	Diameter
2	0.086"	4	0.112"	8	0.164"
3	0.099"	6	0.138"	10	0.190"

More on Tapping

I use spiral pointed (gun) taps for all tapping, including blind holes in steel. After breaking the tip of a tap off when backing up the tap to break the chip, I adopted my neighbor's tap lubricant which he uses at a numerical machining center: ½ Tap Magic, ½ Loctite Anti-Seize Lubricant.

This mix reduces the torque so that backing up the tap to break the chip requires little force. Using this mix allowed me to tap a series of No. 2-56 blind holes in hot rolled steel with ease. Just don't tap more than one revolution before backing up to break the chip in a blind hole.

— John Caldwell

Images of the Fall Meet

Photographs by Allen Underkofler

Well, it was dry, which was welcomed weather after a major hurricane. A light turnout enjoyed good runs, good food and the opportunity to appear in a new video of the club by High Driver Productions.

Clockwise from Right: Bruce Saylor runs his Hudson on a spot that was at water level the week before; David Bortz, Jr rides an LV Geep; "Big" John Geib takes passengers around the track; "Big" John again on John Lukasavage Jr.'s K4s with John hidden behind him; Murray Wilson is animated while relating a story.

Membership Gauge

As of September 30, PLS has:

102 **Regular Members**
293 **Associate Members**
8 **Honorary Members**

Club Membership News

PLS welcomes new Associate members Richard Whittaker, John P. Mitchell, Daniel P. Jaycox, James Connor, Jim Bangert, Thomas W. Ball, and Joyce M. Latona, plus new Minor Associate Robert Kaiser. New probationary Regular members include Ross Magee and Steven C. Diehl. Also, in recognition of his work as Gazette editor, PLS welcomes new Regular member Allen Underkofler.

Before and After — One Week from Irene to the Fall Meet

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creek with the record at 18.25 feet set in 1935.

When the water receded, floating debris settled everywhere causing a huge cleanup effort. Full-sized railroad ties that were used to contain the ballast along the right of way floated off to unknown parts creating a loss for PLS and a headache for residents who live down creek.

Except for a film of soil and leaves that covered the park, all traces of the storm were gone a week later when the Fall Meet took place. This was a result of the efforts of the club's track and grounds maintenance volunteers who worked extensively to remove all signs of damage.

— Bruce Saylor

Clockwise from Above Right: Taking the water route out of the station; PLS meets its water-loo; turntable is all but covered; Pat Murphy surveys the extent of the flood after the water had dropped about 6". All photos by Bruce Saylor.

File Fitness

By Bob Thomas

Proper Maintenance of an Essential Tool

In the days before WW-II, a typical model builder's machine shop consisted of a work bench with a hefty vise, a lathe, a drill press (of sorts), a torch for heat treating and brazing, a variety of small tools, and a bunch of files. Skillful use of those basic tools created amazing examples of mechanical craftsmanship. Even with the variety of sophisticated machines available today, an essential tool for producing fine work is still the file, or more exactly, an assortment of files. The jobs files are capable of depends on the skill of the user and the physical condition of the files themselves. This article will address ways to keep files in top condition and give a few tips on selecting the proper file for its job.

It's ironic that the most common device used for cleaning files is also one that ruins them! I refer to the so-called "file card," a stubby wire brush with very hard bristles about ¼" long. They are intended to sweep out crud accumulated between the teeth of files. Unfortunately, they are only partially successful but worse, they dull more files than they clean. However, they are inexpensive, readily available at hardware stores and tool suppliers, and frequently show up in shop training courses, so they capture innocent users for life. Those diabolical instruments of File Death have proliferated for decades, their users unaware of the destruction they are inflicting on one of the most useful, and in many ways delicate, tools in the shop. Because files are actually cutting tools made with hundreds of hard, precisely-shaped sharp edges, they require respect in the way they are used and maintained.

The reason file cards are so ruinous is because their bristles are made of music wire to resist wearing out as they rub against the file's teeth. However, music wire is so hard that, although it does not wear out itself, it does wear-down the file's sharp cutting edges. Furthermore, the bristles are often too big in diameter to reach down into recesses between the teeth of any but the coarsest files, so they are guaranteed rub off all the sharp cutting edges of expensive fine-tooth files, making them dull and useless. Big deal — ruin the file to save the file card!

The crud mentioned above accumulates most rapidly when a file is used on soft material, or if it is pressed down too hard or stroked too vigorously on almost any material. When it's necessary to file lead or soft aluminum, it's almost impossible to avoid build-up of material between the file's teeth, especially on fine files. Sometimes rubbing a file with chalk before use will inhibit rapid clogging but even then it will eventually become clogged, necessitating cleaning. For example, brass is not typically troublesome, but filing it in the lathe without keeping the file in motion or attempting material removal too rapidly can result in loading. Even mild steel will gradually accumulate in many circumstances.

What to do then if a file card is such a menace and won't provide help in any case with fine files? The answer is to use a cleaning device with soft bristles that will get into the recesses and not harm the file's teeth. Many years ago, when PLS had monthly technical meetings, an astute member-machinist from South Jersey gave a talk on file maintenance in which he stressed all the points mentioned above. I got religion that night, and have followed the sage's advice ever since. His recommendation was to use what is commonly known as a "suede brush" for cleaning files. These brushes, sold in shoe stores for cleaning suede shoes, often have polyester bristles but the type we need have a wood or plastic handle and a brush made of many densely-spaced short *brass* bristles, the shorter the better. Although not as good for our purpose, an alternative is a brass-bristle brush intended for cleaning pots and pans. They are sold in the kitchen utensil department of super markets and variety stores, however, their bristles are longer and not as dense as on sued brushes, so they are less effective for file cleaning.

There will be instances when a fine file becomes so thoroughly impacted with hard or gummy material that brass bristles lack sufficient stiffness to sweep it out. In those cases it is often possible to dislodge the build-up by wiping *across* the file (almost parallel to the teeth) with the edge of a piece of scrap brass sheet, so the brass digs down and into recesses between the teeth. In extreme cases the debris can only be removed with a scriber made of ⅛" diameter mild steel rod ground point with a long, slender taper. The scriber should be held at an angle so it scrapes out the crud without touching the tooth's cutting edge. Yes, it's a slow arduous process, but it effectively cleans the file without damaging it.

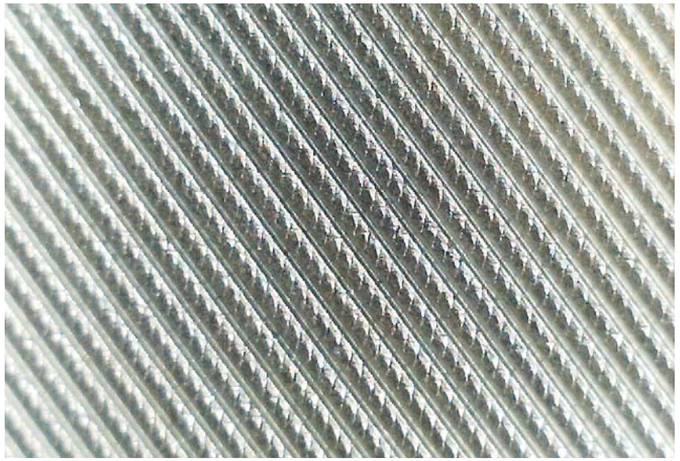
A few final thoughts on file fitness: The type used should always be appropriate for the job at hand. For example, use a coarse bastard-cut for rapid removal of material, and a fine-cut for surface finishing or breaking edges. A special cut for aluminum is available, but if the cost can't be justified, use as little pressure and speed as possible with a conventional file and clean it often to avoid a hard build-up that will score aluminum, leaving deep furrows in the workpiece. Files come in a variety of shapes. Mill files have a slight taper and are good for general work. One type often overlooked is the *warding* file with parallel sides and two "safe" edges (no teeth); they are just the thing for filing the corners of square holes like cab windows. Another useful type is the "riffler" file, a slim double-ended file with tapered curved cutting surfaces for finishing radiuses to which ordinary files cannot conform. Avoid cheap imported files; their teeth are notoriously non-uniform, they are often improperly heat treated and are more likely to ruin your work than enhance it. Do not discard old files that have become dull from use; they can still be used for fettling castings with hard skins, or have their ends ground to make scrapers, form tools, or hand-held lathe tools. Speaking of lathes, NEVER file material in a lathe unless the file is equipped with a handle. In fact, all files should have a handle of appropriate size. And lastly, extend the life of your files by always cleaning them before they are put away, preferably by hanging up, rather than storing them flat in a drawer where they can be dulled by sliding against one another.

Good files are precision tools that are a pleasure to use — treat them with the respect they deserve and they will return the favor with a minimum of manual labor and a superior finish.

A Closer View of Files

The accompanying photomicrographs were made with a USB Microscope connected to a computer. These amazing new microscopes have a built-in LED light source and have a typical magnification range of 20X to 400X They are available on the Internet for less than $50.

Figure 1 shows the exquisite fine cutting edges of a brand new double-cut fine file. The main furrows run at about 30 degrees across the file, while minor teeth, along each main cutting edge, are generated in manufacturing by "cross cutting" teeth at 30 degrees in the opposite direction. Detail in this photo illustrates the author's assertion that files are precision tools.



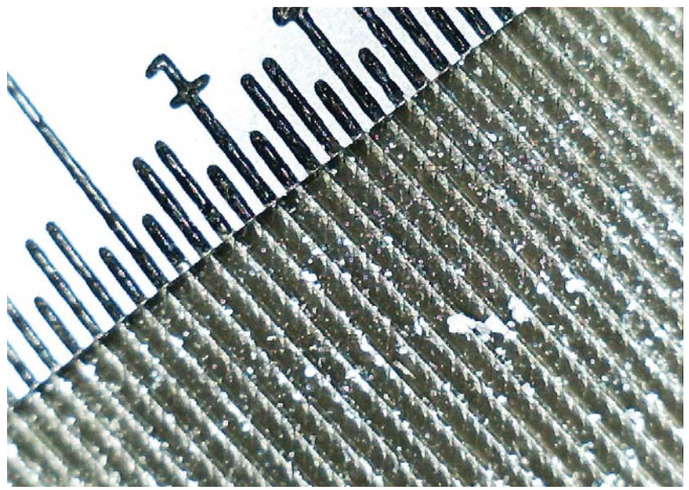


Figure 2 illustrates the beginning of material build-up between teeth after the file was pressed too hard against aluminum while it was stroked. Flakes of work-hardened aluminum can be seen caught on the file teeth. They will eventually accumulate and put deep scratches in the workpiece unless the file is periodically cleaned or pressure is reduced. Each small division on the scale is 0.020 inch.

The author wishes to acknowledge inspiration for these photos to a recent article in the *Journal* of the Society of Model and Experimental Engineers (England).

— Bob Thomas