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THE CRANK & STOKE

THE VOICE OF THE HISTORICAL ENGINE SOCIETY

Founded 1970

THE HISTORICAL ENGINE SOCIETY, INC.

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2023 Show Recap

To say that our show was a success would be an understatement! We had a tremendous turnout, not only in exhibits, but in visitors as well. There were approximately 250 tractors, 150 engines and other displays and 3,200 visitors.

The weekend started off very early Friday morning with a visit from Kenny Crumpton and the Channel 8 news crew. Over the weekend we also had a visit from Channel 5 morning news, Geauga County Maple Leaf and we were on the front page of the Lake County News Herald. We were also featured in the Cleveland Plain Dealer and Farm & Dairy. Along with many, many posts on Facebook and other social media, the word definitely got out that we were at our new home.

The construction equipment had a lot more area to move around, many tractors were able to try their hand at plowing, the parade was very scenic, and we had a lot more gas engines than we have seen in quite some time. There was always something going on.

We received lots of compliments from exhibitors, visitors, Lake Metroparks executives and the Lake County Commissioners.

With that, the HES Board of Directors would like to send out a big THANK YOU to all that helped make this move and show a huge success! Without the help and participation of each and every one of you, this would not have been "The Greatest Show on Earth!"

Election Results

Once again, on October 13th, elections were held to select who will lead HES into the 2023 show season.

Larry DeMoss as Treasurer, Adam Lang as Vice President and Dean Kirby as President, remained for another year. Sandy Paterek decided to throw her hat in the ring again as Secretary,

A new position was created and Penny Kirby stepped up as Membership Secretary.

Four new Directors were elected: Dominic Marino, Mark Menary, Patrick Shelby, and Vincent Kibby. One Director was re-elected: Timothy Mansfield.

The following Directors will serve their second year: Brian Baxter, Jakob Baxter, Adam Lang Jr. and Roger Rodhe.

Many thanks to the outgoing Secretary; David Schultz and to the Directors; Mary Frato, Neal Kitchen and Ray Frato.

HES 2023 Benefit Raffle

The raffle tractor for 2023 was donated to HES with the purpose in mind that we could use it as the 2023 raffle tractor. It is a 1950 Ferguson TO-20. This tractor produces 20hp at the drawbar and 25hp at the belt and is powered by a Continental 2.0L 4-cylinder gasoline engine. They were built in Detroit, Michigan.

Many of these tractors were produced from 1948 to 1951 to compete with the Ford 8N tractors of the same time period with many upgraded features.

Thanks to the Randolph crew for once again restoring this tractor to its original beauty.

Ticket sales are off to a good start as we are already near the break-even point.

What's in Store for '24?

Contributed by Adam Lang

The 2024 raffle tractor has been purchased! At the S.C.R.A.P. show In Gibsonburg, we acquired a beautifully restored 1958 Cockshutt 540 utility featuring an all "Harvest Gold" color scheme used on the early 40 series tractors. It was built in Brantford, Ontario, Canada and produces 26hp at the drawbar and 31hp at the belt. Cockshutt was known for building high quality tractors with more features than most other brands and the price often reflected this, resulting in relatively low production numbers. Only about 2,500 model 540 tractors were built between 1958 and 1962 making this tractor a bit more unique to see at a show than other makes of the same size such as Ford's comparable 600 series that sold in the hundreds of thousands! With its smooth 2.7L 4-Cylinder Continental engine, six speed transmission and live PTO and hydraulics, this is sure to be a strong ticket seller!

By purchasing a tractor that has already been restored, it gives the crew a much needed year off. The investment was similar to what we would have in a restoration.

Engine Spotlight

Contributed by Donald Kuhl

The Brownwall Engine & Pulley Co.

Holland, Michigan

The History:

Brownwall Engine & Pulley Co. started as an off-shoot of Parker Manufacturing Co. of Lansing, MI in 1911. Parker Manufacturing made governor pulleys and wanted to expand into the growing agricultural engine market.

The leadership of Parker Manufacturing consisted of:

- Homer D. Parker, President
- Edsil A. Brown, Vice President
- Frank A. Wall, Sec-Treasurer

(The Brownwall name is a combination of the Brown & Wall names.)

The first engines were made in Parkers' Lansing, Michigan manufacturing facility. These Lansing engines had raised letters with company name & 'Lansing, Mich.' on the flywheels. In the summer of 1914, the Brownwall engine division had outgrown the Lansing, Michigan facility and it was moved to Holland, Michigan. The engine design did not change with the move with the exception that engines built in Holland had the raised letters 'Holland, Mich.' on the flywheels.

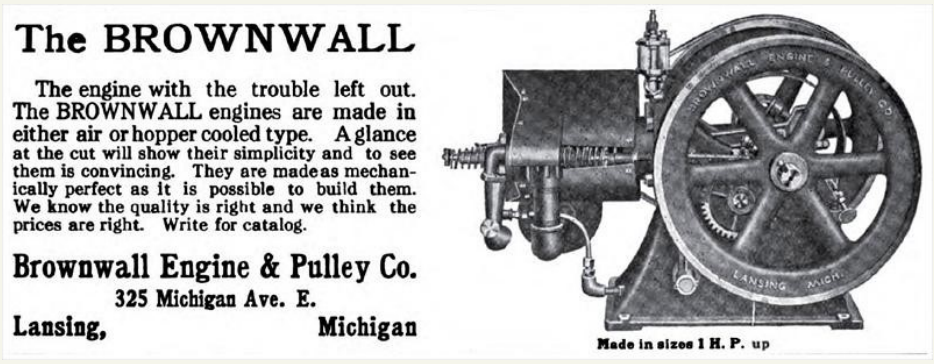
In 1919, Brownwall Engine & Pulley Co. changed their name to Holland Engine Company and announced plans to build their own foundry. They had always been on edge of financial trouble. As a company emerging during WW1 conditions, they had difficulties getting castings. In 1920 Holland Engine Co. was sold & re-purchased under the same name. In 1922, they started building a 4hp vertical, radiator cooled engine using a lot of Model T Ford parts (rods, pistons, rings, valves, springs, etc.) making the newly built foundry redundant and it was sold. The company ceased to exist sometime in 1924.

The Engines:

Brownwall made engines ranging in size from 1 ½ (later rated 1 ¾), 3, 4, 6 and 10hp. The smaller 1 ½ (or 1 ¾) models were air cooled and all the others were hopper cooled. All models were horizontal (no verticals) in design.

An unusual design feature to the Brownwall and Holland engines was the use of the 'F' head design. This is probably 'the' feature that doomed the company. This design limits the amount of casting needed to make an engine, but it also makes for rather difficult machining (based on the machining technology of the time).

The 'F' head engine design does not have a formal cylinder head. The top end of the cylinder is closed, and the valving and carburetor are hung off the side of the cylinder. The 'F' head name comes as this engine design looks like an 'F' with all the monkey action on the side of the engine. The cylinder casting is really complicated and you have to machine the casting from the piston end only. This was really pushing foundry and machining technology for the time.



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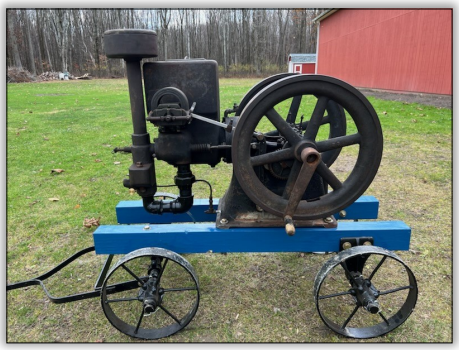
Holland Cont'd

At a Glance:



This is a 1919 – 4hp Holland engine owned by the Kuhl family. It just completed a mechanical restoration.

A combination that never should have never been.

This engine is a hit-or-miss model that is built to run on kerosene. It features an exhaust recirculation system that theoretically should pre-heat the kerosene (making it easier to ignite). The Webster low-tension igniter system is a fine mechanical igniter, but it is a low heat ignition system. This ignition system is really going to struggle to ignite kerosene (a low distillate fuel) unless the engine is really hot. Hit miss engines just never get that hot. (Yeah, this was doomed as soon as it was on the drawing board, but this sure makes for a neat looking engine). I run it on gasoline.

Tractor Spotlight

Contributed by Donald Kuhl

Plymouth name dispute prompts adoption of Silver King

Not long after the Plymouth tractor appeared, Chrysler-Plymouth dealers started getting people in their show rooms wanting to buy a tractor. Walter Chrysler's legal department swung into action, claiming ownership of the Plymouth name, which they had used on their low priced cars since 1928.

That is when the broken-down car finally earned its keep. It proved that Fate-Root-Heath had built a Plymouth car long before the Chrysler Corp. was even a gleam in Chrysler's eye.

However, F-R-H sold the rights to the Plymouth name to Chrysler (reportedly for about $1) and cast about for a new name for their tractor. Because of the silver color, and because F-R-H felt its machine was "the king" of tractors, "Silver King" became the new name cast into the radiator divider.

HES Christmas Party

Lake Metroparks Farmpark will once again provide HES with a room to have our annual Christmas Party on December 10th. We will have our usual raffle table and 50/50. Please feel free to bring items for the raffle table.

As with everything, our costs have gone up considerably. With that being said, we unfortunately have had to also raise the cost of the tickets. Invitations have been sent, so let us know if you have not received your invitation. Please plan to join us, we always have a really good time!

WHERE THE RUBBER MEETS THE DIRT

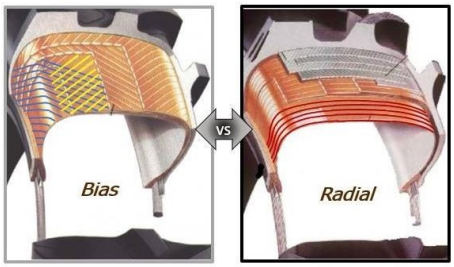
Contributed by Patrick Shelby

Greetings all, I'm Pat Shelby, HES member/new Director, and Agricultural Products Specialist with Titan International. Titan is a global manufacturer of agricultural, construction, material handling, mining, and forestry tires and wheels. Titan also owns and produces the Goodyear Farm Tires brand. For this newsletter I wanted to share with you some common 'Ag Tires 101' questions that come up frequently over the phone, in emails, and in the field. Titan strives to educate end users of our products on a wide variety of topics such as proper selection, optimized use, and best storage practices of tires and wheels through both in-field training opportunities and seminars, as well as at our annual dealer-focused Titan University training event. I have selected what I believe is the most pertinent topics from these training efforts for a broad 'Part 1' overview of the farm tire industry, especially as it pertains to tires for antique tractors and small utility, compact and sub-compact tractors.

Part 1 – Intro to Ag Tires / Ag Tire Technology

Bias vs. Radial Tire Construction

The first pneumatic farm tires of the 1930's were built using bias, or diagonal, ply construction. The cords within each body ply in these tires run at varying angles diagonally from bead to bead. This construction technique is inexpensive due to its simplicity and results in a tire with a 'rounded top' tread profile. Due to this, the tread will not make continual, flat contact with the ground from shoulder to shoulder. The sidewalls and tread work as one unit in bias tires and in general they have stronger, stiffer sidewalls which will result in a rougher ride. They will also generate more heat throughout the carcass of the tire during operation. Bias construction was the primary method of building agricultural tires until the 1970's when a significant shift to radially constructed tires began on new tractors. In radial tires, the cords within the body plies run directly across from bead to bead at right angles relative to the centerline of the tread. There are additional belts comprised of fabric or steel beneath the tread which help stabilize the tread lugs. The tread and sidewalls work independently in radial tires, resulting in a flatter tread profile from shoulder to shoulder and a better area of contact with the ground. Traction and fuel efficiency are increased due to this characteristic. Ride comfort is also significantly improved and longevity in terms of tread wear increases.



Tread Pattern Types

Rear tractor tires fall into one of several industry standard codes for drive wheel positions. R-1 tires are the 'standard' for general dryland farming featuring the familiar tractor tread pattern we all know. R-1W tires look very similar and are intended for soggier soils, with the 'W' designating wet conditions. This designation originated in Europe and R-1W's have tread depths 20-25% greater than R-1's. R-2 tires are very deep tread tires intended for extremely wet, mucky farming conditions such as those encountered in rice or sugar cane operations. These typically have tread depths twice that of R-1's. R-3 marked tires are for turf applications and have shallow, closely spaced tread lugs to minimize ground disturbance. R-4 tires are produced for industrial applications and are in between R-1 / R-1W and R-3 in terms of traction and aggressiveness. R-4's are considered a 'do-it-all' tire, especially when installed on modern compact and utility tractors that perform a wide array of tasks.

Front steer tires follow similar industry standards with F-1 describing a tire with a single rib that complement R-2 rear tires. F-2 tires are the most familiar three-rib design. F-2M designates a multiple rib design (most often four-rib). F-2 and F-2M are the most common combination with R-1 and R-1W rear tires. F-3 steer tires are more of an industrial design with a saw-tooth, multiple rib design and often accompany R-4 rear tires.

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Meetings will be held the 2nd Thursday of the month (except December, January and February) at 7:30pm in the Theater at Lake Metroparks Farmpark 8800 Euclid Chardon Rd. (Route 6) Kirtland, OH 44094

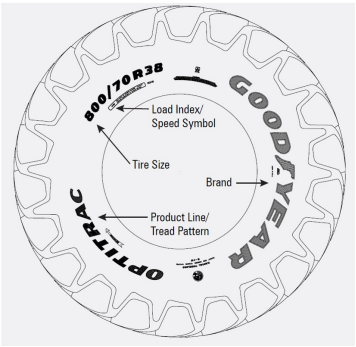
The Historical Engine Society is a non-profit organization whose purpose is to provide a focal point for people interested in the machinery of a bygone era. We encourage the collection, preservation, restoration, and exhibition of power producing devices and the machinery driven by these units.

Society fellowship consists in the sharing of knowledge, ideas and educational programs. Work parties, picnics and field trips make this a truly family oriented organization. The annual show is a year-round effort, culminating in a gathering of people and their machines. Visitors are treated to the sights, sounds and demonstrations of the power of the past.

Tires Cont'd

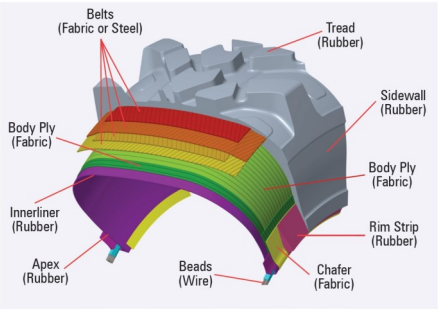
Standard vs. Metric Sizing

'Standard' tractor tire sizing of the past was usually expressed in terms of tread width and rim diameter in inches. Metric sizing, which states section width (sidewall to sidewall) in millimeters, sidewall height as a percentage of section width, and rim diameter in inches began to become more popular across all tire types within the tire industry and is now the most common way of expressing farm tire sizes. For example, 18.4-38 describes a tire that is 18.4 inches wide and fits on a 38-inch rim. The dash indicates bias construction. The same radial tire would be marked 18.4R38, where the 'R' indicates the radial construction. Finally, the equivalent tire with metric sizing is a 460/85R38. A common source of confusion with metric sizing terminology stems from the differentiation of section width and tread width. While the tread width determines how much of the tire will actually contact the ground, the sidewall to sidewall measurement will be slightly wider due to the bulging, or deflection, of the sidewalls under load.



Ply Rating vs. Load Index and Speed Symbols

In the early days, the ply number molded in the sidewall directly correlated to the number of plies built into the tire. Cotton was a common material used for the fabric in the ply cords. As materials and engineering improved, the number of plies actually needed to carry loads decreased and for example, a 6-ply marked tire was not necessarily constructed using 6 body plies. Today nylon, polyester, and even steel are the common materials in cords. Modern farm tires are marked for maximum load carrying capacity using numbers derived from a table called the International Load Index Chart. They also contain a code letter after the load index number that designates the maximum speed the tire is capable of traveling at, derived from an International Speed Symbols Chart. For example, a tire marked '159 A8' has a maximum load carrying capacity of 9,650lbs and can carry that load at 25mph.



If you're still reading, I guess I haven't bored you to death with (seemingly) simple and mundane information about farm tires. Please look for a Part 2 article in the next newsletter where I'll go over today's technology and some of the most frequent questions encountered in the field surrounding tire use and care, and offer a few tips too. Thanks for reading!