

THE CRANK & STOKE

THE VOICE OF THE HISTORICAL ENGINE SOCIETY

Founded 1970

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SO, WHERE DO I GO?



As you may already know, we have moved the show to our new home at Lake Metroparks Farmpark. So, when you arrive, where should you enter?

To start, Lake Metroparks Farmpark is located at 8800 Euclid Chardon Road (Route 6) about 1 mile east from Route 306. Please enter the VENDOR drive on Route 6 located between the main public entrance and the Canine Meadow dog park, east

of the main drive). Look for the VENDOR ENTRANCE banner at the drive. Proceed on dirt/gravel road and follow the signs to Festival Field.

Many of us are used to coming in the service drive for the Horsepower Weekend event. **Do not enter the most western service drive which has the water tower.**

Once you arrive, we can assist you with picking out a space based on your display type. We will try to accommodate your requests as best we can. Look for one of our board members wearing a bright yellow shirt with

“Show Official” on the back for assistance.

Please be sure to stop by the yellow and white tent to register during office hours:

- ◆ Thursday: 12-5
- ◆ Friday/Saturday 8:30-5
- ◆ Sunday 8:30-4

Free camping is available for exhibitors or \$35/night with water and electric hookups.

You may bring your golf carts, Gators or side-by-sides for personal transportation.

We ask that all steel wheel and crawler type equipment not be driven on the paved driveways.

Have a great time!



ANNUAL PICNIC AND SOCIAL TIME

One of the questions that has come up is “Will we still have our traditional picnic Saturday night?” The answer is YES! We will be grilling hamburgers, hotdogs and of course corn along with the other accouterments.

With the show ending at 5 o'clock, we will give the grilling crew time to get things ready once the show shuts down. The picnic will take place in the pavilion between the machin-

ery building and the fire pit.

We'd like to get back to a very old tradition where everyone congregates together around a fire and socialize rather than in separate areas.

Farmpark will provide the firewood and kindly ask that we do NOT bring in our own firewood.

Many of us enjoy these after-hours times almost as much as the actual show. Looking forward to seeing everyone there!



HES ON KICKIN' IT WITH KENNY, AGAIN



On July 29th in the wee hour of about 6am Friday morning the weekend of our show, Kenny Crumpton and the Fox 8 Cleveland television crew will be at Farmpark to help promote our event.

HES members alongside the Farmpark staff will be demonstrating various pieces of equipment that visitors will be able to see during our show

that weekend. Kenny is a very hands-on person and would like to actually operate some of the equipment. Please come out early Friday morning to support HES or, if you are not an early-riser, at least tune to Fox 8 Cleveland to see your friends try not make a fool of themselves on local television. Fox 8 has about 5.6 million viewers.

HES 2022 BENEFIT RAFFLE

Don't forget to get your raffle tickets at the show to win this beautiful 1964 Ford 2000.

We are on-track for selling out this year so don't wait until the last minute to get your tickets. When we are out of tickets, we are finished selling, so don't miss your chance to win!

This tractor has a rare option, the Howard Rotavator, which allows the tractor speed to be significantly slower (3.5:1 ratio), while the PTO remains at the normal speed, allowing a rototiller to operate efficiently.

Tickets are available for \$1.00 each or 6 for \$5.00.





Engine Spotlight

Contributed by Don Kuhl

The Fuller & Johnson Company

Madison, Wisconsin

The History:

The majority of the larger (more known) engine manufacturers had origins from smaller agricultural equipment manufacturers in the mid 1800's. There is a common theme of companies (not much more than successful blacksmiths with a good idea) that when merged with some other company can do much more than ever could be accomplished individually. The Fuller & Johnson Co. story details a rise from humble roots to one of the most known engine manufacturers in the world.

The Early Years:

The Madison Plow Works was established in 1846 by Charles A Billings and George A Cary. As you may guess by the name, their primary product line was plows to open the great prairie lands of the US. Through several acquisitions, the companies' products lines expanded to include harrows and cultivators under the names of 'New Eclipse' & 'Quality First'. With each acquisition, new partner level Management was brought into the expanding company and there were several name changes (Billings & Carman, Firmin & Billings). Between 1850 and 1870, the company burned out once and was relocated 3 times with all the acquisitions & changes. I semi-final merger in 1880 between Firmin & Billings and Fuller & Williams brought the 2 people together (Morris E. Fuller & John A. Johnson) that would take this company into engine manufacturing. The new company became Fuller & Johnson in 1882 as they accumulated patents for plows, reapers, planters, wagons, mowers, cultivators, harrows and feed mills. F & J would sell off Madison Plow Works in 1911.

Note: The selloff of the assets Madison Plow Works included all non-engine related entities under the house Fuller & Johnson. They were fully committed to being solely an engine mfg.

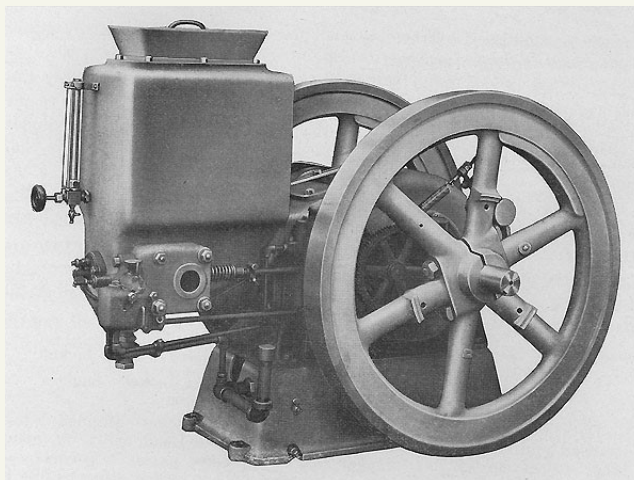
F & J Engines start:

John Johnson created a the Gisholt Machine Co in the corner of F & J in 1887 to manufacture machinery. This was the first departure from agricultural equipment into machine tooling. They began making crude belt driven lathes with a fair amount of success. In 1905, Gisholt acquired the American Turret Lathe plant in Warren, PA. and then later the Northern Works of Madison, WI. With expanded capacity, the machines manufactured included vertical boring machines, engine lathes, horizontal mills, tool grinders and automatics.

Gisholt began working on gasoline engines in early 1887. The Madison Gas Engine Co. was created in 1900. J. Johnson died in 1901. His son Frederick assumed control of Gisholt Machine Co. In 1903, the company was bought in as a formal division under F & J.

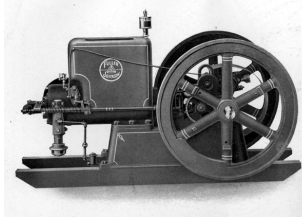
The Engines:

F & J made a fair range of differing engine designs for various agricultural and industrial applications. Their most popular AG engines were the model N and K series.



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F & J C O N T ' D



The Model K ('K' for Kerosene) was the kerosene version of the model N. It had its beginning in 1914, but further refinement held off production until 1916. Mechanical ignitor points (the current ignition system) never did work well with low volatility fuels such as kerosene. This model was throttle governed to keep the heat up in order to burn low grade fuels. When the ignition technology changes to high tension (Wico EK) magnetos, this product line had far better success.

Other Engines:

F & J had their hands in the pump jack engine business. You see a lot of these at the shows.

They owned the Coldwell Mower Company. They made a neat, air-cooled engine for a massive mower frame that operated reel mowers.

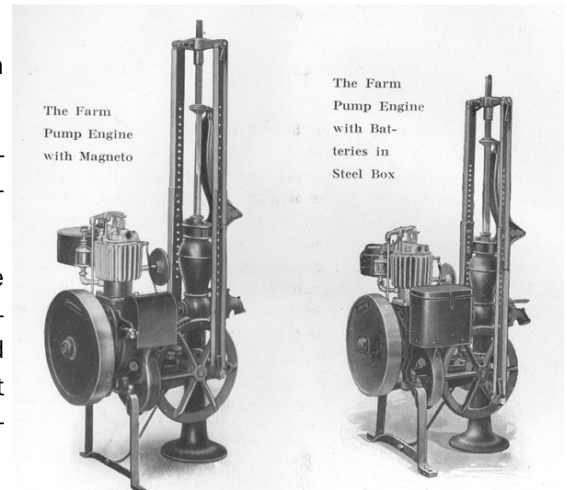
I would remiss if I didn't give an honorable mention to the Double Efficiency engine. These were larger engines they built for industrial shops (8 HP and up). They have a 'F' head design (valve and head on the side of the cylinder). These were really quality built engines with very reactive governors to maintain speed more accurately than would an AG level engine.

F & J Museum:

The Badger Steam and Gas Engine Club in Baraboo, WI has a permanent museum dedicated to Fuller and Johnson Company. Some volunteers are direct descendants of John A. Johnson.

Web site: www.fullerandjohnson.com

I had the privilege to attend the 'Boo' show last fall and I toured the museum. It was an amazing show and well worth the long journey. There was a remarkable showcase of engines and tractors (dominantly WI built equipment).



S T A R T U P W I T H S A F E T Y

Contributed by Adam Lang

Something new in 2022 for all Historical Engine Society members will be the addition of a morning safety meeting for all equipment operators and members. It will be held at the HES registration tent at 9am on Saturday, July 30th. For many of us that work around operating

equipment in the transportation, construction, mining, or manufacturing industries, a morning safety meeting is part of our business culture. We wish to extend this culture into our club, with the goal of promoting safe operating practices to our new members as well as the sea-

soned ones. Topics of discussion will include introducing our club officers and directors, an overview of our HES safety rules, what to do in case of an emergency on the grounds, as well as a few other tips on handling our antique machinery. Please make an effort to attend!



LOADED UP AND TRUCKIN'

Contributed by Adam Lang

The summer show season has arrived and many of us are making plans to attend our favorite places to visit and display our antique machinery. Before heading out on the open road with the equipment we have proudly collected and restored, I would like to share a few things that pertain to loading and hauling equipment that keep us and our machinery, as well as the traveling public safe and protected.

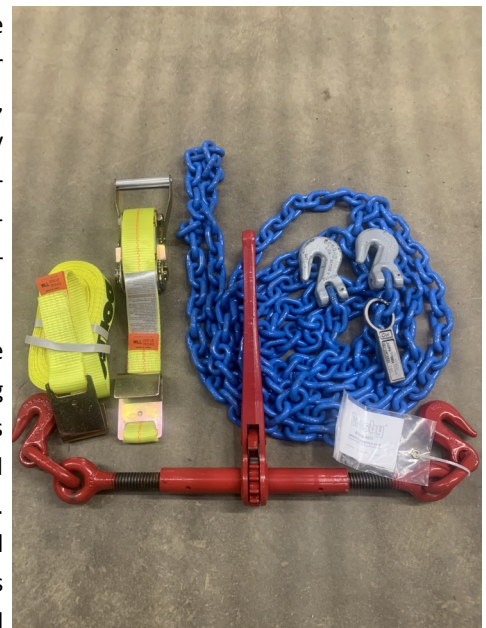
One of the first things to consider is our choice of vehicle. Any vehicle or combination should be capable of carrying the weight and dimensions of the machinery loaded onto it. Every load carrying vehicle marketed in the USA has the gross vehicle weight rating (GVWR) and combination weight rating (GCWR) listed on the manufactures tag, plate or decal. On trucks this is typically found in the left side door jamb, and on trailers it is usually located somewhere on the tongue. It is important to know the weight and dimensions of any load before placing it on a truck or trailer. The state of Ohio allows gross loads up to 80,000 pounds, 53' long, 8'6" wide and 13'6" tall with the proper truck and trailer combination. Axle weights can vary depending on spacing, but Ohio doesn't allow more than 20,000 pounds on any axle, and no more than 650 pounds per inch of tire width for any one wheel. Loads in excess of this require a special hauling permit.

After confirming that our vehicle is capable of hauling the load, we should always perform a walk around inspection, insuring that the mechanical condition of our truck and trailer is up to the task of transporting the load. This shall always include checking our lights, tires, hitch, and load securement. Checking the mechanical condition is not just helpful with safety, it also prevents many of the headaches that can ruin a fun weekend.

Once the correct vehicle has been chosen comes the part of securing the load to it. The law allows for many different tie down devices, but most commonly we use chains, or nylon straps to keep our machinery in place. While most of us have our own way of going about tying a load down, the law gets quite specific as to what is correct when securing a load to a truck or trailer. Federal Motor Carriers 393.100 defines protection against falling and shifting cargo, and basically states that anything shipped on a public highway shall be adequately secured to the vehicle. So, here are a few points to keep in mind when securing a piece of equipment.

When choosing binding devices it is a good practice know the weight of the load, and to locate anchor points on the machine and on the truck or trailer bed first. That way you will have a good idea on what length, type of hook, and style of restraint to use. I was taught that anytime you are hauling heavy iron, steel, or machinery, there is no substitute for chains. When hauling lumber, structural components, plastics or other synthetic materials, nylon is likely a better choice. The law does not dictate which type to use, only the performance requirements for each.

Now comes the complicated part, figuring out how many of what type are needed. FMCSA 393.128 defines tying down machinery and vehicles weighing less than 10,000 pounds, and basically states that a minimum of 2 tie downs are required and must restrict movement in lateral, forward, rearward and vertical directions. They must be placed at the front and rear of the machine. Simply stated, most of our equipment falls under this provision, however I will advise that 2 tie downs are rarely capable of performing to these restrictions of movement on a farm tractor, so most enforcement officers (cops) will move us into the next category, FMCSA 393.130.



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THE VOICE OF
THE HISTORICAL
ENGINE SOCIETY

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Chardon, OH 44024
Phone: (440) 669-2578
Email: info@historicalengine.org

**Meetings will be held the 2nd Thursday
of the month 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.

TRUCKIN' CONT'D

This section defines hauling of heavy machinery and equipment weighing 10,000 pounds or more. It basically says that a minimum of 4 tie downs are required to restrict movement in lateral, forward, rearward and vertical direction. It also goes on to say that additional binding devices must be used to secure buckets, booms, blades, plows and other attachments as well as restraining articulated tractors and machinery. All attachments must also be lowered to the surface of the trailer or machinery cradle designed for the purpose of transport. Hopefully I haven't lost anyone yet, but these are actually the rules.

Next, the rating or working load limits (WLL) of binding devices come into the equation. Have you ever noticed the tag or stamping on load securement equipment when purchasing it new? Hopefully you have, as it determines what is required when fastening down cargo for transport. FMCSA 393.102 states the performance criteria for binding devices, and a quick google search of section 393.108 will give the recognized weights for all sizes of chain and straps if the tags are missing or not legible. What we need to know here is that the law requires the devices to be rated at half the weight of the load or more. They must also pull down at a rate of 20% of the load weight. To simplify this, if a tractor weighs 5,000 pounds, the combined sum of the rating on your binding devices must meet or exceed 2,500 pounds. If you place them at about a 45 degree angle, you'll also easily make the 20% downward pull. Also consider that chain binders are required to be fastened in a closed position if the over center (snap) style are used, and nylon straps are to have the handle fully closed over the safety latch. I will always recommend the use of screw type binders as the risk of opening or loosening is eliminated. Lastly, if using nylon, edge protectors must be used any time the strap touches a sharp edge, and must also be protected from chafing on rough surfaces. Antique machinery is typically full of sharp edges and rough castings, so beware if you choose to use nylon straps!

Once we have the machinery fastened down, don't forget to tie up excess straps and chain, set parking brakes, and clean loose materials such as mud and dirt off of the equipment. Don't forget to remove loose articles such as seat covers, that can blow off while going down the road. It is also a good idea to stop and check your load after about 50 miles to make sure everything is staying tight and in place! Safe travels, see you at the show, and let's try to avoid accidents like these!

