

February 2008

# HIT & MISS

Journal of the Western Antique Power Associates

## PRESIDENT'S MESSAGE

Wayne Mabb [wmabb@yahoo.com](mailto:wmabb@yahoo.com)

Hi to everyone in WAPA. A new year has begun and it is time to start new projects. As many may have heard we are helping to restore two Western engines at Rubel Castle. We met today, January 19, in the morning, and had a great time starting the process. We can have as many people helping but they have asked that only 10 or so people be on the grounds at any one time for safety reasons. If you wish to help let Tom Millett know and he will assign you duties. A special thanks to Tom as he has graciously accepted the position of Secretary. As always, you all are invited to the meeting on the second Friday of each month in Sante Fe Springs. Looking forward to our first show, the Highland Festival in March. Have fun and play safe.

## 2008 BOARD MEMBERS

|                     |                  |              |
|---------------------|------------------|--------------|
| President           | Wayne Mabb       | 626-286-6452 |
| Vice President      | Bob Swan         | 562-944-1247 |
| Secretary           | Tom Millett      | 626-335-6271 |
| Treasurer           | Kelley Garcia    | 562-694-2301 |
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| Membership Director | Jack Johnson     | 714-630-2912 |
| Safety Director     | Joe Siddons      | 626-287-7453 |
| Purchasing Director | Leroy Overstreet | 626-334-1639 |
| Librarian           | Craig Maxwell    | 951-681-4449 |

## DUES ARE DUE!

As we all know, but sometimes forget, membership dues need to be sent in by January first. If you haven't already done so, please take care of this right away. If you don't, then it will substantially add to the workload of the Membership Director and the rest of the Board. If you're an honorary member, please notify Jack that you wish to remain a WAPA member.

## Upcoming Events

**February 8, Friday**  
7:00 p.m.  
**Board of Directors Meeting**

The WAPA Board of Directors meeting is held at Heritage Park in Santa Fe Springs. All members are welcome and encouraged to attend. If you have an idea on how WAPA could become a better club or want to express your opinion, please attend.

Heritage Park is located just south of Telegraph Road and west of Norwalk Boulevard. The meeting is held in the train depot next to the steam locomotive.

**March 29**  
**Saturday**  
**Highland Citrus Festival**

Our display area will be the same as last year. Look for more details in the March Hit & Miss.

**April 18-20**  
**Friday thru Sunday**  
**Tulare**

Don't forget to send in your registration packet to get registered. You can download the form from [www.farmshow.org](http://www.farmshow.org).

We will be located in our usual prime location and will have a slightly larger space than last year.

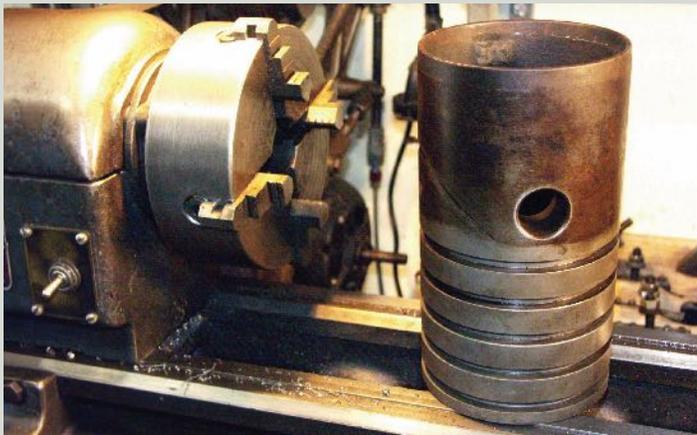
Don't forget to make motel reservations.

This is the story of an old piston needing new rings and one man's journey to provide

# OLD PISTON, NEW RINGS

by Rob Skinner editor@wapa.us

them in an economical manner. It is not meant to be the last word in machine shop practice or a primer on the best method for completing the task. For that, we would have an article written by any number of WAPA's first-class machinists. This article is intended to show that an intimidating task can be completed by the



layman, as long as he takes the time to study the task and pay close attention to detail.

The subject of this exercise is the piston out of a mid-sized Crossley. The bore is 4.5" and there are five rings. Two of the rings were broken many years ago when the engine was disassembled for removal from its original location.

Close examination of the engine reveals minimal wear. The cylinder is within a few



thousandths of round and taper is minimal. There are no distinct "steps" at the end of the ring travel.

The piston ring grooves show just a little wear and taper. Clearly, the piston is in good

shape and is a candidate for reuse of the existing rings.

The grooves, though, are an obscure width and will not take "off the shelf" rings. Having custom rings made would cost nearly forty bucks a pop, as opposed to seven dollars for a standard sized ring.

It is decided that installing expensive rings on a piston that is less than perfect is not a wise use of resources. Instead, it is decided to buy five new rings of a standard size that are just a little wider than the existing grooves.

The challenge is going to be turning new grooves on the piston without making any errors, as the piston is irreplaceable. Nevertheless, there is no reason that I can not complete the task if I take my time and am deliberate in every operation. The following is how the task unfolded.

The first step is to put the piston in to the chuck and indicate it so it runs true. This is critical if the ring grooves are going to come out perfectly.



With the piston running perfectly true, I need to run a center in the tailstock to hold the end of the piston. There is already a center hole from when the piston was manufactured, which will save the trouble of having to lay out the exact center and drill my own hole. Because I will be using a dead center, the hole needs to be lubricated with white lead or another suitable compound.

Two cutting tools will be required, one for each side of the groove. When grinding the



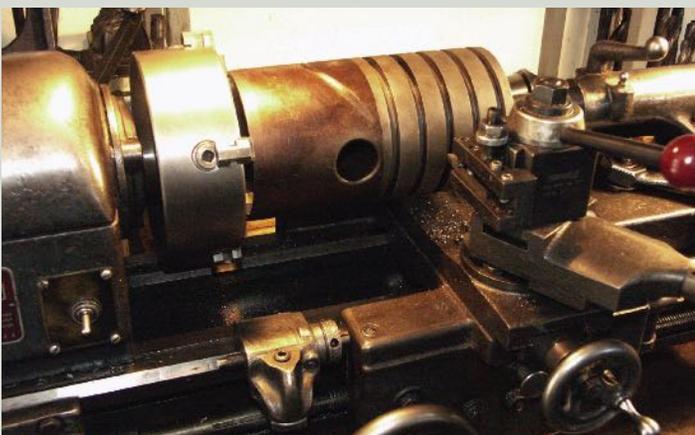
high speed tool, the primary considerations are that it will have sufficient clearance on the side as well as the bottom of the grooves.

The plan is to clean up one surface of each groove, then change tools and open up the opposite side of each groove so that the new rings have 0.001 inch clearance.

The top surface of the top groove and bottom surface of the bottom groove will only be cleaned up a minimal amount. Although this engine shows minimal wear, if the bore had a ridge from wear, a new ring in a wider groove could hit the ridge and cause damage.

Once everything is set up, the position of the tool is eyeballed, measurements confirmed, and the mathematics double checked. There is no room for error in this job.

The first cut is to clean up the left surface of



one of the grooves. After truing up that surface,

more measurements are taken. Everything is good, so the left sides of the other four grooves are cleaned up.

Next, a clean up cut is taken on the right side of one of the grooves. Measurements are taken and the math confirmed. Notice in the

picture that a micrometer stop is used to precisely position the carriage. In the absence of this type of stop, the compound could be turned to ninety degrees and used to adjust each cut.

Subsequent passes are taken until the finished size is 0.0005 inches larger than a ring. A ring can be placed into a groove and it feels good, so the other grooves are finished to provide between 0.0005 inch and 0.0015 inch clearance.



Upon finishing all five grooves, I leave the piston in the lathe and install the rings. To my dismay, the grooves that provide less than 0.001 inch clearance are too tight. I now go back and open up the tight grooves a little, re-install the rings, and everything now looks good.

This engine has a long way to go until completion, but I'm sure that the new rings will work nicely.



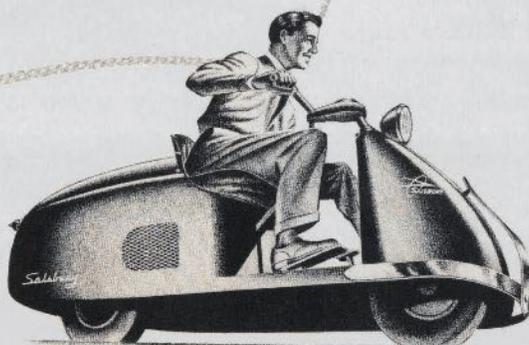
# Salsbury Super Scooter

by Jeff Hodge

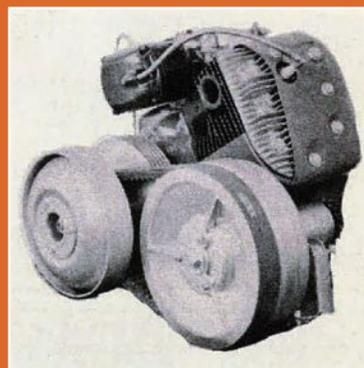
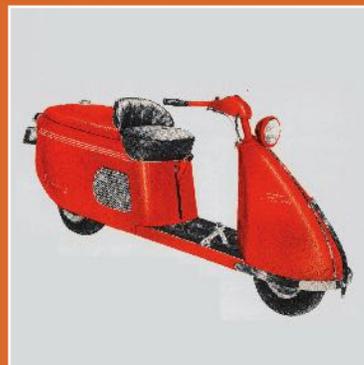
During WWII, GI's were able to save some money. When the GI's returned home there was a pent up demand for some sort of transportation. The "big" automakers were not able to go from wartime production back to automotive production in a timely manner. This spawned the era of the independent manufactures immediately after the war. On the automotive side such names as Kaiser, Playboy, Davis, Tucker, Crosley, among others were trying to capitalize on this phenomenon. There were also Motor Scooter manufactures trying to get a piece of the pie -- Doodlebug, Powell, and Salsbury, just to name a few. While there had been a Salsbury Scooter prior to the war, it wasn't much more than a glorified mini-bike. Salsbury's claim to fame was a centrifugal clutch/torque converter combination. After the war, Salsbury introduced a scooter that was streamlined for the time and was of their design and manufacture. Even the engine was their design, and, of course the clutch/torque converter was used. This made for a very easy scooter to ride, because it essentially was an automatic transmission. Given the time frame, it was a very fast scooter comparatively. However, it could be cantankerous when on the racing circuit. The oil pump was one of the weak areas. Another issue was the cost. Compared to other scooters it was expensive. It was manufactured in Pomona, California under the Salsbury name until the late Forties, When Wayne Manufacturing bought the building and the right to continue manufacturing the scooter. Wayne manufactured scooters until the inventory of parts was used up. Ultimately, anything Salsbury Scooter was sold which included the drawings and any remaining inventory. When Salsbury sold the Pomona facility to Wayne manufacturing, they kept the rights for the clutch/torque converter. Salsbury moved to Los Angeles and continued manufacturing the clutch/torque converter. It was used on snowmobiles and junior dragsters to name a few.

Salsbury  
clutches and  
parts are still  
available  
today

THE REVOLUTIONARY  
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SUPER-SCOOTER



REVOLUTIONARY!



Jeff Hodge is a former employee of Wayne Manufacturing, the company that purchased Salsbury in the 1940's. Jeff has an extensive collection of memorabilia from the Salsbury company as well as several unrestored Salsbury scooters.

Thanks to Bob Smith for obtaining this article for WAPA.