

THE CRANK & STOKE

T H E V O I C E O F T H E H I S T O R I C A L E N G I N E S O C I E T Y

Founded 1970

Officers:

President: Dean Kirby
 Vice President: Adam Lang
 Treasurer: Larry DeMoss
 Secretary: David Schultz

Directors:

Mary Frato 2021/2022
 Ray Frato 2021/2022
 Eva Hansen 2021/2022
 Neal Kitchen 2021/2022

Sandy Paterek 2021/2022
 Brian Baxter 2022/2023
 Jakob Baxter 2022/2023
 AJ Lang 2022/2023
 Roger Rodhe 2022/2023



H E S 2 0 2 2 S H O W

I do believe Spring is in the air! As the temperatures start to rise and the days are getting longer, it makes me start to get the itch to get the toys out and start going to shows.



The show dates are remaining the last full weekend of July, so July 29th, 30th and 31st.

We will continue with many of our traditions including the Saturday evening picnic to include hamburgers, hot dogs and of course, steamed corn! We are working out some additional details on the layout, but will have room for plowing, threshing, construction equipment

demos, camping, and so on.

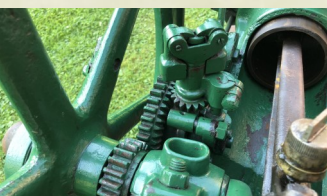
It will take some time getting used to this transition as we all try to figure out where "our spot" will be and where everything is, so please, be patient with the HES Board of Directors, Farmpark staff and of course, each other!

Lake Metroparks Farmpark is located at 8800 Euclid Chardon Rd., Kirtland, OH 44094.



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Speaking of shows, and in case you missed it, we have moved our show to Lake Metroparks Farmpark. We have had a few meetings there already as well as our Christmas party. The folks at Farmpark have been very accommodating and share in the excitement to a long-lasting partnership and putting on the best darn show in Ohio!

ELECTION RESULTS



On October 14th, elections were held at our new meeting venue at Lake Metroparks Farmpark in the Theater.

Larry DeMoss as Treasurer, David Schultz as Secretary and Dean Kirby as President, remained for another year. Adam Lang stepped up and is now our new Vice President.

Four new Directors were elected for a 2022/2023 term and they are: Brian Baxter (former President 1996-2002), Jakob

Baxter (son of Brian), AJ Lang (son of Adam) and Roger Rodhe.

The following Directors will serve their second year as Directors: Mary Frato, Ray Frato, Eva Hansen, Neal Kitchen and Sandy Paterek.

Thanks all for a great election!

YOU KNOW YOU LOVE OLD TRACTORS...



WHEN SOME DAYS YOU TALK MORE TO YOUR TRACTORS THAN YOU DO TO YOUR WIFE.

FULL STEAM AHEAD!

Contributed by Adam Lang

July 23, 2021 kicked off the start of our 50th anniversary show, and that evening HES members removed our stationary steam engine that had been stored inside the sawmill at Century Village Museum for many years. The project was headed up by Sam Paterek. With help from Lakeside's service truck and crane and about a dozen club members, it was safely removed from the building and transported to Lakeside Sand and Gravel in Mantua for storage and repair. As wintertime progressed, so did work on the engine, again headed up by Sam Paterek and his father Fran. A flywheel hub has been fabricated and machined from new materials and a flywheel, once part of an Ingersoll Rand air compressor was mounted. A repair sleeve was also machined and pressed onto the piston valve rod to help seal the packing gland and the main cylinder was cleaned of rust and debris. The engine now runs nicely on compressed air and plans are in the works to mount it on a trailer to make it mobile. As work nights continue on Wednesday evenings, a

paint job may also be in the near future! While we're not sure about its date of manufacture or a horsepower rating, we do know that it was built by the Buffalo Forge Company of Buffalo, New York. It was installed in the Trumbull Cliffs Steel facility in Warren, Ohio running a large ventilation fan, which was mounted in lieu of a flywheel. As the mill was winding down operations, the engine was removed by employees and donated to the club for preservation. The Baxter family moved it to Century Village and started to acquire parts, including a flywheel with long term hopes of having it run off of the boiler in the sawmill. Those hopes were cut short when the boiler was sidelined for repairs which never materialized. Since then the project has been on hold indefinitely until Sam decided to adopt it, and since then he has made another major step forward in its restoration. This piece will be displayed this spring at the Lakeside open house in April, and at our show at Farmpark in July, proudly showing off our area's heavy industrial past!



Buffalo Forge Co. Steam Engine



ENGINE SPOTLIGHT

Contributed by Don Kuhl

But, it's Brit-ish'!!!!

Setting the Stage:

Pre-industrial British agriculture was very different in scope compared to the US. While US agriculture was dominantly crop-based in the early/mid 1800's due to expansive land, the British farms mostly focused on dairy and sheep. The products farms needed in these two very different markets are vastly different. The R.A. Lister & Company sought to fill the needs of British agriculture. It's hard to compare like equipment to US era manufactures as those from the UK were more purpose built. That being said, the UK antique engines have very unique designs and features.



History:

Robert Lister was born into a family business that manufactured agricultural equipment dating back to the early 1800's. Dominantly the equipment they made served the sheep shearing and dairy/cream separation tasks on British farms. In 1867, he led an exhibit of his family's products at the Exposition Universelle (International Exhibition) in Paris. Upon his return, Robert had a falling out with his father, George, and left the family business. He founded this name sake company that same year and began to manufacture competitive products. (You must love family businesses.)

In 1889, the company acquired the rights to a Danish cream separator, Alexandra Cream Separators, that used a centrifuge (this was new tech at the time). The company also expanded into the cycle business in 1899 starting up the Dursley Pederson Cycle Company. By the early 1900's, R.A. Listers had redesigned cream separators, expanded its line of sheep shearing machinery, was producing milk churns and wooden barrels for butter. They had their hands in a lot of machinery markets.

Petrol Engines:

In 1909, the company acquired the manufacturing rights of FC Southwell & Co for their design of a petrol driven engine (derived from a range of imported engines from the US based Stover Manufacturing & Engine Co. During WW1, the factory was focused solely on War Department production of engines, light generators and munitions. Many of the men left for the front so the work force was dominantly female. The Post WW1 market saw expansive growth in their engine related business, but high competition in most other ag products. As a result, the company focused on engine and engine driven products such as generators and pumps. They began to import to Canada, Australia and other countries (not much into the US due to an already highly competitive market). In 1926, the workforce was around 2000 and the company was running 24 hrs.

The Engine Models:

For the majority of the Lister's production history spanning 1923 through the 1960's they mass produced only 4 engine models. There were a fair size range and spread of options on each model, but there were only 4 base engines.

The Petrol (Gasoline driven) were models A (2 ½ or 3 HP) and B (5 HP). Both were introduced in 1923 and ran to the mid 1960's. Lister introduced the model CS (cold start) and D models in 1929. These were their first diesel engines and proved to be incredibly successful.

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L I S T E R C O N T ' D

Fun Facts:

1936 – Lister made a range of 600 engine variations across a range of 80 different sizes

1929-1964 – Over 250,000 model D engines were built.

Lister & Petter:

In 1965, following the death of Charles Ashton Lister (Robert's son), the assets of the company were acquired by Hawker Siddeley who had previously bought Lister's bitter market rival Petter Diesels in 1957. The companies (Lister and Petter) went on producing respective products as two independent companies under the one ownership for some time after. In 1986, Hawker Siddeley officially merged the two companies as Lister Petter Ltd. This company is still in business to this day and spans 140 years of industrial product manufacturing.

At a Glance:

1930 Model Lister A Jr.

Owner: Dean Kirby

Features:

This is a very confused engine regarding sizes. One would think that being from the UK, all the sizes are metric. The base engine dimensions (bore, stroke, crank journal sizes, valves stem diameter) are US standard sizes. (Probably taken right off the Stover engine designs) All the threads/fasteners are Whitworth threads which became the basis for metric size threads.

This engine uses a Lucas high tension magneto. Lucas was 'THE' magneto mfg. in Europe with very few rivals (due to the small market size). This company was also known for their refrigerators along with other household products.



W E ' R E O N F I R E !

Contributed by Adam Lang

Work has begun resurrecting a 1933 American LaFrance fire engine belonging to Lakeside Sand and Gravel. Our hope is to have it displayed at the show in July pumping water from a pond on site at Farmpark. Club members have started repairs at the Wednesday night work nights and have been able to get tires inflated and the engine started. It's in need of some clutch repairs and a good cleaning before a test pump can be performed. The truck was purchased

from the city of Kent, Ohio by Lakeside and is believed to have originally been owned by a city in Pennsylvania. It's powered by American LaFrance's own massive V-12 engine displacing 754 cubic inches. It was based on a design developed by Lycoming Foundry and Machine, an aircraft engine manufacturer. It is also equipped with a 1,000 gallon per minute water pump making this a real fire fighting force in its day. With its open cab, bell and siren,

we're thinking it's sure to be a fun attraction at our new show location!



1933 American LaFrance V12 Fire Engine

PUTTING ON A SHINE

Contributed by Adam Lang

The winter-spring project season has arrived and hopefully many of us are taking full advantage of the off season by working on a new restoration! While many of us in this hobby feel relatively confident in our ability to get a bit of new life breathed into an old machine, it seems that comfort zone sometimes falls short when we are faced with putting on ‘the dreaded paint job’. Surely there are those out there who prefer this part best, but more often than not we would like a helping hand at this point, if not wish to just pay someone else to take on this step.

Before going on any further I would like to point out that I am not a professional painter, nor do I work in the field of auto body. I do, however, have many years’ experience of painting farm and heavy equipment as well as the occasional auto or truck. I was guided in my youth by several auto body professionals who were knowledgeable in both modern paint systems and of course ‘the old ways’. This is where I got my start and through trial and error learned the ropes of applying a good finish. It is my intent that the following information serves as a useful guide to getting started and finishing with that paint job that showcases your hard work and protects whatever historic piece of equipment that you’re working on for years to come.

The first step in the process is identifying with the purpose of the paint job. For some it is purely aesthetics, while to others it is merely for preservation and protection from the elements. I would think that for most of us it is a combination of the two. When picking out our paint, the application process needs to be considered early on. Some questions to ask yourself are: What facility do I have available to do this in? Do I possess the ability to spray or to brush? Are my expectations to have an original looking factory finish or to go a little beyond that? Or perhaps a good, heavy, protective coating is all that is desired? While there are many factors to be considered, my personal feeling is that for most of us, the key factors are dictated by time and money. Let’s face it, this is a hobby and budgets are not endless, and the work being performed is likely happening in our spare time, at home in our garage. That said, the focus here is to give a few pointers to the many people seeking to apply a paint job at home, to the best of their ability, and on an average budget. Contrary to what most folks in the modern auto body shops will recommend, I feel that the best all around choice is the use of an alkyd resin or synthetic enamel paint on a prepared surface.

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Most hardware stores carry a variety of colors and inexpensive solvents. Equipment dealers readily stock their own paint in just about every shade of color used on that brand, plus many from years past.

THE BOSS STEAM SCHOOL

After some discussion among club members, it was discovered that we have a fair amount of future interest in steam powered equipment and several people (including myself) were inquiring about how to become licensed in the state of Ohio. Since the outbreak of COVID-19 many classes have been canceled indefinitely and Ohio’s Historical

Boiler laws were also receiving some possible changes. In light of this, we are pursuing having a class put on for our club members, as well as the Harry Young chapter of the HCEA. We are planning on holding it in November, with the exact dates still pending. The cost of the class is \$75 per person and is open to anyone capable of understanding the material

being presented. The class will likely take place on a Saturday, and testing on Sunday. It will be instructed by Todd Young and lunch would be provided. The class will be open to as many as 3 dozen people and payment is due at time of arrival. More information will follow in the next newsletter. If anyone is interested contact Adam Lang at 330-807-1096.



Those out there that understand and prefer other systems such as single or two stage urethanes, epoxy, or maybe even lacquers are free to go that route, and I'm sure that the results will be wonderful! However, the trusty old enamels are the only paint system that can accommodate both brushing or spraying, can be purchased almost anywhere on a modest budget, and perform reasonably well with most any level of surface preparation and still maintain great durability. The fact is, it was also the original method used at the factory on most of our machines and is still today considered by most manufacturers to be the accepted maintenance or touch up material. That said, the synthetic, or alkyd resin enamels can be purchased at most equipment dealers in an OEM brand name, at hardware or big box stores, and even online. They come in a huge variety of colors, including factory original shades, or can be custom mixed at some auto body suppliers. I have frequently been asked about a particular color or brand of paint, only to see the surprise in a person's face when I let them know that the paint used was \$70 a gallon or less and still has a smooth high gloss finish. Fact is, quality of your job depends heavily on the preparation, and how the paint is applied.

So, let's start with the preparation. The first step in the process should be some minor disassembly of the equipment, so that the shielded areas and undersides can be exposed. A very thorough washing can then take place using a good quality degreasing soap or solvent. I prefer to use a steam cleaner as it makes the job faster, but a regular power washer will work just fine, too. The advantage to using high pressure water is that it removes dirt and grease, but also helps remove loose paint and debris as well as some decals. If a power washer isn't available, a garden hose and scrub brush will also work, they just take a bit longer and a little extra elbow grease. In my opinion this is the most important part of the preparation process and if you choose to skip everything else, washing and degreasing is a must! Next, we should probably think a little more about disassembly, blocking up, and hanging small parts in an environment where they are protected from the weather, including high humidity and condensation, since we will be exposing a lot of bare metal. Once we have chosen our workspace (and it should be one that can get very dirty) we are ready to begin sanding. We should remove any remaining decals and glue at this point. Sanding the surface may then begin using a course (80 grit) paper to knock down old layers of paint and corrosion to get the surface level and smooth. An air or electric powered dual action sander makes this job easier and faster. If heavy rust or corrosion is present, I would recommend sand blasting those areas with black beauty media on cast iron or fabricated steel and silica sand or glass beads on sheet steel and soft metals. Just be careful to not get too aggressive with the blasting media as it can damage the surface very quickly! Using large aggressive blasting media also strips away rust and paint in a hurry but requires a follow up step with something finer before the surface can be painted. If sand blasting isn't an option for you, wire wheeling or brushing and soft pad grinding can also get the job done in most cases. Sanding is very dirty and never much fun but is very important considering that it helps the paint adhere to the surface as well as look and feel smooth. We should also keep in mind that power washing, high powered soaps, sanding, blasting media, grinding, and scraping have the potential to harm us and proper care should be used at all times. Personal protective equipment such as gloves, hoods, safety glasses, face shields, dust masks and other applicable safety apparel should always be worn. Any type of sanding, grinding, or burning of the paint on antique equipment could release lead dust into the air and proper precautions should be taken. Once the major sanding or stripping is completed, this would be the best time to weld up any cracks, patch holes and fill dents. We could write an entire article on just body work so for now, we'll just leave it at that. After any metal repairs are complete, it is time to finish sanding with a finer paper, like 180-220 grit so that any remaining scratches can be leveled and smoothed out.

Now that we have finished sanding, blasting, and repairing the surface, it's time to clean up the mess left behind and mask over anything that you don't wish to cover with paint. Compressed air will help remove much of the leftover dust and debris, just be sure to drain the water from your air tank and hose first. Sweep the floor and wipe down everything in the area where you will be painting including jacks, stands, and benches. Your paint gun or brushes will certainly find any dirt left behind and add it to your paint, so clean everything carefully! Now that the work area has



Proper use of personal protective equipment not only keeps us healthy and safe, but it keeps clothing covered so that fiber isn't released into the paint and keeps paint from ruining clothes

been cleaned up, wipe the entire surface with a solvent such as mineral spirits and cloth that doesn't leave fibers behind so that masking can begin. This is necessary so that the tape will stick firmly and not leak paint past the masking line. Identify everything that you don't wish to paint and decide the best material to cover it with. For small items and areas, apply a good sharp line masking tape. Be sure to always overlap tape in the same direction so that it is fast and easy to remove when finished. For larger areas, taping the edges and covering the rest with masking paper works best. Newspaper and plastic sheeting aren't a great choice as they can tear easily or leak through. Cheap white tape is also not preferred as it can leave behind a sticky glue when it's removed and may not provide a clean and sharp masking line. Also be sure to close all open seams with tape. Since most of our equipment include some odd shape items that require masking such as exhaust manifolds, hydraulic hoses, cylinders, and cables, taping the edges and covering the rest with aluminum foil works great since it easily forms around any shape and is also quickly removed. After the tape is applied strike all of the edges with a plastic paddle to ensure a tight seal. A good masking job is important to the quality of your finished paint job.



When masking, be sure to keep tape overlapping in the same direction, so that it may be removed easily

The next step is our final wipe down with a preparatory solvent or mineral spirits. Be sure to use a prep cloth that doesn't leave behind fibers. You may also wipe down sheet metal and other smooth areas with a tack cloth. After this cleaning, do not touch it with bare hands and keep bugs and dust away, too. Be sure that the area is properly ventilated and has adequate lighting and isn't in the direct sunlight. Temperatures should be around 70 degrees Fahrenheit or at least between 50 and 90 degrees. Humidity should be 40-50%. Anytime that the environment exceeds 90 degrees or 85% humidity painting should be avoided. Clean and inspect your respirator and change out the filters if necessary. I recommend the use of a Tyvek suit to cover your clothing and skin, as well as to keep clothing fibers out of the paint. Gloves and safety glasses are a great idea too since we are ready to start mixing primer. Remember to wear protective equipment when using solvents, mixing or applying paint. Paint and solvents may release harmful fumes and can be damaging to your skin.

Once everything is clean and we have protective gear ready, we're ready to start with some primer. While some may skip this step, I advise you to take the time and a few extra dollars and spray on at least a coat of some sort of primer. If you have any rusted areas, a rust prohibiting primer is a good choice. If painting over clean metal or painted surfaces, a gray enamel primer is sufficient. This gives a uniform color to the surface and adds another layer of protection. It also seals in body work and old layers of paint and fills small scratches and pits. There are many kinds of primers and sealers on the market for different applications including 2k or filling primer, epoxy, lacquer and many more. We're going to leave those products to the pros just stay with enamels for now. If applying with a brush, use a good quality natural bristle and keep strokes in the same direction. If spraying use the manufacturer's instructions for thinning as brands seem to differ. Some primers require a full 24 hours before topcoat may be applied, others much sooner. Again, follow instructions. Many primers do not require scuffing before topcoat is applied if you paint inside a specified time frame, while others always require scuffing. In all cases, another wipe down is necessary before applying the topcoat of paint.

Now the fun part begins! We're ready to apply the color of topcoat that will show off and protect our hard work. Since we've already decided on using an enamel finish, let's discuss where and what to buy. My first choice is always an OEM brand of paint such as Deere's Ag & Turf or CNH's Iron Guard. The reason behind this is that OEM paints come in original shades, such as Deere's Classic Green, J.I. Case's Desert Sand, or IHC's 2150 red. The OEM paints also possess a much higher level of ultraviolet light protection to prevent fading. This is especially important on red and orange colors. If these brands don't suit your color needs or are not accessible to you, almost any hardware or big box store sells a line of enamel paints. Rust-oleum, Majic, Van Sickle, and Sparex to name a few are popular brands. They all cover well and have a great shine, however, be careful how much they sit out in the sun. Some of these brands come with their own reducer or thinner while others simply call for mineral spirits, naphtha, or acetone. For best results, I recommend using a catalyst hardener, which is sold at any auto paint supplier. Majic also sells a hardener which is inexpensive and available at Tractor Supply and has worked well with any brand I have tried mixing it with. As far as thinning solvents go, again follow paint manufacturer guidelines. In most cases the reducer will be naphtha, while if painting in hot weather mineral spirits is a slower evaporating solvent.

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THE VOICE OF
THE HISTORICAL
ENGINE SOCIETY

PO Box 892
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.

P A I N T C O N T ' D

Most Rust-oleum products call for acetone which evaporates quickly and works well in cooler temperatures. When beginning to mix any paint, first stir the can thoroughly and mix all cans together in one container if using a large quantity so that color is uniform. If applying with a brush, we're now ready to do so with a high-quality natural bristle. If spraying we should start our mixture with 8 parts paint, 2 parts reducer, and 1 part catalyst. Some adjusting of the mixture may be necessary, but this is a good start. Contrary to what many may think, adding extra reducer does NOT make the paint shinier. In fact, it does the opposite. You only want as much solvent as absolutely necessary to make the paint lay down evenly. Now it is time to load our paint into our spray gun. This may be controversial, but since we're using an antique paint system, I prefer an old high pressure paint gun. I believe they do a much better job laying down the paint, at least when using enamel. Maybe not everyone will agree, so use what you prefer. High pressure spray guns will likely need 35-45psi to paint and will require some adjustment.

As we begin to paint our first coat, spray some paint on an inconspicuous area to test the mixture and air pressure. If the paint lays down lumpy or resembles an orange peel, add a bit of reducer. If it's very runny, add some paint. If the paint seems like it's drying as it hits the surface or is dull and gritty, reduce air pressure. If the paint is way too thick and runny, add some air pressure. It takes practice and patience but stay with it. Once the mixture is adjusted properly continue to spray a light transparent coat on everything and allow it to flash or tack up before recoating. Use some patience and allow the proper flash time so that solvents may be properly released and the next coat binds and doesn't run or sag. The paint should feel similar to the sticky side of masking tape when it is ready to be recoated, not dry, and not slippery or oily. The second coat should be applied evenly over all surfaces and should no longer be transparent. Take your time and cover everything! It sometimes helps to turn wheels and shafts a little, or to move levers and pedals. Double check everything! Again, wait patiently for the proper flash time. Getting in a hurry destroys a good paintjob. Cooler weather or lack of a catalyst extends the flash time. The last coat should be your wet coat. This will be a bit heavier than the other two, but don't get carried away. It may look great going on but may develop runs or sags minutes after its applied but before it flashes if too much is put on at once. Once you've completed the wet coat, double check for missed spots before cleaning up.

Hopefully your hard work pays off and turns out just how you wanted it to. If not, you can always scuff it off and try again. It takes practice but can also be quite fun and rewarding. I've always felt that the paint is what brings all of the other phases of a project together. Always remember to paint in a well-ventilated area and use protective equipment, especially breathing protection! Take time to clean up paint brushes and spray guys so they may be used again without issue. Respirators shall be cleaned and inspected before and after every use. And finally, remove masking when the paint is dry, but still soft and fresh. Good luck and hopefully you find this to be helpful.