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Newsletters for the Larsen Tractor Museum

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FRIENDS OF THE LESTER F. LARSEN

TRACTOR TEST AND POWER MUSEUM

NEWSLETTER NUMBER ONE *May 1998*

This newsletter is being sent to members of the Friends as well as those who have donated toward the renovation of the Museum. There is some overlap but hopefully people will receive only one copy. Since we will be including some who have not had the opportunity to join our Friends organization, a form is included which will place you on the rolls.

With this inaugural issue we will provide news relative to the status of the Museum and one in-depth article which you will find interesting. At this time we plan to issue two newsletters each year and, as activities increase, go to four issues per year.

Status of the Friends

The Friends of the Lester F. Larsen Tractor Test and Power Museum is a non-profit, 501c3 corporation registred in the State of Nebraska. As a 501c3 the IRS allows donations to the corporation to be tax exempt.

The Friends organization was formed when it was apparent that the University was providing no support for the upkeep of the former tractor test laboratory building, which housed a collection of historic tractors brought together by Professor Lester Larsen. The Friends undertook a funding drive to renovate the roof of the building and this has been accomplished. The Friends then recommended that the building be named the Lester F. Larsen Museum in recognition of Professor Larsen's 39 years as Chief Engineer. This was approved by the Board of Regents on April 4, 1998 and a dedication of the building was held on May 2.

Although it was a cold and windy day, it is estimated that over 400 people came to the open house and dedication program. Professor Larsen and his family were in attendance and many former tractor test employees were able to attend and renew acquaintances.

In addition to the historic tractors, the museum houses the collection of pioneer hand tools and animal drawn implements which Prof. Chauncey Smith had brought together, student forge projects from Professor William Runnalls classes and early conservation tillage equipment manufactured by the L. W. Chase Plow Company of Lincoln. The format for displaying these exhibits has not been finalized and we are employing a Master's student from the Museum Studies program to assist us. This will give the student some experience and will give us access to professional advice.

Our next step with the museum is to replace electrical wiring which had to be removed when the roof was repaired and re-connect the steam lines for heat next winter. As required by the University,

we are working with an architect to draw up the plans for these projects as well as re-painting the interior walls and replacing one or two of the large doors. We do not know the expected costs for these projects but we do know that we have utilized our funding to date for the renovation of the roof and will need your continued support for this next phase.

All support to date has come from donors and volunteers. We need to assure the continued support of the museum activities over the years and, for that purpose, we encourage support of our endowment program through the University of Nebraska Foundation. Our initial goal is \$400,000, which would provide for a part time curator, student hourly help and some operating expenses. Our long term objective is to re-introduce some of the activities which Professor Larsen had such as renovation of specific historic tractors and machines to show calibre. In past years the museum had employed students to renovate a 1908 Ford tractor and a 1925 Model T pickup, both of which were basically junk, but which are now excellent displays. We have several tractors with which Professor Larsen had started renovating but we have placed them in storage until funding is available.

We receive a continuing interest on the part of visitors even though we have not yet set up hours of operation. We generally have someone working on projects during the mornings and can easily accomodate visitors then and we will meet with visitors during the afternoon if they will call ahead.

For those of you who have not yet joined the Friends, you may fill out the form below and return it to the address shown. Our annual dues are \$10. For those wishing to contribute to the completion of the renovation project or toward a perpetual endowment, send your contribution to the University of Nebraska Foundation, 1111 Building, 1111 Lincoln Mall, Lincoln, NE 68588-0650, specifying account number 4182.

I enclose \$_____ for ____ year's membership in the Friends of the University of Nebraska Lester F. Larsen Museum.

Name_____

Address_____

Phone:_____FAX_____e-mail_____

Send to: Bill Splinter
202 BSEL
University of Nebraska-Lincoln
Lincoln, NE 68583-0832

The Nebraska Tractor Test Law
The Beginnings

by Dr. Louis I. Leviticus
Professor Emeritus
Department of Biological Systems Engineering
University of Nebraska - Lincoln

The May 13, 1919 issue of the *Senate Journal* of the State of Nebraska carried the following item:

HOUSE ROLL No. 85:

"A Bill for an Act to provide for official tests for, gas, gasoline, kerosene, distillate or other liquid fuel traction engines in the State of Nebraska, and to compel the maintenance of adequate service stations for same" was read the third time and put upon its passage.

Whereupon the president stated: "This bill, having been read at large on three different days, and the same with all of its amendments having been printed, the question is, shall the bill pass?"

The roll was called and those voting in the affirmative were: Messrs. Ainlay, Barr, Bradstreet, Brooks, Bushee, Chappell, Cordeal, Cronin, Cooper, Erickson, Good, Hall, Harriss, Hammond, Hoagland, Houston, Johnson, Neal, Peterson, Randall, Reed, Robbins, Swanson, Saunders, Sears, Sturm, Tannaer, Taylor, Warner, Watson, Weaverling, Weston.
Total - 32

Those voting in the negative were: None.

A constitutional majority having voted in the affirmative, the President declared the bill was passed and the title agreed to.

The first real consumer protection law aimed at the American farmer thus became law after having been signed by the Governor. The bill was the result of many complaints by farmers and a number of articles which were written on the subject of tractor quality, parts availability and the marketing ethics of some of the tractor manufacturers and their sales personnel. The July 1918 issue of the *Nebraska Farmer* carried two editorials by C. W. Pugsley, who was apparently editor at that time. One of them, discusses many aspects of farming, from machinery development to uniforms for farm workers. There is an interesting heading in this editorial on the subject of tractors and I quote:

" Tractor Difficulties.

At a meeting of approximately a thousand farmers in Lincoln a few weeks ago the subject of the tractor was up for discussion. These farmers had not assembled to discuss the tractor and might therefore be regarded as an average group of Nebraska farmers insofar as their attitude towards the tractor was concerned.

During the course of the discussion it developed that a large number of the farmers present owned tractors, and that a large number of the owners were not using their tractors. Several testified that they had purchased tractors, ranging in price from \$750 to \$2500, that they had only used these tractors a short time and that they were now for sale very cheap.

Many tractors now on the market are impracticable. They have one or more weak points which make them useless and it only takes one weak link in a chain to make it of no value.

The tractor experience of Charlie Warner of Lancaster County, covering a period of ten years, is typical of the development of the tractor. The first five years of the ten were filled with grief and disillusionment. He stayed by the game, however, and as he had chanced to tie up with a good and responsible company pointed out the defects to them. These were repaired and now he and other farmers are reaping the benefits of his costly and trying experience."

The next heading, called *"Irresponsible Companies"* contains paragraphs complaining about false sales claims and sales people who have no other interest than getting the tractor to the farm and pocketing the money from the farmer who, in those days, was not as well educated in the mechanics of machinery as he is today. After the tractor arrived it as often as not was started only once and then broke down. One section reads:

"Another reason why costly and valueless tractors are rotting in farmyard corners or in fields where they refuse to run is because irresponsible concerns are manufacturing tractors merely to sell and not to run."

One of the reasons of the tractor's increasing popularity was the shortage of labor and especially labor skilled in steering the horses which were still in use on most of the farms. There are several cases mentioned in another article by Mr. Pugsley in the same issue of the *Nebraska Farmer* titled *"Farm Tractor Experience"*

The editorial goes on to say:

"Farmers are talking tractors now. They want tractors especially during the labor shortage which now confronts us. Many farmers do not know much about tractors and are obliged to take the word of tractor salesmen. It is easy to describe a tractor on paper. Almost any pile of iron can be so described by a good advertising agent that it sounds like a wonderful tractor. If the defects are covered up with paint, and if the engine will run long enough to get the tractor to the farm, the object of some companies has been accomplished.

On 19 September 1919 an article by Representative Wilmot F. Crozier appeared in the *Implement and Tractor Trade Journal* which was a national farm machinery journal. The article was titled *"Father of Nebraska's Tractor Law explains it"*. The editorial heading above the article reads as follows:

"Without a doubt the Nebraska Tractor test Law, which has engendered so much interest among tractor men the country over, is a remarkable piece of legislation. Unlike so many such measures, it aims to be fair to the industry upon which it is to have regulatory

effect. Representative Wilmot F. Crozier of Osceola, Neb., who fathered and pushed the bill through the legislature, tells the trade in straight-forward fashion through the Implement and Tractor Trade Journal why he formulated this important law."

It is clear from this heading that the country as a whole considered this law a very important step for the advancement of a better product and was very much aware of its importance and impact.

I will take the liberty here of quoting excerpts from Rep. Crozier's excellent article:

"I have watched the development of the tractor from its infancy, and have followed many a queer-looking contraption around the demonstration fields, that purported to be able to replace my long-eared mules in front of a gang plow (sic)."

"The successive years of development proved to me, beyond a doubt, that the tractor, in some form, was the agricultural implement the American farmer had been looking for, for these many years. I began investing a little money in the things, that is, I invested in the cheapest one that had wheels. I soon found out that wheels and cast iron are of no value unless you have power to turn them when they are hitched to something."

After operating, or attempting to operate, two excuses for tractors, I finally invested my money in a machine that would really do what the company said it would. Then I began wondering if there wasn't some way to induce all tractor companies to tell the truth."

Rep. Crozier states that the start of his actions began after reading the aforementioned editorial in the Nebraska Farmer by Mr. Pugsley and he quotes the relevant passages from the editorial. He also quotes cases of some companies and their dealers trying to induce farmers to invest in the stock by using false claims. Before taking the legislative route, a "lengthy correspondence" between Mr. Pugsley and Rep. Crozier followed.

"I had one other fact in mind, namely, that the tractor industry is a national institution as far as the American Farmer is concerned and no legislation confined unnecessarily to the boundaries of one state can completely fill the bill. However, Congress is so slow to act on anything of this nature till they get a great deal of pushing, I am in favor of giving the push whenever we can."

In addition, Rep. Crozier addresses the question of availability of repair parts and service which he incorporated into the law:

"Another relief that the Nebraska law is intended to give the farmers is in connection with the maintenance of service stations. The following clipping from one of the state papers of last October will show the need for some relief. This clipping says: "How Nebraska farmers have suffered serious losses and production of foodstuffs has been decreased through inability to replace broken parts of farm tractors and other farm machinery is told by H. Peters of Hay Springs in a letter written to the governor. He declares that the big

implement and machinery concerns compel farmers to wait from ten to thirty days, or even longer, for necessary parts, and in the meantime the grain becomes too ripe and shells out upon the ground. He suggests that the state council of defense issue an order forbidding any new machinery company to enter the state for the sale of its goods until it has provided a complete stock of repair parts and proper facilities for getting them to the farmers."

An interesting remark by Rep. Crozier, which was also addressed in the editorial by Mr. Pugsley was the question of Standardization. There was a lot of unhappiness with the fact that tractors and implements or even parts often could not be matched together without intensive alterations. The Implement and Tractor Trade journal also did address that question. No attempt was made to include this in the bill, apparently because of the difficulty in prescribing what had to be done. It can be deduced however, that these public discussions and the danger to the industry of someone passing some law concerning standardization, were instrumental in the enacting of standardization in the industry.

In the last paragraph, titled "*Aim Is Better Understanding*" Rep. Crozier concludes:

If this law brings about a better understanding between the producer and consumer in the tractor industry, it will be the chief reason for the framing of this legislation. The farmer has always protested against certain practices in the tractor business, but he has protested singly. Now he speaks with a voice that, at least, is being given attention. It was reported to me that one Eastern company intended to contest the Nebraska law in the courts. I am glad that it has reconsidered this decision. If there are any defects in the way the present law works out, or if it is shown to be unfair in any way to the manufacturer, I shall be glad to receive suggestions relative to the matter of a remedy or improvement

WILMOTT F. CROZIER

At the time of the writing of this article, the Nebraska Tractor Test Law has been in effect for about eighty years. Test procedures have changed over the years as technology has changed. The current procedure allows the manufacturer to make adjustments and repairs during pre-test runs conducted before the start of the official test. Over the years there have been many repairs and improvements to tractors as a result of conducting the pre-test runs. Also, all the breakdowns and repairs, which occur during the official test, are made public in the official test reports. Altogether the system has worked to provide a better product for the farmer and has provided industry with a performance standard for comparing their products.

May 26, 1998

FRIENDS OF THE LESTER F. LARSEN

TRACTOR TEST AND POWER MUSEUM

NEWSLETTER NUMBER TWO (11/18/98)

This is to announce the First Annual Meeting of the Friends of the Lester F. Larsen Tractor Test and Power Museum, to be held on January 19, 1999 at 1:30PM in the Museum. We now have steam heat restored to the building although, funding being available, this will be temporary. The steam heating system is quite antiquated, having been installed in 1919. Our condensate return line is plugged and the condensate is currently being carried through a hose to a floor drain. We are hoping to receive some of the heating equipment which will be taken from the press box at the football stadium, now being removed and replaced by the \$1million private boxes. The Museum has natural gas service which is not being used but would serve as a more energy efficient system.

We have yet to replace the electrical wiring which was removed during the replacement of the roof. Hopefully that can be accomplished in time for the annual meeting. The toilet needs to be updated, we need to develop a second pedestrian exit to meet OSHA requirements, re-work or replace two of the large doors and get our exhibits properly displayed. We have enough projects to keep from getting bored.

Thanks to the efforts of Bob Kleis, we have a functioning library. Files for all tractors submitted for test and test reports are now easily obtainable. We have responded to a number of requests for information on tractors. We also have slides and photographs, including those donated from Frank Walter's estate by his wife Charlotte. The office has been upgraded and the computer which is being used for this newsletter sits where the planimeter table formerly resided. Gradually we are moving toward having an operating museum.

We had eight tractors and the 1925 Model T on exhibit at State Fair again this year. This display of antique tractors and a parade of these tractors each day was initiated by Les Larsen. We are pleased to continue the program, which has become one of the more popular activities at State Fair now the manufacturers have moved their displays and demonstrations to Husker Harvest Days at Grand Island.

This year we had an extra activity at State Fair. Roger Welsch, who hosts the "Postcard from Nebraska" segment on CBS Sunday Morning, and another talk show Friday evenings on Educational TV, also has an interest in restoring old tractors. His specialty is Allis-Chalmers WC's., about which he has written two popular books, "Old Tractors and the Men Who Love Them" and "Busted Tractors and Rusty Knuckles". He has donated one tractor which he calls "The Woodpecker" because it was sitting in a fence row with trees growing though it before he restored it, to the Museum to be awarded to the winner of a national lottery. This is in cooperation with Dave Mowitz of Successful Farming, who provided the raffle tickets and Dave will be running a promotion in the magazine and in

"Ageless Iron". We have received several hundred dollars so far and hope this will provide enough support to accomplish some of the remaining renovation projects.

We would be very happy to sell you or your friends tickets. They are \$1 each or 6 for \$5. The drawing will be held September 6, 1999 at the State Fair. You do not have to be present to win. I can verify that the tractor runs as I drove it in the tractor parade at State Fair.

We have had our first act of vandalism. Four students from Wisconsin were visiting their fraternity in Lincoln and evidently decided they would like to return with the sign designating the Museum which was dedicated May 2, 1998. The campus police noticed them driving with the sign in the back of their pickup, became suspicious and stopped them. Three of them ran, leaving one holding the sign. All four found themselves in jail and the sign will be restored at no expense to us. Unfortunately they also pulled the sparkplug wires and removed a gas cap from a Case CC which we had sitting outside of the museum. We recovered three of the wires but the cap will be hard to replace.

The operation of the Museum is based totally on contributions. Therefore we need your continued support through gifting to the UNL Foundation, 1111 Lincoln Mall, Lincoln, NE 68508. Our Museum account number is 4182.

Now to the business of the First Annual Meeting. In addition to enjoying the company of people with similar good taste, as well as some cookies and punch for refreshments, we have some essential business to attend to. We are in discussion with University administrators concerning a joint administration with the State Museum (Elephant Hall). This would provide a direct linkage with professionals in museum management, displays, renovation and graduate students in Museum Studies. It is important that the structure of the museum be set up for long term development and operation. Another essential activity to assure the continuity of the program will be through election of officers and board members.

So mark this time and date on your calendar and plan to attend. To assure that we have a sufficient number of cookies it would be helpful if you would give me a call at 402-472-5511 or drop a line at 202 BSEL, UNL, Lincoln, NE 68583 and let me know you are coming.

In the meantime, enjoy the attached article on the Winnipeg Plowing Contest, have a merry Christmas and endure a New Years without Nebraska competing for a national title.

THE WINNIPEG PLOWING CONTESTS

With the introduction of steam powered traction engines in the latter 1800's and internal combustion powered traction engines in the early 1900's there was little information available to farmers to guide them in the purchase of such machines. The majority of farmers had no knowledge of or experience with either type of engine except for the operators of steam powered tractors, used primarily for threshing and for plowing. The operators of these machines were regarded with high respect by the community.

In the early 1900's, a number of agricultural colleges established tractor operator courses during the winter months where farmers were instructed in the care, repair and operation of the steam and gasoline powered tractor. At the University of Nebraska these courses were offered in the agricultural mechanics building located on the Farm (now East Campus). Even with this knowledge, no means existed for comparing one tractor's performance with that of another make, other than the advertising claims, which commonly extolled the merits of the particular tractor far beyond achievable levels of performance.

There was obviously a need for information based on neutral observation which would allow a farmer to select a tractor for his particular needs. Manufacturers were entering the market with machines having a wide spectrum of designs and components. Engines had vertical or horizontal cylinders, single or multiple in number. Cooling was often achieved by exposing the cooling water directly to the atmosphere, flowing it over a screen for example. Everyone had a better design for a carburetor. Steering often required significant upper body strength. The significant question of the day was what parameters should be evaluated to provide a fair basis for comparison.

The first such comparisons were called the Winnipeg Plowing Contests which were held in conjunction with the Winnipeg Industrial Exhibition in Winnipeg, Canada from 1908 to 1913. Fortunately, L. W. Chase, who was Head of the Agricultural Engineering Department at the University of Nebraska attended all contests, serving as a judge in 1910 and 1912 and as Engineer in Charge in 1913. He compiled a detailed report on the test procedures and results which we have in our Departmental Library. It is interesting to see how the testing process developed, leading to the basis for the Nebraska Tractor Tests.

In Chase's words the 1908 contest consisted of "having the engines go out and pull a few loads and then do a little plowing, after which the judges, by looking the engines over, would award the prizes". Obviously Chase was not impressed with the procedure. However, measurements were made for six tractors. The "hauling test" consisted of pulling a load and measuring fuel and water consumption. The results were reported in pounds of fuel and pounds of water per ton mile. The plowing tests consisted of plowing a given acreage and reporting the pounds of fuel and pounds of water used per acre. As you can appreciate, there are so many variables entering into these tests that realistic comparisons were mostly a matter of judgement.

In 1909 the Prony brake was introduced to determine belt horsepower and a traction dynamometer was used to measure hauling and plowing performance. Gasoline powered tractors were classified in power classes, A being 20HP and below, B being from 20 to 30 HP and C being above 30HP. Steam tractors were placed in class E and ranged from 67 to 105HP. For the prony brake tests engine efficiencies ranged from 4.7 to 11.8 HPhrs/gal. The most efficient tractor was an IHC rated at 24.9 HP. This value is quite surprising since gasoline powered tractors, which were last tested in 1976 (manufactures had switched to diesel) were in that range. For example, the Massey Ferguson 230 was found to operate at 11.85 HPhrs/gal and an IHC 666 operated at 12.76 HPhrs/gal. Is something wrong? Let's check further.

In 1910 twelve gasoline powered tractors were tested and fuel efficiencies on the 2 hour economy brake test (wonder where the two hour tests originated?) ranged from 4.08 to 10.1 HPhrs/gal. The most efficient tractor was an IHC which developed 46.49 HP. This year they dropped the hauling test. It is interesting to note that another important criterion was the amount of water used. One rating was HPhrs/100 gal. of water. Here ratings ranged from a low of 391 to a maximum of 4015.

In 1911 fifteen gasoline powered tractors were tested and fuel efficiencies on the 2 hour prony brake test ranged from 7.02 to 10.56 HPhrs/gal. The most efficient tractor was an Aultman-Taylor which developed 58.93 HP.

In 1912 twelve gasoline powered tractors, four kerosene tractors and eight steam tractors. Of the gasoline tractors, fuel efficiencies ranged from 6.79 to 11.08 HPhrs/gal. Again the Aultman-Taylor, rated at 58.6 HP was most efficient.

The year 1913 was the last year of the tests. Here J.I. Case Company dominated the entries, having 4 of the 8 tractors entered in the gasoline category, 3 of the 5 tractors in the kerosene category and 3 of the 6 steam tractors. Fuel efficiencies in the Economy Brake Test ranged from 7.8 to 11.64 HPhrs/gal, with an Avery tractor rated at 61.1 HP having the top efficiency.

Although we cannot compare the fuel efficiencies directly with the more modern tests since Imperial gallons were listed as 7 lbs/gal, compared with a value of 7.32 today, it is interesting to note that the top efficiency ratings for each year were within the range found for gasoline powered tractors as late as 1976. Although the newer test equipment was more refined than the simple setup used by the early tests, there the prony brake rested directly on a scale and a tachometer and stopwatch were used, compared to the electronic curcuity used today, it would appear that the engineers running the tests were very concerned with accuracy. Not having some of the modern parasitic loads imposed by cooling fan, hydraulic steering, hydraulic lift and air conditioning, the conclusion is that some early developers of gasoline powered tractors were able to achieve very respectable performance.

Professor Chase ascribes the termination of the tests in 1913 as a consequence of a poor crop year in Canada and loss of interest on the part of manufacturers to pay the \$50 fee to enter. In an effort to be as fair as possible, the judges had developed a scorecard system for rating the tractors. There were 35 rules and conditions that the manufacturers were required to comply with. Various performance parameters were given a maximum number of points allowed, such as HPhrs/lb. fuel being worth 130 points for gasoline powered tractors. HPhrs/lb. water was worth 20 points. A nomograph was developed to read off the number of points up to the 130 maximum which various fuel efficiencies warranted.

Then there was a list of 25 penalties which were deducted from the score. Such things as cleaning the carburetor cost 10 points, adjusting bearings cost 20 points each and not having sufficient water to end the two hour test with out replenishing could cost 15 points. One might wonder if the burden of meeting all of the rules may have created some lack of interest on the part of the manufacturers.

Nevertheless, the Winnipeg Plowing Contests established the groundwork upon which the performance of agricultural tractors could be compared. Although there was an interest at the time to set up a national tractor testing program under the USDA, political wrangling delayed any action. When Mr. Willmot Crozier, a farmer and state legislator, needed a source of technical support while developing the Nebraska Tractor Test Law in 1919, he found the most qualified individual in the US in Professor L. W. Chase. His personal involvement in the Winnipeg Plowing Contests allowed him to screen out those tests which were practically impossible to quantify, such as the plowing tests. He went to controlled testing of belt horsepower using an electric dynamometer inside of a building where there was at least some control of the environment. The draft tests were conducted on an earthen, and then a cinder track for tractive uniformity. It was determined within the first season that testing in the snow was something to be avoided.

Professor Chase's 1914 thesis titled "Motor Contests With Results" is a fact filled document, covering, in detail the evolution of the process of performance testing of gasoline, kerosene and steam powered tractors. This brief report is but an introduction to the material he developed and the reader is encouraged to check it out of the Departmental library and enjoy learning something of the early history of tractor development. ----W. E. Splinter

FRIENDS OF THE LESTER F. LARSEN

TRACTOR AND POWER MUSEUM

NEWSLETTER NUMBER THREE (5/7/99)

At the First Annual Meeting of the friends of the Lester F. Larsen Tractor Test and Power Museum on January 19, 1999, two significant items of business were conducted. First, after discussion, the affiliation of the museum with the Nebraska State Museum was approved. Subsequent to that action, a Letter of Agreement for the Development and Management of the UN-L Lester F. Larsen Tractor Test and Power Museum was developed through discussions with Dr. James Estes, Director of the Nebraska State Museum (Elephant Hall) and Dr. Glenn Hoffman, Head of the Department of Biological Systems Engineering and myself in behalf of the Friends.

Until now, the activities of the Friends organization and the utilization of the former tractor test laboratory building was on an ad hoc basis and was subject to termination by the University at any time. Neither the Friends organization or the museum had any official recognition by the University.

This agreement basically assures that the University will permanently assign the 6542 sq. ft. of the former tractor test laboratory building to the Lester F. Larsen Tractor Test and Power Museum. Next it states that the University, operating through the Nebraska State Museum and the University of Nebraska Foundation, will assist the Friends in raising funds for the museum. To assure the overall maintenance of the museum and its technical accuracy, it specifies that the Director of the Nebraska State Museum will empanel an advisory board composed of nine individuals with expertise in agricultural engineering, agricultural history and rural sociology to advise the Director on the operation of the museum.

This advisory board will be responsible for the oversight of scientific and engineering content of the museum. Board members will serve three-year terms on a staggered basis. The Head of the Biological Systems Engineering Department, the President of the Friends, the Director of the Nebraska State Museum and the IANR Facilities Director will serve as ex-officio members of the Advisory Board.

The Friends must provide a letter of intent to raise \$400,000 in private contributions, including funds which have been raised to date. The letter of intent will detail fundraising plans to establish the \$400,000 endowment to provide for operation of the museum and plans to request funding through grants to develop educational exhibits and research the history of specific exhibits currently held by the museum.

As the program develops, a goal for raising \$1 million in endowments will be set to provide for manpower and operating funds for continued maintenance of the program.

The agreement then provides for assistance on the part of the University of Nebraska Foundation in the raising of these funds.

For the operation and management of the museum, a position of Director and a position of Curator/Exhibits Manager will be established in cooperation with the Department of Biological Systems Engineering. In addition graduate students from the Museum Studies Program and student hourly employees will be utilized as funding allows. The Director and the Curator/Exhibits Manager may also have partial or total faculty or staff appointments in the Department of Biological Engineering or the Nebraska State Museum.

With this arrangement, the Lester F. Larsen Tractor Test and Power Museum will serve as an ancillary to the University of Nebraska State Museum similar to programs at Ashfall State Park near Orchard, NE and the Trailside Museum at Fort Robinson. This will provide professional support in the area of museum exhibits and management.

The Friends of the Lester F. Larsen Tractor Test and Power Museum will affiliate with the Friends of the Nebraska State Museum in the same way as the Friends support organizations for the Ashfall and Trailside museums. The presidents of these groups report to the monthly meetings of the Board of the Friends of the Nebraska State Museum and attend the annual meeting of their Friend's group. The Treasurer of the Friends of the Nebraska State Museum monitors the books of the other Friends groups to assure that they conform to IRS rules etc. On a request basis, the Friends of the Nebraska State Museum have provided funding for the other groups.

The agreement has been signed off by the Vice Chancellor, IANR, the Vice Chancellor for Research, the Vice Chancellor for Business and Finance, the Vice President and General Counsel, the President of the University of Nebraska Foundation, the Director of the Nebraska State Museum, the Head of the Biological Systems Engineering Department and the Friends of the Lester F. Larsen Tractor Test and Power Museum. That should make it official.

Basically this agreement gives us official status with the University, a management connection to the Nebraska State Museum and the support of the Foundation for raising funds. We also maintain our connection to the Biological Systems Engineering Department, our source of origin.

So what do we do now? We are initiating plans to develop a brochure, establish a separate mail address, set up our own stationery, place signs at appropriate locations on the Interstate and the campus, secure the part-time or full time assistance of Museum Studies students and basically get the program running. We have not been able to get Facilities Management to complete the wiring and renovate the toilet yet but eventually that will happen. Anyone interested in serving as a museum guide or in working with the restoration of tractors is more than welcome.

The second major item of business was the election of officers for the coming year. Bill Splinter was elected President, Robert Kleis as Vice President, Shirley Trauger as Treasurer and Glenn Hoffman as Secretary.

In the March issue of Successful Farming, Roger Welsch had an article on his Woodpecker tractor that he donated to the Museum last September at the Nebraska State Fair. He described how we are raffling the tractor and the proceeds go toward the renovation of the Museum. The drawing will be on September 6 at the 1999 Nebraska State Fair. As a result of this article we have received 112 orders for tickets, ranging from \$1 to \$120.

FUEL SAVING DEVICES IN THE EARLY TWENTIES - ANYTHING NEW?

By

Dr. Louis I. Leviticus

There are advertisements in many journals and newspapers today, where companies tout their oils, fuel additives and devices, claiming wonders of savings for the user. At truck stops one can find pamphlets with testimonials claiming the same. During my 22 years as head of the Tractor Testing program at the University of Nebraska many manufacturers and sales people came to us telling us how good their oils, additives or gadgets were and many offered testimonials from friends truckers and other "independent" witnesses. Some declared that they had applied for a patent. They usually offered us a quart or so to test whatever it was, or they left one of their gadgets to evaluate. After it was explained to them that it would cost quite a bit of money to perform a proper test on their material, most of them disappeared with their samples. In none of the cases, where we did have the opportunity to perform a proper test, and there were about four or five of those, did we ever find any justification for the claims. Needless to say, we were blamed for running faulty tests and in one case a manufacturer threatened us with a two million dollar law suit.

I wondered if in the early days of motoring and engines there had been similar cases of wondrous improvements through the use of miracle additives or gadgets. After all, those were the days when the name "snake oil" was coined! After some searching I came upon the Master's thesis of Arthur W. Farrall from the year 1922 which was written at the University of Nebraska Department of Agricultural Engineering under professors O. J. Sjogren, C. W. Smith and C.J. Frankforter.. The title of the thesis was ***"INVESTIGATIONS CONCERNING FUEL SAVING DEVICES AND PREPARATIONS: ALSO MOTOR EFFICIENCY AS EFFECTED BY CHANGES IN THE TEMPERATURE OF THE COOLING WATER."***

For our purposes, we are going to look only at the "fuel saving devices and preparations". There were apparently many devices on the market at that time similar to the current situation.

Mr Farrall selected some representative examples from what was available on the market and tested the following "devices and preparations":

1. Name of product: **Lisco Tablets**
Cost \$1.00 per 100 tablets
Dosage One tablet per gallon of fuel.
Claims (verbatim) Removes Carbon in Internal Combustion motors
 Prolongs life of motor
 Makes starting easier
 More power - more miles per gallon
2. Name of product **Motor Kool Oil**
Cost \$2.50 for 32 oz.
Dosage 2 oz for 5 gallons
Claims (verbatim) Saves 25 - 50% of gasoline (!)
 Prevents Carbon deposits
 Prolongs life of motor
 Increases power and mileage
 Lubricates upper chambers perfectly
 Produces higher motor efficiency
 Removes Carbon deposits from cylinder valves and spark plugs.
- 3 Name of product **Reatomizer**
Cost \$5.- \$7.50
Dosage Does not apply. For continuous usage
Claims (verbatim) More miles per gallon
 Better distribution
 Warms up quicker
 Keeps gasoline out of crankcase
 More power
 Less carbon

The tests were carried out at the University of Nebraska and used correct engineering considerations and procedures. The engine used to perform the evaluation tests was a Continental 4 cylinder engine with a 3.75" bore and a 5" stroke. With the exception of inaccuracies due to the state of the art of the equipment used for measurement, the test was performed in a highly professional manner.

Regarding the "devices and preparations" Farral remarks (page 123):

"In the use of any such article, it is felt that in order to be of practical benefit, the benefits should be great enough to be readily apparent, even in ordinary use, and if they were apparent in ordinary use, they must necessarily be doubly apparent in the tests carried on, because all the apparatus is set to show these very things as accurately as possible and in such manner that they should be readily measured."

Referring to the claims which were made, Mr. Farral states (page 125):

"As will be noticed, these are very strong claims, yet practically all of these sorts of articles have claims of nearly equal strength. Surely then, if these claims are true, it would be a simple matter to note the improved efficiency and increased power developed by their use."

And Mr. Farral continues further on the same page:

"On the other hand, from data taken during our tests, it was difficult to find any real benefit resulting from the use of the article tested, and in some cases, in fact most cases, it will be seen by a perusal of the comparative curves shown on pages (109-122) that straight gasoline used alone and with no special attachments on the motor gave the best results in almost every instance, giving a higher efficiency and also greater horsepower developed".

Mr. Farrall also remarks on the claims regarding the removal of carbon deposits and remarks on the Lisco tablets that:

"..... by its very nature cannot be effective in removing carbon in the cylinders of an internal combustion engine. There is no way to calculate how or why it should remove carbon.

And he concludes that:

"Lisco could not be recommended for use in motor fuels. While it is possible that no serious harm might be done to motors, no amount of good proportionate to the cost of the material, could be obtained. Any better motor performance credited to Lisco could be obtained by adjusting the carburetor properly."

Regarding the Motor Kool additive the tests showed no improvements either, rather the opposite was true. This prompted the following conclusion by Mr. Farrall:

"It appears that this oil of no especial benefit and may do harm on account of some of the undesirable heavy oils or greases it contains. It is probably merely a good grade of common lubricating oil, with a solid or heavy oil added. Not enough of it is added to have much effect one way or another, but it is certainly not worth near what it costs."

The results with the Reatomizer were even more clear to Mr. Farrall. They included power loss as well as efficiency losses over the whole performance range. Farrall remarks that only when a carburetor is of a very cheap and unsuitable type, or is in very bad shape, the Reatomizer might be able to improve performance. His summary of the three test series is as follows:

"Therefore, in concluding, it appears that these so called fuel saving devices are of no practical value, and indeed in most cases, only an added expense or detriment, and that the best assurance of a satisfactory and economical performance of a motor is to keep it in good shape and keep the carburetor correctly adjusted."

So, what else is new? It doesn't appear that things have changed much.



University of
Nebraska
Lincoln

University of Nebraska State Museum

Lester F. Larsen Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833
(402) 472-8389
Fax (402) 472-8367

Newsletter #4, August 10, 1999

As you can see from the letterhead we have re-organized in accordance with actions reported in Newsletter Number 3. We now have a new phone number, PO Box number and zip code. With the re-organization, Bill Splinter serves as the Director of the Museum, Louis Leviticus serves as Curator. Bob Kleis now serves as Chair of the Friends organization and Earl Ellington is the new Vice-Chair.

Under the new arrangement, the Lester F. Larsen Tractor Test and Power Museum is now a component of the Nebraska State Museum (Elephant Hall) in a manner similar to the Ashfall Museum near Royal, NE, which is an active archeological dig of ancient rhinosceros and other prehistoric animals, and the Trailside Museum at Fort Robinson, near Crawford, NE, which holds artifacts from western Nebraska. Our budget now comes through the State Museum. All of our finances come from donations to the University of Nebraska Foundation.

Mark Nickolaus has been serving as a volunteer helper and visitor guide. We have added a Museum Studies Master's student, Luis Vasquez to begin cataloging and developing the history of the Chauncey Smith collection of pioneer hand tools and early animal drawn equipment. This very unique collection holds some very rare hand tools, old plows and animal drawn implements.

This past year we have been active in selling raffle tickets for the Woodpecker tractor, an Allis-Chalmers WC which has been donated to the Museum by Roger Welsch. We have the active support of Dave Mowitz of Successful Farming, who provided the raffle tickets and they have advertised the raffle in the magazine. The Woodpecker tractor is one that Roger describes in his book "Busted Tractors and Rusty Knuckles". The tractor with a mounted corn picker, was in a fence row with trees growing through it and it was given to Roger as a challenge to renovate. To Roger's credit the tractor runs and has participated in parades at the 1998 Nebraska State Fair and at the recent World's Expo at Ankeny, IA. Ticket sales have come from Maine to Florida to Washington to California. The tickets cost \$1 each or 6 for \$5 and the drawing will be held at the Nebraska State Fair on September 6. If you wish to own the world's most famous renovated tractor and haven't purchased your tickets yet send your money before September. Moneys received from the raffle goes to the Friends of the L.F.Larsen Tractor Test and Power Museum for support of the Museum.

We participated in the Camp Creek Old Threshers's event again this July. Mark drove the Farmall M in the parade each day. The weather was good (for July in Nebraska) and there was a good attendance. We will be displaying about ten tractors the the Nebraska State Fair again this year, in addition to the Woodpecker tractor and the 1925 Model T Ford.

The dates are August 27 to September 6. If you can help us move tractors, drive tractors in the parade or sell Woodpecker raffle tickets we would appreciate any assistance We could also use volunteers to man the Museum during the year. At present we are open only weekday mornings but we would like to expand our hours to afternoons and possibly weekends.

With this issue of the Newsletter we are initiating a funding drive to move on to the next step in the renovation of the Museum. As you recall, the first drive provided the money to replace the roof. With the replacement of the roof we have cleaned up the facility, renovated the office, established a library to house tractor test reports and historical materials, re-connected water, electricity and steam and established hours for visitors. According to our Visitor's Book we have had over 320 visitors sign in since the building was dedicated May 2, 1998. We estimate that about one-half of the visitors do sign in so we have probably had well over 600 visitors so far. Having made no public announcements or having conducted no advertising, due to the "iffy" state of our existence, we feel this portends well for the level of visitors in the future. Dr. James Estes, Director of the Nebraska State Museum, wishes us to develop brochures and establish roadway signs to alert people of the presence and location of the tractor museum.

We need to continue the renovation project with three tasks. We need to re-connect three rooms with electricity since, during the re-roofing, the wiring was removed. We need to upgrade our 1929 toilet and sinks (although they work they are unsightly), and we need to provide a second exit door to comply with OSHA requirements. There are further projects along this line such as re-painting the interior, re-building the connected garage and generally making the place more attractive so requests for donations for these causes will continue.

We also need to provide permanent operating funds for the museum. Toward this end we have an initial goal of a \$400,000 endowment in the Foundation which will provide an income of \$20,000 per year for salaries of graduate students and other support personnel, office supplies, acquisition and renovation of exhibits and other operational expenses. As the museum program matures we have a goal of a \$1 million endowment, which would yield \$50,000 per year and allow modest salaries for the Director and Curator positions.

Therefore we need your support of the continued operation of the Lester F. Larsen Tractor Test and Power Museum through a pledge or a donation to the University of Nebraska Foundation, Account Number 4182. You can designate how you wish your funds to be utilized. We will provide you continued copies of the Newsletter which will keep you apprized of the program and provide you with articles on the history of the development of agricultural tools and tractors. With our library covering the performance of all tractors tested and a series of graduate Master's theses in the Department Library, we have a wealth of information which we are pleased to share with you. Enjoy the attached article and stop by when you are in the area.

NEXT MEETING OF THE FRIENDS BOARD: 1:30 PM, SEPT. 21. 222 LWChase

ANALYZING TRACTOR TEST RESULTS - A FIRST EFFORT

by

Dr. Louis I. Leviticus

Professor Emeritus

University of Nebraska, Lincoln

Introduction

Over the 80 odd years of the existence of the Nebraska Tractor Test Lab there have been many articles discussing the results and how to interpret them. Here is a report on the first effort which was carried out in 1922 for a Masters Thesis by Mr. Oscar Warner Sjogren at Iowa State University. The title was: *"An Analysis of Nebraska Tractor Test Results"*. Since the *"Nebraska Tractor Law"* as it was called was enacted on July 15, 1919 and testing started in 1920, there were only test reports from 1920 and 1921 available. Fortunately, the range of power in those days wasn't very large and so this limited analysis was quite valid and resulted in some interesting data and conclusions. It is interesting to note that a number of factors considered at the time are still relevant today.

The Lab building and equipment - General Description

The original building was 41 feet wide by 82 feet long with a ceiling height of 14 feet. The building was made with many windows *"so as to provide much air"* and the window area was more than 10% of the total wall area. The door space, which was kept open during the tests, was 232 ft², giving a total area of 526 ft², which was over 20% of the total wall area. In addition, the ceiling had a 41' long and 6' wide exhaust duct with a powerful fan.

A 150 hp. Sprague DC Dynamometer which was belt driven was installed in the building. The lab could supply belts, but the manufacturer was allowed to bring its own. The track was surfaced with cinder, was ½ mile long and was *"slightly rolling, no grade however being greater than 3.5%"*

The test car was made from a tractor chassis with an electric absorption (DC) dynamometer mounted and driven by the rear wheels. Maximum Drawbar pull which could be absorbed by this unit was about 5000 lbs.

Number of Tractors tested

For the 1920 and 1921 seasons 135 applications were received. Only 83 actually appeared for the full test. The other 52 withdrew their applications. There were various reasons given: Model was obsolete by the time the test was conducted; Production cutbacks; Territory changes etc. In reality one big reason was that after viewing a test a number of the manufacturers decided that their units probably would not perform very well and withdrew their applications. Of the remaining tractors

Did not meet advertised claims	12 (14%)
Withdrew after preliminary test	3 (4%)
Changed Rated Engine Speed settings	6 (7%)
Made equipment changes	17 (20%)
Went through test without making changes	47 (55%)

Power Standards needed

The reasons for the above results are seen by Sjogren as the lack of existence of standard rating system between manufacturers. For instance he suggests that the rated power should be at least 80% of the maximum available power. Some tractors were overrated, others underrated as can be shown in the following tables:

	Ratio of Rated Belt Power to Maximum Belt Power Number of tractors	Ratio of Rated Drawbar Power to Maximum Drawbar Power Number of tractors
50-60 %	10	—
60-70 %	13	2
70-80 %	28	11
80-90 %	13	24
90-100 %	7	30
Above 100%	2	—

The difference in the numbers between the Drawbar and Belt groups is caused by the fact that belt power (and PTO power today) is always greater than the drawbar power - except for a few recent models which are power-limited in some low gears.

Belt speeds standards

Sjogren pointed out another reason for the variations in the results. He states that the belt speeds are far from uniform. If belt speeds and pulley sizes would be standardized, it would benefit the equipment industry and make the ratings more uniform. The following table shows the variations.

Belt Speeds fpm	# of tractors
Below 2000	2
2000 - 2199	5
2200 - 2399	2
2400 - 2599	7
2600 - 2799	16
2800 - 2999	7
3000 - 3199	9
3200 - 3399	10
3400 - 3599	10
3600 - 3799	2
3800 - 3999	3
Above 4000	5

Largely as a result of Sjogren's analysis the standards were changed to narrow and standardize the range of belt speeds. Some years later, the PTO drive, which replaced the belt, was standardized as well, providing the user and the implement manufacturer with comparable and universally usable drive systems. All this as a result of the Nebraska Tractor Test Law.

Tractive Efficiency

Sjogren defines Tractive Efficiency (TE) as follows:

$$TE (\%) = \text{Drawbar Horsepower} / \text{Brake (Belt) Horsepower} \times 100$$

From the test data he calculated the values of TE as a function of total tractor weight for all the tractors in the various gears they were tested in. The data showed that a 4500 lb tractor was most efficient in the drawbar tests - with only one exception. This happened to be a tractor with a four cylinder engine.

Weight per Drawbar Horsepower

Sjogren writes:

"Upon first thought and without the aid of figures one might easily assume that the very light tractors had less weight per DBP than the heavy ones. The chart, however, clearly shows that this is not the case. It indicates that the tractors having a total weight of about 4500 lbs have less weight per drawbar horsepower than either the lighter or the heavier ones".

This is a result similar to the one found for the TE

Wheel slip.

The available drawbar power is limited by two factors. Sjogren states that especially slippage causes *"considerable worry"*. The other factor is the engine power. Sjogren states that *"considerable effort and thought has been given by tractor designers in attempts to balance these two factors."*

Sjogren investigated several factors which might have an influence on slip and also searched for a relationship between slip and tractive efficiency.

The following factors were considered:

Angle Lugs, Spade Lugs, Malleable Bar, Cone Lugs, Crawler Tracks,

Total Weight, "Live or dead" axle, Weight per DB hp, Wheel Rim width

(Unfortunately Sjogren does not define anywhere what is meant by "Live" or "Dead" axle.).

The writer recognizes that the slippage influence of the lug shapes and angles may not be the same for all field conditions. These tests were after all performed on a cinder track. Sjogren observes that

"the tendency of the angle lug was to pulverize the surface of the track, after traveling over it several times to such an extent that a good grip could not be secured. This condition would not exist where the tractor breaks a new path continuously as in farm work. The spade lugs give the best results on the track due largely to the fact that they would penetrate the ground to sufficient depth to give a good grip and would therefore not cut or pulverize the surface. The malleable bar (M.B.) Lugs were used on the largest tractors which in themselves were heavy enough to cause the wheels to grip the ground"

Other conclusions were that increased weight tends to reduce slip, that the "dead axle" performed better than the "live axle". Sjogren notes that there were more tractors with the former axle and the dead axle was usually more prevalent on heavier machines. These facts could have skewed the results.

The thesis investigates also many other aspects of the test data in the reports, such as: Piston displacement (bore and stroke); Fuel consumption; Water consumption; and, lastly, General Observations. With regard to this last category Sjogren states:

"Under this head may well be considered observations made of weaknesses and the observation not covered by the tables or charts."

The writer then lists a number of problem areas from the test reports:

Cooling systems and fan belts; Hot spots, especially heated intake air; Carburetors; Air cleaners
Fuel choices; Governors; Belt pulleys; Guiding (Meaning steering); Valves and lastly, Spark Plugs. We will only point out a few of the most interesting findings.

1. Cooling System.

Wrong fan belt sizes, too small radiators, limited water spaces in the cylinder heads and engine blocks are all mentioned as needing improvement.

2. Hot Spot

By this the writer referred to the hot air which was taken into the intake when the engine warmed up. The hot intake air caused a significant drop in the power. On the spot development of shields around the intake provided marked improvement. Many of those improvements were adopted in the redesigned and later models.

3. Carburetors

In some cases unsuitable carburetors had been installed. Changing carburetors showed *"....that*

close attention must be given to the choice of carburetor in order....." Better control of the amount of water added was also essential to the proper operation. In one case a globe valve was replaced with a needle valve a "sight feed" caused the engine to increase its power from two hp below rated to above rated..

4 Air cleaners

Sjogren remarks that *"Much remains yet to be learned about the design and use of air cleaners."* The air cleaners were either of the dry type or wet type. The dry cleaners were mostly undersized for the engine. By disconnecting them the power would increase markedly. The wet filters used water, which had to be replenished during use. This was inconvenient and so many farmers tended to disconnect them, thereby losing their protective effect

5 Governor

There were great variations in the speed control of various models of governors. One tractor's governor allowed for a 55% variation of the engine speed above the rated speed. Of 65 tractors, 30 had governors providing control within 10%, and 35 were higher. Of the latter group, 13 varied by more than 20% and two more than 50%. No tractor went more than 7% below rated speed. Fuel consumption varies with the engine speed and Sjogren concludes that *"It seems, therefore, that in the interest of fuel economy, a governor giving close speed regulation is desirable."*

6 Belt Pulley

The clearance between belt pulley and drive wheels was often too small to allow for easy belt mounting and might cause problems in the field due to mud getting in between the drive wheel and pulley. The use of the pulley as a starting device is also discussed and discouraged.

7 Guiding

One complaint is the lack of sufficient weight on the front end on many tractors, which affects the ease of steering. Also, many steering systems were unwieldy to operate and should be made easier for the operator. Here Sjogren points out that the comfort in seating, accessibility of various parts for inspection and maintenance should be improved. The seat is often in the line of the fan blast, making it very uncomfortable. In some cases the operator has to sit *"astraddle of a transmission case or differential which virtually becomes a pot of boiling oil. The matter of replenishing the supply of water in the cooling system and in the air cleaner as well as lubricating the tractor while it is in operation seems to have been overlooked in a number of instances"*

8 Valves.

Sjogren in this case gives the manufacturers a free piece of his mind:

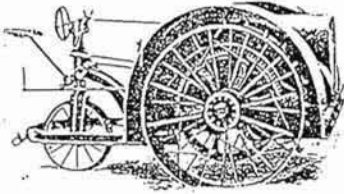
"That the condition of the valves is looked upon by the factory as a minor matter is indicated by the fact that in 16 different tractors the valves were ground after the test was started and the power output thereby materially increased. A number of these cases gave evidence of the work of fitting and grinding the valves having been done improperly at the factory."

9 Spark Plugs

Sjogren's remarks here are similar to the preceding ones:

"That the matter of proper spark plugs has not been satisfactorily solved is shown by the records which disclose that 42 spark plugs had to be replaced during the testing season."

Reasons were burning of points, breakage of points and "blowing out" of the plugs. No mention is made as to who manufactured those plugs.



Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583 - 0833

NEWSLETTER NUMBER FIVE (402) 472-8389; Fax (402) 472-8367
NOVEMBER 26, 1999

On January 18, 2000 at 1:30 p.m. the Annual Business Meeting of the Friends of the Lester F. Larsen Tractor Test and Power Museum will be held in L.W. Chase Hall. All members are urged to attend and bring others who may be interested in joining our group. The agenda is attached along with some related items.

A reminder January 1, 2000 begins a new membership year. Please continue your membership and send your annual \$10 dues payment to the address in the letterhead.

This is the first general usage of the newly adopted logo and letterhead. We hope that you find it appropriate. It is also the first since the organizational developments announced in the August 1999 newsletter. Dr. Bill Splinter as the Director and his staff are making deliberate progress with the museum development. They seem undaunted by the long list of things yet needed to be done. The development of the adjunct linkage with the Nebraska State Museum is a major element of progress through Bill's efforts.

An updated mission statement reflecting the organizational terminology and structural changes of recent months has been developed to state: "The purpose of the Friends of the Lester F. Larsen Tractor Test and Power Museum (Corporation) is to support the development, usage, and operations of that museum on the University of Lincoln East Campus as an adjunct of the Nebraska State Museum. The scope of interest highlights tractors, but also encompasses other sources of power including human, animal, electrical, solar, and wind. This support includes education, communication, and collaboration as well as personal and financial involvement."

Periodic visits to Lester Larson in the Homestead Alzheimer Care Unit find him weak, but mobile and apparently happy to see familiar faces even though not remembering who. He is still the great gentleman.

Two pressing needs of the museum outside of its interior development are being pursued. One is a tractor storage facility to replace the doomed old horse barn and judging arena. The other is renovation of a basically sound tandem axle equipment transport trailer which we have acquired from "surplus" property. This is important for legal and safety requirements. The Friends will be helping with this.

Financial support development for the museum will be pursued by Dr. Splinter. But you are also reminded that 'in kind' donations of tractors or other agricultural power of historic or sale value can also help the cause. The Friends group already has some duplicate tractors which will be profitably disposed of for benefiting the museum. You or your neighbors or friends may have a tax deductible item in the back of the shed.

Bob Kleis, President

Board of Directors

Robert Kleis, President - Earl Ellington, Vice President - Glain Hoffman, Secretary - Shirley Trauger, Treasurer, (Exeter) - Leonard Bashford
Fred Chase (Fla) - Charles Fenster (Gering) - Lawrence Hemman - Howard Lamb (Ainselmo) - Richard Marsh (Geneva) - Steve Melvin (Nelson)
John Smith (Scottsbluff) - Norman Tooker (Relston) - Dale Vanderholm - (Ex-officio - James Estes - Louis Leviticus - William Splinter)

AGENDA ANNUAL MEETING JANUARY 18, 1999 - L. W. CHASE HALL

Opening comments	Bob Kleis
Minutes of September 21 meeting	Glenn Hoffman
Financial report	Shirley Trauger
Directors report	Bill Splinter
Curators comments	Lou Levitius
NE State Museum Director report	Jim Estes
Nomination report-and action	Bill Splinter
Bylaw amendments action	
and mission statement	Bob Kleis
Program activities for 2000	Earl Ellington
Other items as desired	

RECOMMENDED BYLAW AMENDMENTS

1. Incorporate newly adopted "mission statement" as the "purpose" item in the Bylaws
2. Incorporate Lester F. Larson into the name wherever located
3. Indicate status as an adjunct of the Nebraska State Museum wherever relevant
4. In Article VI, Section 1 - Annual meeting date - change October to January
5. In Article VIII, Section 3D-Secretary term of office - delete "--- to one additional term"
6. Article IX, Section 1D - Ex officio members of Board of Directors - add the Curator and Nebraska State Museum Director
7. Article IX, Section 2, Sentence 3 - Directors terms - delete the clause "but shall serve no more than two consecutive terms"
8. Article IX, Section 4C - change to read "A quorum shall be a simple majority of the Board members of record"
9. Article X, Section 1B, to read "The Nominating Committee shall consist of the President, all participating Past Presidents and the Director of the adjunct Museum"

NOMINATIONS

OFFICERS - 2000

Bob Kleis - Pres.
Earl Ellington - V. Pres.
Glenn Hoffman - Sec.
Shirley Trauger - Treas.

HONORARY LIFE MEMBERS

Lester F. Larsen
William E. Splinter
Fred Chase
Wallace Giles

BOARD MEMBERS

Chas Borcharding, Harold Borman, Ervin Rolofsen
and Mark Lynott of Lincoln, and Bill Overturf of Oak NE

DIRECTOR'S REPORT

As reported in the May 7, 1999 Newsletter, the Lester F. Larsen Tractor Test and Power Museum is now operating as an adjunct to the Nebraska State Museum. Dr. Bill Splinter now serves as the Director of the museum and Dr. Louis Leviticus serves as Curator. Mr. Luis Vasquez, a graduate student in Museum Studies is inventorying our collection of early American tools and farm machines. Mr. Mark Nickolaus serves as a Docent, conducting tours and assisting with museum operations. We have expanded our open hours to 9-12 and 1-3, with visits on the weekend welcome if arranged by calling 402-472-8389, our new Museum phone number. Note that we now have our own postal address, PO Box 830833.

Our national raffle for Roger Welsch's Allis-Chalmers "Woodpecker" tractor concluded on September 6 at the Nebraska State Fair with the winning ticket being held by Harriet Holman of Plattsmouth, NE. The raffle was sponsored by Successful Farming through the assistance of Dave Mowitz, Machinery Editor. There was national interest in purchasing raffle tickets, including people from Maine to Florida to California to Washington, and nearly every state in between. We greatly appreciate the generosity of Roger, with his national reputation as author and TV personality, in attracting this national interest. The raffle brought in over \$2300 for the support of the museum.

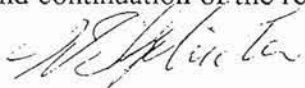
Everyone recognizes the quality of the tractor exhibit as developed by Professor Lester Larsen, but we are finding the quality of our exhibit of early American tools and machines is also of national caliber. I visited the Shelbourne Museum near Burlington, VT and the Sloan Museum near Kent, CT in early October of this year. They are two of the three top museums with collections of early American tools, the third being at Doylestown, PA.

What I found was that our collection, while not as extensive, was of equal quality to their exhibits. We hold a number of items that are unique, including some not known by personnel at either the Shelbourne or the Sloan Museums. I attended the regional meeting of the Midwest Tool Collectors Association in Omaha recently and showed their members photos of our collection. This was quite helpful as they identified the origin of three of our tools, but we still have some unidentified.

Although not confirmed at this time, it appears that a number of the hand tools may have been brought from L. W. Chase's grandfather's farm in Vermont about 1918. L. W. Chase, of course, is the man who developed the Agricultural Engineering program at Nebraska, built the Agricultural Engineering building (now L. W. Chase Hall), instituted the Tractor Testing program and founded the Chase Plow Company.

Our next major project will be the completion of the initial endowment to support the museum and continuation of the renovation of the building.

Director



THE DAVIDSON TRACTION DYNAMOMETER

by

Dr. Louis I. Leviticus

Professor Emeritus and Curator

L. F. Larsen Tractor and Power Museum

University of Nebraska, Lincoln

The measurement of traction forces, be it those developed by a tractor, or those needed to perform various tillage, cultivation and other field practices became a subject of great interest when mechanical farm power was being developed and the industry started bringing many different machines and configurations on the market. The well known Winnipeg plowing contests and later, the testing performed near Fremont, Nebraska, showed how much interest there was, but also showed the inadequacies of the test equipment to measure draft or traction forces with consistent accuracy.

The main source for this article was a thesis for "the Professional Degree of Agricultural Engineer" by Jay Brownlee Davidson, submitted on April 20, 1914 to the Department of Agricultural Engineering at the University of Nebraska. In the thesis, called "Special Agricultural Engineering Apparatus" Davidson describes several pieces of equipment which he developed. He apparently did most of the development at, what is today called Iowa State University and called his instrument on which he received a patent, "*The Iowa Integrating and Recording Traction Dynamometer*".

The instrument was built by a company in Chicago under a licensing agreement and "*the patents of this instrument are to be consigned by the author (Davidson) to the Agricultural Engineering Section of the Iowa Agricultural Experiment Station*". The thesis includes photographs and detailed drawings, which, amongst others, specify that the handles of the carrying case should be purchased from Hammacher Schlemmer Company in New York City.

The requirements of an instrument to measure traction developed or draft force required were set out to be:

1. "*Convenient*" to attach to various implements
2. "*A close hitch*" meaning as short an instrument as possible so it would not interfere with implement adjustments.
3. "*An instrument of variable capacity and adaptable to a wide range of use*"
4. "*An instrument giving the average draft over a self measured distance*"

Whereas requirements one and three are not too difficult to attain, numbers two and four required an ingenuity which was amply displayed by Mr. Davidson. The resulting dynamometer, of which we have a display in our museum is an example of outstanding engineering. The instrument is only 10 inches in length between its two hitch points. That is very short for a mechanical dynamometer. The fact that it could average the draft force over a given distance is nothing short of amazing.

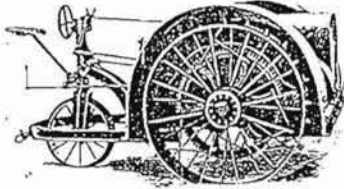
Averaging the draft force requires the force to be integrated with respect to the distance traveled. What this means is, that the force is measured over a very short distance and is assumed to be constant over that distance. The multiplication of that force times the small distance is the work performed over that distance. By adding up all the work sections done over all the short distances we obtain the total work done over the total distance. If we now divide that total work by the total distance we obtain the average force. The genius of Mr. Davidson was that he managed to incorporate measuring device plus mechanical integrator into a small compact package.

The force was measured by a system of parallel linkages pre-loaded by a calibrated spring. Different springs could be used for different loads. When a force was applied to the linkage, the spring was compressed and the movement of the links was transferred to a linkage with a needle which transcribed the movement onto pressure sensitive paper, which was fed to the writing area by a pair of cylinders, which were driven by a set of gears. The gears were in turn driven by a drum which had a special strong rope on its periphery. The end of the rope was attached to a fixed point in the field and the movement of the team (or tractor) and the implement unwound the rope and drove the drum. The integrator was driven by a special disc covered with a fiber. This disc was also driven by the drum. On the face of this disk and perpendicular to it ran a small wheel, whose position on the disk was determined by the movement of the load spring. The further the load spring contracted, the further away the small wheel operated from the center of the disk, thereby increasing the number of revolutions. The number of revolutions, which was proportional to the spring compression, were counted by a mechanical rotary counter.

It was of course necessary to calibrate the spring and use several constants to calculate the average force from the final count. However, this instrument was a tremendous achievement. Take into account, that the Nebraska Tractor Test Lab used a paper trace for many years, but did all their final calculations of the average force after integrating the trace with a planimeter in the office. The same thing the Davidson dynamometer did on its own.

The photograph from the thesis (figure 1) shows the recording side of the dynamometer with the protective cover removed. The integrator assembly has been removed to show the flat disk which drives it. The pen linkage can be seen as well as the proportioning bar, which is the center link on the pen. Three rolls can be seen. The left roll is the support for the writing pen, the center roll stores the paper with the trace and the right roll has the new paper. The parallelogram linkage can clearly be seen. The bolt through the center of the spring is anchored on the lower block to which the links are attached. The spring is held by the upper block. When pull is exerted on the two pins by the implement and the towing vehicle, the two blocks separate, they remain parallel because of the links, while the center arm, which is attached to the lower block moves the pen arm. The pulley and the rope are on the other side of the dynamometer.

The thesis also analyzes the accuracy of the system which turns out to be one percent. This is extremely good, considering the difficulties encountered in field testing in general. The dynamometer was used at the University of Nebraska for implement testing over a period of years. Proof of this was found in a thesis by John W. Sjogren, dated 1934, titled "*Plow draft as influenced by soil compactness and soil shear*". During field tests it was discovered that the integrator was inaccurate - probably due to vibration and shock, which is normal in field operations and which may have affected the contact between the driver and driven wheel of the integrator. It is reasonable to assume that this dynamometer was also used by other researchers, especially at Iowa State University, although we have, at this time, not yet found any confirmation of that.



Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583 - 0833
(402) 472-8389; Fax (402) 472-8367

NEWSLETTER NUMBER SIX
APRIL 18, 2000

Dr. Bill Splinter is back at the helm of the Larsen Museum following his March 8 heart bypass surgery. He claims and seems to be recovering well. We are glad to have him back and we only hope he is not doing too much too soon. Our cautioning comments seem to have little effect.

The Massey-Harris 'Pony' raffle is under-way as a fund raising activity this year. This follows last years successful raffle of the Allis W C 'Woodpecker'. See the attached leaflet for details and feel free to post it for notice by potential ticket buyers. Dr. Earl Ellington is coordinating the raffle effort and arranging to have the 'Pony' and ticket selling at special tractor shows and events including the State Fair. Tickets may be purchased by mail addressed as listed in the letterhead.

Lester F. Larsen Memorial donations have been received by the Museum as suggested by his family. They may still be sent either directly to the Museum or to the University of Nebraska Foundation identified for the Museum.

An informational brochure about the Larsen Museum is being prepared by a committee chaired by Dr. Norman Tooker. We believe it will help generate interest and support.

Museum Visitations are increasing as the word spreads and as the exhibits have developed. The E.A. Olson donation of many valuable antique hand tools, added to those collected earlier, are nicely developed in a special side room display. Also, a special area for antique animal powered implements is attracting attention. But the main feature of the Museum is the tractors and related items.

Development of the Larsen Museum will be a continuing process, the costs of which are totally dependent upon private imputes. There is no tax base budget. We point out that such support may be "in-kind" donations of services or equipment, such as tractors or implements which may be either used or sold. Such donations to the Friends of the Larsen Museum are tax deductible. (Money is also quite acceptable!)

Museum hours are Monday through Saturday 9:00 to 12:00 A.M.. Other visitation times may be arranged by calling (402) 472-8389.

E-Mail address recently established is: tractormuseum2@unl.edu

Antique Tractor Auction - May 6, 10:00 A.M. in North Platte - Herman Zalud is retiring and selling over 175 units plus various parts.

Bob Kleis, President

Board of Directors

Robert Kleis, President - Earl Ellington, Vice President - Glenn Hoffman, Secretary - Shirley Trauger, Treasurer, (Exeter) - Leonard Bashford
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John Smith (Scottsbluff) - Norman Tooker (Ralston) - Dale Vanderholm - (Ex-officio - James Estes - Louis Leviticus - William Splinter)

DIRECTOR'S REPORT

We have re-organized the antique hand tool exhibit. Additional shelves have been added and all shelves are now covered with a special, non-reactive liner. All of the hand tools, many of which date to the 1700's, have been cleaned and entered into a listing which documents as much of the history as we can determine from various sources. The hand tools have been organized according to function, household items, woodworking items, etc., and displayed in an open way so that they can be readily seen. The more we work with this exhibit the more we appreciate the efforts of Professor L. W. Chase and Professor Chauncey W. Smith in bringing together these items, which were displayed for many years in the machinery laboratory in the Agricultural Engineering building.

In addition the blacksmithing display, which had been put together by Professor Runnels, has been located above the hand tool exhibit. Again, each item is being documented and signs will be added. This is an unusual display in that it is not just a exhibit of items made by students over the years, but it is instructional in that the various steps required to repair a plow or cultivator share, make a chain, make a pair of tongs, make a bolt, make a chisel or a cleaver are all shown in sequence. We believe this is a unique display and will be very helpful for those wishing to revive blacksmithing skills.

We have made a change in spaces, moving the curator's work area to the former dynamometer room. Luis Vasquez, our graduate student in Museum Studies, is the person who is documenting, cleaning, and if necessary, repairing our individual items. His assistantship is funded by the G. W. Giles Endowment.

We were also fortunate in receiving the original till-plant unit with which Professors Hurlbut, Schnieder, Wittmuss and Lane developed the idea of planting directly into the previous row, eliminating stalk cutting, plowing, disking, harrowing and listing. The frame was donated by Russ Poyner of International Harvester and the sweeps are the originals. The machine is the prototype which Leonard Fleischer used to develop and manufacture the Buffalo Till Planter. Other manufacturers followed the idea and today the plow is obsolete in Nebraska and several surrounding states. The planter was donated by the Shure family of Humphrey, NE.

This piece fits nicely with our exhibit sequence which starts with an IHC two bottom sulkey plow and a Chase two row lister, representing the conventional planting system, followed by a Chase sweep plow, the first conservation tillage implement. The sweep plow was developed in the '30's in response to severe wind and water erosion throughout the great plains. It introduced conservation tillage for small grain. The till planter was developed to provide cover for row crops such as corn. Not only did it decrease wind and water erosion, but the stubble captured snow during the winter. The final benefit was savings in fuel and equipment costs.

Stop by and see our displays.



Friends of the Lester F. Larsen
Tractor Test and Power Museum
P. O. Box 830833
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402-472-8389, Fax 402-472-8367



M. H. PONY RAFFLE

Tickets \$1 each (Minors and Students)

Adults 6 tickets for \$5

24 Tickets plus a one year membership in the
Friends of the Larsen Museum for \$20

Drawing to be held on January 16, 2001

at the annual meeting of the Friends

No need to be present at the drawing

Come and get tractor and drive it home
(If you win)

FACTS ON OUR FORDSON 'F' TRACTORS

We need your help
by Lou Leviticus, Curator

We have a problem in identifying the age of our two Fordson 'F' tractors. We initially intended to make one complete tractor out of the two units we have. But we are reconsidering, because we need some more information first. That is where we hope that some of you may help us out.

One unit (let's call it A), we learned it was a 1922 model, is lacking all its ignition parts which were stolen several years ago when the tractor was exhibited at the Nebraska State Fair. This tractor also has the special fenders which were made, as the literature states, to "reduce sinking of the tractor wheels and provide stability in case of a rearward overturn". It also has the continuously operating belt pulley which was offered as an accessory in the 1920 model tractor book.

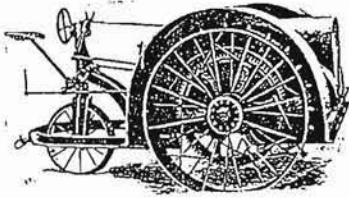
The other tractor (let's call it B), is a 1920 model, does have its original ignition system, but its manifold intake system is cracked in several places and it has zero compression. In addition, someone cut out the wheel rims between the lugs, apparently in order to improve self-cleaning in sticky soils. It also has a pulley which can be engaged and disengaged.

In all the literature I have seen on this tractor it is mentioned that the Fordson did not have a governor, at least up till after the 1926 model was tested (Test # 124). From the test reports of the 1930 tests (173 and 174) it is clear that "Ford's own governor" as well as a Robert Bosch magneto were installed.

The problem with tractor B is that it has a very large vertical housing on the right side of the engine behind the radiator, attached to the location where the original distributor was located. This housing, which is as high as the top of the engine, contains a governor (apparently the one mentioned as "Ford's own") and distributor. However, it does not have a magneto. It uses the same coil box as the 1920 model. The distributor is connected to the same lever which controls the timing on Model A and which is also depicted in all the tractor manuals. The governor part is directly connected to the throttle lever on the one hand and to the carburetor system on the other hand, as a governor should be. The carburetor looks similar to the "original" one, but is different in several aspects.

In addition there is the question of the belt pulley. Nowhere in any of the Ford books can I find a pulley which can be disengaged as optional equipment. When did such a pulley appear? Did Ford make it or was it another manufacturer who supplied it? This tractor seems to be an amalgam of a 1920 model plus 1930 model innovations. We would like to get your ideas and opinions on this if you have heard of other cases like this. We also want to learn if we are all wrong in our assessment.

You can call us at 402-472-8289, Fax us at 402-472-8367 or write to us at the address on the letterhead. Thanks in advance, Friends.



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Lincoln, NE 68583 - 0833
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NEWSLETTER NUMBER SEVEN
AUGUST 12, 2000

Enclosed is a copy of the informational brochure about the L.F. Larsen Museum. Thanks to Chairman Norman Tooker and his committee for developing this and to Bill Splinter for arranging the layout and production. We believe this will help inform people about the Museum and develop interest. If you have occasion to distribute copies please request them.

A major current activity of the Friends of the Museum is the raffle of the M.H. Pony. This is being coordinated by Chairman Earl Ellington through a several member committee. Tickets sales are progressing well through visitors, mail, and special gatherings including the Camp Creek Threshers Show, swap meet, a North Platte auction, and Deer Creek Sodbusters Show. Coming up are the Old Trusty Show (Clay Center), The Husker Harvest Days, and the Nebraska State Fair. If you haven't yet bought your tickets please do so and spread the word.

Many antique tractor books are on display at the L. F. Larsen Museum and may now be purchased at regular price providing the Museum with some profit. They make excellent gifts for or from family and friends.

There is not yet a general public awareness of the existence of The L. F. Larsen Museum. Visitations are increasing somewhat, but often as a result of rather accidentally discovering it. Our "Friends" group members can be helpful in spreading the word and encouraging individual or group visitation. It is open week-day forenoons and by phone call arrangements, at other times.

Eight selected Museum Tractors will be exhibited at the State Fair Aug. 25-Sept. 4. There will also be the Raffle Tractor and a ticket sales table. Stop by, and if it is about 11:30 A.M. there is likely to be an opportunity to drive a tractor in the noon time parade of old tractors.

Antique Tractor and equipment auction enthusiasts, not already on Nixon Auctioneers mailing list, might want to be added. Address is P.O. Box 531, Wakefield, NE 68784 or phone 800-535-5996. Big sales coming up: Aug. 19; in Council Bluffs; Aug. 25-26 in Cylinder, IA; Sept. 16 in Albert Lee, MN; and Sept. 30-Oct. 1 in DeSmet, S.D.

Next meeting of the Friends of the L.F. Larsen Museum is October 17, at Chase Hall. In the meantime, we hope to see many of you at the State Fair and the Museum.

Bob Kleis, President

P.S. Due to several snags and schedule complications an article by our museum Curator, Dr. Leviticus, is not available for this newsletter. His item will reappear in the next newsletter. RWK

Board of Directors

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ANTIQUE TRACTOR DATA BOOKS
Through the L.F. Larsen TT and P Museum*

H9326	Massey Tractor Data Book	\$ 11.95
H9329	Vintage I.H. Tractors	19.95
H9332	Farm Machinery; Practical Hints---	12.95
H9334	Unusual Vintage Tractors	19.95
H1296	A Guide to A. C. Farm Tractors	14.95
H0593	Full Steam Ahead; J.I. Case Tractors and Equipment 1842-1955	19.95
H9313	Caterpillar	19.95
H1294	John Deere Tractors 1918-1994	14.95
H9286	I H Tractor Data Book	11.95
H9254	Minneapolis-Moline Tractors	13.95
H9167	Massey Tractors	21.95
H0397	A Guide to Hart-Parr, Oliver and White Tractors 1901-1996	14.95
H9137	What Was That? A Compendium of Little Known and Mostly Forgotten Tractors 1930-1960	7.95
H9305	Deere and Companies Early Tractor Development	12.95
H0119	The Agricultural Tractor 1855-1950	15.95
H0981	Farm Tractors 1950-1975	17.95
H1195	Farm Tractors 1975-1995	19.50
H9270	Vintage Ford Tractors	29.95

* Nebraska residents add 6½ % and \$4.25 to the price for shipping and handling by mail.

Numerous other historic tractor books are not stocked, but may be ordered and provided promptly as desired - Phone (402) 472-8389 in the forenoon for information.

DIRECTOR'S REPORT

While visiting Florida recently I stopped in to visit Fred Chase, son of L. W. Chase, the founder of the tractor test program. Fred is still golfing in his nineties although he says he doesn't lose golf balls anymore as they do not go out of sight.

Fred gave me a book for our museum library titled "Farm Machinery and Farm Motors" authored by J. B. Davidson and L. W. Chase and published in 1908. This is the first text to define the newly developing profession of Agricultural Engineering. The book is especially valuable as it includes notes and comments by Chase.

The opening chapters describe the major advances in agricultural production brought about through the development of farm machines utilizing animal power to replace human effort. There is a description of the early devices used to measure the draft capability of animals and the draft requirements of machines. (We display these devices in the Larsen museum collection).

Next follows a discussion of tillage machines including the modern single and two bottom sulky plow with foot lift. The text tells us that the draft of a sod plow with coulter is 3.524 lbs/Sq.in., compared to 4.453 without the coulter. Disks, harrows and other tillage equipment follow.

The next chapter is on seeding machinery. The authors do not just describe equipment but they show extensive historical research in the development of the ideas leading to mechanization. The lead-in to this chapter describes the early seeders used by the Chinese and Assyrians. This historical development is used for each area of the book and shows that the authors had a depth of understanding of developments over time.

The section on harvesting machinery begins with the early development of the sickle and leads through the sequence of ideas leading to the reaper, the binder and the threshing machine. Today's combine is mentioned only as a new development in California. The corn binder and haying equipment is discussed in detail.

The authors then discuss the cost of owning farm machinery, which they recognize as a consequence of mechanization. A list of 17 essential farm machines including a gang plow, corn planter, binder, mower, wagons and a buggy came to an alarming total of \$924. Therefore they recommended that the equipment be housed to increase its useful life from five years to 12 years.

There is extensive coverage of the horse as a work animal. It is an excellent coverage of the importance of musculature and the expected performance of the animal. There is comparison of the work capacity of man vs. the horse and they include other animals as a source of power such as the dog.

There is an excellent chapter on wind machines covering design details of the windmill in various configurations.

Steam engine design and operation is covered in considerable detail. This is an excellent source for those restoring or operating steam tractors. Gas, oil and alcohol powered internal combustion engines were obviously new developments and the primary consideration is for single cylinder auxiliary engines which would be used around the farmstead.

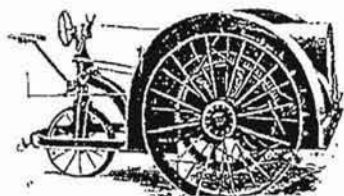
Electricity on the farm was very new and the book covers such mysteries as the workings of the light bulb. It covers basic electricity and design of electric motors.

Traction engines (the word "tractor" had not yet been coined) are described extensively, primarily with steam power although there is some discussion of internal combustion powered machines. At this stage in the introduction of the internal combustion engine to power farm tractors they were facing the problem of reversing the tractor. Friction drive systems were seriously considered (an example being our Heider tractor) and clutches and gearing were just being introduced (our example being the 1912 Minneapolis Ford tractor).

This book serves as an excellent addition to our museum library, which also includes copies of all tractor tests, including the Winnipeg plowing contests held from 1908 to 1913. The book itself is quite fragile but we were surprised to find that it is still in print under the title "Farm Machinery--Practical Hints for the Handyman". Anyone interested in obtaining this book as a source of enjoyable reading, or as a reference for the operation of old machines such as threshing machines or steam engines may purchase one from the Larsen museum for \$20, which includes sales tax and postage.



W. E. Splinter



Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583 - 0833
(402) 472-8389; Fax (402) 472-8367

NEWSLETTER NUMBER EIGHT
DECEMBER 1, 2000

On January 16, 2001 at 1:30 P.M. the Annual Business Meeting of the Lester Larsen Tractor Test and Power Museum will be held in L.W.Chase Hall, UNL. All members and others interested in the museum are urged to attend.

A major event at our January 16 meeting will be the drawing for the winner of the M. H. Pony raffle. To date ticket sales have totaled nearly \$2500. But if you haven't bought or if you want more tickets it is not too late up to the time of the drawing.

The nominating committee offers the following nominations for the year 2001 to be acted upon at the annual meeting:

President - Earl Ellington
Vice- President - Charles Borcharding
Secretary - Glenn Hoffman
Treasurer - Shirley Trauger
New members of the Board - Jerry Kohl, Vern Anderson, and Richard Goodding

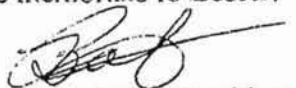
A reminder - January 1 begins a new membership year. Please continue your membership and send your annual \$10.00 dues to the address in this letterhead.

In addition to the address, phone, and fax information in this letterhead the LFLTT and P Museum may also be contacted through an E-mail address: tractormuseum2@unl.edu.

The museum has duplicates of some of tractors in its inventory. It is planned that some may be sold at the ARDC (Mead facility) in its late winter or early spring auction. You may want to watch for the publicity when the date is established. We gladly accept such item donations to assist our self funded development of the museum.

The reference library of the museum is available for public access anytime the museum is open or through communicated questions or requests. It has thousands of documents on agricultural mechanization in general and tractors in particular. It's there to be used.

May we pause in remembrance of Lester Larsen and of his distinguished professional and personal life. We are grateful that he had witnessed the dedication of this museum named in his honor. Tax deductible gifts to the Museum are appropriate memorials to Lester.


Bob Kleis, President

Board of Directors

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John Smith (Scottsbluff) - Norman Tonker (Ralston) - Dale Vanderholm - (Ex-officio - James Estes - Louis Leviticus - William Splinter)

DIRECTOR'S REPORT

NOVEMBER 28, 2000

I am happy to report that the pedestrian door has finally been installed along with the 12 foot roll-up door, giving us a second pedestrian exit, in accordance with the fire code. These two doors replace the 16 foot north door. This has been an ongoing project for over a year and a few things still need to be completed such as the door sill. Nevertheless we are pleased that we now have a north entrance, which is more convenient for those parking on the north ramp. This entrance is also wheel-chair friendly and we demonstrated this by bringing Prof. Ole Olson over to visit the museum. He has provided a number of unique hand tools for the museum collection.

Over the past 20 years we have stored the tractors which we were unable to fit into the Museum in the old horse barn. That is no more. The University has demolished this old building to make way for additional parking.

We have moved six of our tractors to the historic Behlen building just north of the museum, thanks to the assistance of Dr. Milford Hanna, who cleared space adjacent to the mill he uses to process materials for the Industrial Agricultural Products Center. This building has a brass plaque identifying it as having participated in the atomic bomb tests in the 1940's. This site is more convenient to the museum than the horse barn and is easily accessible for visitors who wish to see the tractors stored there. We rotate the tractors so that visitors will see different presentations upon subsequent visits.

We recently received a John Deere "M" tractor which was provided by the family of Gordon Olson. Gordon worked as a test engineer in the tractor test lab from 1946 to 1950, when he joined John Deere at Dubuque, IA. The tractor is a pre-production prototype and the gift includes several items of experimental and production equipment such as plows, cultivators, disc's, mowers, blade and scoop. We were fortunate to get Fabian Skretta, a member of the Friends, to haul these items from the Jim Olson (Gordon's son) farm in northeast Iowa to Lincoln with his low-bed goose-neck trailer.

Luis Vasquez, our graduate student has done an excellent job in organizing and documenting our collection of hand tools and other artifacts from the 1700's and 1800's. We are now organizing the collection of early animal drawn tools so that visitors can more easily view them. Unfortunately Luis will be receiving his Masters and will be taking a museum position in Omaha at the end of the Semester. We hope to find another Museum Studies Master's student to continue bringing a professional structure to our program.

Three years ago we completed a project to replace the roof of the museum. Since then we have renovated the office, established an excellent reference library of tractor testing going back to the Winnipeg Plowing Contests, developed an exhibit of the hand tools collected by L. W. Chase, with additions by E. A. Olson, Louis Leviticus and Stan Liedtke, and

established an exhibit of early animal drawn tools. We have an excellent exhibit of the first sweep plow, developed by the Chase Plow Company, establishing conservation tillage for grain crops and the first till planter for row crops developed by Professors Hurlbut, Wittmus, Schnieder and Lane, establishing conservation tillage for row crops.

Our next objective, for which we need to raise funds, is the renovation of the old garage on the west side of the museum for use in renovating tractors. We have a new roof but need to replace the stucco exterior and add insulation, electrical outlets and heat.

We are going to sponsor an open house on Saturday, May 5, 2001, the third anniversary of the dedication of the Lester Larsen Museum. In the morning there will be a meeting of the Friends, followed by an open house. We would then allow Friends members to drive the tractor of their choice around the earth track and we will include rides in the Model T pickup. We will have an open house for the public during the afternoon. Should be fun and more information will follow. Put the date on your calendar.

Since our museum receives no State funded support other than water, electricity and steam, we exist only through the financial support of donors, membership dues for the Friends, sale of raffle tickets and books. We also are fortunate to have the support of individuals who help maintain office hours, assist with the renovation of tractors, the library and with shows such as the State Fair where we exhibit many of our tractors.

Our objective is to establish an endowment base of \$1 million to support the operation of the museum. Toward that end we have four endowments totalling \$190,000. The University Foundation invests these funds and they have a current market value of over \$440,000, from which the museum receives about a 5% return. Our day to day operations are supported primarily from donations toward our operating fund. Over the past 10 years we have had over 160 donors, ranging from \$1 to over \$50,000.

We strongly solicit your support through donations to the L. F. Larsen Tractor and Power Museum, University of Nebraska Foundation, 1111 Building, 1111 Lincoln Mall, Lincoln Mall, Lincoln, NE 68588. Our basic need is for donations at any level to provide for the day to day operation of the museum.

If you are in a position to donate a substantial amount, Susan Sack of the Foundation will assist with the establishment of an addition to a present endowment, the setting up of an individual endowment, the use of charitable remainder trusts or the use of a will. This is an investment in perpetuity. If you have any questions you are most welcome to call me at 402-472-8389.

We have had 564 visitors sign our guest book since dedication, which we estimate is about 1/3 of our visitors. We would be most happy to show you around whenever you are in Lincoln.

Bill Splinter

"FIRST" AND "BESTS" - QUESTION AND QUIZ

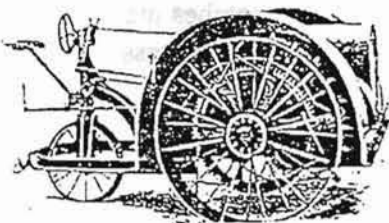
by

Dr. Louis I. Leviticus, Curator

My friend, and Museum Friend, Bill Teaford recently sent me a list of **"First and Bests"** which he thought might be a future wish list for us. He did not know all the "Firsts" and his list of "Bests" may be subjective in some cases (he retired from Big Green after all), but his fax gave me an idea for a quiz we could all learn from. A lot of info is out there but I have not seen a real good summary. So here's what I want you to help us with: I have made a list of **"Firsts"** subjects. Send us the info and critiques you have and what your source is. We'll then publish this list with the sources and your name and address (including e-mail if you want that) so a correspondence can be started. We may even decide to publish all the contributions in a **"volume of firsts"** for our Friends and other interested people.

Here are the questions and if you can think of others, so much the better.

	<u>What was the first</u>	<u>Answer</u>	<u>Year</u>
1	Liquid fuel engine	Hart Parr	?
2	Test number 1	Waterloo Boy	1920
3	Tricycle Tractor	?	?
4	Narrow Front	Farmall Regular	1923
5	Rubber Tires	Allis Chalmers U	1932
6	Electric Starter on tractors	Moline Universal?	1917?
7	Electric Lights on tractors	Moline Universal?	1917?
8	Mechanical Implement lift	?	?
9	Hydraulic Implement lift	John Deere A?	?
10	Three-Point Hitch	?	?
11	Load sensing Three-Point Hitch	Ford 9N or 2N?	1939
12	Automatic preset depth and draft control	?	?
13	Remote Hydraulic outlets	Allis-Chalmers WD and Bruning Co.	?
14	Diesel Engine	Fendt Dieselsross	1929/30
15	Auxiliary Starting engine	?	?
16	LP-Gas engine	?	?
17	Standard 540 rpm PTO	?	?
	Standard 1000 rpm PTO	?	?
	Independent (Live) belt pulley	?	?
18	Independent (Live) PTO	Oliver 88	1947
19	Planetary Hi-Lo shift	IHC MTA	?
20	Power Steering	?	?
21	Full planetary power shift	JD 3010 or 4010	1963
22	Articulated chassis	?	?
23	Four-wheel steering	?	?
24	All-Weather Cab	MM Comfort Tractor	1938
25	Certified ROPS frame	JD 3020 or 4020	1966
26	Certified ROPS cab	?	?
27	"Quiet" ROPS cab	?	?
28	Air conditioning	?	?
29	Integral Global positioning system	?	?
30	Radial Tires	?	?
31	Rubber tracks	?	?
32	Power adjusted Rear wheels	?	?



Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583 - 0833
(402) 472-8389; Fax (402) 472-8367

NEWSLETTER NUMBER NINE
MARCH 30, 2001
Bob Kleis - Editor

The next meeting of the Board of Directors will be held April 17, 2001 starting at 1:30 in room 225, L.W. chase Hall. All members are welcome.

Museum Director Bill Splinter is coordinating plans for an Open House on May 5 to celebrate the third anniversary of the dedication of the Lester F. Larsen Tractor Test and Power Museum. All members of the "Friends" are urged to attend and bring others interested. On page 3 Dr. Splinter describes great programming.

The Annual Business meeting was held on January 16 and included:

Election of 2001 officers:

Earl F. Ellington - President
Charles Borcharding - Vice President
Glenn Hoffman - Secretary
Shirley Trauger - Treasurer

Election of new Board Members: Jerry Kohl, Vern Anderson, and Richard Goodding

Drawing of Winners of the 2000 Tractor Raffle-The Massey Harris "Pony" was won by the holder of the number 8157769, Mr. R. Christensen of Eagle Grove IA. Other tickets were drawn for lesser winning a very early Farm Motors Book to Bob Weber of Tulden, NE, and Roger Welsch books to Dave Mowitz of Des Moines, IA, and Vern Anderson of Lincoln, NE. Congratulations.

The 2000 Raffle grossed \$2500 plus twenty new members of the "Friends". Total membership now 145 and growing. If you haven't yet done so for 2001, please renew your year membership.

Plans are underway for the 2001 Raffle of an Allis Chalmers Model B. There will be ticket purchasing opportunities at several places during the year. If you can't wait or can't attend a show involved, mail orders can serve.

The Museum has acquired one of the very few remaining "Minneapolis Fords", the bad performance of which provided the impetus for the 1919 Nebraska Test Law. Note the questions about its birth date on page 4.

Some duplicate tractors and equipment items were sold at an auction March 17. They sold well and proceeds will help the Museum development cause..

Louis Vasquea provided valuable part time service to the Museum in organizing and documenting small equipment and animal power items. He has completed his advanced degree and taken a job at the Children's Museum in Omaha. His replacement is Brian Mancuso, a graduate student who will focus especially on outreach presentations of Museum offerings.

Board of Directors

Earl Ellington, President - Charles Borcharding, Vice President - Past President, Robert Kleis - Glenn Hoffman, Secretary - Shirley Trauger, Treasurer, (Exeter)
Vern Anderson - Leonard Bashford - Harold Borman - Charles Fenster (Gering) - Richard Goodding - Lawrence Hermann - Jerry Kohl - Mark Lynott
Bill Overturf (Oak) - Ervin Rolofson - John Smith - Norman Tooker (Ralston) - Dale Vanderholm - (Ex-officio - James Estes - Louis Levinicus - Susan Sack
William Splinter)

Please be reminded that old tractors no longer used , but which occupy storage or weed patches may be donated to the Museum and provide an income tax deduction. This is mutually beneficial process.

We thank Fabian Skretta of Omaha for transporting tractors for the Museum recently. Fabian, a retired engineer, transports machinery east-west in the United States.

Several ideas for "Friends" assistance to the Museum have been discussed for this year including:

- Volunteers to keep the Museum open in afternoons
- Sealing of the east door and repair of windows
- Promoting and selling raffle tickets
- Tractor renovation and / or repair
- Sale of caps and / or shirts with the Museum logo
- Storage of Museum tractors rotated from display

PRESIDENT'S MESSAGE

I am honored to serve as the 2001 and fourth President of Friends of the Lester Tractor Test and Power Museum. Under the leadership of our first President, Former Senator Dick Maresh, second President, Dr. William Splinter, and third President, Dr. Robert Kleis, our organization is off to an excellent start. We, at this time period, have many challenges and opportunities as we continue with our mission.

As last year's Vice President, I chaired the fund raising activity, the M.H. Pony Tractor Raffle. Raffle activities took us off campus to several locations over the state: Camp Creek Swap Meet, Waverly; Camp Creek Show, Waverly; Deer Creek Days, Grand Island. I recently appointed a Tractor Raffle Committee for this year. I have been very impressed with the enthusiasm and willingness of people to help with this program.

If you haven't visited this East Campus, admission free museum, I would certainly encourage you to do so. You will find a nice collection showing the progression of farming from hand tools to animal powered machinery to tractor utilization. Dr. William Splinter, former Agricultural Engineering Department Head , is the Museum Director and Dr. Louis Leviticus, former Tractor Testing Program Director, is curator. Dedicated Mark Nickalaus volunteers his time as docent there and is most willing to tour you and answer your questions. These people report that more and more people are discovering the museum and have complimentary words for the exhibits they see.

I extend congratulations and welcome to our New Vice President, Charles Borcharding and New Board Members Vern Anderson, Richard Goodding, and Jerry Kohl. Thank you to Dr. Glenn Hoffman and Shirley Trauger for agreeing to serve as Secretary and Treasurer, respectively, for another year. I extend a special thanks to Dr. Robert Kleis for agreeing to serve as editor of our newsletter.

We welcome your comments, suggestions, and inputs. Hope to see you at the Open House, May 5, 1-4 p.m. as described on page 3.

Earl F. Ellington, President

OPEN HOUSE

We will be having an open house on Saturday, May 5, 2001 to celebrate the third anniversary of the dedication of the Lester F. Larsen Tractor Test and Power Museum on May 2, 1998--and to just have a good time. From 10 to 12AM we will have a program for members of the Friends of the museum which will consist of no formal program (speeches etc.) but will consist of driving some of our tractor collection and seeing what we have done with our collections of colonial hand tools, blacksmithing exhibit and pioneer animal drawn equipment.

We will demonstrate and give the background of as many tractors as we can have operational by that time--and we will welcome any experiences you have had with the particular models (some exaggeration is allowed but keep things credible). The Tractor Test Lab will be testing tractors and will give a discussion of their tests.

We have the following tractors which should be ready:

1909 (or 1915) Minneapolis Ford (we started it this morning): Waterloo Boy: Fordson: Case CC, DC: Twin City: Farmall Regular: Allis Chalmers WC, B, G and WD: John Deere D, M, and H: Farmall M: Ford 2N: Oliver 60. Cletrac: and Minneapolis Moline R--subject of course to our being able to start them on this particular day.

Friends will be allowed a little seat time on tractors of your choice for a modest contribution to our museum budget (\$5) and we will throw in a picture of you at the wheel. You will be allowed to drive around the earthen track but not the concrete track as official tractor tests are under way.

We plan to have Valentino's Pizza and drinks for lunch. Please give us a call at 402-472-8389 or send an e-mail to "tractormuseum2@unl.edu" to let us know if you are coming so we can order enough for everyone.

Then from 1 to 4PM we will have a public open house with static displays. Everyone is welcome to stay around for that and to tell more tractor stories.

THE MYSTERY OF THE MINNEAPOLIS FORD B

by

Dr. Louis I. Leviticus, Curator

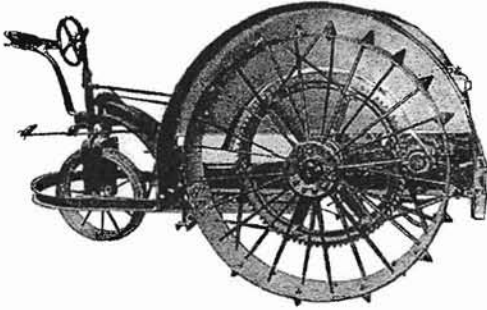
The Museum came recently possession of a running Ford Model B, the tractor model which was the cause of the enactment of the Nebraska Tractor Test Law. There is, however a mystery with regard to the year that this tractor was manufactured. The material which arrived with the tractor tends to show that the year of manufacture is 1909. A letter from Mr. Roland Spenst, the previous owner, which was written on December 10, 1990 states that people seemed to want to prove that the Ford B is from 1915. According to Spenst, Mr. Howard Erlendson, the original owner of this tractor, told him that he bought the tractor new in 1909 and actually bought two more for parts. Mr. Spenst bought the Ford from him in 1912! According to Mr. R. Spenst's and his son's correspondence :

1. The 1909 model did not have brakes on the differential to help steer the tractor. A later "Ford B"(?) model was provided with brakes in 1912.
2. The ignition system on the 1909 model had a battery-coil system. The 1912 model had a Kingston magneto. Mr. Spenst changed the magneto for an International Harvester magneto at a later date
3. The 1909 model had no cover on the gears. The 1912 model did have a cast-iron cover. 4 The 1909 model had a cone type clutch, the 1912 model had an expanding clutch in the flywheel. Spenst replaced the cone clutch on his 1909 model for an expanding flywheel clutch.
- 4 The 1909 model had a triangular drawbar, the 1912 model had a U-shaped drawbar.
5. The 1909 model had a thermo-syphon cooling system, the 1912 model had a water pump.

The big question is, was it a Ford tractor already in 1909 or did it have another name which was later changed to Ford when the Ewing's Minneapolis company bought the technology and incorporated the Minneapolis Ford name. R. Leffingwell in his book "Ford Farm Tractors" devotes the whole of Chapter 2 to "Ewing's Ford B Tractor". From it we learn that one of the designers of the "Ford B" was D. Maurice Hartsough who was one of the builders of the Bull Tractor. Hartsough had started the Gas Traction Company with P. J. Lyons in 1908 and built the "Big 4" tractor which produced 30 hp. In 1913 they demonstrated a smaller tractor, the Little Bull, which bears resemblance to the "Ford B". Conceivably they made other models with similar designs previously and later as well. There was quite a bit of confusion in the sales and renaming of companies in those days, which are well documented in Mr. Leffingwell's book. So, was there a Ford tractor before 1915 or not.

From the above you can see that there is some confusion, because our Ford B has a triangular drawbar (1909), no brakes on the differential (nor anywhere else!) (1909 again), no covered gears (1909); our model has a thermo-syphon cooling system (1909). It does still have the International Harvester magneto and the signs which came with it give the manufacturing date of 1909. Unfortunately Mr. Roland Spenst is no longer with us and so we do not have the luxury of having him tell the story of this tractor in more detail. We hope, however, that you will come and see this interesting tractor and /or enlighten us more about its history and provenance. My e-mail is [**<lleviticus1@unl.edu>**](mailto:lleviticus1@unl.edu) and our phone is 402-472-8389 (mornings only)

Friends of the Lester F. Larsen Tractor Test and Power Museum



Bob Kleis - Editor Newsletter #10 August 2001

To preserve, research and interpret the traditions and technologies of agriculture.

President Ellington comments: It has been a pleasure to visit with many of you at locations such as the Lester F. Larsen Tractor Test and Power Museum, at Board meetings, and at raffle ticket sites. A special activity since the last newsletter was the Museum Open House on May 5. It was a very successful event and drew many members and visitors. Please contact me at (402)472-6434 with any questions or suggestions you may have. *E.F.E.*

Raffle Update: Vice-President Charles Borcharding is coordinating this third annual tractor raffle and thanks all who have helped staff the ticket sales table at various events. People are needed to transport the Allis-Chalmers B and to sell tickets at:

Deer Creek Sodbusters Show at Sterling, August 12
Nebraska State Fair - 11 days, August 24 - September 3
Old Trusty Days at Clay Center
Husker Harvest Days at Grand Island

Please call Charles at (402)421-2034 if you can help during any of these events. Sales already exceed 600 and have brought several new members. Remember to buy your tickets and spread the word. They are always available at the museum.

State Fair: Increased space for an expanded array of antique tractors this year. The Museum will be participating with a selected group of units. Stop by and visit the exhibits, buy some raffle tickets, and see similarly infected old tractor enthusiasts.

Museum Library: Be reminded that the Museum library has historic references and documents of all the tractors ever tested by the Nebraska Tractor Testing Laboratory. They are available to public access any time the Museum is open, or a phone call to the staff at (402)472-8389 can get you a mailed copy of the test report on your special tractor for a fee.

Board of Directors meeting will be October 16 at 1:30 p.m. in room 225 of Chase Hall. All members are welcome.

Board of Directors

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William Splinter)

tractormuseum2@unl.edu

Museum (402)472-8389; Fax (402)472-8367

Directors Report—July 17, 2001

Bill Splinter

First, I want to recognize the passing of Emanuel A. (Ole) Olson on May 5, 2001. Ole donated several unique items from his collection of early American hand tools to the Museum. He was a well-respected member of the Midwest Tool Collectors and his counsel guided us into several connections with other museums, which greatly assisted us in cataloging our collection of hand tools, which were brought to the Department in the early 1900's by L. W. Chase. Ole had supported our Museum through cash donations and as a final gesture, he and his family directed memorials to the Museum in his name. We miss a strong supporter and good personal friend.

Thanks to the support of Dr. Estes, Director of the Nebraska State Museum, and Dr. Don Helmuth, Acting Vice Chancellor for Research, we now have a secretary and bookkeeper—Judy Ray. Judy works for us half time, the other half of her time involving accounting for UNL State Museums at Morrill Hall. Visitors will note that she is not only a proficient organizer of our files and records, but she has "supervised" the rearrangement of our office, our library and our coffee room—a great improvement. She brings further talents in "procurement" from sources unknown of such needed items as a window air conditioner for the office (the old one died) and a small refrigerator for drinks.

Brian Mancuso, our graduate student has been effective in outreach programs to make the public aware of the Museum—to the extent that we have had an increasing number of visitors. He has developed a uniform signage for our tractors and outside exhibits and we now have a Self-Guided Museum Tour pamphlet for visitors.

Luis Vasquez comes in on Saturdays and is developing an exhibit of early automotive tools we found to be in the Museum. These consist of early wrenches used on the early tractors and the Ford Model T.

We are now able to keep the Museum open from 9 to 4 *most* weekdays and from 10 to 2 on Saturdays.

Carl and John Bern recently donated a 1920 Oliver 2 bottom 14" chilled plow that their father had purchased. Years ago they had donated a 1920 Fordson tractor and this plow was used with that tractor. We thank them for this addition to our collection.

We have now initiated monthly staff meetings and the results are already apparent. We have arranged the tractors in the east area by order of tractor test number. This greatly assists in following the evolutionary development of the tractor. We will be changing the exhibits in the hand tool room, again to provide a more meaningful sequence for visitors.

We are especially pleased when members of the Friends stop by when they are in the Lincoln area. Without exception they have stories and experiences which add to our background of information relative to the exhibits.

Early German Tractor Industry

By

Dr. Louis I. Leviticus

We tend to think in the U.S. that most of the tractor development took place here in the U.S. and that the biggest development came after WWI. However, the same problems with available farm power and the need for food production occurred in Europe. Germany was in a deplorable state after WWI and it is interesting to read in some of the literature what actually was happening, not only after, but also before the war. One of the more interesting books which have come my way is by Klaus Hermann "Traktoren in Deutschland 1907 bis heute – Firmen und Fabrikate" (Tractors in Germany 1907 till today – companies and models). The book came out in 1987 and does not give a chronological history but lists all the German manufacturers, which have been in existence over the years. It shows that in Germany, too, many manufacturers tried their hands at producing tractors, but few have remained. Many of the earlier ones were taken over by larger and more successful companies—same as happened here in the U.S. I only want to cite a few gems from this extremely informative book.

1. In 1907 Deutz (KHD) came out with the first real tractor, powered by a 25 hp motor, a drawbar for field machinery, and a belt pulley. In Berlin in the same year Robert Stock started manufacturing "Motorplows". Other manufacturers followed his example for a while because plowing required the most power. Later tractors with higher speeds were developed to run on the roads. This was necessary in Germany where most of the farms were located in villages and fields were scattered away from the villages.
2. 70 German manufacturers were involved in making tractors. To these we have to add 13 foreign companies, some of whom (IHC, Deere, etc.) had local manufacturing facilities.
3. Xavier Fendt marketed the first small diesel tractor in 1929. This unit was also equipped with an independent PTO—well before it appeared in the U.S.
4. In order to provide a better ride, the Hoffmann 601 (1950) had a sprung rear axle. The Hoffmann S 236/5 (1935) could tow a load of "7 to 8 metric tons" at a top speed of 38 km/h (23 mph).
5. Porsche Diesel Tractors appeared in 1956. They had high quality, 1 to 4 cylinders, diesel engines, and the larger models were equipped with sprung front axles for stability and better ride.

These are but a few of the many gems to found in this 208-page book. Unfortunately there is no translation available—so start learning German!

Bittersweet Country is an interesting book of earlier years rural living. It has many illustrations of old tools, procedures, equipment, and terminology. You may want to check with your local library. It is probably out of print. Louis Leviticus reports that a copy donated to the Museum seems to have escaped and he would appreciate any help in its recovery.

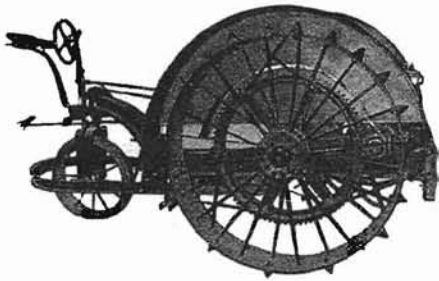
Numerous new antique tractor books are on display in the Museum. They and others may be purchased there at regular prices* providing the Museum with some profit. They make fine gifts for family members and friends.

*Add \$4.25 shipping and handling and Nebraska residents add 6 1/2% sales tax

H9326	Massey Tractor Data Book	\$ 11.95
H9329	Vintage I.H. Tractors	19.95
H9332	Farm Machinery, Practical Hints	12.95
H9334	Unusual Vintage Tractors	19.95
H1296	Guide To A.C. Farm Tractors	14.95
H0593	Full Steam Ahead (J.I. Case Tractors and Equipment 1842-1955	19.95
H9313	Caterpillar	21.25
H1294	John Deere Tractors 1918-1994	14.95
H9286	I.H. Tractor Data Book	11.95
H9254	Minneapolis-Moline Tractors	13.95
H9167	Massey Tractors	21.95
H0397	Guide to Hart-Parr, Oliver, White 1901-1996	14.95
H9137	What Was That? A Compendium of Little Known and Mostly Forgotten Tractors 1930-1960	7.95
H9305	Deere & Co. Early Tractor Development	12.95
H0119	The Agricultural Tractor 1855-1950	15.95
H0981	Farm Tractors 1950-1975	17.95
H1195	Farm Tractors 1975-1995	19.50
H9270	Vintage Ford Tractors	29.95

Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
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Friends of the Lester F. Larsen Tractor Test and Power Museum



Bob Kleis – Editor

Newsletter #11

December 2001

To collect, preserve, research and interpret the traditions and technologies of agriculture.

Interim Position for Bill Splinter

Museum director Bill Splinter has been recalled to serve as Interim Dean of Engineering. The time period is uncertain during the search process for a replacement for Dean Hendrix who has moved to another duty. The university is fortunate to have an experienced and able administrator to step into this interim role. During bill's absence from his museum position, Louis Leviticus will be filling in for him.

State Fair Manager

Patrick Lloyd, former manager of Tulsa Oklahoma State Fair will succeed John Skold as Manager of the Nebraska State Fair. He said the State Fair Park would remain true to its 130 year-old agricultural traditions.

Museum Assistants

Luis Vasquez has new employment which precludes his serving the Museum on Saturdays. Saturday visitations can be arranged with a prior call to the office at (402)472-8389.

Brian Mancuso is graduating and taking a position in Texas. We congratulate him and thank him for his good work in the Museum.

Annual Meeting

January 15, 2002 1:30 p.m.

2nd floor of L.W. Chase Hall just south of the museum on the East Campus UNL
All persons interested in the Museum are urged to attend.

Raffle Drawing

The winning raffle ticket for the Allis Chalmers C tractor will be drawn at the January 15th meeting. Ticket sales have been good. If you haven't bought or desire more tickets, it is not too late up to the time of the drawing.

Nomination of Officers

Officers for next year to be acted upon at the Annual Meeting include:

President – Earl Ellington

Vice Pres. – Charles Borcharding

Secretary – Glenn Hoffman

Treasurer: Shirley Trauger

2002 Dues

January 1 begins a new membership year. Please continue your membership and send your annual \$10 made out to the Friends of the Tractor Museum to the address on this newsletter. Donations can be made to Larsen Tractor Museum or via University of Nebraska Foundation. Please let us know if you do not wish to receive the newsletter.

Lester F. Larsen
Tractor Test & Power Museum
UNL East Campus, 35th & Fair St.
P.O. Box 830833
Lincoln, NE 68583-0833

Phone (402)472-8389
FAX (402)472-8367
E-Mail tractormuseum2@unl.edu

Officers:

President: Earl Ellington
V. President: Charles Borcharding
Secretary: Glenn Hoffman
Treasurer: Shirley Trauger (Exeter)

Board of Directors:

Past Pres.: Robert Kleis
Vern Anderson
Leonard Bashford
Harold Borman
Charles Fenster (Gering)
Richard Goodding
Lawrence Hermann
Jerry Kohl
Mark Lynott
Bill Overturf (Oak)
Ervin Rolofson
John Smith
Norman Tooker (Ralston)
Dale Vanderholm

Ex-Officio:

James Estes
Louis Leviticus
Susan Norby
William Splinter

REPORT OF THE DIRECTOR

Anyone visiting the museum for a return visit will notice the continued improvement in the exhibits. The old tractors need continuous TLC to keep them in running order and sometimes this becomes an exercise in frustration—leading to a question as to the credibility of the engineers who designed them. But everything seems to work out and we get them operating again. We have the Case DC which was donated by former State Senator Richard Maresh in running condition although there is still a leak around the water pump shaft. We solved the gearshift problem on the Oliver 60. The generator on the John Deere H presented a logistics problem to remove (as did the generator on the DC Case) and we have provided a steady source of income to the local electrical shop getting generators and starters operational.

The tractor display sequence is now in the order in which they were tested so the sequence of development of the tractor can be easily explained. Our graduate student, Brian Mancuso, has greatly improved the signage on the tractors and he is now working on the traction dynamometer display and the hand implement display. The objective is to have the signs self explanatory so that people can perceive the significance of each item in the museum. Luis Vasquez has worked on Saturdays, which allowed us to be open then and he developed exhibits on our collection of hand tools. Mark Nickolaus continues to impress us with his knowledge of facts concerning tractors—always an item of discussion with visitors.

Judy Ray has done an exemplary job in getting the office and other areas of the museum organized although she works in the museum only 2 ½ days per week. Three of our computers now access the internet and we are expanding our use of that resource. Our presence on the internet has led to a number of visitors stopping by. Special guests were the grand daughters of Professor Chauncey Smith, Laurea Arnoldt from Bandon, OR and Jane Smith from Garland TX. There have been a number of tours from such places as Yankton, SD, FFA groups, retirees from Legacy Terrace, fourth graders from Seward and the Alumni Board. Visitors have also included people from Italy, Sweden, New Zealand and Canada.

A major activity has been the tractor shows. Museum personnel and tractors participated in the Camp Creek Threshers show, the State Fair, the Old Trusty show at Clay Center and Husker Harvest Days at Grand Island. Thanks to volunteers including Harold Borman, Larry Hermann and Charles Borcharding and his two "volunteers" we were able to move 12 tractors to State Fair and return most expeditiously. Special thanks to Jerry Kohl who regularly shares a cup of coffee with us and is a major help, because of his background in automotive mechanics, in repairing and renovating our tractors.

One of the major rewards through involvement with the museum is the discovery of new information concerning our exhibits. Nearly every day we learn something new—which keeps us all young.

- BILL SPLINTER

MUSEUM HOURS

**DUE TO THE WINTER
MONTHS AND LACK OF
STAFF, PLEASE CALL
(402)472-8389 BEFORE
YOU PLAN TO COME TO
THE MUSEUM. WE
WILL BE WORKING ON
PROJECTS AND OUR
HOURS WILL NOT BE
CONSISTANT.**

Judy's Corner

I have been here 6 months now and I'm getting to know the museum contents, its creaks and groans, its history and its health. Officially I am a 20-hour employee at Morrill Hall and 20 hours here, but I seem to "donate" a lot more interest. I would like to learn more power history--not just tractor testing power--but people power. I know my Grandpa got a rare cornpicker when he married Grandma and that machinery, like people, have their own personalities. Send me a story or two on any ag or make-do experience you have had and I will keep them here and share some. I especially enjoy the way cobs and kerosene were so versatile. TP, corks, medicine. Starting a small fire under the tractor while you did the barn chores could make it start right up when you came out.

"Have you a sizable can of kerosene handy?" has become a frustration phrase for me since I read *Case Affirms His Quest For Quality* in the Case storybook at

<http://www.casecorp.com/corporate/storybook>

We have a wonderful display of old tools here at the museum and there are more at

<http://jonzimmersantiquetools.com/>

For country living, country skills and country people go to Kountry Life at

<http://www.kountrylife.com/contents.htm>

If you have any old ag books, magazines, show buttons, etc. that you would like to donate to us that we could use or sell, please do so! We also take donated help! I know I can't wash and dust all these tractors by myself. If you have skills that go beyond my custodial skills you are *especially* welcome. Contact Lou. Drop in for a visit. Send us a story. Quiz Mark Nickolaus, our handy reference guide. Be an active member.

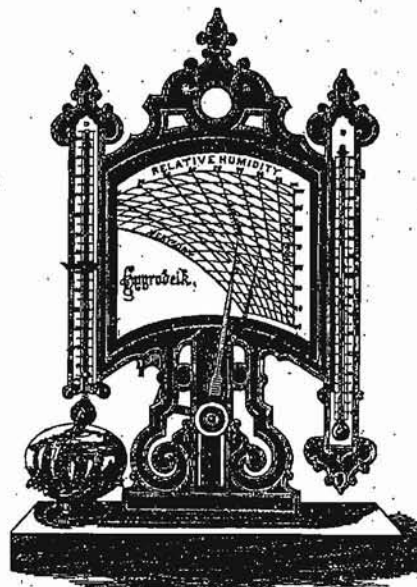
-Judy L. Ray, Girl (Every Other) Friday and Tuesdays and Thursdays

**JUNK IS SOMETHING YOU THROW AWAY
THREE WEEKS BEFORE YOU NEED IT.**

Old Time Advertising

Here is an example of some of the advertising claims made in the old days. This example of a humidistat or wet-dry hygrometer was taken from a copy of the original Wilkinson "Hardware and Tools" Catalogue. The company was established in 1842 in Boston. No date of issue was printed on the catalog – **Lou Leviticus**

Edson's Hygrodeik.



FOR HYGIENING AND MECHANICAL PURPOSES.

Price from \$15 to \$25 (Tucker Bronze \$15).

It is a guide which, if followed, will enable one to maintain an atmosphere in inhabited rooms of such a nature—

That the most delicate lungs will not suffer from atmospheric causes.

That the healthy will feel a degree of comfort never before experienced within doors.

That plants may be made to bloom in it as well as in the conservatory.

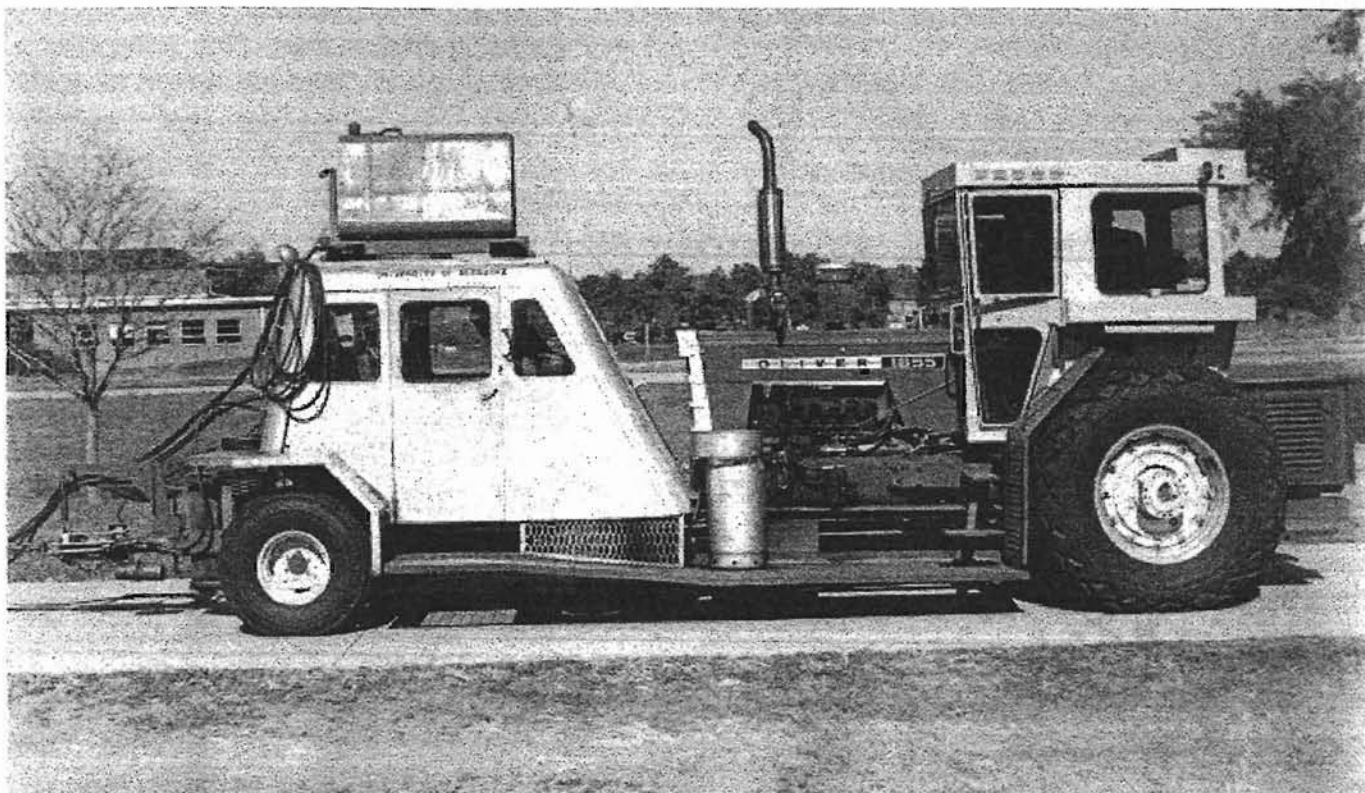
Of great value in a dry house for lumber, wool, cotton, &c

Circulars with particulars sent on application.

N. B.—By following the indications of this instrument, at least twenty per cent. of fuel may be saved.

Mark's Corner

I have been at the Tractor Museum since 1998. I lived on a farm by Aurora, NE. We had Ford tractors which I helped Dad with to pick corn. My favorite tractors are John Deeres. We had a neighbor that had a John Deere A and a John Deere 70. I love the sound of the 2-cylinders. We have a John Deere B, a JD Prototype M, a John Deere H, and a John Deere D here at the museum. My favorite one to drive is the JD H. The belt pulley runs off the camshaft so it turns opposite of the A and B. – **Mark Nickolaus**



From the museum photo archive: This silver test car was built from scratch about 1937 and has been modified over the years until it looked like this in about 1970. – Mark Nickolaus

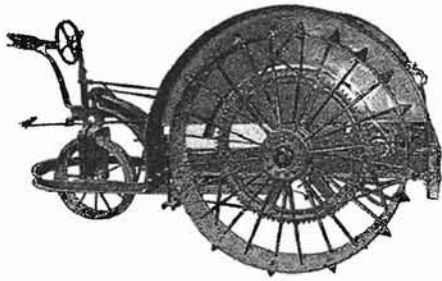
**Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833**

ADDRESS CORRECTION REQUESTED

HOLIDAY GREETINGS TO ALL!

Let us be mindful of those military and intelligence personnel serving us in hazardous duty.

Friends of the Lester F. Larsen Tractor Test and Power Museum



Judy L. Ray – Editor Newsletter #12 April 2002

To collect, preserve, research and interpret the traditions and technologies of agriculture.

Honorary Membership



At the January Board Meeting, Mark Nickolaus was given the first honorary membership in Friends for his dedication and many contributions to the museum. The first Docent of the Museum, he has an enormous amount of knowledge of tractors and can answer most any visitor question. Mark grew up on a farm near Aurora and has been interested in tractors ever since he can remember. He collects model tractors and tractor books. Much of his time is spent volunteering to show guests around the museum.

Open House May 4th

We intend to have an open house, similar to last year's on May 4th. We will be open for the Friends at 10 a.m. and have some of Valentino's prize pizza brought in at noon. Then, after lunch, the museum will be open to the general public from 1-4 p.m. Please come and see the development of the new displays in the museum. We want to prepare for the Open House the Saturday before (April 27th). If that day is inconvenient for you, please contact us and come any other day. We need help mainly in moving tractors and getting them started.

From The President

This newsletter provides considerable information pertaining to activities associated with the Larsen Tractor Test and Power Museum. I commend our new editor, Ms. Judy Ray, for a job well done. Too, I wish to thank Dr. Robert Kleis, the previous and first editor, and his wife, Bea Kleis, for their many fine contributions in starting this project.

Unfortunately, as covered in this newsletter, we now mourn the recent accidental death of a prominent board member, Dr. Norman Tooker. I fell fortunate to have developed a close friendship while working with him not only in this organization but also on many previous University of Nebraska projects. We also have the death of John Carlile, a retired technician for the Tractor Test Lab and one who made significant contributions to tractor testing. Condolences from this organization certainly to the Tooker and Carlile families.

Please make note of dates given in the newsletter such as the May 4th Open House. Our Friends organization is relatively new and we invite inputs from you regarding business items needing attention. Please contact any officer or board member as listed in this publication should you like to interact with us. We hope that you find the newsletter to be interesting and informative. We welcome your comments and suggestions for making the newsletter better.

– **Earl Ellington**

Lester F. Larsen
Tractor Test & Power Museum
UNL East Campus, 35th & Fair St.
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E-Mail tractormuseum2@unl.edu
Web: tractormuseum.unl.edu

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Mark Lynott
Bill Overturf (Oak)
Ervin Rolofson
John Smith
Dale Vanderholm

Ex-Officio:

James Estes
Louis Leviticus
Susan Norby
William Splinter

Judy's Corner

If you have an e-mail address,
let me know at jray1@unl.edu.
We have a website!!

tractormuseum.unl.edu

I have been very busy here at
"tractorville" with little time to surf,
but try:

www.JohnDeereCollectorsCtr.com

Boltantiquetools.com

www.farmandranchmuseum.com

CURATOR/INTERIM DIRECTOR'S REPORT

Now that I have been saddled temporarily (when are you coming back, Bill) with the directorship and the daily chores at the museum I decided not to write two separate reports—hence the heading of this report.

Tractor Test Car

You may already have heard about this, but if not, here is the big news. The Tractor Test Lab will be getting a new Test Car. This new vehicle is currently being built and pre-tested at the manufacturer's facilities. When the new test car will be fully tested and integrated, the old test car will be donated to the museum. **WE WILL NEED TO PROVIDE AN ADEQUATE SHELTER!** We have ideas how to do this. You may have ideas and suggestions and maybe materials or funds for this purpose. **PLEASE HELP US** in this matter. The test car is unique in the U.S. and is a valuable piece of history. Contact Bill Splinter or myself if you have ideas, suggestions or direct help available.

The Garage

When you come and visit, please note the outside wall of our garage. It is in deplorable state and needs fixing urgently. Ideas, suggestions and material help are needed and will be very welcome.

Displays

A number of displays, some new and some improved, will be shown and I think you will be proud of the work which has been done with your help.

1. The tractors: You will see that the tractors have been rearranged and what that has done for the space. This was all Yunju's idea. Always leave it to the ladies to rearrange the furniture.
2. The traction dynamometer area: Some of you may have seen the improvements that were started by Bryan and completed by Yunju Kim.
3. The belt dynamometer area: We have cleaned the area up a bit and have moved the fuel measuring system nearer. Also, it now looks as if we can connect a tractor to the belt pulley and start twirling the dyno.
4. The carburetor display has been altered and moved. Yunju has made new labels and the whole thing looks pretty good.
5. The antique automotive and tractor wrenches made by Walden Worchester and Blackhawk have been identified and mounted in display cases with labels and will hang in the "Model T" room.
6. An educational set of three panels has been prepared and mounted. The display shows the relationship between manpower, animal power and tractor power. I think it is very successful.
7. We now have, in addition to the two-row hand planter we already had, a beautiful single row hand planter donated by B.K. Fuller from Superior. The planter is marked Parkin Orrendorf and has a patent dated May 1883. Parkin Orrendorf also made two of the plows we already have and possibly the lister in our collection. This company was bought out by the International Harvester Company around 1920, and we do have a plow outside which is marked with both IHC and PO.

- Lou Leviticus

John Carlile In Memoriam

John Carlile, who passed away in Arkansas on March 3rd was my technician from the day I came to the Tractor Test Lab until his retirement. He was an outstanding technician, who was responsible for building and maintaining the test equipment and, amongst other things, built the current Test Car. He was great to work with and had a tremendous hoard of stories and a wonderful sense of humor. There are many stories we can tell you about John, but his "Rules for Tractor Testing" pretty well sum up the type of man he was. He will be greatly missed by his family and by all of us who knew him and will miss his infrequent but regular visits. — **Lou Leviticus**

THE LAWS OF TRACTOR TEST by John Carlile

1. Cleanliness is next to Godliness (but not more than one step above it.)
2. True research begins at the end of a broom handle.
3. A moving stream from the end of a water hose can wash dirt as well as sins away.
4. True service to others starts with a good grease job and oil change.
5. More points can be counted on a broom handle than on a computer.
6. A good day's work begins the night before.
7. A good pair of boots might keep your feet dry, but a pair of well-shined shoes do a better job of keeping you out of hot water.
8. Long hair and whiskers might be a sign that you're protesting a noble cause, but it takes a clean shave and a haircut to earn the first call to breakfast.
9. Volunteers always merit more lasting benefits than do draftees.
10. Numbers and letters on an official form which are illegible are even worse than unfilled squares.
11. If someone is so keyed up and tense he can't seem to hold it, there are always the windows to be washed or the floors to be swept.
12. Ultra-scientific theories and prognostications may be OK for the testing schedule in the year 2000 AD, but it will take plenty of hard work and early hours if we're to finish this year before Thanksgiving deadline.

**EVER STOP TO THINK, AND FORGET TO
START AGAIN?**

Norman Tooker In Memoriam

Dr. Norman Tooker of Ralston, Nebraska will be long remembered and much missed by his hundreds of friends and associates throughout Nebraska and beyond. His death resulted from an automobile accident on I-80 near Lincoln on January 19. He was interred at David City, his home area, on February 11.

Norman had a long and distinguished career as a Cummings County Agricultural Agent, as the Douglas County Extension Services Director, as Professor of Agricultural Education, and as Assistant Director of International Agricultural Programs at UNL. Both before and after his 1986 retirement, he served volunteer leadership and service roles in many organizations including ten years as Master of the Nebraska Grange. He was the prime mover in the planning, financing, and building of the Eastern Nebraska 4-H Camp. He served the L.F. Larsen Tractor Test & Power Museum as a Board member, the original author of its informational brochure, and with hands-on tractor repair.

It was my privilege to work closely and directly with Dr. Tooker in the International Programs office. He was a willing doer of things great or routine at whatever time of day or day of the week it was needed. He was creative and compassionate. He was a great gentleman. He was my friend and a friend of many, many others.

His widow, Phyllis, is recovering from injuries from the same accident in Madonna Rehabilitation Center in Lincoln. — **Robert W. Kleis**



Pictured left to right are L.F. "Tiny" Williams, Mark Nickolaus, John Benes, Lou Leviticus, Earl Ellington, and Charles Borcharding

The winning raffle ticket was drawn at the January Friends Board Meeting for the Allis Chalmers B tractor. John Benes of Raymond, NE was the winner.

Who Made the First Steel Plow?

Well...was it John Deere who made the first steel plow? Was it steel? These are questions that are still being argued by the cognoscenti of plow history. Deere & Co. state of course that good old John made it. The Case history buffs claim it was Leonard Andrus, born in Vermont in 1805. Andrus established a factory in Grand Detour and invited John Deere to come work for him. He had known about the blacksmith who was called John Deere and who also hailed from New England. The Andrus factory became the Case Plow Company in about 1910.

A Case dealer's handbook of 1941 states:

"In 1843 Andrus formally organized the first plow manufactory (sic) in the name "L. Andrus". In 1847 his partner (John Deere – ed) withdrew to establish his own plow factory elsewhere."

Until 1847 Andrus and Deere had been partners. The truth as to which of the two partners was responsible for producing the first steel plow remains a bit of murky history. From literature it appears that John Deere had greater knowledge of steel and forge work and that Andrus was the businessman with the needed capital. John Deere sold his interest in the business for \$3,000 and formed his own company in 1846. By 1857 he had made about 10,000 plows and by the end of the century he was the largest plow manufacturer in the U.S. **– Lou Leviticus**

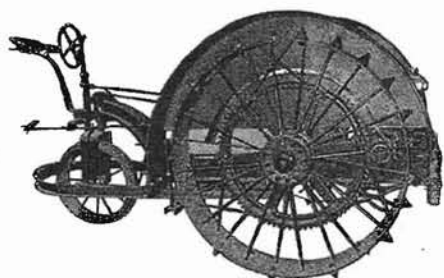
2002 Dues

January 1 began a new membership year. Please continue your membership and send your annual \$10 made to the "Friends" of the Tractor Museum to the address on this newsletter. Donations can be made to Larsen Tractor Museum or via University of NE Foundation. Please let us know if you do not wish to receive the newsletter.

**Friends of the Lester F. Larsen
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ADDRESS CORRECTION REQUESTED

Friends of the Lester F. Larsen Tractor Test and Power Museum



Judy L. Ray – Editor Newsletter #13 August 2002

To collect, preserve, research and interpret the traditions and technologies of agriculture.

Open House Successful

The museum's open house was held May 4th with a good attendance of new faces that didn't know it existed. We not only need to get the word out, we need to have volunteers to keep the building open, especially on Saturdays.

New Board Member

Our newest board member Russ Tooker, is filling his father, Norm Tooker's vacancy. He and his wife Julie and son Garrett live near David City and he also farms near Silver Creek. He grew up in Ralston and attended UNL 1979-1983 where he studied Agronomy Crop Production. He could watch the tractor test track from his dorm room in Burr Hall. Until a few years ago he used JD A's and B's to run belt-heads for irrigation wells. One of his favorite green tractors is a 1961 JD 3010. He is an enthusiastic addition to our group and is not afraid to help when asked. We welcome him to our midst.

Nebraska Ag Shows

Aug. 24-Sept. 2 <http://www.statefair.org/>
Nebraska State Fair, Lincoln

Sept. 7-8 <http://www.ci.clay-center.ne.us/>
Old Trusty Days, Clay Center

Sept 10-11-12 <http://www.huskerharvestdays.com>
Husker Harvest Days, Grand Island

Sept 21-22 www.farmandranchmuseum.com
Farm & Ranch Museum Harvest Festival, Gering, NE

Oct. 12-13 <http://www.stuhrmuseum.org/>
Grand Island Stuhr Museum
Antique Tractor, Engine & Vintage Auto Show

From The President

We hope that the summer is going well for all our members and that many of our farmers and ranchers were blessed with needed rains.

We continue to have visitors for the Larsen Tractor Test and Power Museum and receive favorable comments about the museum. We need volunteers to help operate the museum. Should you be able to help, please contact one of us. We were represented at the recent Camp Creek Show in Waverly, NE and our next activity of this type will be at the Nebraska State Fair, August 24-Sept. 2. Please make it a point to visit with us there, and contact **Charles Borcharding (402/421-2034)**, who is providing leadership in this activity, if you can help. You can choose morning or afternoons. Please call.

Our next Board Meeting is October 15, 1:30 p.m., 225 Chase Hall. Hopefully all board members can be present. We also welcome visitors and comments at any time.

The annual meeting of the entire membership will be January 14, 2003 at Chase Hall at 1:30 p.m. New officers will be elected at this meeting.

– **Earl Ellington**

Editor's note:

Earl will be retiring from UNL October 25th.

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Secretary: Glenn Hoffman
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(2007 Rd 22, Exeter, NE 68351)

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Jerry Kohl
Mark Lynott
Bill Overturf (Oak, NE)
Ervin Rolofson
John Smith
Russ Tooker
Dale Vanderholm

Ex-Officio:

Louis Leviticus
Susan Norby
William Splinter

CURATOR/INTERIM DIRECTOR'S REPORT

Following is my report on activities.

Items received/to be received.

We have received several items from various sources. Yunji Kim, our graduate student, will enter them into the collection when she gets to them. On some of the items we have an interesting provenance due to the help we received from the donors. We are also promised a Fairbanks Morse 1.5 horsepower engine, which looks good but needs some magneto work. The single unit Hand Corn Planter is now on display and elicits a lot of comment. We are currently in possession of 4 scythes and I am endeavoring to trace their date of manufacture as close as possible so we can make a selection of which to display.

Museum arrangement and displays.

I hope you have all seen the cleaning and rearrangement of the displays, the signs, etc – all work by Yunju who deserves our commendation. Notice also the painted walls, new arrangements in the "utility room" and in the office, which Judy has been working on. Credit for the outside plantings goes to Gail Ogden and Judy – who also try to keep the many weeds under control.

Workshop and garage area

I have been working hard (but am not finished) to improve the conditions in that small area. We now have two steel cabinets dedicated to "flammables" and electric tools, and some of the older cabinets are outside and will be disposed of. Nuts and bolts and all the other "pieces" are slowly being arranged and rearranged into some semblance of order so that items can be found when needed. We will get more steel cabinets in to replace some of the cabinets in the garage area and add to the tool room. We have moved the second Fordson out of the Garage so we can use the forklift inside and clean out our "attic". We have cut away much of the unneeded electrical conduits and can now start to find out what else is hidden in the dirt. (We did find a complete skeleton of a squirrel which went to the curator of zoology of Morrill Hall).

Helpers

Jerry Kohl has been a steadfast source of help for us and for a time we had help from one of the Grad students of BSE, Todd Cole. However, it is very hard for Jerry and me to get to everything that needs doing, accomplished in one morning per week. I don't know what the solution is, but we need more muscle more often. On days that I am alone there is practically nothing I can do because if any small mishap should happen, I am on my own.

- Lou Leviticus

Membership

Each January begins a new membership year. Please continue your membership and send your annual \$10 made to the "Friends" of the Tractor Museum to the address on this newsletter. Donations can be made to Larsen Tractor Museum or via University of NE Foundation or to the "Friends" Fund. Please let us know if you do not wish to receive the 3 yearly newsletters.

True Stories From The Past

-Lou Leviticus

We've talked a lot about tractor history and I thought it would be nice to talk about some horror stories. At least, that is what they appear to me. Two are personal experience and they show how stupid even highly intelligent people like me can act.

First story:

It was in Israel, on a Kibbutz, and I was in charge of the machinery. We had a ramshackle tractor shed where the tractors were stored. Open on one side, covered with corrugated tin and with a back of the same material. It was very thin corrugated iron and tended to blow around in a strong wind, but it was the only material we could afford.

One morning I got up early and went out in the dark to start the Farmall H. I opened the fuel tank valve and after groping around for the crank, managed to get it in the hole and into the daw on the belt pulley. Now the day before, someone else had been driving the tractor, but had omitted shutting the ignition and had left it in gear as well. We used to let the carb run dry, but always took the tractor out of gear.

I kept those tractors in pretty good shape and when I turned the crank half a turn, the H started and pushed me forward through the corrugated wall. I told you the stuff was rather thin! Luckily I am a little guy. There was a horizontal beam, but it was just above my head. The tractor came to a standstill against the beam. The only damage was to the wall, the upper part of the tractor radiator and to my self-esteem!

Second story: (taken verbatim out of the August-September issue of *Farm & Ranch Living*)

"Most every hay field on the ranch where I grew up was on a hillside writes this farmer from Colorado. "We had several tractors, none in great shape. Overhauling or replacing them would have been expensive, so we managed with what we had."

"The tractor in the worst shape was a Case. Under the rust and grease, you could see it was originally yellowish orange. I think it was made in the late 1930's. It had a crank and the rod from the steering wheel ran forward over the engine cowl and down in the front of the radiator to a single wheel. One of this tractor's many problems was that you couldn't get it out of second, so it was always in gear."

"Because of that, you had to park it downhill. To start it, you'd crank it, jump out of the way and climb on the back to drive. Dad and my uncle used it to mow hay so it had a mower on it as well. One day, while being cranked, the tractor lurched into a deep wash. Back then we dumped a lot of junk in there, not just to get rid of it, but to slow down erosion."

"Dad figured it was best to leave the Case in the gully. As far as I know, it's still there today."

Third story:

It was the first time that I was to drive a crawler tractor, a Cat D4. I was being "trained" by a young pioneer in the Hills of Ephraim in Israel. He taught me about starting and about the other controls, but didn't go into details about the innards and I wasn't wise enough to ask. We were on the top of a hill and the road was gently sloping downward, circling the hill for about half a mile.

After a successful start I was proudly driving along with my "teacher" sitting on the tank to my left. Then he told me to stop, jumped off and opened a gate on the side of the gravel road. From there two tracks ran down toward a shed about 30 feet away. I duly pulled the left lever and put on the left brake. The D4 obeyed and we started going down that fairly steep hill. The path curved slightly to the right just before the shed.

I was going down smoothly and proudly when I pulled the right lever to go around that curve, but of course the tractor went to the left, characteristic of the clutch and brake system of crawler tractors of those days on a slope, as I found out later. By the time I had stopped the D4 I was well through the wall of the wooden shed and sitting inside with a mess of straw, birds nests and other debris.

My "teacher" was standing nearby with tears in his eyes and slapping his knees.

Restoration Clinics

The Membership and Finance Board of the Museum has plans in place to feature restoration clinics this Fall and Winter. Information and registration forms will be available at the display area at the State Fair, Old Trusty Days, and the Husker Harvest Days at Grand Island. The cost is \$35 for non-members and \$25 for members. All four classes will be on a Saturday from 9:00 a.m. to 11:00 a.m. Instructors to be announced.

October 19, 2002	Trouble Shooting
November 16, 2002	Electrical Systems
January 18, 2003	Fuel Systems
February 15, 2003	Expert Painting

All workshops are at the Lester Larsen Tractor Museum on East Campus of UNL.

Judy's Corner Websites

Yesterday's Tractors

<http://www.ytmag.com/>

Missouri Valley Wrench Club

<http://home.neb.rr.com/mvwcnews>

Nebraska History

<http://www.nebraskastudies.org>



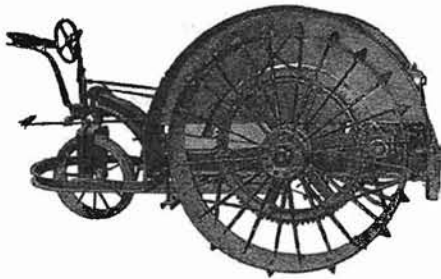
**From the museum archive: Nebraska Tractor Test Lab in late 1940's – early 1950's.
Wouldn't it be nice if we could make it that way today? ☺**

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ADDRESS CORRECTION REQUESTED

**If you have not paid your 2002 dues, this will be your last newsletter.
You will have a red mark on your address.**

Friends of the Lester F. Larsen Tractor Test and Power Museum



Judy L. Ray – Editor Newsletter #14 December 2002

To collect, preserve, research and interpret the traditions and technologies of agriculture.

Building of Contents

Our museum takes you through the development of food production from the period of hand agriculture in Colonial times through the period of animal powered agriculture in Pioneer times; then through the evolution of the agricultural tractor up until the introduction of diesel power.

Our graduate student, Yunju Kim, has improved the hand tool room. The windows have been closed off and used for a display area. Cleaning and painting has been done. A large glass-enclosed display case has been added to hold such unique items as a foot warmer, candle molds, lanterns, mortar and pestel, cobblers stand, eyeglasses, shaving blade, powder horn, boot jack, sad irons, wooden ladles, and sugar tongs—not the fancy silver type you are thinking of. These heavier duty tongs were used to cut off lumps of unrefined sugar. There is a blacksmith forge and tools, small implements made in the blacksmith shop here at UNL in the 30's and 40's, and a large leather bellows.

Antique carpenter tools, household knives, axes and bark removal tools for logs, sickle knives for grain cutting, and the all important sharpening tools to keep them all going.

Stop in and see more than tractors here. Give us a call to make sure someone will be here to welcome you. (402)472-8389

L.F. Larsen Diary 1946-1956

PROGRESS OF TRACTOR TEST WORK

"Began working in Tractor Testing laboratory May 1, 1946. This laboratory has been inactive since 1941 and much of the equipment was out of order and in need of repair. Considerable time was spent getting ready for first test. Began official test No. 379 on the "Bear Cat" 3000-1 manufactured by Ellinwood Industries. Test started July 22, 1946 and was ended August 10, 1946. Began calculating August 12, 1946 and completed all work on this test on Aug. 19, 1946.

In-as-much as there were no more tractors to test made preparation to teach 2 classes in Farm Machinery and assist in an orientation class taught by Professor Smith. Semester ended Jan. 22, 1947 and second semester began Febr. 3, 1947. John Schrunk is taking over the Farm Machinery Classes and I plan to work in Tractor Test lab from now on."

Annual Meeting

January 14, 2003 1:30 p.m.

2nd floor of L.W. Chase Hall just south of the museum on the East Campus UNL. All persons interested in the Museum are urged to attend. January 1 begins a new membership year.

Please continue your 2003 membership and send your annual \$10 made out to the Friends of the Tractor Museum. Separate donations can be made to Larsen Tractor Museum or via University of Nebraska Foundation.

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Bill Overturf (Oak)
Ervin Rolofson
John Smith
Norman Tooker (Ralston)
Dale Vanderholm

Ex-Officio:

James Estes
Louis Leviticus
Susan Norby
William Splinter

REPORT OF THE DIRECTOR

I have been absent from the Larsen Tractor Museum this past year, first serving as Interim Dean of the College of Engineering and Technology until August 31, then as Interim Director of the Nebraska State Museum with the retirement of Dr. James Estes. Dr. David Allen was named the Dean of the College of Engineering and Technology and negotiations are under way to hire the next Director of the Nebraska State Museum so, hopefully I will return to the Larsen Tractor Museum shortly.

I wish to acknowledge Dr. Louis Leviticus, our Curator, for taking over the leadership of the Larsen Tractor Museum during this period and the continued efforts of Judy Ray, our secretary/accountant/ general helper, Mark Nickolaus, our Docent/tour guide, Yunju, our graduate student/exhibit designer, Jerry Kohl, our volunteer fixer-upper and the support of our Friends for the day to day operation of the Museum. There have been many improvements in the exhibits over this past year which have enhanced our ability to relate the evolution of food production from hand operations at the time of the American Revolution through the introduction of animal power and the evolution of the tractor up until the introduction of diesel power. If you have not visited us recently you need to make it a point to see what a great job our museum crew has done.

With this report I wish to acknowledge with sincere thanks the financial contributions to the museum through the University Foundation which have made the operation of our museum successful. The only support we receive from the University is heat, electricity and water and one half of Judy's salary. Therefore we must rely on contributions, raffles and visitor donations to survive. If you see your name on our list please consider upgrading to the next level. If your name is not on our list and you have donated to the Museum let us know immediately. If your name is not on our list please consider adding your name through a contribution to the University of Nebraska Foundation designated for the Lester F. Larsen Tractor Test and Power Museum.

I am looking forward to returning to the Larsen Tractor Museum and hope to see you there.

- **BILL SPLINTER**

MUSEUM HOURS

**DO TO THE WINTER
MONTHS AND LACK OF
STAFF, PLEASE CALL
(402)472-8389 BEFORE
YOU PLAN TO COME TO
THE MUSEUM. OUR
HOURS WILL NOT BE
CONSISTANT.**

Judy's Corner

Yunju Kim our graduate assistant for the past year will be moving on in mid-December. She has done a wonderful job of organizing and labeling many items in the tractor museum. Her ambition has been greatly appreciated and her personality will be dearly missed. Lou will be taking some time off for knee surgery in December. Mark and I had some special guests recently to check on the tractor museum. Dan Larsen, Les's son and Jerry Hedges, who used to drive the tractors around the track in the 30's. Among other interesting visitors were people that worked with Les when they were students.

Donors to L.F. Larsen Tractor Test Museum Foundation Fund

\$50,000 and above—

Lester F. Larsen Level Benefactor 1

G. Wallace & Carol (d) Giles
William & Eleanor (d) Splinter

\$10,000 to \$49,000—

Chauncey W. Smith Level Benefactor 2

Fred M. Chase
Hitchcock Foundation
Charlotte Walters
John Deere Foundation
Leslie and Harriet Jochens
Frank C. (d) & Charlotte C. Walters

\$5000 to \$9999—

Fred M. Chase Level Benefactor 3

Leroy and Jean Thom
Carlton (d) and Clarice Zink (d)

\$1000 to \$4999—

Carlton L. Zink Level Benefactor 4

Vern & Grace Anderson
Biological Systems Engineering
Glenn D. Chambers
Donald Doolittle
Paul N. Exstrom
Fleischer Mfg. Co.
Lester (d) and Elaine (d) Larsen
Stanley and Clara Liedtke
Robert and Celia Mitchell
New Holland No. America

\$200 to \$999—

Benefactor 5

Raymond Anderson (d)
Robert H. Becker
Big Red Collectors
Billy B. Bryan
Calnetics Corp.
Lyle L. Choat
Paul T. Corcoran
Max W. Cruikshank II
Kelly L. Downing
Robert F. Emanuel
David E. Finney
Michael E. Frazier
Adolph & Beverly Gerst
Lewis C. Haight
Milford & Lenora Hanna
Raymond (d) & Hollyce Heller
Ronald S. Hilgenfeld
Glenn J. Hoffman
B. Gene Hunck
Curtis A. Johnson
Glenn W. Johnson
Raymond (d) & Annette (d) Kubie
Howard A. Lamb
Alice Lane
Gerald A. Leonhardt
Derrell & Joan Martin
James & Carol Breczinski
Menasha Corp.
Donald E. Kuska
Meredith Corp. (Dave Mowitz)
R. Richard Meysenburg
Carl & Marjorie Meyer
Rodney M. Nohr
Patrick C. O'Hara
Emanuel & Dorothy Olson

Gordon W. Olson
Fred J. Otradovsky
Howard T. Palmer(d)
Eric J. Rasmussen
Jack & Janeth Schinestock
Richard Schleusener
Gary Schmer
Leonard (d) & Evonne Schoenleber
John A. Smith
Larry Swenson
Wayne E. Thurman
Bob & Shirley Trauger
Kenneth L. VonBargen
Herman F. Wegner
Frank & Lois Zoz

Below \$200 — Patron 6

Karl C. Anderson
Mrs. Elaine Arms
Lee D. Baker
William A. Bachman
Raymond & Marilyn Beckner
Carl J. Bern
Larry L. Bond
Alan H. Boning
Eunice Bruckner
H. Glen Buchta
Leonard G. Cernik
Kenneth & Sharon Cheney
Charles J. Clanton
Coash Inc. (Donald Meysenburg)
Bill & Marylu Cords
Robert L. Crump
Martin M. Cypher
Robert G. Curley
M. Louise DeLong
Chester Denker
Cary & Nancy Eberle
Joel Ehrig
Earl Ellington
Dale N. Elliott
Scott H. Eveland
Paul E. Fischbach (d)
David M. Fricke
Harold (d) & Marie George
Riley H. George
Herbert C. Glesmann
Bobby Grisso
Frank M. Gugula
Franklin C. Hager
Orville C. Hansen
Donald and Blanche (d) Hanway
Stephen & Karen Harsh
Dale F. Heermann
David L. Heitmann
Gary & Ellen Hellerich
Wilbur A. Henry
Richard D. Hentzen
Holub Land Farm
Scott M. Hottovy
Ed & Ellen Huff
Ed Janike
Vearl L. Jensen
John E. Johnson
Kevin & Lynette Johnson
Kragh D. Johnson
Bradly d. Jorgenson
Glen & Eileen Katz
Ezra Keuer
Mrs. Beverly Kimball
Herman W. Knoche
Mike & Jodi Kocher
Jerome J. Kohl

David L. Leinemann
Herbert Larson
Daniel D. Laska
Louis Leviticus
Dale Leyburn
Nathan Leyburn
Dan B. Lutz
Emil Lutz
Donald L. Mais
E. Vincent Martinson
Kenneth E. Meier
Steven & Cynthia Melvin
Carl L. Meyer
Carl & Marjorie Meyer
Merle L. & Doris M. Miller
Glen Mlnarik
David L. & Karen Morgan
Milo Mumgaard
Ernest L. Munter
Richard G. Myers
Alex A. Nagel
National Warranty Insurance
Stuart O. Nelson
Edward Nizalowski
Brent J. Nyffeler
OMRO Antique Tractors
Gerald E. Plesing
Stephen & Kathryn Farrell-Poe
Puget Sound Antique Tractor
R-M Enterprises
Gene A. Ross
Brent Sampson
Sam Sampson
Gary Schmer
Perrin Mfg.
Rollin D. Schnieder
Gladys C. Schroeder
Dale C. & Carol L. Seebach
Paul Shaw
Donald C. Signor
Daniel T. Smith
Robert E. & Margaret E. Smith
Larry L. Snyder
William L. Splinter
William L. Sprick
James Steele
John (d) & Olga (d) Steele
Laverne E. & Shirley R. Stetson
Garland R. Stevens
Harold & Virginia Stevens
Clyde M. & Margaret B. Stickney
Carroll J. & Leola A. Story
Daniel P. Stromp
Sunnyside Seed Farm
Norris & Ruth Swanson
Clare & Roberta Sward
Thomas L. Thompson (d)
Ernest N. Thorp
Hattie Toth
Shirley B. & Robert Trauger
Valmont Ind.
Dale H. Vanderholm
Vindulyn Acres Inc.(Lynn Vinduska)
Robert M. Vinton
Robert Von Bernuth
Williard H. & Beulah E. Waldo
Trent E. Wiles
Louis V. Wilhelmi
Janet Y. Williams
R.L. Wohlgemuth
Wayne E. Wolford
Dennis Zubrod

Old Stuff

-Lou Leviticus

Several years ago I bought two boxes of "stuff" for a buck or so on a sale somewhere near Denton and dumped them in my basement. I finally had the guts to go and see what was in them. It is clear that the original owner of the material was somehow connected to the Tractor Testing Program at the University of Nebraska.

Apart from items, which might be of value to the State Historical Society, there were an awful lot of publications on tractors and tractor testing in that first box (I haven't had the courage to excavate the second one). One of the items was a 1918 issue of Implement and Tractor, which apparently had belonged to Wilmot F. Crozier, the farmer cum legislator who was instrumental in writing and passing the Nebraska Tractor Test Law of 1919. The 1918 issue shows the chaotic tractor market in the U.S. at one of its high points.

At that time there were 129 different tractor companies which manufactured 187 different tractor models with power ratings of 1-5 through 70-120 (the first number pertains to the Drawbar power, the second one to the Engine power). Tractor weights ranged from 525 lbs to 28000 lbs. Of those 187 models there were five models with four-wheel drive and 19 models with track type drive (some of these were steered with wheels).

Some of the names given to those tractors were very interesting as well: Neverslip, Light Foot, Happy Farmer, Prairie Dog, Plow Boy, Plow Man, Farmer Boy, Old Reliable, Tom Thumb and, lastly, Creeping Grip (a disease?)

I can just imagine the conversation of two farmers in the local café: "What are you driving Jim? I drive a Prairie Dog."

"Don't like that. I have a Creeping Grip"

FYI & Mine - jlr

Brake horsepower: made available by an engine for driving machinery other than itself, as measured by a dynamometer.

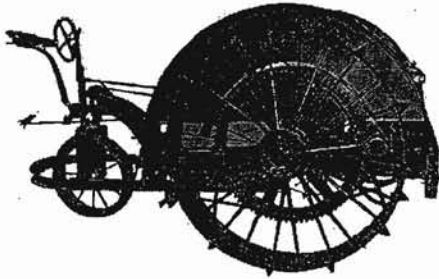
Dynamometer: a device for measuring mechanical force as a balance.

Prony brake: a friction brake serving as a dynamometer for measuring torque.

**Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833**

ADDRESS CORRECTION REQUESTED

Friends of the Lester F. Larsen Tractor Test and Power Museum



Judy L. Ray – Editor Newsletter #15 April 2003

To collect, preserve, research and interpret the traditions and technologies of agriculture.

LB212

*Leonard Bashford
Test Lab Director*

A new bill, LB 212, was introduced into the 2003 Nebraska Legislature. The bill was introduced by Senator Kremer and sponsored by Senators Baker, Burling, Cunningham, Schrock, and Smith. This bill eliminates the requirement for a sales permit in order for agricultural tractors over 40 horsepower to be sold in Nebraska. If this bill passes, performance information for agricultural tractors would only be available if the manufacturer elected to have the tractor tested. The laboratory is supported entirely by fees obtained from the manufacturers for testing tractors. No state or university funds are provided to the Nebraska Tractor Test Laboratory. If the permit requirement is eliminated, there is no guarantee that the manufacturers would continue to test. Therefore, there would be no income to the laboratory, and it would close de facto. The bill has now been designated a priority bill by the Agricultural Committee.

The Iowa/Nebraska Equipment Dealers Association and the Farm Bureau are heavily lobbying the bill. The origin of the bill was from the dealers association and they were successful in getting Senator Kremer to sponsor the bill. The dealers association has indicated that there are numerous lost sales of tractors to out of state dealers because of the permit issue.

- continued on back page

Open House Saturday May 3, 2003

The Friends will host an Open House at the museum on Saturday, May 3, 2003.

Members of the Friends can meet starting at 9:00 a.m. to drive some tractors around the track. The Test Lab will be open also.

The public will then be invited to come from 1:00 until 4:00 p.m.

Board Meeting April 22, 2003 1:30 p.m.

This meeting will be held **at the Tractor Test Museum**, just south of Chase Hall on the East Campus UNL.

Please continue your 2003 membership and send your annual \$10 made out to the Friends of the Tractor Museum or this may be your last newsletter.

Separate donations can be made to Larsen Tractor Museum or via University of Nebraska Foundation, Tractor Fund #4182.

Lester F. Larsen
Tractor Test & Power Museum
UNL East Campus, 35th & Fair St.
P.O. Box 830833
Lincoln, NE 68583-0833

Phone (402)472-8389
FAX (402)472-8367
E-Mail tractormuseum2@unl.edu

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John Smith
Russ Tooker (David City)
Dale Vanderholm

Ex-Officio:

James Estes
Louis Leviticus
Susan Norby
William Splinter

REPORT OF THE DIRECTOR

I would like to invite everyone to our Open House on Saturday, May 3 starting at 9:00 for our Friends membership, with a public open house then running from 1:00 until 4:00. We have three students working under the supervision of Jerry Kohl and Lou Leviticus getting as many of our tractors running as we can. Come by, kick some tires, drink some coffee or soft drinks, exchange war stories about tractors and have fun driving some of our collection around the track. The Tractor Test Laboratory will be in the middle of testing some Caterpillar Challengers and we are planning to have them give a demonstration on the track and also have an open house to see the test equipment and procedures. Now for the bad news department.

Both the Tractor Test program and the Nebraska State Museum are under threat of closing at this time. LB212 has been set as a Priority bill by the agriculture Committee in the Nebraska Legislature. It is being pushed by the Iowa/Nebraska Farm Equipment Dealer's Association and the Nebraska Farm Bureau. Should the bill pass it will remove the requirement that all tractors sold in the State of Nebraska have a permit to sell based on the determination by the Nebraska Test Board that the tractor meets its advertised claims for horsepower, sound level, hydraulic lift capacity and rollover protection. There will remain no requirement that a manufacturer submit their tractors for testing and therefore the Tractor Test Laboratory will be shut down. This will deprive farmers of the only unbiased source of information relative to the performance of tractors. With today's very high fuel costs, farmers must operate as efficiently as possible. The Lincoln Journal Star covered several farmers that are going out of business because they cannot afford to continue farming. This proposed legislation could not come at a more inappropriate time.

Also, because of the state of Nebraska's economy, the University administration has proposed eliminating the research curators for the Nebraska State Museum (Elephant Hall to most people). The immediate effect would be to eliminate five of the exhibit galleries on the third floor, which display artifacts from the anthropology collection such as the Omaha and Sioux materials, the Southwest Indian potter and the African materials. The long-term effect would be to eliminate changes and updates in the paleontology exhibits, the mammoths, rhinoceros, camels, etc., making them static exhibits. Thus repeat visitors would soon disappear, attendance would fall off and the program would atrophy.

This impacts the Larsen tractor Museum since we report to the UNL Nebraska State Museum and have derived major support, especially through the graduate students in Museum Studies that have assisted our development. The Museum Studies program has also been recommended for closure.

The Larsen Tractor Museum has not been recommended for closure as we are funded almost entirely through donations to the University of Nebraska Foundation. I wish we had better news but that is the way it is. Maybe your State Senator should hear your views.

- Bill Splinter

MUSEUM HOURS

**DUE TO THE LACK OF
STAFF, PLEASE CALL
(402)472-8389
BEFORE YOU PLAN TO
VISIT THE MUSEUM.
OUR HOURS ARE NOT
CONSISTANT.**

More Wisdom From the Teens and Twenties

- Lou Leviticus

In our last newsletter I reported on some tractor data I found in a 1918 issue of the Cooperative Tractor Catalog of Implement and Tractor. I dug some more in the same volume - a treasure trove of information. For reasons of space in this newsletter I will digest the information at this stage. One thing is sure - they don't write them like that anymore.

This catalog contains not only items on tractors. It is a veritable study guide for engineers and farmers alike. It also contains lots of advertising with the most interesting claims such as **"PERFEX, the perfect radiator. The biggest thing to look for on a Tractor!"** (Makes you want to ask - well, how about the engine, buster). Or the Wizard Auto Power Transmitter (a gadget which goes on the front of your car) which **"will run any piece of machinery with a belt from 1.5 to 16 HP at LESS THAN ONE-FIFTH of the cost of any stationary gas engine on the market":(ONE FIFTH!!??)**

I could go on, but there is much more of interest. This catalog contains articles and diagrams on how to hitch implements of many types to tractors and specification and operating instructions for all of the farm machinery in use in those days. Apart from tractor pictures there are tables of specs, which are better than any you may find in many books. They include detailed descriptions of Drawbar HP and Belt HP at **normal** speed; recommended number of plow bottoms and thresher size; physical measurements; sizes of tracks or wheels; ground contact area (!) and drawbar adjustments; all details on the engine, including valve diameter, governor make & type; carburetor make and size; fuel type and feed method; air cleaner make & specs; ignition type & specs; cooling system type & specs; clutch and belt pulley drive makes and specs; Full transmission description and specs; frame and axle description and specs.

Similar tables are given for gas engines (179), piston ring and spark plug sizes, alfalfa and ensilage cutters, feed grinders huskers, shredders, threshing machines, manufacturer's addresses etc. etc. In short, an unbelievable amount of farming and engineering information, taking into account that data are given for 194 tractors on 32 pages of fine print out of a catalog which has a total of 308 pages crammed with information.

There are also plenty of great hints, such as the following (copied verbatim):

USE OF THE FIVE SENSES REQUIRED

Some one has said that a man can find use for all his five senses in running a tractor.

This statement, in large measure, is true.

The sense of **SMELL** can be used to detect an over-rich fuel mixture or burning oil caused by an over-heated bearing.

SIGHT assists in all adjustments and in telling how parts fit and that everything is in place.

FEELING detects knocks, looseness of parts and other adjustments.

HEARING detects regular and proper noises as well as unusual noises - knocks, grinds, clicks or ponds. It is of help in carburetor adjustments, listening to exhaust.

The tractor has a language of its own which an attentive operator will learn through observation. Make use of all your senses in learning the language of the tractor.

Judy's Corner

My Grandma Ray told me books are living things. Actually they only come alive if you *read* them! I like to read about "the good old days" without having to live through them, admiring the ingenuity and perseverance of the previous generations. A visitor said that sometimes stories are "embellished" to make them better. I am sure that even unembellished, some stories are pretty good.. In No Time At All is a very enjoyable book. First published in 1974 it is filled with information and pictures on farm life in eastern Iowa as seen through the eyes of Carl Hamilton, who graduated from Iowa State University in 1936. I found this among the cats at a used bookstore in Lincoln.

Used bookstores have great character, but sometimes that longed-for book can only be found on the Internet.

www.alibris.com has a great selection of hard -to-find books. www.motorbooks.com has tractor, car, planes, nostalgia and more. Anyone have other good sites?

I have someone in Illinois that is looking for something about a Pony Junior 1936 small tractor (waist high) who has been searching the Internet for years. Thinks it was made in Lincoln, NE. Anyone out there have a clue?

By the time you read this I will be on the East Coast with my daughter whose Air Force husband is overseas, or have made the newspaper for choking a hijacker. I can only hope the State has taken a more logical look at the budget cuts at UNL. I would not want to lose Nebraska Hall, where the treasures of Morrill Hall are kept.

LB212 - continued from page 1

However, they have never documented the lost sales because of the law. It is baffling why the dealers association and the Farm Bureau, who claim to represent farmers, do not want farmers to continue to have access to tractor performance information to assist in making good marketing decisions.

There are ramifications other than having performance data available for tractors. The laboratory has always employed students to assist with the test program. Over the many years of existence, there have been literally hundreds of students that have worked at the laboratory to help pay for their college education and gain experience in testing protocols. Presently, there are ten student employees at the laboratory. The experience gained by these students simply cannot be replaced.

If the laboratory closed, there would be considerable loss to the academic programs offered by the Biological Systems Engineering Department. The laboratory is used for class instruction in procedures and instrumentation used in tractor testing protocols. There would be no replacing this

opportunity, an opportunity that is not available at any other university in the U.S. The laboratory is the main resource to our 1/4 scale tractor design team, which consists of more than 20 students this year who participate in a national tractor design and pull competition. The laboratory also sponsors and hosts the state FFA and 4H tractor operator contests.

While the reasons for having the performance tests available have changed since they were first introduced, the tests have provided a benefit for the consumers in that it allows comparative performance test data to be used when making purchasing decisions. Since 1999, all performance reports are available free from the laboratory web page. The average number of visits to the web page is in excess of 1400 per day.

The Nebraska Test Laboratory brings good publicity to the State of Nebraska and the University. No University or State funds go into the support of the laboratory. The existence of the laboratory is a win-win for the University, State, farmers, dealers, and tractor buyers throughout the world.

**Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833**

ADDRESS CORRECTION REQUESTED

If there is a red mark on your address this will be your last newsletter.

FYI January 1 began a new membership year. Please continue your membership and send your annual \$10 made to the "Friends" of the Larsen Tractor Museum to the address on this newsletter. Donations can be made to Larsen Tractor Museum or via University of NE Foundation. Please let us know if you do not wish to receive the newsletter.

Tractor Testing Experiences

by Stan Liedtke, Class of 1948
Dubuque, Iowa

Discharged from the then known as Army Air Corps I joined Paul Exstrom, Robert Mitchell, and Phil Corke, intending to complete our Ag E degrees. Mitchell remarked that it was time to Graduate or Quituate". The GI Bill and our spouse's income needed to be augmented and that need led to part-time and then full-time summer work for Les Larsen.

Never before or for that matter since have I worked for a person who managed as he. Les in his own quiet way simply instilled the ethic of completeness, accuracy, and documentation of your test work results.

When Dr. Hurlbut chose to use the class Les would have taught as a way to get to know the students, I missed the opportunity to experience Les as a teacher. I did come to know him well and develop a great deal of respect for him as I worked in the Test Lab.

Working at the Lab involved whatever needed to be done during a test and whatever needed to be done when there was no test in progress. During a test Paul and I spent a good bit of time with the planimeters used to measure drawbar test results. Another task that fell to me quite frequently was to measure and record the fuel consumption during belt tests.

By today's "whiz bang" standards of instrumentation now available, ours was very basic but I think best understood by our visitors of that time. Farmers of that era had little knowledge of flow meters and computers to integrate data and simply present a printout of test results.

When there was no test in progress, there were always floors to sweep, tools to replace, or something needing paint.

Working at the Test Lab provided a very real opportunity for any student wishing to become a tractor engineer. No interview in an Engineering Department could reveal the nature of the prospective employer so clearly.

One question frequently asked by visitors was "you see them all, which is the best tractor?" My response was that "No matter the maker, sometime there will be a problem and the ability of the service dealer was an important consideration."

The Oliver incident that Bob relates is well remembered. (December Newsletter) Les showed me a handwritten note locating certain punch marks on an Oliver tractor then on test. Not at all conspicuously placed, I readily confirmed the marks existence. Reportedly as the test engineer expressed a hope for better results, all Les said was "Well you didn't expect them to be much different than when we tested the engine before, did you?" Nothing was reportable on the Test Result Reports.

Post WWI brought forth a flood of aspiring tractor makers, many of doubtful ability and created the need for Nebraska Test Law. Subsequent to WWII there was a much smaller group of aspirants, among them American Steel Tractor, and Fate Root Heath with the "Silver King". Sharp looking machine with its aluminum or silver color paint job. Unfortunately the silver color painted radiator was not particularly efficient.

It was American Steel that was most interesting and a more spectacular flop.

Mr. McDevitt, the only Company man present, held that most manufacturers must spend a lot of time contemplating their navels (actually more pithy words more appropriate). That conclusion was reached because the American Steel was claimed to be a ninety-day wonder. No use testing for strength, just measure a few competitors machines to average the wall thickness of final drive, transmission cases and mainframes and then expect that when made of cast steel they would be more than adequate. No provision for wheel weights had been made and the tires were of inadequate size. Fine cigars and all that bombast were to no avail. The machine failed miserably.

With the certain exception of American Steel, manufacturers sent knowledgeable and competent personnel with the test machines, not all groups seemed equally competent however. It seemed that the representatives from Deere and Company were the best prepared and knew best what to expect. Any crew from the JD Waterloo Works or the JD Dubuque Works I always enjoyed working with. Some experiences during tests show that it was not always easy.

Merlin Hansen from Deere Waterloo knew well that there were acceptable methods of bringing test results to a standard barometric pressure reading. No matter, Merlin would only test when the barometer was considered high at Lincoln. During one lengthy stretch of favorable barometer readings the writer recalls thirty-six hour continuous stretch of test.

Part of the belt test was carburetor adjustments determined by running a series of short tests at various settings. This was known as running a "fishhook" because when plotted the results assumed that shape. Art Shell the Marvel Schebler Carburetor rep often became impatient and would mutter to me "if they would just let set the carburetor."

The first tractor that I helped to test was the John Deere Model M manufactured at the JD Dubuque Works. The Chief Engineer, Willard "Nurdy" Nordensen was assembling the engineering staff for this new tractor plant and I chose to go with the John Deere Dubuque Tractor Works. Nearly thirty-four years later I retired after a varied career with John Deere.

My Internship



- by Donna Martin

It was a sweltering August afternoon when I first stepped in to the Lester F. Larsen Tractor Test and Power Museum Archives. Luis Vasquez, assistant curator, had posted an email to entice a Museum Studies student interested in audiovisual material to intern at the museum. When I walked in to the small narrow room that contains all the files of past tractor tests and all the millions of glass plate slides, photographs and films I felt like I had found my niche. First I set out to inventory what we had in the mysterious gray cabinets. There were layers of objects and images. I had no idea what many of these objects were used for. That is where the expert knowledge of Mark Nickolaus, docent extraordinaire, comes in. Mark has spent many a day looking over my shoulder viewing the mystery movies. He often knows what year and make the tractor is as well as what test number it is. Lou Leviticus the head curator also enjoyed the occasional "film fest" and would always inform me of great stories about his life and the many ways agricultural technology relates to everyday life.

One memorable day early on in my internship was the day Luis and Judy Ray, accountant, resident answer woman, and all around great gal put a window air conditioner in the archive room window. Wow, I am telling you that made a difference. I am sure the artifacts and records appreciated it too. No such luck during the winter months. The one time I did try to raise the temperature above fifty-five with a space heater a breaker somewhere clicked off. It wasn't until Bill Splinter, director of the museum, noticed me wandering around confusedly staring at various fuse boxes that I found the correct breaker. I remained cold but I had light!

The people at the Tractor Test museum are very knowledgeable about many things. More endearing is the fact that they are extremely patient. For instance one day I made the brilliant discovery that tractors pull plows. For years I had the idea that a plow was a type of tractor. Now everyone who reads this knows that I am not anywhere near the country girl I would like people to think I am!

Volunteer Highlights

-by Luis G. Vasquez

Since September 2003 our museum counts with the invaluable help of **Phil Dinges**, our new "multi-task" volunteer on every Tuesday morning. Phil, a Lincolnite born in the historic North Bottoms to a German-Russian immigrant family, has recently celebrated his 81st birthday. He remembers driving his 1st tractor in the early 1930's: A red Farmall. During WWII Phil served for 3 years in the Navy and in 1947 came back to Lincoln, when he got married and for the next 27 years worked as a specialized mechanic at the local Siedel's Buick. In 1974 he joined the crew at UNL Downtown Campus Power Plant and worked as Utility Maintenance Mechanic for 12 years. After his retirement in 1986, Phil became an active volunteer at the different organizations in Lincoln and enjoys so much of his time working in a variety of projects at his garage: "My Shop" as he calls it. I first met him during the years I worked at the American Historical Society of Germans from Russia and where Phil was already a well-known volunteer. Last fall he decided to follow me on my new job at the Larsen, and since then Phil has become our unconditional carpenter. His work is now all around and it is slowly changing the looks of this old building.

In addition to his old fascination for old John Deere tractors, Phil has begun to portray them on colorful stained-glass artwork and these are now available for collectors in our shop area. Funny though, the only thing that can take Phil away from a project: a warm homey meal for lunch or supper prepared by his beloved wife, Irene. The two of them have just celebrated their 57th anniversary last February!!



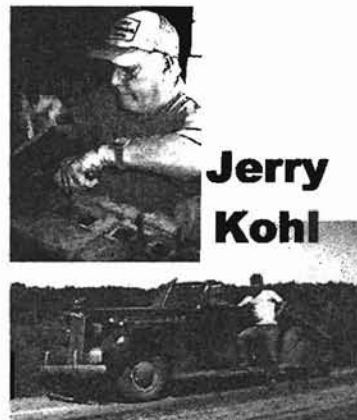
Phil and Irene Dinges relaxing at home.

Another Volunteer story continued on back page.....

Volunteer Highlights continued from page 3

With a life-long passion for mechanics and engines of all kinds, Jerry Kohl's favorite tractors are "all of the crawlers!" he says, "...although they are hard to put up with." Jerry came on his first visit to the museum after having been told of its location by Bill Splinter, Jr., a former student of his at Lincoln East High. Once at the museum Jerry met with Bill, Sr. and told him about the casual re-encounter with his son. Since that very first visit in 1998, Jerry realized he had found the perfect place for helping around with the maintenance and restoration of old tractors. He also found a safe place to keep restoring his old collectible, a 1948 Oliver HG crawler.

Born at his family farm in Nora, Nebraska, Jerry drove his first tractor at the age of 10. That tractor was his grand father's John Deere "A" and Jerry recalls it with fond memories. He remembers how easily the hand clutch allowed him at such a young age to operate and shift gears out there in the fields. At his father's shop, Jerry had the chance to begin learning about engines during the weekends and there he managed to drive his first crawler: a huge Caterpillar D-9 brought to the shop for repairs. Soon after high school, Jerry found a job working at the kilns of the Ideal Cement Co. Later in 1951 he joined the Navy and specialized in GMC "Jimmy" diesel engines. After 6 years in the Navy sailing all over the Pacific Ocean, Jerry decided to move back to Nebraska and started selling GM cars in Fairbury, where also met and married Kay. Soon after the wedding, the new couple moved to Kearney and there, Jerry graduated from teachers college with a BA in Mechanics and a minor in Social Studies-History. Omaha South High was the next stop for Jerry at which he started the vocational auto-mechanics programs in the early 1960s. Then, in 1966 came to work in Lincoln for Job Corps, but got immediately involved with setting up the vocational auto-mechanics program at Lincoln East High and stayed teaching in the program for 28 years. After retirement, Jerry is still busy in school as substitute teacher, plus doing all kind of projects at his home's backyard, and volunteering at the museum. More than six years have passed since his first visit. We hope keep having Jerry's enthusiasm and cooperation around for many more years, and soon seeing his Oliver HG on permanent display at the museum.



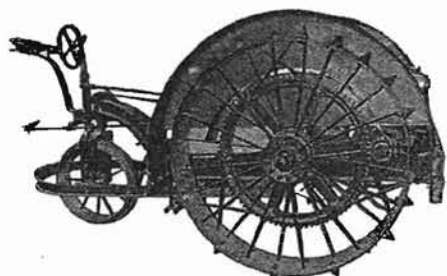
**Jerry
Kohl**

Above: Jerry at work restoring the MM Twin City ZTU in the museum, and with his 1940 Packard in 1949.

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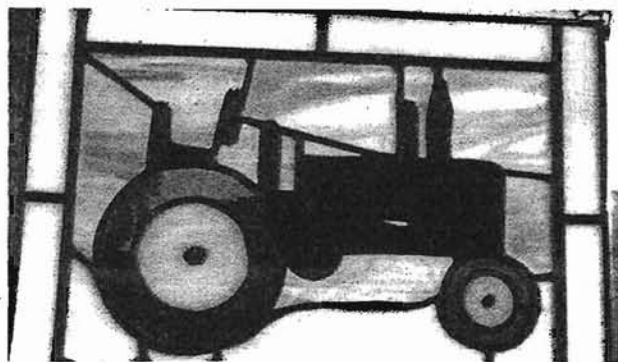
Judy L. Ray – Editor Newsletter #20 December 2004

To collect, preserve, research and interpret the traditions and technologies of agriculture.

Check Our Website!

The Lester F. Larsen Tractor Test and Power Museum web site has added a new feature. Please check out the web site to see our gift shop items on display. Gail Ogden, Communications Associate at Biological Systems Engineering, has created a beautiful display. She is a tremendous help and very talented. She not only came over to the museum to take the photos of our gift items but she also helped write the creative descriptions of the items.

Included in the display are the finely crafted art glass hangings done by Museum Friend and volunteer Phil Dinges. Phil will custom make tractor art glass if you give him a picture of the tractor. Also displayed on the web are pencil drawings of antique tractors drawn by Craig Cassell. We also feature some of our books and calendars on the web. Please give the web site a look and tell us what you think. Better yet come in and look at the selection and give us your opinion. Think of a gift from the Tractor Museum for that tractor enthusiast on your gift list!



New Museum Hours

The Lester F. Larsen Tractor Test and Power Museum is open on Saturdays and Sundays. In addition to the museum's regular week day hours the weekend hours are Saturday 10-2 and Sunday Noon-4. This will give people who work during the week a chance to bring their family and friends to see the museum. After a couple of test runs it was determined that the museum needed to be open on the weekends. We hope that you come and visit the museum when you are looking for something to do that is fun and educational. The weekend hours will also give the folks who live out of town a chance to visit us.

The museum was open on the Friday after Thanksgiving and twenty people came in to look around. Families from Michigan, Colorado, Western Nebraska as well as neighbors from just down the block came in to see our unique exhibits. Please spread the word that the museum is open on the weekends.

We will have special hours over the University's Holiday close-down December 27th through 30th of 10 am-2 pm. We will be closed the Christmas and New Year's weekend. Call 472-8389 if you have questions.

Board Meeting & Election

Jan. 11, 2005 1:30 p.m.

This meeting will be held at Chase Hall, just south of the Tractor Museum on the East Campus UNL.

Lester F. Larsen
Tractor Test & Power Museum
UNL East Campus, 35th & Fair St.
P.O. Box 830833
Lincoln, NE 68583-0833

Phone (402)472-8389
FAX (402)472-8367
E-Mail tractormuseum2@unl.edu

Officers:

President: Charles Borcharding
V. President: Don Edwards
Secretary: Leonard Bashford
Treasurer: Bob Kleis

Board of Directors:

Past Pres.: Earl Ellington
Vern Anderson
Harold Borman
Charles Fenster (Gering)
Richard Goodding
Lawrence Hermann
Jerry Kohl
Mark Lynott
Bill Overturf (Oak)
Ervin Rolofson
John Smith
Russ Tooker (David City)
Dale Vanderholm

Ex-Officio:

Louis Leviticus
Susan Norby
William Splinter

Who's New?

Hello there! I am Donna Martin, the new Museum Development Assistant. Currently I am working on finishing my degree in Museum Studies at UNL. I worked at the Larsen Tractor Museum as an intern in 2003.

My primary agenda for the museum is archival arrangement of the extensive tractor test documents and the development of the museum for the future. There are many artifacts and documents available at the museum but many people are not aware of the wealth of information we have. I am committed to finding creative and effective ways to make the public aware of this fantastic museum. Like my predecessors Luis Vasquez and Amanda Ray I am looking forward to being an asset to the development of the museum.

I am replacing Amanda Ray who left us to go to be the Director of the National Roller Skating Museum at 48th and South Street. Go see Amanda at the Roller Skating Museum. If you haven't been to this fabulous museum you will be surprised at the extensive collection housed in this museum.

The front burner item that we are working on right now at the museum is the very important historical designation of the building. We are striving to get the former tractor test lab designated as a National Historic Building. This will benefit the future of the Tractor Museum immensely. Not only will it help publicize how unique, important and one-of-a-kind we are, it will help us gain grant money for preservation and restoration. Most importantly it will help us find grant money for the infrastructure such as heating, cooling and air quality.

I am really looking forward to the challenge of keeping the museum in the spot light of historical research and preservation of agricultural technologies. Please stop by and say hi. I am always open to ideas and look forward to your input.

MUSEUM HOURS

MON-FRI 9AM-4 PM
SATURDAY 10AM-2 PM
SUNDAY NOON-4 PM
CLOSED NOON HOUR
HOLIDAY HOURS:
DEC 27-30 10AM-2PM
CLOSED DEC 24-26
CLOSED DEC 31-JAN 2

Volunteer Andrea Arbuck is shown working diligently in the archive room at the museum. Andrea is an employee at Love Library on the UNL City Campus. She works for Technical Services. Andrea is from Lincoln and her degree is in Great Plains Studies. As a student Andrea played clarinet and baritone in the UNL Marching Band. We are very fortunate to have Andrea here to help us get the archives in order. She is working on transcribing inventory logs into the computer and inventorying documents.



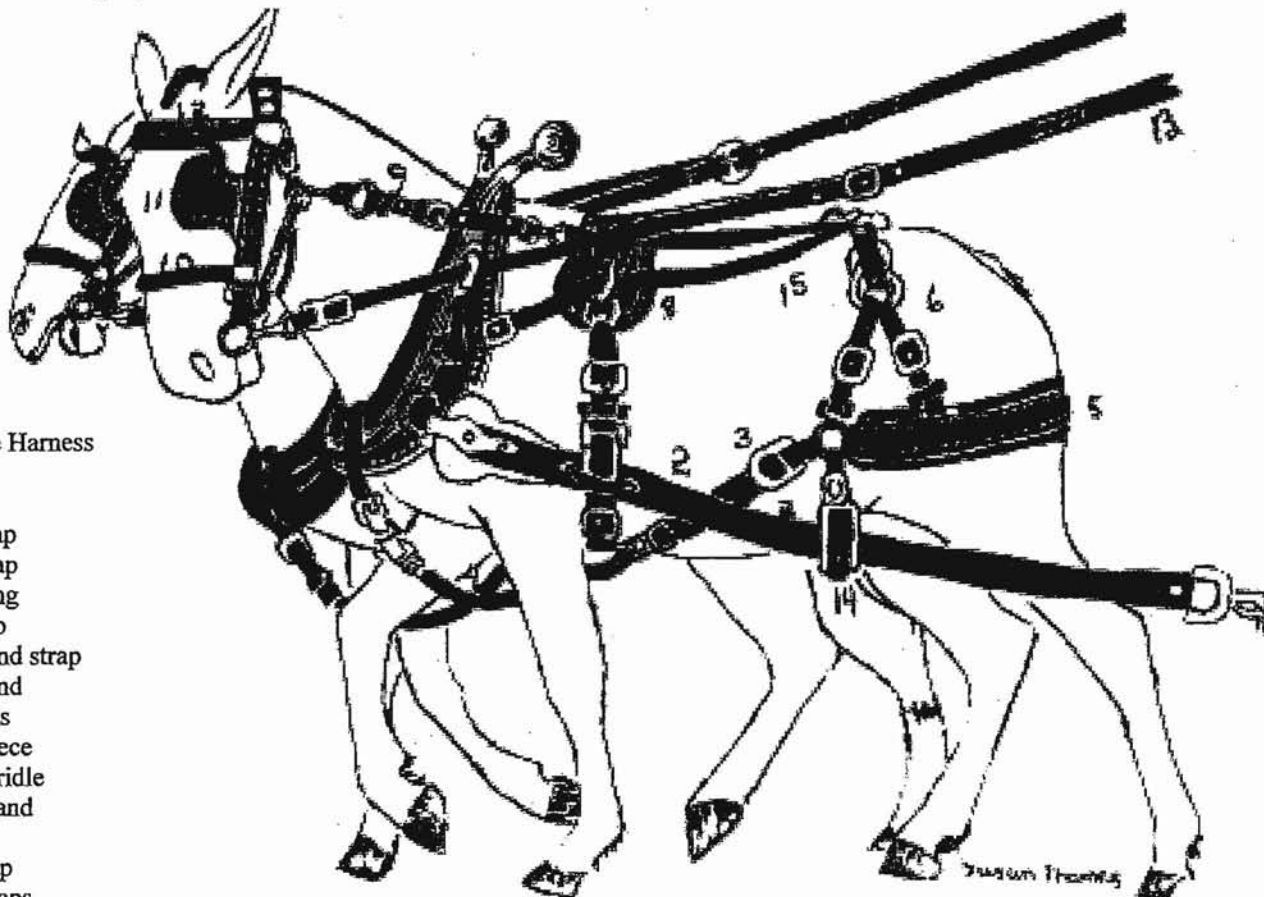
Thank you,
Andrea, for
your time and
effort.

Benefits Derived From Tractor Tests

Copied from a 1970's write-up by someone in tractor testing

1. Early tests showed imperfections in construction
 - a. Open chains and gears
 - b. Poor air cleaners if any
 - c. Excess weight
 - d. Inefficient engines
 - e. Manufacturers claims
 2. If true performance figures were advertised then there would be no need for Tractor Testing. However, this is (not) the case. Even yet Mfgs. often use bare engine power for advertising drawbar power. Test results stabilize advertising, several companies have been called "on the carpet" for misleading advertising.
 3. Tractor law requires that repair parts be available for tractors in Nebraska. All tractors need repairs sooner or later.
 4. The Nebraska Tractor Test furnished the first information showing the benefits derived from the use of pneumatic rubber tires on tractors.
 5. Over the years the results have furnished the only direct comparison of tractor performance since 1920 (in the world), comparisons of different transmissions and configurations (4 wheel), comparison kerosene, distillate, gasoline, propane, and diesel.
 6. Fuel economy was of great importance in the period from 1930 to 1960. Then increase of power became important and fuel economy suffered. Now with fuel shortage it is being revived.
 7. Following World War II fuel heating and loss of power became a problem. This necessitated new locations for the fuel tank (gasoline). We have been told that John Deere's location of fuel tank was followed by a suggestion from Test Lab.
 8. The testing for noise and sound probably did more good to help the operator's environment than most any aid in modern times. Tractor testing certainly stimulated rapid improvement in operator comfort far beyond any expectations. This was objected to quite severely by Mfgs. in the beginning.
 9. The first 4-wheel drive tractor built by J.I. Case gave good fuel economy on the PTO. The company representative asked to make a recheck hoping to do better than MF tractor showed real good results. This indicates a renewal in fuel economy interest.
 10. The dangers of over fueling to obtain more power were illustrated in several cases recently during the testing procedure.
 11. The use of Turbo chargers was abused in some of the more recent tests. This illustrated that these innovations must be designed on the unit and not an add-on attachment.
 12. Radial tractor tire testing slowed down much false advertising.
-

Power of Another Source



Parts of the Harness

1. hames
2. tugs
3. jack strap
4. pole strap
5. breeching
6. hip strap
7. back band strap
8. back band
9. gag reins
10. nose piece
11. blind bridle
12. brow band
13. lines
14. lug strap
15. side straps

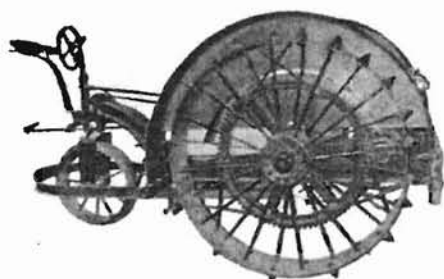
**Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833**

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Friends of the Lester F. Larsen Tractor Test and Power Museum Museum



Judy L. Ray – Editor Newsletter #21 April 2005

To collect, preserve, research, and interpret the traditions and technologies of agriculture.

BSE Open House Held

The first annual Biological Systems Engineering Open House was held on February 26th. Bill Splinter, director of the Larsen Tractor Museum designated this day of festivities for the Staff, Students and Faculty of the BSE Department.

We here at the museum often note how supportive and helpful the folks at Chase Hall, the headquarters of the BSE Department, are. The open house also commemorated the completion of 100 years of Agricultural Engineering here on the UNL Campus. Visitors were able to view items from the archives of the museum such as the lab coat Lester Larsen wore during his many years as the head engineer at the Test Lab. Thank you to Dave Morgan, assistant director of the Tractor Test Lab who supervised tours of the Test Lab during the open house. It was fun to discuss with department visitors how important the history of agricultural technology is. A number of staff, faculty and students from the department came to visit as well as interested folks who just happened to stop by. A big "thank you" to the faculty, staff, and students who came by to visit us on the special day. Thanks to Betty Splinter for the fantastic fruit punch and cookies. Our devoted volunteers Larry Ehlers and Jerry Kohl gave up their entire Saturday to give tours and chat with the visitors. As always we appreciate their support immensely!

Board Meeting

April 19, 2005 1:30 p.m.

This meeting will be held at East Campus Student Union UNL. Room will be posted.

President of Friends Board Attends Meeting

Don Edwards attended the Friends of the University of Nebraska State Museum Board Of Directors Meeting on Monday March 21. Marj McKinty, president of the State Museum Board, invited Don to the meeting. Marj attended the Tractor Friends meeting held in January. Don discussed the importance of promoting our museums and how useful and important networking between museums can be. Don also displayed the new 2005 Show Guide which features a half page advertisement about the Larsen Museum. A moment of laughter was had by all when Don displayed an advertisement he found in the recent edition of Antique Power magazine. The ad displays a picture of a lavender tractor and is advertised as a girl tractor all decked out in lavender and lace. Don also brought along a couple of tractor calendars and the group pulled numbers out of a hat to win the prizes. Don and Marj are dedicated to keeping the lines of communication between both friends groups wide open. It is quite evident that the Friends of the University of Nebraska State Museum are a very strong and active group and we hope to work with them in the future.



Visitors March 20 were from a Studebaker club

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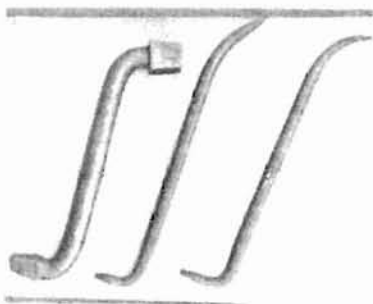
Past Pres.: Charles Borcharding
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Ron Yoder

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Message From the Director - W.E. Splinter



1910 International Auto Wagon

We have recently received two significant new donations for our tractor exhibit. The first is a 1935 John Deere "B" that has a brass name plate, indicating that it is among the first year's production run. It has been nicely restored and was donated by Don and Anne Eppley of Omaha. This complements our tractor collection very nicely as we like to show the earliest models demonstrating step changes in tractor technology. The John Deere "B", together with the "A" are the first row crop John Deere tractors following the John Deere "D" which in turn followed the Waterloo Boy. All are in our collection. It is nice to be able to show this sequence.

The second donation consists of a 1910 International Harvester "Auto Wagon", a motorized wagon mounting a two cylinder horizontally opposed, air cooled engine beneath the driver's seat. The driver sits on the right hand side. There are two speeds forward and one reverse. Extra passengers can sit on a board in the wagon box. This vehicle was beautifully restored by Elton Lyles and Don Graves, also of Omaha. We do not have all of the history of this machine yet, but it may have originally come from Gothenburg. We certainly appreciate these historic additions to our Larsen Museum collection and we invite everyone to come and see them.

Research Notes and Other Items from Lou's Desk

As you know, my efforts for the past year have been in cataloging and describing all the items in our collection. I have been greatly helped by the initial work done by Luis Vasquez, who did an absolutely magnificent job of recording and describing the items. His folders are a joy to look at from an artistic point of view and I urge you to ask to see them when you are at the museum.

However, he, unfortunately, was unable to record everything before he left. As I reported at the Friend's meetings, I have made good headway and discovered many interesting histories. This doesn't mean that I am finished—there are always new pieces of information and corrections on the items which have to be entered into the database.

I have some tools I am not sure of which I am showing in the reproduction on the left. I have received some ideas from people, but nothing was really "for sure". I would prefer to be able to register them in our list of items with, at least a "best guess". Anyone who has any info on what they are called and for what they were used or knows of a reference please contact me at the museum (402-472-8389 or email lleviticus1@unl.edu). Or, even better, come and see us.

- Lou Leviticus

Spotlight on the Friends Board

Featuring Larry Ehlers

Larry was born in 1933 at Junction City, Kansas. His great-grandparents came from Germany to homestead in 1854 in Missouri. Larry's grandmother came to Kansas in a Covered Wagon. Larry's grandparents bought a farm in 1913 near Junction City, Kansas. His brother Carl still lives there. In 1936 Larry's dad bought his first tractor. It was a Farmall



Regular. Like most folks Larry's interest in tractors comes from growing up with them. He recalls long hard days helping his dad harvest while his mom would be hard at work in the kitchen to bring food out to them in the field. "She would bring us a full meal with pie and everything, sometime twice a day!"

Larry thought about studying to become an architect but changed his mind when he found he didn't have the patience for drawing. He changed to engineering because he could do the math without any trouble. Larry began his teaching career in 1957. He started at Kansas State. He also taught at Oklahoma State. In 1965 he started teaching at the University in Omaha.

Larry met his wife Judy in High School. They started dating when she returned to Junction City and started working at the hospital. They have two children Pam and Doug. Their first and only grandchild is Julia Kay. They are awaiting the April arrival of a grandson who will be named Jack Edward.

Larry transferred from UNO and became a faculty member at UNL. He and Bill Splinter, director of the Larsen Museum, became friends when they were both department heads and they attended boring Dean's meetings together where they discussed their shared passion-- TRACTORS.

In his spare time Larry likes to refinish furniture and attend life-long learning classes. He is an avid sports fan and enjoys Kansas State Wildcats football and the New York Yankees baseball.

When I asked Larry about his teaching philosophy, it is assigning lots of homework, always answering questions about the problems and being available in his office. "I always tried to impress on the students they have to be correct 95% of the time when they go to work." He also enjoys students who are willing to work. "An engineering student can not avoid a life-long love of learning."

Larry feels that the most important aspect of being on the Larsen Museum Friend's Board is to be involved! The best way to do this, Larry adds, is by offering ideas to promote the museum, volunteer your time at the museum and last but not least investigate ways to keep the museum running through varied funding sources. Larry is always willing to fill in when staff cannot be at the museum and to research the historical aspects of the tractors so that we have clear, concise and interesting information for the patrons to read. Larry is a great asset to the museum and we are very glad he shares his busy schedule with us!

- Donna Martin

Dear Friends, Farmers and Countrymen,

Here is an odd one I dug up on the Internet. I have no idea how they aimed it. It probably made enough noise to scare away some. Others, possible marauders, may have been incapacitated from laughter. At least the farmer felt secure! - Lou Leviticus

Plow and gun



In 1862, during the American Civil War period (1861-1865), W.H. Fancher and C.M. French of Waterloo, N.Y. received a U.S. patent for a combined plow and gun (No. 35,600). To the metal plow with wooden handles of ordinary construction, the inventors added the elements of light ordinance, designed for "especially when used in border localities, subject to savage fueds and guerrilla warfare." The share serves as an anchor in the ground to resist recoil, the wooden handles being used to set direction. Projectiles could be grape shot or balls of one to three pounds weight. The combination was proposed to give those in agricultural pursuits to have at hand an "efficient weapon of defense at very slight expense in addition" to that of a plow.

LARSEN TRACTOR TEST AND POWER MUSEUM

8TH ANNUAL OPEN HOUSE
SATURDAY MAY 7
10-3



TRACTOR DEMONSTRATIONS - 1:30
ICE CREAM SOCIAL - 2:30

Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833

ADDRESS CORRECTION REQUESTED

Robert Kleis
6325 "O" St., #602
Lincoln, NE 68510

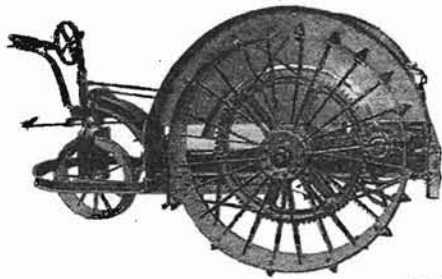
Archive Dedication Slated For May 7th Open House

There will be an important dedication ceremony during the Larsen Museum Open House on May 7th. The Bob and Bea Kleis Archives will be dedicated in appreciation of the tremendous amount of time, money and material Dr. and Mrs. Kleis have donated to the development of the Tractor Museum Archives. A dedication ceremony is planned for the morning festivities with rolls and coffee being offered after the ceremonial plaque unveiling. We will also dedicate two exhibit areas in the memory of E.A. Olson and L.W. Chase who contributed the collections that are housed in the antique hand tool room and Chauncey W. Smith who contributed many of the fine examples of early agriculture implements in our plow exhibit. Please plan on attending this observance of gratitude to our thoughtful donors, Bob and Bea Kleis, E. A. Olson, L.W. Chase and Chauncey W. Smith.

Red "X" - Dues Are Due

FYI January 1 began a new membership year. Please continue your membership and send your annual \$10 made to the "Friends" of the Larsen Tractor Museum to the address on this newsletter. Donations can be made to Larsen Tractor Museum or via University of NE Foundation. Please let us know if you do not wish to receive the newsletter.

Friends of the Lester F. Larsen Tractor Test and Power Museum



Judy L. Ray – Editor Newsletter #22 July 2005

To collect, preserve, research, and interpret the traditions and technologies of agriculture.

Museum Happenings

The Larsen Museum is in full summer swing. This is a busy time of year for the Museum. We have committed to five tractor shows this year. They are Platte Valley Machinery Association in Ayr, NE July 9-10, Camp Creek Threshers in Waverly, NE July 16-17, Nebraska State Fair in Lincoln, NE August 27- September 5, Old Trusty in Clay Center, NE on Sept. 10-11 and Husker Harvest Days in Grand Island, NE Sept. 13-15.

If you want to see the Museum in full bloom now is the time to come over and look at our front entrance. The flowers are beautiful. Many of these plants have been here for a number of years and they are reaching a nice size and the blooms are gorgeous. Judy Ray and Gail Ogden have been nurturing this area for quite a while. We have a number of valuable volunteers keeping the flowers watered, weeded and cleaned up. Don Johnson comes in three times a week to process and describe photos, but he also waters all of the flowers and I think I have noticed him chatting with them from time to time also. Liam and Connor Mullin along with their mom and dad Leslie and Peter come in once a week to clean the Museum and water the garden. They also planted some lovely native grasses and drought resistant plants. Jeremy Steele landscaped the McCormick Deering just to the west of the Museum and it now stands out quite nicely. Jim Willis donated and helped plant some pretty posies also. Please come over anytime of the day or night and admire this lovely area. Pull a weed or two while you are here!

The Museum is buzzing with activity. Volunteer Partners has helped us find some really valuable and needed help. In addition to the volunteers we have depended on for many years we are also happy to have Jack Fingeret around to perform general maintenance and repair. Sandy Luebbers is scraping and painting the interior walls. Margaret Howie is processing and inventorying in the archives. Al Brhel is working on the glass plates and identifying many of the individuals and tractor tests from the early forties. Kerry Taylor has also been helping with the glass plates and inventory of the blue prints.

Josh Medley helps with odd jobs. He recently fixed the lawn mower Gail Ogden donated to us. Thanks to Gail by the way for finding this much-needed machine for those days when the grass seems to grow a foot. Jerry Kohl and Phil Dinges have been working feverishly on the John Deere H. We are hoping to get the tractor moved out of the garage so we can get the space ready to exhibit more artifacts. Larry Ehlers continues his mission to get all of the tractor signs up to speed so that they are accurate and easy to read. Andrea Arbuck continues to come in to work on the tractor test files so that the staples and paper clips are removed. Jared Teichmeier is busy caulking the outside of the building. Jeremy Steele, was mentioned above as helping with landscaping but he has also taken a special interest in the Museum's education mission. Come in and see the fun scavenger hunt he has set up for the kids.

We had a visitor from Scotland come in the other day with important information about some of our hand tools and horse equipment. He was visiting from the Highland Folk Museum in Kingussie Scotland. More about that later. He will send us more information when he returns home.

I have been here six months and I am enjoying the challenge. I have decided to return to school in January of 2006 to get my nursing degree. I hope to remain here at the Museum until December in some capacity to finish up some of the projects I have going. We are still trying to get the building designated a historic site. The Chancellor and Vice Chancellor visited the Museum in June and we are hoping they give us the go ahead to continue with the application. We hope to continue our discussion about what is best for the archive material. Should we store it here at the Museum or transfer it to Love Libraries Special Collections? Do we look for funding to restore the exterior of the Museum first or concentrate on funding for heating and cooling? These questions and more keep the folks here at the Lester F. Larsen Museum hoping and hopping.

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MUSEUM HOURS

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John Carile was a technician at the Tractor Test Lab for many years. Lou Leviticus found this in one of our books. It is by John and we thought our readers would get a chuckle out of it even though it may not be politically correct:

Pants Are Made For Men
Women Are Made For Men, and Not For Pants
When a Man Pants For a Woman
And a Woman Pants For a Man Then
They are Called a Pair of Pants
Such Pants Do not Always Last Then
They are Called Breeches of Promise Then
This May Turn into A Suit.

Message From W.E. Splinter, Director

The 8th Annual Larsen Museum Open House was a success! Over 250 people came to the Museum to see the tractor demonstrations, eat ice cream, and see a father and son rope making team at work. The event exceeded our expectations. We had a number of families with children who had never been here before stop by and see the tractors. In the morning before our afternoon program we saw 15 dozen cookies disappear. For our ice cream social after the tractor demonstration we saw 175 cones of ice cream disappear so the crowd was happy and well fed. The rope making demonstration by Jeremiah and Lyndon Ochsner drew a crowd all day and many kids got to have a free jump rope made especially for them with their own choice of colors. One little boy was going to go home and rope his sister. I told him he had better not try to rope his mother. A group of folks from Cortland, Nebraska drove their tractors in to Lincoln just to participate in the open house. The weather was beautiful and we all had a great time. Thanks to everyone who participated.

From the Desk of Lou Leviticus

Yes, Victoria, there is a Santa Claus. I found some very valuable history in Frank Walters' material. That is one of the fruits of groping through our printed archival material. Let me go back a few steps and start at the beginning. Some weeks ago a visitor brought us an article from the Summer 1975 issue of "Nebraska History". In it there was an article about a HENRY OLERICH of Omaha, who had, among many other things, developed a tractor, the "Olerich All Purpose Tractor" which "HAD BEEN TESTED IN 1917"! There was even a photograph of that tractor. Now, we all "know" that Nebraska Tractor Testing started in 1920 - don't we? We said: "Nah, must have been the plowing demonstrations in Fremont."

Well, we were wrong. In Frank Walters' (bless him for collecting so much stuff) material I found an article by Leon W. Chase called "Nebraska Tractor Tests, 1917." In the article Chase describes the tests on 90 "Traction Engines" over a period of two weeks before and two weeks after the public plowing demonstrations which were held that year in Fremont. Special dynamometers and measuring methods and equipment were used and the results were published in detailed tables and graphs of the performances of the various machines.

It is clear that these were "official and scientific" tests and that they laid the foundation for the methods and procedures for the final actual tests which started to be performed in Nebraska in 1920 and which were the foundations for the ASAE and SAE standards. We owe a great amount of thanks to Frank Walters and to Charlotte Walters, Frank's widow, for putting these materials at our disposal.

Since this is very valuable and fragile material, we will make copies on request for those interested in studying the article. It is well written and worthwhile.

Spotlight on the Friends Board

Featuring Russ Tooker

We continue our Spotlight on the Friends Board with Vice President of the Board Russ Tooker. Russ got interested in the Larsen Tractor Museum because his dad was on the original board. Norm Tooker, Russ' dad, passed away three years ago. Russ was born and grew up in Ralston, Nebraska and his dad was the County Agent for Douglas County. His family was always connected to agriculture and he wound up going to college at UNL from 1979-1983. His grandparents farmed near David City and Silver Creek, Nebraska.

Russ has been acquainted with many of the folks who have served as board members and who have been professors at UNL in the Agricultural Engineering Department, now known as Biological Systems Engineering. Russ's Dad, Norm Tooker and Friends Board Member, Earl Ellington, worked in the same building when Norm was working with International Programs on East Campus so Russ met Earl that way. Norm also worked with the International Students for ten years at UNL.

Russ has a degree in Agronomy Crop Production from the University of Nebraska and he farms near David City, Nebraska. This is where his mom's side of the family is from and his dad's side of the family is from Silver Creek. He farms both family farms. So Russ keeps busy farming two farms 30 miles apart. He relies on his mom and his wife to help him transport machinery between the two places.

The main crops that they farm are corn and soybeans. Russ used to raise pigs but he got out of that business about two years before the bottom dropped out of the market in the late nineties. He also rents out about 140 acres of pasture for cattle. When I asked Russ if it was possible to make money in corn and soybeans these days he said only if you have two or three wives working the farms.

Actually Russ only has one wife, her name is Julie. She works with quality control at a company in Columbus. Russ and Julie have been married since 1986. They met in College when they were both students on East Campus. Russ and Julie have a twelve year old son. Russ remembers looking out the dorm window in Burr Hall and watching the tractors going around the test track.

According to Russ the museum needs more hands on displays to interest students in the history of agricultural technology. He has a great idea about a display for the dynamometer which would use an exercise bicycle hooked up to an alternator. The alternator would be hooked up to a light bulb and when the person on the bicycle pedals the light bulb

would light up. Other displays that would be interesting are a hydraulic cylinder to show how the tractor test equipment works for the load test. This could be hooked up to a tractor seat and a pressure gauge to illustrate how the strain meter in the tractor test works. And some examples of how an engine works would be helpful. Anything that is hands on and that moves, lights up or makes noise would be interesting to young people.

As a board member Russ feels the most important aspect of the Friends Group is involvement. He would also like to see some tractor clubs involved. Russ would like to get KRVN radio interested in promoting the Tractor Museum. The radio station gives farm organizations five minutes of free air time on Friday afternoons. It would be great if we could get this kind of thing going. KRVN reaches a large audience that would be interested in hearing about the Museum. We could give a short history about Tractor Testing or how a specific tractor evolved over the years. There is an endless amount of information we could use for this sort of promotion.

Russ feels the mission of the museum is important because the transition of the horse from the tractor is important. Farmers did not go out and buy a car when they became available, they bought a tractor first and then rode to town on their horse when they needed to get a part for the tractor. The tractor is the first mechanical power they had out on the field. A tractor was something an individual could afford to bring more power to the farm. Some city people couldn't afford a car or a horse and at least the farmer had something that ran on gas and he did not have to feed it grain. If the tractor was not working it was not eating!

In the small agricultural community where Russ and his family live most kids are aware of where their food comes from. It is important for kids to know that the beginning of the food chain is not the grocery store. The grocery store is the end of the food chain. The idea of outsourcing food production is on the horizon and that is a scary thought Russ feels. The idea that the individual Nebraska farmer feeds over 200 people is important to remember. People in most third world countries have to work a day or two to afford a loaf of bread and a person in America works two minutes.

- Donna Martin

Board Meeting
July 19, 2005 1:30 p.m.
This meeting will be held at Chase Hall.

Minutes of the April 19, 2005 Board Meeting

The April 19, 2005 meeting of the L.F. Larsen Tractor Test & Power Museum Board was held in the Sunflower Room of the East Campus Union. President Don Edwards presided. A total of 18 were in attendance.

Minutes of the January 19, 2005 meeting were distributed and accepted as presented.

Treasurer Robert W. Kleis was not present. His report was read by the Secretary and accepted as given. This showed a balance of \$15,348.91 as of April 19, 2005 in the checking account plus a CD of \$5073.50, both in the Union Bank.

The Curator's Report was given by Lou Leviticus. The Director's report was given by Bill Splinter. Mark Nickolaus gave the Docent's report showing 690 visitors to the museum for 2005 to date. Donna Martin gave the museum's activity report.

Items discussed during the meeting included:

- Participation at this fall's Nebraska State Fair.
- Additional space for the museum including space for the old Tractor Test Load Car.
- Publicity received by the museum in various publications and the benefits of museum recognition.
- The need for additional funding and the possibility of obtaining donated tractors which could be sold with the funds used by the museum.
- The possibility of the museum putting out a calendar.

The Museum's 8th Annual Open House is scheduled for Saturday, May 7th from 10 to 3 with tractor demonstrations at 1:30 and ice cream refreshments at 2:30.

The next Board Meeting is scheduled for 1:30 p.m., July 19th in room 225 of Chase Hall.

Meeting adjourned at 2:37 p.m.

Harold Borman, Secretary

Interesting Museum Visitors

In addition to folks from Australia, New Zealand and Scotland we have been very happy to meet people from all over the United States here at the Museum.

In early spring Eric Luebben and Gary Branch from southern California stopped in to see us. Eric was on a trip to return to California with a Luebben Baler on his trailer. His great-grandfather, Melchior, was the man who invented this amazing machine. The picture postcard he had with him is shown on the back page. On the post card the printing reads "Bale your Hay direct from the Winrow-capacity, 3 to 7 tons per hour. The bales are rain-proof and bound with twine. Luebben Baler Company, Beatrice, Neb."

In the summer 1984 issue of the Clay County Historical Society news quarterly *Save Yesterday for Tomorrow* George A. Woolsey, Jr. wrote "An innovative new agricultural invention that was conceived in Sutton soon after the turn of the century is today a time-saving and economical necessity on many farms throughout the world. In 1908 the Luebben Brothers Round Hay Baler was, without a doubt, "ahead of its time." Promoted as something new and something practical, the Luebben Baler was described in early advertisements as most appealing "to the man ready to mount the chariot of progress and be a leader in his community."

Eric and Gary spent many hours at the museum and the test lab. They were especially impressed with the 1/4 scale students and their projects. Eric and Gary left us with interesting material relating to the Luebben Baler. Thank you to Eric and Gary for their informative visit and support!

On June 27 Gaylord Bode and his wife came to visit his dad's 1951 Case LA. He knew the diesel engine was put in for more power in 1953 and it was one of the first models with turning brakes and has a chain drive, not gear. It took the kids to where the school bus could get through in the bad winter weather because in 1955 Charles and Marie (Egging) Bode worked on a sketch for a cab. Marie wrote the measurements on a napkin. Charles wanted it tall enough to stand up in with his cowboy hat on, and a sun visor like a semi cab. Marie's cousin had a bigger shop, and the Eggings built the cab and manufactured more. Gaylord's brother rolled a JD with a cab and it saved his life.

All our visitors are a treat to visit with and they seem to really enjoy the Museum.

Cushman Collector, Jim Brown



Jim Brown came to the Museum one day looking for information about the Ward Tractor Company. Come to find out he had more information about the Ward Tractor than we have. Jim is a collector and restorer of Cushman Motor Works material. He buys Cushman gas engines, parts, literature and memorabilia. This is why he is interested in the Ward Tractor Company. In an article Jim wrote for *Gas Engine Magazine*, June 2005 issue, he explains "It was not uncommon for early gas engines made for general farm or industrial use to find their way into both homemade and factory-made tractors. It was also not uncommon that many of these tractors had limited success. Such is the case with the Ward Tractor Company. Manufacturers of the Ward Tractor Plow, powered by Cushman Motor Works 2-cylinder engines, all made in Lincoln, NE."

Jim has provided us with a very nice display of Cushman memorabilia at the museum. He has also loaned us his 1910 Cushman 3 H.P. Model C #1046 "Binder" Engine. Please come to the Museum and see these unique items. Thanks to Jim Brown for loaning these items to us and for the information he has provided. Please take a look at the excellent article he wrote in *Gas Engine Magazine*. He even mentioned the Larsen Museum in the article! Thanks Jim.

by Donna Martin

A Visitor's Letter

Dear Donna,

Attached is a photo of Darcy at the testing laboratory. Hope this is sufficient for your article. We had a wonderful time at your museum and lab and will tell it as a highlight of our whole journey to the US.

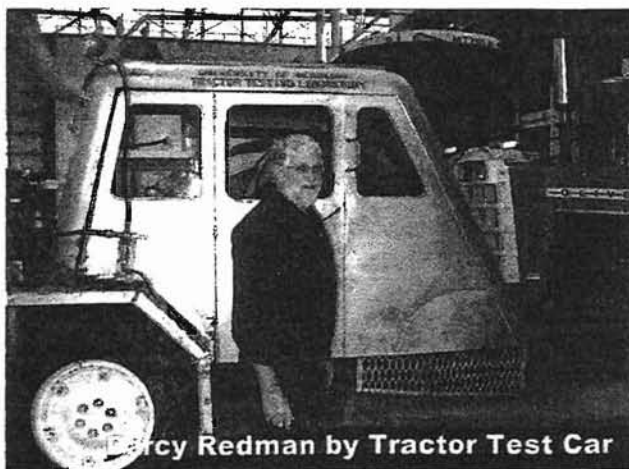
Briefly, Australian Darcy Redman visited the Nebraska facility on Friday, April 22nd. Darcy's interest in tractors stems from his childhood, when as a youngster living on a farm in Australia, he had an ambition to own a tractor and saved for his dream by collecting and selling wool from dead sheep. It doesn't sound like an instant way to wealth, but in times of

good wool prices in Australia, and by the age of ten years, would you believe, he was able to purchase his first tractor. It was a model N British built kerosene Fordson Major. He bought it with the intention of making pocket money on the farm by harrowing for weeds and towing a delva to level some of the rough black soil tracks used to access points where cattle were watered. His endeavours were shared by several adjoining farmers and before the age of eleven, he purchased a second kerosene Major on rubber tyres, and converted his original to rubbers as well.

Ambition drove him to develop a simple twin hitch and control. He and his friends of this age were quite capable of welding, driving vehicles, and using a wide variety of tools. A generous supply of second machinery soon resulted in a collection of a fourteen foot sundercut, an eighteen row combine planter, and an eight foot chisel set, along with extended harrows. Darcy involved a similar aged friend and it was obvious that they needed an addition to plant, so that both boys could be working at the same time. Darcy fulfilled a long ambition by the age of eleven and a half, and purchased a near-new exquisitely maintained model "L" Lanz Bulldog, exclusively for harrowing. He later owned another two Lanz Bulldogs of larger size, before selling off all of his equipment except the lovely little model L Bulldog before he went to boarding school at the age of fourteen years.

His affair with tractors did not end at this point. At college, he met a girl whose father owned an exquisite electric-start Lanz Bulldog and who had a truly wonderful daughter. He married Karin and they have been together for 38 years. Darcy is currently on a 10 week Churchill Fellowship to the United States to study water technology in arid environments, and visited the Nebraska facility as a matter of deep personal interest. It is certain that there is romance in tractors old and new. Thank you all very much for your hospitality at the Nebraska Museum and Test site. You are a world class facility.

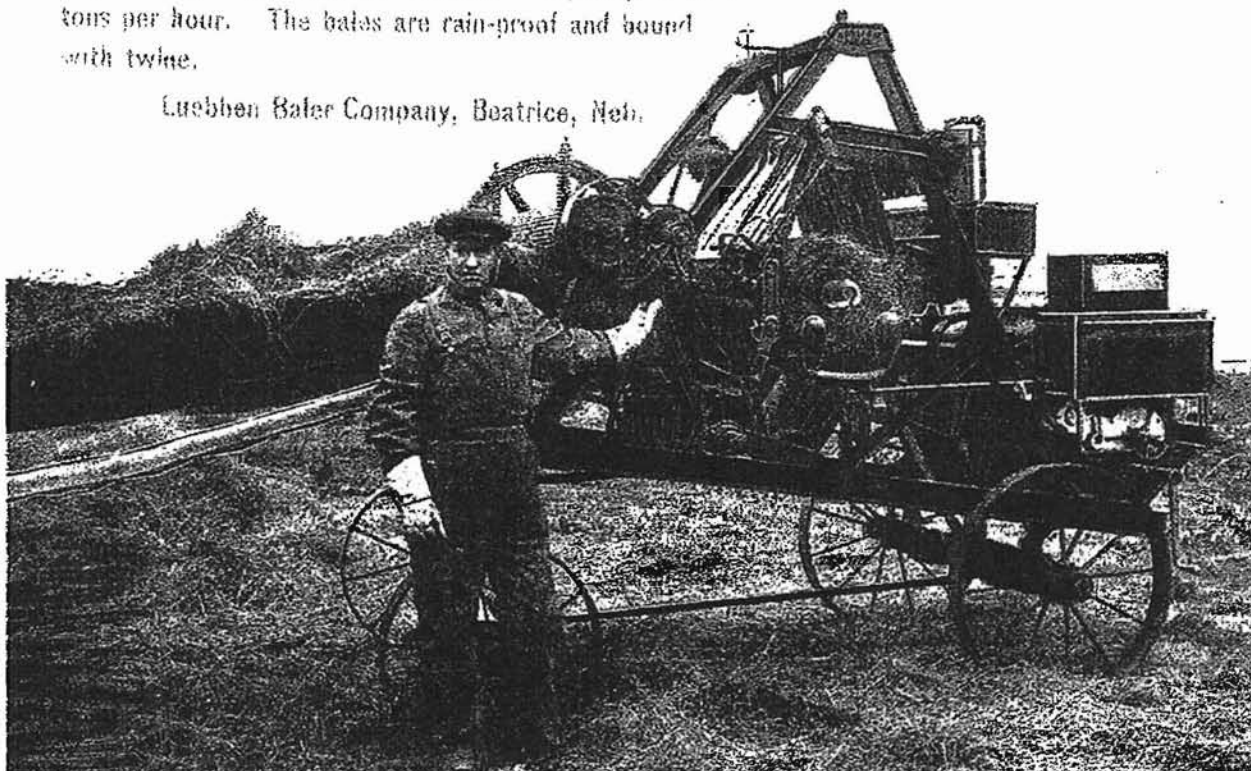
Cheers from Darcy and Karin Redman



Darcy Redman by Tractor Test Car

Bale your Hay direct from the Winrow---capacity, 3 to 7
tons per hour. The bales are rain-proof and bound
with twine.

Luebben Baler Company, Beatrice, Neb.

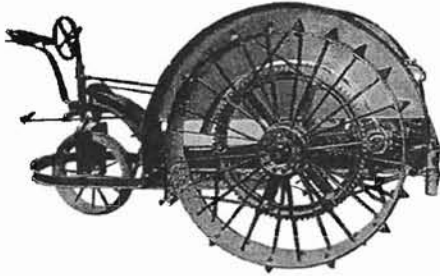


**Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833**

ADDRESS CORRECTION REQUESTED

FYI January 1 began a new membership year. Please continue your membership and send your annual \$10 made to the "Friends" of the Larsen Tractor Museum to the address on this newsletter. Donations can be made to Larsen Tractor Museum or via University of NE Foundation. Please let us know if you do not wish to receive the newsletter.

Friends of the Lester F. Larsen Tractor Test and Power Museum



Judy L. Ray – Editor Newsletter #23 October 2005

To collect, preserve, research, and interpret the traditions and technologies of agriculture.

A Letter From Fred Chase

Editor's note: Fred is 99 and the son of L.W. Chase. He lives in Florida. The design of the tiller here was picked up by the Noble Plow Co. and it is still used in wheat country in the U.S. and Canada.

"A conversation with Bill Splinter and the July Newsletter brought up some memories of events about 70 years ago. It was the end of the depression with low corn and wheat prices and a hangover from the dry years of 1934 and 1936. (Ed note: Actually advertised as "New for '41"). The dust was still blowing. Practically all of the Chase Plow Company's cash flow came from the sale of repair parts for an obsolete line of row crop tools.

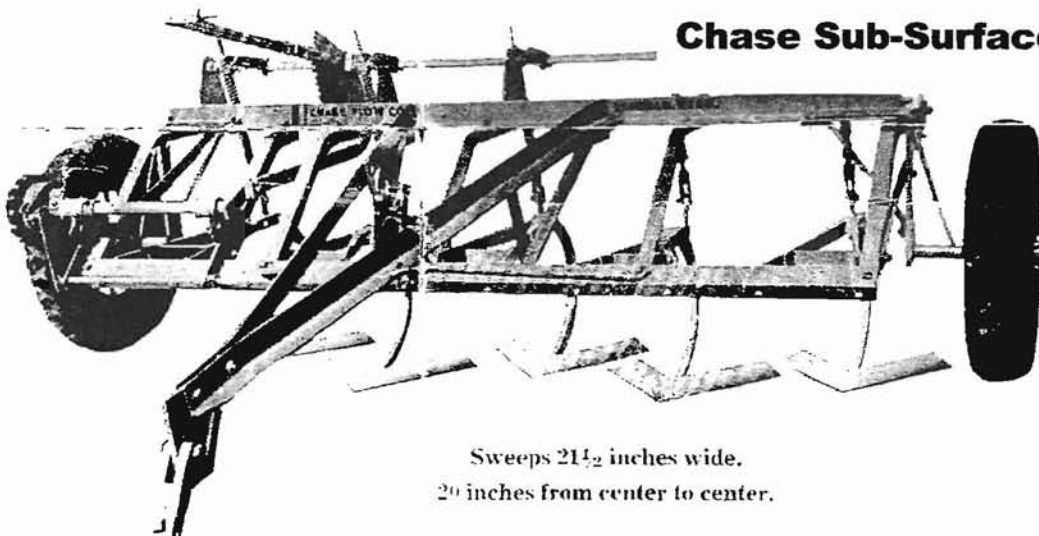
Bindweed (Russian Morning Glory) was taking over the Central Plains States as it could survive the drouth with its long tap root. We had built and were trying to sell a machine which we called a bind weed exterminator. It was basically a field cultivator with a special blade. It was probably in 1937 or 1938. I was in the back office and Father (L.W. Chase) in the outer office when Drs. Duley and Russell came in. As they knew Father they visited with him. One of them said that they were looking for a

tillage tool that would operate under the soil surface and not disturb the top soil or the crop residue.

Father considered the problem and replied by offering a spade and a trip to China and (suggested) digging up. I heard all of this and got into the discussion. I suggested that we might have what they wanted in our bindweed exterminator.

We made a few changes in the sweep design and the machine became the Chase Sub-Surface Tiller. It apparently was what they were looking for as they and the Soil Conservation Service adopted it as a new tillage practice for the Great Plains.

However, our financial condition was such that we could not properly introduce the modern NO Tillage farming. Uncle Sam caught up with me in 1942 and by the time I got out of the Army in 1946 the field had been taken over by other machines that were heavier but did not do job as well. One problem was that farmers liked to see the dirt move."



Chase Sub-Surface Tiller

Sweeps 21½ inches wide.
20 inches from center to center.

Lester F. Larsen
Tractor Test & Power Museum
UNL East Campus, 35th & Fair St.
P.O. Box 830833
Lincoln, NE 68583-0833

Phone (402)472-8389

FAX (402)472-8367

E-Mail tractormuseum2@unl.edu

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Louis Leviticus

Susan Norby

William Splinter

Message From W.E. Splinter, Director

We have several projects underway which keep all of us busy. Larry Bitney and Phil Dinges are renovating the 1917 Moline tractor. It will be interesting indeed to hear it run.

Curt McConnell is determining the footprint of all of our tractors so that we can better lay out the most efficient way to show our tractors. We are hoping, with the completion of the garage area, to move enough exhibits to that area to free up the Northeast bay, allowing tractors to be shown there and hopeful freeing up enough space to add the old Test Car to our exhibit. I am currently looking into utilizing heat pumps for HVAC.

Batteries and tires seem to be the consistent operating cost for the Museum. Jerry Kohl continues to keep things running and Mark is doing an excellent job in handling visitors. We would indeed be unable to operate without their input. I am very sad to report that one of Board Member Ervin Rolofson's grandsons was killed in a road accident. Certainly he has our understanding and sympathy.

From the Desk of Lou Leviticus

This time we have a new wrinkle. Is there anyone who has heard of a "Nebraska Engineering Scale"? I thought not. Well, there is one and it appears to be a legitimate scale. We have one in our museum. It was manufactured by K&E Co (Keuffell and Esser), a well known and respected name for its many types of slide rules and other measuring equipment. This company was also well known for its accuracy, because slide rules and surveying equipment has to be very accurate and precisely made. Ours is in the form of a triangular ruler, to be used to lay out and read different scales on maps.

And herein lies the rub! There is a regular scale in inches, alongside a 1:2 metric scale. This means that the metric scale should run to 608 mm for a length of 12 inches. But someone messed up when making this ruler (maybe that's why we got it!) and the 12 inches equal EXACTLY 600 mm. That is an error of over one percent – a very unusual error for this company and one which might cause some problems when laying out maps, or, in WWII, determining where to bomb or lay an artillery barrage.

The latest addition to the Ruler Saga: Larry Ehlers explained that this is an Architect's Ruler. The scale with the 600 units, which are NOT millimeters is just a scale to be used by the architects. Thus this scale is 600 divisions for 12 inches, or 50 divisions per inch. So that mystery is solved. However, if this is an architect's scale why call it "NEBRASKA ENGINEERS SCALE". What did K&E think about Nebraska, its engineers and architects?

MUSEUM HOURS

MON-FRI 9AM-4 PM

SATURDAY 10AM-2 PM

SUNDAY NOON-4 PM

CLOSED NOON HOUR

*** A bumble bee is considerably faster than a John Deere tractor.**

*** Life is simpler when you plow around the stump.**

Spotlight on the Board

Jerry Kohl is well known around the Larsen Museum as the volunteer who knows each tractor intimately. Jerry is a dedicated volunteer as well as a member of the Larsen Museum Friends Board. Here are a few things that you may not know about Jerry.



Jerry became interested in the Tractor Museum when Director Bill Splinter offered him a home for his Cletrac. He came to visit his tractor often and one thing led to another. Jerry volunteers a number of times a week depending on what he and his wife Kay have going on at home. He was born in Nora, NE near Superior, NE and spent most of his growing years in Hardy, NE.

Jerry grew up a gear head all the way. His dad ran a garage and had the only full service garage in the community during WW II. Jerry learned his mechanic skills from his dad who was a good teacher. When he was 15 years old, he was in the pit working on a car and the car dropped locking him in the pit. He did not get hurt. There he sat until the guys came back from lunch and of course, he was given a hard time because he did not put blocks under the car. When he was very young, about a year and a half old, he took off from home on his own one day. He wandered down to where his dad was working in a garage two blocks away and fell into a drain pan full of oil. He has been kidded ever since about being baptized in oil. He joined the Navy at the onset of the Korean War and learned diesel mechanics in the Navy. He worked on a repair ship.

Jerry decided to become a teacher and he began in 1958 as pre engineering major. He went to Fairbury Jr. College. A professor saw his gift for teaching and guided him towards industrial arts. He went to Kearney State and received his degree in Vocational Education, Machine Shop and Automotive Technology. He taught at Omaha South High School as his first teaching experience where he built the vocational program up from scratch. Jerry says his philosophy of being a successful teacher is to know what you are doing. Don't try to snow the kids because they can see right through it. Don't show fear even if the world is falling apart. Of all the student teachers he has had, the one thing he always tells them is no matter how scared you are just hang in there. Be sure to always know what you are doing. As far as the difference between students today and when he started Jerry has found that students are the same now as they were back in the fifties... they just get away with a lot more.

As a board member, Jerry feels the most important aspect of the Larsen Tractor Friends Organization is preservation of the tractors, the history, and the science of farming. The thing he likes best about the Museum is that unlike many other museums the artifacts are not packed away behind glass. You can touch the exhibits, even sit on them and see them running. Kids really like to be able to do that. The importance of this is that it gives the visitor a base or background for where agriculture has been. If a person knows a little about the history of agriculture, they are more likely going to want to learn more about it and the Larsen Museum is a great place to learn.

Judy's Corner

Things continue to move forward here at Tractorville. We would like to thank Jeremy Steele for taking over the very active job of running our State Fair exhibit and to Donna Martin, our recent Museum Development Associate who continued to give her help. Thanks to all of you who volunteered your time and energy, not to just the State Fair, but in all the outings and projects we have been doing this summer: Platte Valley Antique Machinery Assoc. show in Ayr, NE. Camp Creek Thresher Show in Waverly. Old Trusty in Clay Center, NE. Husker Harvest Days in Grand Island.

Each person who works with us leaves their mark on the museum in a good way. Donna did a great job with signage, organizing volunteers, out-reach, publicity, inventory, and displays just to name a few things.

Jeremy Steele has also been filling in on Museum Development. He is a very enthusiastic person and we have a hard time keeping up with him. He was instrumental in getting the garage area dry-walled and is making many helpful contacts.

On September 9th Jeremy invited 3 brothers: Gerald Johansen, Dennis Johansen, and Robert Johansen, all from Osceola, NE, to record their memories of growing up with and farming the land of Wilmot Crozier "the Father of Tractor Testing".

We have volunteers working on a few of our tractors, and we can always use donations to buy parts. We do not operate on a large budget and I am still doing my begging, borrowing, repairing, sales and coupons.

Please consider a tax-deductible donation to the museum this year. We promise not to use the money on wild parties!

-Judy L Ray

More on Luebben Baler



In the last newsletter, we gave a brief description of the Luebben Baler. Eric Luebben, the great-grandson of Melchior Luebben, and Gary Branch visited the Museum in early spring. After reading the article, Don Edwards, Larsen Museum Friends President, pointed out a valuable reference to the evolution of the round baler in one of the many books in the Museum Library. The following information is from Allis-Chalmers Farm Equipment 1914-1985 by Norm Swinford:

"The rolled-bale bailing press was invented by Umno F. Luebben of Lincoln, Nebraska, and he was granted Patent No. 972,884 on October 18, 1910. Henry Merritt was instrumental in acquiring rights to the Luebben patent in 1940.

Work on the A-C round baler began in December of that year, with the first unit built in 1941. In 1943, a pilot run of 25 balers was built, most of which were placed with farmers and custom operators in seven Midwestern states. This extensive test program produced the proven Roto-Baler.

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ADDRESS CORRECTION REQUESTED

Farmers were accustomed to seeing hay baled in relatively large, usually heavy, rectangular packages held together by two or three wires, although the new-fangled twine-tie balers were getting started. Now here was a bale that wasn't rectangular, wasn't very heavy, and was wrapped not tied, with binder twine. Can't be! Won't work!

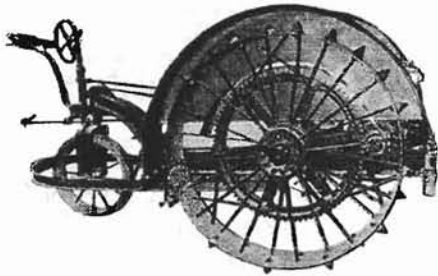
But that strange-looking machine, which certainly didn't look like a baler, had a lot going for it. At only \$985 (1947), a farmer could afford to own one and avoid the custom baler who didn't always come to bale before the next rain which was sure to come. But who wants a round bale?

So the A-C sales crew had to learn all about "Roll-Up Compression" and how it formed the bale without mangling the hay. They had to learn how to convince farmers that this was a better bale. They talked some of their first customers in to leaving some bales in the field all winter, so they could open them in the spring and show the non-believers the bright green dry hay. Even the cattle became part of the selling team—they liked the rolled hay better because there were no sharp ends to jab their mouths.

The Roto-Baler remained in production from 1947 through 1964. Due to popular demand, there were three small production runs of 800 each in 1971, 1973 and 1974. Altogether 77,200 standard and fast-wrap Roto-Balers were built. Not bad for something that didn't even look like a baler."

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Friends of the Lester F. Larsen Tractor Test and Power Museum



Judy L. Ray – Editor Newsletter #24 Winter 2006

To collect, preserve, research, and interpret the traditions and technologies of agriculture.

These Fifty Years:

As taken from the 1926 History of the College of Agriculture

<http://www.rootsweb.com/~neresour/OLLibrary/UNAC/pages/unac0091.htm>



The Ag College as it appeared in the 1880's. The two main buildings are the dormitory and the stone house.

Agricultural Engineering. - The department of agricultural engineering is one of the newer departments of the college. Prior to the fall of 1904 some work in the farm mechanics line had been given in the engineering shops at the University. In the summer of 1904 the Board of Regents set aside \$15,000 for buildings and equipment at the college farm. This money was expended in the erection of a machinery hall and shops building, a red brick structure still standing on the campus, at a cost of \$10,500, and in equipping the blacksmith shop. J. B. Davidson, a graduate of the University of Nebraska in mechanical engineering, was put in charge of the work, under the direction of the mechanical engineering department of the University. He gave instruction in forge work, farm machinery, and farm motors. The work was known as farm mechanics,

rather than agricultural engineering, however. But after a year Professor Davidson resigned, and soon L. W. Chase, under whom the department grew rapidly, was placed in charge.

From 1904 to 1907 the department was under the mechanical engineering department of the University, but in 1907 it was made a special department under the direction of the associate dean of agriculture. In 1910 it became known as agricultural engineering, subject to both the Agricultural and Engineering Colleges. In 1907 A. A. Baer became instructor in carpentry. O. W. Sjogren, the present chairman of the department, became associated with it about this time.



**Agricultural Engineering Building about 1925
now known as Chase Hall**

Lester F. Larsen
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UNL East Campus, 35th & Fair St.
P.O. Box 830833
Lincoln, NE 68583-0833

Phone (402)472-8389
FAX (402)472-8367
E-Mail tractormuseum2@unl.edu

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Lawrence Hermann
Jerry Kohl
Dave Morgan
Bill Overturf (Oak)
Ervin Rolofson
John Smith
Glen Vollman
Ron Yoder

Ex-Officio:

Louis Leviticus
Ann Bruntz
William Splinter

Message From W.E. Splinter, Director

The John Deere "H" has been repaired and is running fine. The pistons had been stuck which took considerable time and patience to free up, and the radiator was plugged with too much sealant so a "new" one was obtained from Jim Strump at Spalding, NE. We installed a new battery but had trouble starting it until we just pulled it and it started within 10 feet. Jerry Kohl along with Phil Dinges did an excellent job of coordinating this project.

Our loyal volunteers continue to keep us moving along. Jeremy Steele our Museum Development Associate, and volunteer, Curt McConnell, are in the process of moving the hand tools and oxen drawn equipment, including the yokes, into the garage area that is in the process of being renovated. It had fallen on hard times and volunteers, Phil Dinges and Jared Teichmeier, applied stucco board to the outside. The interior has been cleaned out and wall board installed thanks to Jeremy, and his father, Mike Steele, and friend Rick Bennie. We should have the garage finished by spring. This will free up space for the display of more tractors. Curt McConnell has worked up a plan for re-arranging our exhibits so that we can show more tractors.

The display signs are being updated and improved in presentation by Larry Ehlers. Although Mark Nickolaus enjoys taking visitors around, we want the visitor to also be able to visit the museum and see the displays independently. Don Johnson is logging in the many documents Les Larsen had accumulated over the years. Lou Leviticus has documented all of our tractors and most of the other artifacts on the computer.

Many of the old photographs have been transferred to the Love Library archives and 272 historic pictures of tractor testing activities are available at <http://contentdm.edu:2000/index.php>. Select "browse" and scroll to Larsen Tractor Test and Power Museum. All of this activity makes the unique collection of the museum more available to the public.

Thanks to the efforts of Donna Martin and Jeremy Steele, who has taken over her position here, the museum is receiving increasing attention as a tourist site by University, Lincoln, and State tourism guides. Primarily through Jeremy's working with the College of Architecture Senior Design Class we have 15 student projections on a future tractor museum. This has received considerable publicity and resulted in yours truly being on the front page of the Omaha World Herald--next to a tractor of course.

We are especially indebted to those who continue to support the museum through their donations. Of major impact will be the contribution of Bob Mitchell, a 1948 graduate in Ag Engineering and a long-time supporter of the museum. A previous newsletter contained a write-up by Bob of his experiences in working for Tractor Test. Bob passed away and was buried at York, NE on January 2nd. He has left a portion of his estate to the Tractor Museum which will go through the UNL Foundation.

MUSEUM HOURS

TUES-FRI

9AM-12 PM & 1 PM-4 PM

SATURDAY 10AM-2 PM

OVER 2700 VISITORS IN 2005

**Good judgment comes
from experience, and a
lot of that comes from
bad judgment.**

Judy's Corner

I received a letter from a lady in Colorado with a question I cannot answer and need some help on. Her grandfather worked on harvest crews from 1914 to 1922 and serviced the engines on the "Tramp Machines". In letters that he wrote, he referred to these machines. She (and I) would like to know what they were.

I did get a couple of connections for an Italian visitor this Fall that has a building full of Cases with tracks on them. Turns out they are rare in the U.S. The undercarriage was made by the Trackson Company from Milwaukee, Wisconsin and put on in the Case factory.

We get all kinds of requests here that fall outside the knowledge of tractor testing. Please send in any stories you have about unique things, or suggestions for things to put in this newsletter. Maybe I will get the next one out on time.

What is it?

3PH or 3-point Hitch. A popular standardized mechanism for attaching implements, consisting of an adjustable top (pivot) link centered above two lower (lifting) links. Category 0, 1, 2 or 3 refers to both the size of the connecting pins and the strength of the components, with category 0 being the smallest (often seen on garden tractors and implements) and category 3 being the largest (often seen on large agricultural equipment). It is usual for the 3PH to supply lifting force via the hydraulic system, to raise an implement, but rare for it to exert downward force.

ROPS. Roll Over Protective Structure. A roll bar or similar device to help protect the driver in case the machine tips over.

EROPS. Enclosed ROPS. AKA cab or heated cab with ROPS.

FOPS. Falling Objects Protective Structure. A heavy duty structure for protection of the machine operator from falling objects. Usually has 4 posts and a strong roof.

Letter From Bill Teaford

The picture of the Chase Plow (field cultivator) in the last newsletter really took me back to my farming days. In 1949 my Dad found this new yellow cultivator at the local Coop service station. It was about half the price of a Graham-Holme or Jeffory of roughly the same size. I recall the five 21-inch sweeps on 19 inch spacing. I understand that the big single sweep, Bobble Blade had the identical problem.

We also bought a set of five shanks with welded-on 2 1/2 inch chisel points that could replace the sweep shanks. The chisel shanks were poorly designed so that it was almost impossible to get the chisels to penetrate normal soil hardness. So we had a local blacksmith re-bend them, open up the curvature to get about six inches more "throat". With the reworked shanks the chisel points had only about three inches clearance with the cultivator at full lift. However, we were able to penetrate hard, dry wheat stubble in August to about 12 inches.

Our blacksmith also put "stodite" hard facing on the sweeps and chisel points. We used this cultivator for six years until I was drafted into the Army in June, 1956, and my Dad retired. It did everything we ever needed for our summer fallow wheat cropping. My Dad was really good at taking care of equipment and at the end of six years it was better than new.

I certainly understand the quote from young Mr. Chase, "farmers just wanted to see dirt roll." Both the Graham-Holme and Jeffory had 12 inch shank spacing and used sweeps with nearly twice the penetration angle. They did make dirt roll. Providing efficient, effective operation with minimum draft at low cost will not guarantee a market with farmers.



From the Desk of Lou Leviticus

In the last newsletter, we gave a brief description of the Luebben Baler. Eric Luebben, the great-grandson of Melchior Luebben, and Gary Branch visited the Museum in early spring. After reading the article, Don Edwards, Larsen Museum Friends President, pointed out a valuable reference to the evolution of the round baler in one of the many books in the Museum Library. The following information is from Allis-Chalmers Farm Equipment 1914-1985 by Norm Swinford:

"The rolled-bale bailing press was invented by Umno F. Luebben of Lincoln, Nebraska, and he was granted Patent No. 972,884 on October 18, 1910. Henry Merritt was instrumental in acquiring rights to the Luebben patent in 1940.

Work on the A-C round baler began in December of that year, with the first unit built in 1941. In 1943, a pilot run of 25 balers was built, most of which were placed with farmers and custom operators in seven Midwestern states. This extensive test program produced the proven Roto-Baler."

Farmers were accustomed to seeing hay baled in relatively large, usually heavy, rectangular packages held together by two or three wires, although the new-fangled twine-tie balers were getting started.

Now here was a bale that wasn't rectangular, wasn't very heavy, and was wrapped not tied, with binder twine. Can't be! Won't work!

But that strange-looking machine, which certainly didn't look like a baler, had a lot going for it. At only \$985 (1947), a farmer could afford to own one and avoid the custom baler who didn't always come to bale before the next rain which was sure to come. But who wants a round bale?

So the A-C sales crew had to learn all about "Roll-Up Compression" and how it formed the bale without mangling the hay. They had to learn how to convince farmers that this was a better bale. They talked some of their first customers in to leaving some bales in the field all winter, so they could open them in the spring and show the non-believers the bright green dry hay. Even the cattle became part of the selling team—they liked the rolled hay better because there were no sharp ends to jab their mouths.

The Roto-Baler remained in production from 1947 through 1964. Due to popular demand, there were three small production runs of 800 each in 1971, 1973 and 1974. Altogether 77,200 standard and fast-wrap Roto-Balers were built. Not bad for something that didn't even look like a baler.

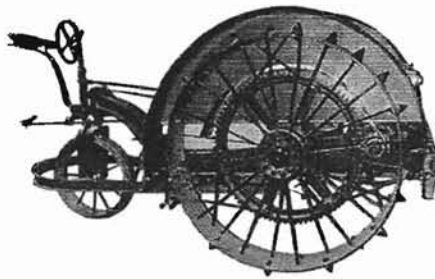
**Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833**

ADDRESS CORRECTION REQUESTED

IF YOU HAVE A RED MARK BY YOUR ADDRESS—DUES ARE DUE!

FYI January 1 began a new membership year. Please continue your membership and send your annual \$10 made to the "Friends" of the Larsen Tractor Museum to the address on this newsletter. Donations can be made to Larsen Tractor Museum or via University of NE Foundation. Please let us know if you do not wish to receive the newsletter.

Friends of the Lester F. Larsen Tractor Test and Power Museum



Judy L. Ray – Editor Newsletter #25 Spring 2006

To collect, preserve, research, and interpret the traditions and technologies of agriculture.

The Avery Ro-Trak



Bob Kleis and his latest Orphan.

In 1938, the Avery Farm Machinery Company brought out this "Ro-Trak" as a belated effort to save the faltering firm. Based in Peoria, Illinois from 1884, it became a major producer of steam traction engines and threshers. From 1909 to 1925 it produced a variety of tractors noted primarily for their mass. After two bankruptcies and reorganizations, this somewhat innovative "Ro-Trak" emerged. WWII ended its struggle for survival in 1941.

This Avery firm is not to be confused with the B.F. Avery and Sons Co. of Louisville, Kentucky which was taken over by Minneapolis Moline in 1951.

The primary feature of the Avery Ro-Trak is the "easy" adjustment of the front tread width from tricycle to full width or points in-between by "one man in thirty minutes and with no special tools".

Related to this feature is the independent suspension and overhead steering linkage. It also has a mechanically powered lift system on its rear, which makes getting on and off a rather worrisome process.

This tractor was a birthday gift from my wife and came from Pueblo, Colorado. I had made known an interest in having an Avery Ro-Trak, but hadn't been able to find one. Restoration of this gift has kept me occupied for six months. Fortunately, it required making only a few new parts.

The Avery Ro-Trak is very rare. *Yesterdays Tractors* publication reports "less than twelve" are known to exist. I know only of one in Wisconsin and two in Illinois.

This orphan has joined three other restorations in the Kleis orphanage: a 1934 Plymouth 10-20, a 1939 Cletrac GG (The General), and a 1939 Silver King R-44.



Avery Ro-Trak in the "tricycle" position.

Lester F. Larsen
Tractor Test & Power Museum
UNL East Campus, 35th & Fair St.
P.O. Box 830833
Lincoln, NE 68583-0833

Phone (402)472-8389
FAX (402)472-8367
E-Mail tractormuseum2@unl.edu

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Ron Yoder

Ex-Officio:

Louis Leviticus
Ann Bruntz
William Splinter

MUSEUM HOURS

TUES-FRI

9AM-12 PM & 1 PM-4 PM

SATURDAY 10AM-2 PM

OVER 300 VISITORS SINCE JAN1

On the right:

From the Billy Overturf collection,
complete with steam engine and a
pair of mules.

We have scanned over 60 of his
many interesting pictures and
postcards. Thanks Billy!

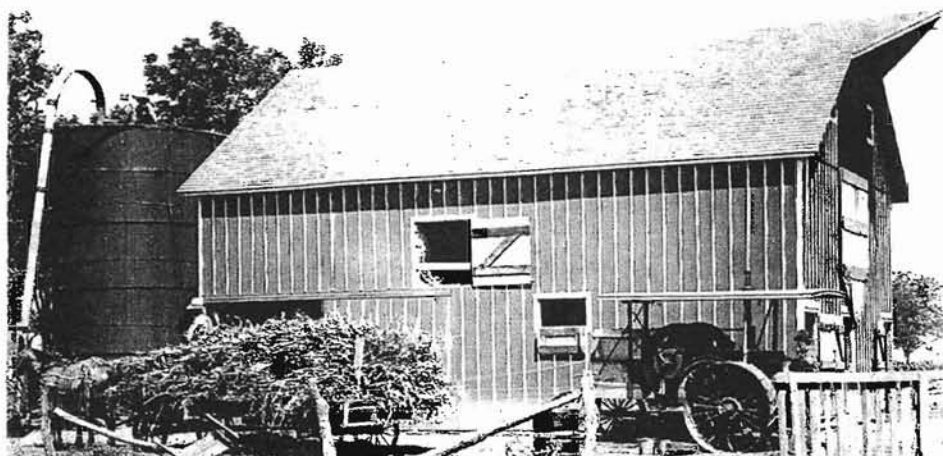
Message From W.E. Splinter, Director

Our main activity at this time is preparation for Open House on May 6. We will start at 10 and have a demonstrations beginning at 2. We will have over 22 historic tractors starting off with our 1909 Ford and continuing sequentially by year. We should be finished by 4.

We will take this opportunity to rearrange our exhibits in accordance with a plan developed by Curt McConnell. We have already made a significant start by moving all of the shop benches and tools to the Behlen building and we have removed an unsteady tile wall. This has opened up a significant additional area for exhibits. For open house we will have an exhibit developed by Architecture students who have developed ideas for a future museum that would be able to house the historic machines and tractors that are outside in the weather. Before Open House we will move all tractors to be driven outside and line them up in order based on the year of test, or manufacture if they have not been tested. The tractors remaining inside will be moved to their new location and at the end of Open House, as each tractor finishes its drive by, it will be parked in its new location. Curt's plan will allow us to exhibit tractors in a logical sequence in the development of the tractor.

The most hopeful news is a significant contribution coming from the estate of Bob Mitchell, with whom I took classes in the '40's. His son Howard is the administrator and we are trying to get things in order. Currently there is discussion between his lawyer, his accountant and him relative to closing the estate. The amount that may be contributed is in the \$70,000 to \$80,000 range. We plan to use the funds to install air conditioning in the areas we have records and wooden artifacts. We also plan to complete the interior of the Behlen building and develop that as a place to restore tractors and the machines that currently sit outside. Anything extra will be used to clean up and whitewash the exterior to have "a white jewel among the drab University buildings" according to Howard Mitchell.

We are all pleased that Jerry, Phil and Larry have the 1917 Moline Universal tractor running. We now need to get the radiator fixed (it leaks) and find a muffler. We hope to have it ready for Open House. We hope to see all of you there!



WARD TRACTOR COMPANY

Builders of
THE WARD TRACTOR PLOW

THE TRACTOR
with the
CUSHMAN ENGINE

**LIGHT WEIGHT
SIMPLE
SERVICEABLE
for Every FARM**

LINCOLN, NEBRASKA.

March 4, 1915

Prof. L.W. Chase
Engineering dept.
University State Farm
Lincoln, Nebr.

Friend Chase:

I have been thinking over very carefully the plan which you outline for the Hastings Contest, and while our position as a Tractor Company is of not sufficient importance to make our opinion of any importance to you, yet perhaps the matter of personal acquaintance and knowing the interest that I have in seeing anything which you take hold of prove successful, will give you some interest in having my opinion in the matter.

That opinion honestly and frankly is that I don't see how you can make a practical success of anything like as elaborate a line of tests and contests, as you have theoretically outlined; at least to do it and carry through to anything like conclusion of individual test would, it seems to me, so drag out the proceedings that they would be almost entirely lacking in real interest to the visiting farmer who is possibly only one-half day there, would be chiefly interested in seeing machines under actual operation and things moving.

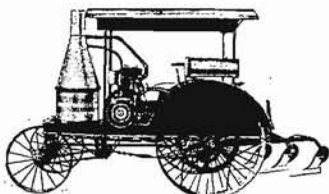
I fear, therefore, that manufacturers will consider that devoting the time and expense to such expensive test and contest work, would very largely defeat the advertising value of the meet, and thus little inducement left to get them to go in.

As to the attitude of the Ward Tractor Company towards it, beg to say that we would not enter such a competition. In the first place we are not anywhere near on a big enough basis to stand the expense. In the second place I figure that the possibility unit would be only one to a hundredth; that through some unforeseen accident or misfortune our machine should get a bad knock out in the contest in some way, that the damage there from would be greater by far than the possible value from its going through satisfactorily.

I regret that I cannot feel more enthusiastic toward joining in on your plans, for I certainly would like to see something held in the way of demonstration or something of the sort out there at Hastings, it that good Western territory. Of course, all you need is to get a few of the big fellows to come through with you and you can put on a splendid big show and I certainly will be more than pleased to see you succeed in doing this, but I am just writing you my honest opinion as it looks to one of the little fellows.

Yours very truly,

WARD TRACTOR COMPANY



The Ward Tractor Plow

20 H. P. CUSHMAN ENGINE

Total weight of model with plow complete—only 5,700 pounds. Write immediately if interested for Spring delivery.
WARD TRACTOR COMPANY, 2100 N Street, LINCOLN, NEBRASKA

From the Desk of Lou Leviticus

As you may have noticed, you can access our archived photographs also through our website. It is a good way to find photographs which can be copied or transferred and reproduced on your printer or through other means (Kinko's etc).

I have continued to go through our boxes and drawers and have found many papers which are slowly being sorted into subjects such as SAE papers, ASAE papers, other research papers, Instruction and operator handbooks etc.

The latter will be sorted according to manufacturers and then put on our website so that people will be able to order copies (at an appropriate cost) from us, either via email or hardcopy. That will still take a bit of time and effort.

We have also transferred to the University Libraries three antique volumes which really did not fit in with the museum's collection. One was an 1803 (Over 200 years old) volume titled "The

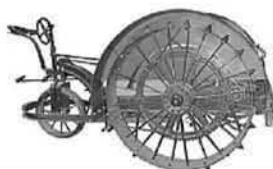
Life and Travels of Lorenzo Dow" by Lorenzo Dow. The second volume was C.B. Taylor's "A Universal History of the United States of America: from 1833. The third volume was a Bible from 1900. The two first volumes were not in the University Library collection and are thus wonderful additions to it. We are glad they found a "good home" and are being well cared for and will be used.

In the meantime we have transferred a few items to the restoration section of the archives – among them a 1916 yearbook of the "School of Agriculture" called "SHUCKS", one of the earliest prints of the Davidson-Chase book on Farm Machinery and a 1902 issue of "The Thresherman's Journal", which has fabulous machinery depictions and many interesting articles. As soon as this Journal has been stabilized we will proceed to copy it so it will be more accessible and usable.

**Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833**

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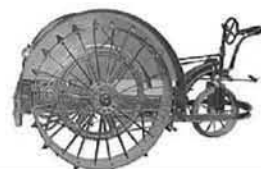
Nebraska Tractor Times

Newsletter for the Friends of the Lester F. Larsen Tractor Test and Power Museum

Jeremy Steele - Editor

Newsletter #26

Summer 2006



Our Mission: To collect, preserve, research, and interpret the traditions and technologies of agriculture

In this Issue: State Fair Tractor Registration

Museum Open House

The 2006 Tractor Museum Open House was a tremendous success. We received beautiful weather and the day was a great experience for many. The rope makers were back again making rope for kids of all ages. Cookies, tea and water were served for refreshments. The day concluded with a parade of tractors around the outside of the test track. We greatly appreciate the volunteers that were able to help us with tours, refreshments and coordinating the parade. A special thanks goes out to the Tractor Club from Cortland that once again drove their tractors to our event.



Standing room only! Kids patiently wait for rope.

Tractor Museum Friend Stationed in Iraq

In early June, we received a letter from one of our museum friends Eric Teegerstrom. Eric is currently stationed in Camp Anaconda, Iraq. He provided us with a donation, renewed his membership and requested that we keep sending newsletters to his home address in Cortland, Nebraska.

I figured that if he could send a letter to us, then we sure could send a letter back to Camp Anaconda. A newsletter called "**The Tractor Troop Scoop**" was created for Eric and other U.S. troops. This was sent to Iraq in hopes of recruiting "*Tractor Troops*" that would enjoy corresponding with our museum about agriculture and tractors around the world. It did not



Iraqi woman herding cattle behind tractor plowing field.

take long for Eric to receive this newsletter and email us back. Eric indicated that he is stationed near Balad, Iraq. Balad is north of Baghdad and two kilometers from the Tigris River. He said that the area is relatively fertile. Iraqis have canals and aqueducts to move water to the fields. Some of the crops seen are sunflowers, tomatoes, peppers, grapes, dates and wheat. The livestock is usually sheep, goats and cattle. They do have small tractors, a lot of Massey Ferguson, but most of the work is done by hand. Mostly you will see women and children in the fields. The daily temperature is usually 105 to 115 degrees with a humidity of about 10-15%. Eric said that you can hardly drink enough water.

Future issues of *Nebraska Tractor Times* will provide an article and images related to the correspondence between our museum and "*Tractor Troops*" around the world. Please help us recruit additional "*Tractor Troops*" for museum correspondence. If you know of a troop that would appreciate our "*Tractor Troop Scoop*" newsletter, please provide us with an address and we will share information about our museum with them while they are stationed away from home. Please remember our troops as they sow democracy and cultivate hope for the harvest of freedom around the world.

Focusing
on the Future

1st Friends Membership Meeting

August 15 at 7:00pm Tractor Museum UNL East Campus 35th & Fair Streets

Focusing
on the Future

All members and potential new members are invited to our first *Friends Membership Meeting* for the Lester Larsen Tractor Test and Power Museum. Agenda includes: The Nebraska State Fair, the Future of the Museum, and Friends Involvement. Please bring cookie or dessert to share with others.

Lester F. Larsen
Tractor Test & Power Museum
UNL East Campus, 35th & Fair
P.O. Box 830833
Lincoln, NE 68583-0833

Phone: (402)472- 8389
Fax: (402)472-8367
Email: tractormuseum2@unl.edu

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Bill Overturf
Ervin Rolofson
John Smith
Glen Vollman
Ron Yoder

Ex-Officio:

Louis Leviticus
Ann Bruntz
William Splinter

Museum Hours

Mon-Fri: 9:00-4:00
Saturday 10:00-2:00

Director's Report

We have now received a check for over \$86,000 from the estate of Bob Mitchell, Ag. E. '49. We are working with the campus architect and a mechanical engineer to design a HVAC system for the areas where we keep important documents and historic items made of wood or leather, and we also hope to install HVAC and insulate the Behlen building where we renovate and restore tractors. Over the years the humidity and temperature variations have made paper and leather brittle and molds are attacking the old tractor test reports. We attempted to donate some of our records to the library archives but they would not accept them because of the mold. Therefore this gift will give us a critically needed means to preserve these items.

Jeremy has been very effective in making contact with various media such that our attendance has improved significantly. During the month of June we had 432 visitors who signed our register, and not everyone signs. We had one group of 50 antique cars and another group of 20 Mustangs with their drivers and passengers. They looked at our tractors and we looked at their cars. Then on July 14 we had over 150 visitors who were MF collectors attending the Camp Creek event.

We took the Oliver Hart-Parr to the Platte Valley tractor show on July 8 and the MF 101 JR. to the Camp Creek show on July 15. It rained at Platte Valley and it.

We are finally getting the Farmall Regular painted. It had once belonged to State Senator Charley Warner, co-author of the 1919 Tractor Test Law. It was donated to the museum by Senator Jerry Warner, Charley's son. Over the years it had deteriorated, as we all do, and this will greatly enhance our tractor exhibit. We have it running and will be able to show it in action at upcoming shows.

From the desk of Lou Leviticus

PRE – 1920 TESTING IN NEBRASKA

I was duly surprised when I found an article by L.W. Chase titled: "Nebraska Tractor Tests, 1917". Here we've been telling everyone a fib, that testing started in 1920 after the Test Law's passage in 1919 and now we have to eat our words (and change all the articles which have been written since 1920).

The article discussed pre-Fremont trial tests conducted by Professor Chase and his staff. These tests, as I reported in a previous newsletter, were conducted in the two weeks before and two weeks after the actual Field Trials. In this article the tractors are not identified by model name or manufacturer, which was a bit disappointing.

It turns out that there was good reason for this. The actual series of trials started in 1913, as far as we've been able to ascertain as the "National Power Farming Demonstration". In a publication of the event, held in Fremont on August 17-22, 1914, we see no mention of Chase's involvement. We do know that the 1914 event was organized by "The Twentieth Century Farmer" and the "Fremont Commercial Club".

Apparently Chase did participate in some way (*if anyone has more info on this please let me know*), because he did send letters out in 1914 to various manufacturers requesting their participation in a series of Field Trials in Hastings Nebraska. All of the manufacturers sent back their answers, stating that, for various reasons, they were not interested or didn't think it worth their while to participate. We have many of those letters and I will try to summarize them in a future newsletter.

Free Tractor Museum Hat Offer

We greatly appreciate everyone that supports the Lester F. Larsen Tractor Test & Power Museum. We hope to increase the number of individuals that are a part of our friends organization. We are offering a free tractor museum hat to anyone successfully encouraging ten others to join the "**Friends of the Lester F. Larsen Tractor Test & Power Museum**" organization. See provided form within this newsletter.

The following article is from Implement & Trade Journal. September 19, 1919. Representative Wilmot F. Crozier of Osceola, Nebraska, who fathered and pushed the bill through the legislature, tells the trade in straight-forward fashion why he formulated the law.

Father of Nebraska's Tractor Test Law Explains It

By Rep. W. F. Crozier

I take pleasure in complying with your recent request for an account of my reason for formulating and introducing, in our legislature, what is now known as the "Nebraska Tractor Law." I have watched the development of the tractor industry from its infancy, and have followed many a queer-looking contraptions around the demonstration fields, that purported to be able to replace my long-eared mules in front of a gang plow.

The successive years of development proved to me, beyond a doubt, that the tractor, in some form, was the agricultural implement the American farmer had been looking for, for these many years. I began investing a little money in the things, that is, I invested in the cheapest one that had wheels. I soon found out that wheels and cast iron are of no value unless you have power to turn them when they are hitched to something.

After operating, or attempting to operate, two excuses for tractors, I finally invested my money in a machine that would really do what the company said it would. Then I began wondering if there wasn't some way to induce all tractor companies to tell the truth.

The real starting of this tractor law was an editorial written in a Nebraska farm paper under the date of July 20, 1918. It read in part as follows: "Many tractors now on the market are impracticable. They have one or more weak points which make them useless, and it takes only one weak link in the chain to make it of no value. Another reason why costly and valueless tractors are rusting in farmyard corners, or in fields where they refuse to run, is because irresponsible concerns are manufacturing tractors merely to sell and not to run."

This was the beginning of a somewhat lengthy correspondence between myself and the editor of the paper. This was the beginning of a campaign, to eliminate these irresponsible tractor companies.

Now, lest there should be a disposition to assert that all tractor companies are responsible, etc., I will simply quote from a circular that lies before me, which was sent to me in 1916 to induce me to invest my money in the stock of one of these get-rich-quick tractor companies. It says, "The _____ Tractor Co. estimates that with a force of 1,500 men they can produce 100 tractors a day which would mean 31,200 tractors a year. Producing and marketing 31,200 tractors a year would, on the previously indicated profits, equal a net profit of \$3,822,000 for the year, which would be 634 percent on the issued shares."

Possibly we have found one of the "irresponsible" concerns mentioned. And if anyone wishes, I can give you some claims of other companies slightly less glaringly false. However, in my work with the tractor bill, through both branches of the legislature, I believe that a great majority of tractor companies are honestly endeavoring to place on the market a machine that will come up to standards and will do what they represent it to do. I had one other fact in mind, namely, the tractor industry is a national institution as far as the American farmer is concerned and no legislation confined necessarily to the boundaries of one state can completely fill the bill. However since Congress is so slow to act on anything of this nature, till they get a great deal of pushing, I am in for giving the push where ever we can.

Another relief that the Nebraska law is intended to give the farmers is in connection with the maintenance of service stations. The following clipping from one of the state paper of last October will show the necessity for some relief. This clipping says: "How Nebraska farmers have suffered serious losses, and production of foodstuffs has been decreasing through inability to replace broken and worn-out parts of farm tractors and other farm machinery is told by H. Peters of Hay Springs in a letter written to the governor. He declares the big implement and machinery concerns compel farmers to wait from ten to thirty days, or even longer for necessary parts, and in the meantime grain becomes too ripe and shells open upon the ground. He suggests that the state council of defense issue an order forbidding any new machine company to enter the state for the sale of its goods until it has provided a complete stock of repair parts and proper facilities for getting them to the farmers."

Now we have taken up two reasons for the introduction of this legislation under discussion. A third is the matter of standardization. I notice in that there was a need for a metaphorical yardstick to be found in the tractor game.

In preparing this bill, I wish to acknowledge the assistance rendered by other members of the legislature, and engineers outside of an official capacity. I also wish to state that, but for my personal effort, certain features would have been injected into this bill, which seemed to me were unfair to responsible concerns. If this law brings about a better understanding between the producer and consumer in the tractor industry, it will be the chief reason for the framing of this legislation. The farmer has always protested against certain practices in the tractor business, but he has protested singly. Now he speaks with a voice that, at least, is being given attention.

It was reported to me that one Eastern company intended to contest the Nebraska law in the courts. I am glad that it has reconsidered this decision. If there are any defects in the way the present law works out, or if it is shown to be unfair in any way to the manufacturer, I shall be glad to receive suggestions relative to the matter of a remedy or improvement.

Newsletter "Nebraska Tractor Factor"

Created for Younger Tractor Fans

Young tractor fans are introduced to *Ford the Flop* through our **Nebraska Tractor Factor** newsletter. The introductory newsletter tells the story of how a Nebraska Farmer fixed the broken heart of Ford the Flop, the little tractor that couldn't when he founded the Nebraska Tractor Test Law nearly 90 years ago. Young tractor fans learn lessons through this and other stories told by Ford the Flop and his tractor team: Waterloo Will, Heidi Heider, Philip A. Ford, and Moses Moline Universal.



Ford the Flop

With the help of the Twin City Tutor. Young tractor fans also have the opportunity to learn all kinds of interesting facts and information related to agriculture, engineering, entrepreneurship, leadership and legislation. Twin City Tutor proves that he is not just full of hot air. Kids will become familiar with tractor terms by completing word games, solving puzzles and word scrambles. Below are sample word games from the introductory issue of the **Tractor Factor**.

Tractor Terms

- | | |
|-------------------|--|
| 1. advertise | _____ a term used to describe strength of a machine. |
| 2. horsepower | _____ truthful. |
| 3. performance | _____ doing what is right even when no one is watching. |
| 4. legislation | _____ to run or operate in a certain way. |
| 5. representative | _____ to provide information to the public to help sell a good or service. |
| 6. integrity | _____ elected official to serve the best interest of a group of people |
| 7. honesty | _____ the process of making a law. |

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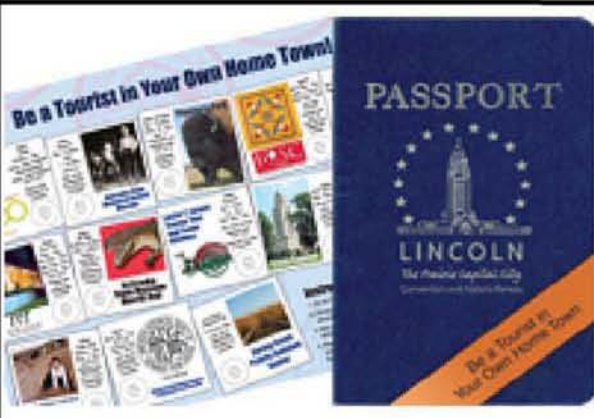
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Secret Word _____

To receive **The Tractor Factor**, please send a minimum \$5.00 donation that will go towards the development of this newsletter and additional opportunities for youth.



Passport Program Increases Museum Awareness

The Tractor Museum is a part of Lincoln Convention and Visitor Bureau's "Be a Tourist in Your Own Hometown" Summer Passport Program. This program is designed to promote Lincoln's tourism with a program designed to encourage Lincoln tourists to visit thirteen destinations located throughout Lincoln. Passports and stamps are provided at each destination. After receiving seven stamps, participants become eligible for prizes. Grand prizes will be presented at the 2006 Nebraska State Fair. Stop by and pick up a passport at the Lester F. Larsen Tractor Test & Power Museum. More details provided below.

- Go to 7 of 13 attractions listed on this passport.
- Receive a stamp on your passport from each attraction you visit.
- Mail or drop this form off at one of the participating attractions by August 19, 2006.
- Become eligible for prizes to be awarded during the parade at the Nebraska State Fair.

You do not need to be present to win! Visit: <http://www.lincoln.org/>

Tractor Museum Participates in "Podcast Demo"

Todd Jensen of UNL's New Media Center recently was invited to stop by and receive a tour and learn more about our museum. We discussed the development of audio tours, virtual tours and iPod tours for the museum. One week later, Todd returned with camera's and a couple of student assistants for the development of a "Podcast Demo" to be presented to the Nebraska Information Technology Commission and other individuals related to the development of Nebraska Tourism to encourage potential funding for a future project. We will keep each of you updated as this develops.



Consideration Underway for Web Site for Friend's Organization

Recently we began exploring the development of a web site for the Friends of the Lester F. Larsen Tractor Test & Power Museum. The goals for this potential web site include:

1. To increase awareness of the museum and to define the Friends Organization.
2. To increase membership of the Friends Organization.
3. To inform Friends Members of activities and events.
4. To encourage volunteer participation with museum operation and development.
5. To encourage donations towards museum's development.
6. To create an interactive online community.

Chris Wenburg originally from Beaver City, Nebraska and his company Rural Designs has completed a one page "Web Site Design Draft" free of charge for The Friends of the Lester F. Larsen Tractor Test and Power Museum. This page is temporary on display at the following address: www.ruraldesigns.com/tractormuseum. This address shows a draft of a proposed layout for a new web site for each of you. This site is designed to contain seven main pages: Home, About Us, Museum Development Goals, Contribute to Development, Ag in the Classroom, Visit the Museum, and Contact Us. This draft page currently contains the brief information concerning the major focuses of the Friends Organization to draw a visitor's attention to subsequent pages that would contain more detailed information. Please review this web site design draft and suggest any changes to museum development associate, Jeremy Steele at jsteele4@unlnotes.unl.edu or call 1-402-472-8389.

The completion of this web site for the Friends Organization will cost \$1,352. According to university sources, this is a very good price for this type of web site development. I hope to gain feedback from Friends members about investing in the development of this web site. It is very important that we have an online presence that increases our awareness and contributes towards the success of achieving our developmental goals. With the price of advertising and promotion in newspapers and magazines, this web site will pay for itself in a short amount of time. The development of this web site will create the potential for our online "Nebraska Tractor Shop", "Nebraska Tractor Test Registry", and our online lessons for students.

Message from the President, Don Edwards: Museum Needs Your Help!

The Lester Larsen Tractor Test Museum is a world-class Museum dedicated to illustrate the evolution of the application of power in agriculture. Show cased is the story of moving the application of human and animal power needed in agriculture production to tractors and machinery. Thus, people are freed from the slavery of providing the needed power to make agriculture production possible and to have a better life style. The Museum has a story to tell people that must be preserved for future generations.

As Friends of the Museum, our responsibility is to assure that the Museum continues to provide the educational venues that tell the important story of the evolution of power and accompanying machinery that has resulted in allowing agriculture to continue to provide abundant high quality food and fiber to the people of the world. At risk to telling this important story is the overall operations of the Museum. The Museum is being 'found' by people from throughout the world. With the increasing number of visitors, the demand to show-case the Museum to the visitors has become significant, yet most enjoyable, task. With recent months of over 400 visitors during 2006 as compared to about 500 per year, only a few years ago, the work load has increased. Additionally, due to decreased budgets throughout the University, paid personnel who have worked in the Museum, have been transferred elsewhere. The Museum has been left with volunteers to operate the Museum.

The Museum needs your help! The Museum operates as a private funded and staffed Museum that is located at a University. Volunteering a few hours a week or month will be of great help. Financial support is also necessary for the Museum to continue. It will take much more financial support from the private sector to assure the future operation of the museum.

This is your Museum! Your involvement with the Museum is essential for the future of the Museum. To find out more information about ways you can help, please contact the Museum at 1-402-472-8389. Thank you.

Your Feedback is Important to Us!

Ideas from each of you are very important to us. Please provide us with feedback related to the promotion and development of the Lester F. Larsen Tractor Test and Power Museum. We will greatly appreciate more information and resources that would aid our development. Please call us at 1-402-472-8389 or email Jeremy Steele at jsteele4@unlnotes.unl.edu.

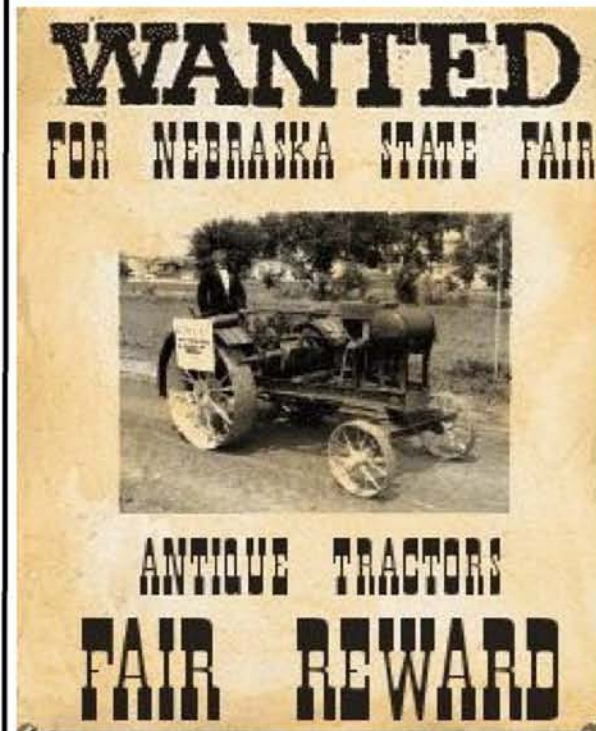
2006 Nebraska State Fair

Antique tractors are wanted for the 2006 Nebraska State Fair, Friday August 25th through Monday, September 4th. Each tractor exhibitor will receive a free ticket and a discounted spouse ticket to the fair for each day they are able to participate in the parade. Parking is free everyday this year.

The only requirement for this years exhibitors is a suggested \$5.00 donation that will go towards candy and supplies for the museum's *Candy Tractor Factory*. The kids really enjoy making tractors out of candy at the fair and at our museum.

We encourage each exhibitor to become a member of our museum friends organization. Members of this organization will be informed of our upcoming events.

We hope that during the State Fair, each of you will help us promote our museum and encourage State Fair visitors to stop by the actual museum and learn more about Nebraska's heritage. Please detach and fill out the form below or print pdf.file from our web site. (<http://tractormuseum.unl.edu>), mail with suggested donation for candy. Friend's of the museum memberships are \$10 if you are not a member and would like to be informed of upcoming events. Registration for the 2006 Nebraska State Fair is due August 15th.



(cut here)

2006 Nebraska State Fair Tractor Registration

(Registration is due August 15th)

NAME _____

TRACTOR _____

ADDRESS _____

MAKE _____

MODEL _____

PHONE _____

YEAR _____

EMAIL _____

BACKGROUND/HISTORY/SIGNIFICANCE _____

WEBSITE _____

ORGANIZATION _____

MAIL FORM AND WRITE CHECKS TO:

Larsen Tractor Museum
P.O. Box 830833
Lincoln, NE 68583-0833

Help Discover the Treasure!

We are developing an educational program to help students discover and learn from Nebraska's historic treasure found in the 1920 Nebraska Tractor Test Laboratory.

Students will learn about our state's influential role that ensured America's tractor technology would advance with integrity and the best interest of the farmer in mind.

Through history, students will learn about agriculture, engineering, entrepreneurship, legislation and leadership. We encourage and will depend upon contributions as we develop our educational program for Ag in the Classroom, 4-H and FFA student tours. All donations are tax deductible. Checks can be made out to: **Friends of the Lester F. Larsen Tractor Test & Power Museum**, with **Education Mission** memo.



We appreciate your support as we strive to preserve and display a significant part of America's great heritage. For more information call 1-402-472-8389 or visit: <http://tractormuseum.unl.edu>. (we are a nonprofit 501 (c)(3)).

Be a part of the progress,

Join Today!

Richard Allen, Lincoln
Vern Anderson, Lincoln
Sykes Bailey, Omaha
Carl Ben
John Bern, Elkhorn
Larry Blum, Lincoln
Alan Brong, Norfolk
Charles Buchheit, Lincoln
Harold Borman, Lincoln
Glen Brinkman, Beatrice
Glen Buchta, Broken Bow
Kenneth Buhl
Paul Cogswell, Washington, IL
Phil Dwyer, Lincoln
Don Edwards, Lincoln
Larry Evans, Lincoln
Don & Anne Eppley, Omaha
Paul Estrom, Dubuque, IA
Charlie Fendler, Gering
Alan Feltz, Beatrice

David Finney, Quincy, IL
Chris Ford, Lincoln
Dan Foster, Milford
Wayne Foster, Lincoln
Lynn Freye, Matell
Tyne Fries, Plattsmouth
Ray Gant, Beaver Crossing
Lawrence Gily
Herbert Gleason, Omaha
Richard Gooding, Lincoln
Dale Heermann, Ft Collins, CO
Hogan Hewer, Lincoln
Eliot Hemming, Lincoln
Larry Heermann, Lincoln
Rod Holman, Marietta
Gene Hundt, Cedar Falls, IA
Joy Hyslop, Bennett
Bob Janock, Wahoo
Dennis Johnson, Osceola
Larry Jones, Chico, CA

Brett Jones, Chico, CA
Gary Kennedy
Keith King, Bennett
Bob Kiehl, Lincoln
Jerry Kohl, Lincoln
Donald Kuus, Bettendorf, IA
Howard Lamb, Anselmo
Harold Landon, Waverly
Alan Lane, Lincoln
Daniel Larsen, Robbinsville, NC
Lester R. Larsen, Longview, TX
Robert Larson, Visalia, CA
Alfonso & Linda Larsen-Stony
Norman Larnhardt, Collinsville, IL
Stanley Leddie, Dubuque, IA
Eric Luebbers, Irvine, CA
Ellen Lykes, Omaha
David McDonald, Omaha
Richard Meyersburg, Grand Junction, CO
David Morgan

Jack Nagel
Mark Nickolaus, Lincoln
Dale Nelson, Weeping Water
Patrick O'Hara
Dorothy Olson, Dubuque, IA
Larry Olson, Plattville, WI
Bill Overdorf, Oak
John Owens, Lincoln
Norman Pearce, Kearney
Ronald Penalt, Filley
Jim Pitz
Ken Probstman, Omaha
Dorell Ranc, Swanton
Marvin Rhodes, Lincoln
Evelyn Roldson, Lincoln
George Rodfson, Greensboro, NC
Brent Sampson, Lincoln
Sam Sampson, Lincoln
John Seaman
Keith Shewell, Lincoln

Fabian Skelita, Omaha
John Smith, Scottsbluff
Michael Smith
Mark Sorenson, North Platte
William Spitzer, Lincoln
Jeremy Steele, Lincoln
Mike Steele, Fremont
Jamie Stomant, M. Vernon, IL
Elmo Stochler, Nampa, ID
William Tealand, Cedar Falls, IA
Jared Technier, Lincoln
Phyllis Tooker, Ralston
Russ Tooker, David City
Bob & Shirley Trauger, Exeter
Dwayne Tapp, Lincoln
Curtis Twedt, Lincoln
Dorothy Van Brodken, Coughton
Kathleen Von Bergen, Lincoln
Glen Vultour, Omaha
Paul Walgren, York

Roger Welch, Dunnington
David White
Edward Wilkerson, DeWitt
Wayne Winchell
Wayne Wulford, Cozad
Roger Wurst
Roy Yanagida, Lincoln
Larry Zimmerman, Lincoln
Frank Ziz, Wabasha, IA

112 Members from 9 States

(cut here)

Join The Friend's Organization

Become a member of our museum's **Friends Organization** for only \$10 to receive our quarterly newsletter. Our newsletter "**Nebraska Tractor Times**" will share stories about the history of tractor development and inform members of our upcoming events. We depend greatly upon contributions and the help of volunteers as we strive to collect, preserve, research and interpret the traditions and technologies of agriculture.

NAME: _____ ENCOURAGED TO JOIN BY: _____

ADDRESS: _____

PHONE: _____

EMAIL: _____

Please tell us more about your interest in agricultural history. _____

MAIL FORM AND WRITE CHECKS TO:

Friends of the Larsen Tractor Museum

P.O. Box 830833

Lincoln, NE 68583-0833



Larsen Tractor Museum Lincoln, Nebraska

John Deere Collectors Center Provides Model for Tractor Museum Development



John Deere Collectors Center Moline, Illinois

Nebraska's Tractor Museum Finds Model for Development

The John Deere Collectors Center located in Moline, Illinois is the premier association for enthusiasts interested in the history and heritage of John Deere, and the collecting of early John Deere tractors, equipment and memorabilia. Visitors can watch restorations in progress, view displays of vintage John Deere tractors and equipment or visit the Center's customer service counter for information about parts, repairs and restorations, and reference materials. The Collectors Center retail store offers a variety of John Deere gifts and merchandise. Visit www.deere.com to learn more.

Nebraska's Tractor Test Museum is in the process of becoming much like the John Deere Collectors Center by displaying tractors of all makes and models that illustrate key developments in agricultural mechanization over the decades. We are in the process of setting up our shop to allow visitors to watch restorations in progress. The University Book Store in the East Campus Union is providing retail space for the tractor museum. The tractor museum's library of nearly 2,000 files of tractor test reports, tractor manuals and advertising literature sets the stage for our facility to be able to assist tractor enthusiasts through research and networking efforts. Visit www.deere.com to find out more.

**Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833**

ADDRESS CORRECTION REQUESTED

"In 1980 it was thought that Lester Larsen's only regret in a long career of achievement may be that his dream of a great comprehensive museum of tractors at the University of Nebraska never came true. Today, his dream is indeed coming true because of each of you. Thank you for supporting the Lester F. Larsen Tractor Test and Power Museum." - Jeremy Steele Museum Development Associate.



Tractor Test Times

Newsletter for Friends of Nebraska's Tractor Test Museum

Newsletter #27

Jeremy Steele – Editor

Fall 2006



Our Mission: To Collect, preserve, research, and interpret the traditions and technologies of agriculture.

TRACTOR MUSEUM FRIENDSHIP DRIVE

To encourage membership, Museum Development Associate Jeremy Steele plans to drive a tractor one mile for each new 2007 friend joining before January 1st, 2007. The number of friends joining prior to this deadline will determine the distance for this Tractor Museum Friendship Drive that will take place in 2007.

CANADIAN FRIEND TESTING POWER

On August 3rd, Elgin Payne and his friend Patricia Sharron of Amherstburg, Ontario, Canada stopped by to visit the museum. Elgin has quite a project north of the border. Elgin began building his very own Prony Brake in 2002 and by 2005, he was able to demonstrate his brake at 3 shows in Ontario, Canada. In 2006, Elgin is scheduled to show his Prony brake six times.



"Prony Brake" Designed and constructed by Elgin Payne with the help of his welder and friend, Bob Menzies.

We welcome Elgin to our Friends Organization. During his visit to the Museum, he signed up to be a member for two years. Currently, Elgin is our only Museum Friend Member located outside of the United States.

Thank you Elgin for you interest in our museum!

TRACTOR MUSEUM E-FRIENDS

Tractor Museum E-Friends has been established to help us keep our friends informed of what is going on here at the Tractor Museum.

To become a Tractor Museum E-Friend, simply send an email to jsteele4@unl.edu with the subject: Tractor Museum E-Friend. Once an E-Friend, you will receive emails about volunteer opportunities, museum events and developments.

2006 NEBRASKA STATE FAIR

The 2006 Nebraska State Fair was a tremendous success. It all began on Friday, August 25th with the largest antique tractor display in years. Fifty tractors line up the museum exhibit space and 32 tractors participated in the first parade of the Fair.



Above is a picture from Wyatt Drew's "TractorCam." Thank you Wyatt for this great photo of the 2006 Nebraska State Fair.

There was plenty of red, orange, green silver, yellow and blue spread throughout the Museum exhibit space.

The Museum would like to thank all of those that were able to display their tractor and the volunteers that helped throughout the fair.

The 2007 Nebraska State Fair will be here before we know it. Please help spread the word about our Nebraska State Fair Exhibit and encourage others to join us at the fair next year.



Kids take time to manufacture candy tractors at the state fair. Thank you exhibitors for donating money to supply this years candy.



This is the before picture of the Museum's original Farmall.



It is amazing what new paint and decals will do to an old tractor!

1930 FARMALL REGULAR REPAINTED.....AGAIN!

Senator Jerome Warner, the son of Senator Charles Warner, "Father of the Nebraska Tractor Test Law", donated this Farmall Regulator to the University of Nebraska Tractor Test Museum. The serial number indicates that this tractor is a 1930 Model.

The Farmall no doubt was the first successful attempt at building a genuine all-purpose tractor of tricycle design. Up to this time, the conventional 4-wheel tractor was generally accepted for agricultural work, despite the fact that it failed to meet the problem of row crop cultivation. This tractor was equipped with a power take-off, belt wheel and drawbar. It had a convenient means of mounting a cultivator and other attachments. This tractor model was probably the turning point in framer acceptance to power farming.

According to the museum files, this tractor was initially received in very bad condition. Many new parts were needed. The Omaha International Tractor Branch was contacted for parts, but none were found. A letter was then sent to all the dealers out of the Omaha Branch and soon parts started coming in mainly from the Sand Hill region of Nebraska. A magneto, new main ball bearings, new sleeves and pistons, new gaskets, new valves, decals and paint eventually found their way to the Tractor Museum. The tractor was repainted and made into good running order just in time for one of the last Tractor Field Days on East Campus in 1960.

In early August, this same Farmall was hauled off to Wittrock Sandblasting and Painting in Waverly. It did not take long and this 1930 Regular was looking like a brand new tractor! Stop by and see this for yourself.

FRIENDS OF THE MUSEUM

Richard Allen, Lincoln, NE
 Vern Anderson, Lincoln, NE
 Sylvia Bailey, Omaha, NE
 Carl Bern, Ames, IA
 John Bern, Elkhorn, NE
 Larry Bitney, Lincoln, NE
 Alan Boning, Norfolk, NE
 Charles Borchering, Lincoln, NE
 Harold Borman, Lincoln, NE
 Glen Brinkman, Beatrice, NE
 Glen Buchta, Broken Bow, NE
 Kenneth Buell, Belton, MO
 Paul Corcoran, Washington, IL
 Phil Dinges, Lincoln, NE
 Don Edwards, Lincoln, NE
 Larry Ehlers, Lincoln, NE
 Don & Anne Eppley, Omaha, NE
 Paul Exstrom, Dubuque, IA
 Charlie Fenster, Gering, NE
 Allen Fetty, Beatrice, NE
 Bob & Barb Fey, Palmyra, NE
 David Finney, Quincy, IL
 Chris Ford, Lincoln, NE
 Dale Fosler, Milford, NE
 Wayne Foster, Lincoln, NE
 Lynn Freye, Martell, NE
 Tyrone Fries, Plattsmouth, NE
 Ray Gard, Beaver Crossing, NE

Lawrence Gay, Geneseo, IL
 Herbert Glesmann, Omaha, NE
 Richard Goodding, Lincoln, NE
 Dale Heermann, Ft Collins, CO
 Harlan Heier, Lincoln, NE
 Elliot Henning, Lincoln, NE
 Larry Hermann, Lincoln, NE
 Rod Hollman, Martell, NE
 Gene Hunck, Cedar Falls, IA
 Joy Hyslop, Bennett, NE
 Bob Janecek, Wahoo, NE
 Dennis Johansen, Osceola, NE
 Larry Jones, Chico, CA
 Brett Jones, Chico, CA
 Gerry Kennedy, Pilger, NE
 Keith King, Bennett, NE
 Bob Kleis, Lincoln, NE
 Jerry Kohl, Lincoln, NE
 Donald Kuska, Bettendorf, IA
 Howard Lamb, Anselmo, NE
 Harold Landon, Waverly, NE
 Alice Lane, Lincoln, NE
 Daniel Larsen, Robbinsville, NC
 Lester R. Larsen, Longview, TX
 Robert Larsen, Visalia, CA
 Alfonso & Linda Larsen-Story
 Norman Launhardt, Collinsville, IL
 Stanley Liedtke, Dubuque, IA

Eric Luebben, Irvine, CA
 Elton Lyles, Omaha, NE
 David Macdonald, Omaha, NE
 Rich Meysenburg, Grand Junction, CO
 David Morgan, Almo, NE
 Jack Nagel, Davey, NE
 Mark Nickolaus, Lincoln, NE
 Dale Nielsen, Weeping Water, NE
 Patrick O'Hara, North Bend, NE
 Dorothy Olson, Dubuque IA
 Larry Olson, Platteville, WI
 Bill Overturf, Oak, NE
 John Owens, Lincoln, NE
 Norvin Pearce, Kearney, NE
 Ronald Pieratt, Filley, NE
 Jim Pittz, Hastings, NE
 Ken Pohlman, Omaha, NE
 Darrell Rains, Beatrice, NE
 Marvin Rhodes, Lincoln, NE
 Ervin Rolofson, Lincoln, NE
 George Rolofson, Greensboro, NC
 Brent Sampson, Lincoln, NE
 Sam Sampson, Lincoln, NE
 John Seamann, Burwell, NE
 Keith Sheets, Lincoln, NE
 Fabian Skretta, Omaha, NE
 John Smith, Scottsbluff, NE
 Michael Smith, NE

Mark Sorensoen, North Platte, NE
 William Splinter, Lincoln, NE
 Jeremy Steele, Lincoln, NE
 Mike Steele, Fremont, NE
 James Storment, Mt. Vernon, IL
 Elmo Strickler, Nampa, ID
 William Teaford, Cedar Falls, IA
 Jared Teichmeier, Lincoln, NE
 Phyllis Tooker, Ralston, NE
 Russ Tooker, David City, NE
 Bob & Shirley Trauger, Exeter, NE
 Duane Tupy, Lincoln, NE
 Curtis Twedt, Lincoln, NE
 Dorothy Van Brocklin, Creighton, NE
 Kenneth Von Bargaen, Lincoln, NE
 Glen Vollmar, Crete, NE
 Paul Walgren, York, NE
 Roger Welsch, Dannebrog, NE
 David White Lincoln, NE
 Everett Wilkens, DeWitt, NE
 Wayne Winchell, Kingston, NY
 Wayne Wolford, Cozad, NE
 Roger Wurst, NE
 Roy Yanagida, Lincoln, NE
 Larry Zimmerman, Lincoln, NE
 Frank Zoz, Waterloo, IA

DIRECTOR'S REPORT: Bill Splinter

Chip Doolittle called to inform me that his Uncle, Fred Chase had passed away on October 7th. Fred turned 100 years old this past August. He was the son of L. W. Chase, the first Head of the Ag. Engineering Department and the designer and developer of Nebraska's Tractor Testing program. Fred was a strong supporter of the Larsen Tractor Museum and was alert when I called him about a month ago. He died in his sleep. Chip Doolittle and Jeri Ferris have contributed a fund to restore the lister and sweep plow that Fred was involved with.

We remain delayed and frustrated with the lack of progress in getting the HVAC units for the Museum office and tool exhibit area and for the Behlen building. Requisitions have been submitted for both systems but there has been no sign of progress. We have just received an estimate for the exterior of the garage area, which needs stucco to match the rest of the building. It is completely beyond reason so we will lose time there arguing that case. Insulation contractors have evaluated the Behlen building but we have had no response. With snow normally to expect soon, I do not know how this will play out.

Other than that we have had an excellent visitor response. We have averaged around 400 visitors per month and we have averaged around 2,000 hits per month on our web page. We had a successful Tractor Tailgate and our participation in tractor shows at Old Trusty and Platte Valley led to a number of contacts. Jeremy Steele gave excellent leadership with our participation in State Fair and we had around 50 tractors.

We especially welcome tours so if you are associated with a group that needs a program, keep us in mind.

CURATOR'S REPORT: Lou Leviticus

I have been plodding on with archiving and cataloguing. Strange that in this small place one discovers something every time. Last week I found some boxes at the top of the shelves. Thinking that they must be empty, I grabbed them and was unpleasantly surprised to find them filled with artifacts which had never been recorded. How they got there is unknown, but we have our suspicions. They have been catalogued by now.

Love Library Archives and Preservation (2 separate departments) have been very helpful. The archiving of photographs is still continuing and will for some time. We have zillions of slides, both old glass slides as well as the cardboard & plastic ones. We need to go through all these and decide which ones are worthwhile to copy and publish on our website. The speed is also dependent on the workload and funding of the Archives' personnel, which does all the actual processing. I usually spend one morning every two weeks there.

I found an interesting item in the March-April 2006 issue of "Implement and Tractor". (Yes, it still exists). It was an article by Mary Shepherd, the editor, about Wendell Van Syoc, (remember him? Green Blood, John Deere?). In this posthumous article Wendell tells about a Case LA which they were experimenting with in about 1955.



Pictured above is the Museum's Case LA modified by the Egging Company.

I quote Wendell: "First a Case Model LA tractor (50HP) was fitted with a Detroit Diesel Model 471 engine and fueled to 100 Belt HP." That raised a question. We have a Case LA with such an engine, which was modified by Egging out of Gurley, NE as far as we know, in 1955.

Thus, the tractor we have in the collection is definitely inspired, if not the actual tractor, by the John Deere experiments. Or did JD start doing the experiments because some mechanic in Nebraska paved the way. I haven't been able to get confirmation either way. Any helpers out there?

Lou Leviticus
Curator

REPORT FROM FRIENDS PRESIDENT

"BUILD IT AND THEY WILL COME!"

This quote is from the movie, 'Field of Dreams'. The story tells about how a baseball field was carved out of a corn field and eventually attracted an outstanding team and thousands of people. It was the story of a man pursuing his dream.



The Larsen Tractor Test Museum can share a similar story. In 1980 it was thought that Lester Larsen's only regret in a long career of achievement was that his dream of a great comprehensive museum of tractors at the University of Nebraska never came true.

The Museum Larsen dreamed of has been established and stocked with an outstanding collection of tractors and other exhibits to tell the story about the evolution of power from humans to draft animals to that of machines. The Museum exhibits focus on these developments as related to power necessary to drive the agriculture industry.

The tractor collection is a result of tractors that were tested at the Nebraska Tractor Test Laboratory; each tractor contributed a technological feature that made the progressive change of mechanization more efficient, affordable and easy to use.

In 1920, the first tractor testing laboratory in the World (the current Museum) was constructed. After 60 years of testing tractors and fifteen years without proper maintenance, this building was restored and stocked with colonial tools, yokes, plows, historic testing equipment and of course tractors. Since that time, an increasing number of visitors have been coming from throughout Nebraska, the nation and the world. This Museum started from humble beginnings a few years ago to become a World Class Museum today!!

The Museum is a privately funded facility that is located at a public university. The funds needed to operate this Museum come from people like yourself, or as we refer to these people, 'Friends of

the Museum.' We encourage each of you to become a member of the Friends of the Museum organization. Membership is \$10.00 per year.

Dues alone can not pay for the overall operation of the Museum. For fulfilling those financial obligations, the Museum needs your support. This support can be made through the University of Nebraska Foundation. All contributions are tax deductible.

Additionally, the Museum needs volunteers to help with the continued restoration of tractors and machines, the archiving of data and information, the hosting of visitors and the development of exhibits. So please contact Jeremy Steele, Museum Development Associate for more information. Be sure to plan a visit in the near future, bring a friend, or better still, bring many friends.

Don Edwards

President, Friends of the Museum

MUSEUM DEVELOPMENT

No other place can claim to have as much influence on the worldwide acceptance of the agricultural tractor then this Museum located on the University of Nebraska-Lincoln East Campus.



Current photo of Tractor Test Museum.

This, the World's First Tractor Test Laboratory ensured that farmers were receiving what the 200 plus tractor companies were claiming to sell. This laboratory exercised one of the first consumer protection laws with regard to agriculture in the Nebraska Tractor Test Law.

Initially, farmers simply wanted to know the truth of whether or not a tractor was an adequate replacement for their team of horses. Once this was proven to be true by many tractor companies, farmers then wanted to buy the best tractor available to help maximize their production efficiency. (next page)



Early Nebraska Test Car testing a Minneapolis 12-25 tractor.

Since 1920, Tractor Companies have reported each year to Nebraska seeking approval from a panel of Tractor Testing Engineers for their new tractor model. Upon approval, the companies received not only a permit to sell in the State of Nebraska, but also publicly published unbiased data recognized and respected around the world.

This unbiased data collected from the Nebraska Tractor Test Laboratory since March 31st, 1920 has been very valuable. It protects food producers from a poor product and ensures competing Tractor Companies keep the best interest of the valuable and respected farmers in mind.

With this all being said, it is a fact that this Museum is very well positioned and is becoming a well respected, Nationally recognized Museum. We invite each of you to take ownership in this great museum. Trusting together we will strive to develop with the best interest of the Museum's Friends in mind.

At this point we can focus on one of two phases of our development. This first phase targets our efforts towards solidifying our current building's existence on the University's East Campus.

To the best of our abilities, utilizing the available resources and funds, we are striving to become a destination point for University of Nebraska-Lincoln East Campus Visitors. A destination the University and the State of Nebraska is truly proud of.

We have the ingredients needed to find much success throughout this phase of our development. A network of individuals and resources can be utilized to make great strides in the near future.

We have an existing facility to model in the John Deere Collectors center located in Moline, Illinois.

The John Deere Collectors Center is the premier association for enthusiasts interested in the history and heritage of John Deere, and the collecting of early John Deere tractors, equipment and memorabilia. Visitors can watch restorations in progress, view displays of vintage John Deere tractors and equipment or visit the Center's customer service counter for information about parts, repairs and restorations, and reference materials. The Collectors Center Store offers a variety of John Deere gifts and merchandise.



Current Museum Showroom.



Deere's Collectors Center Showroom

May we become the premier association for enthusiasts interested in the history and heritage of all tractor makes and models, and the collecting of early tractors, equipment and memorabilia? Shall we become established to allow our visitors to watch restorations in progress, and to provide customer services and a gift shop?

The stage is set and we are developing in this direction at a rate that is determined by the resources and funds that we can acquire for this endeavor from the Friends of this great Museum.

So what is beyond this phase, what is it that will make up the second phase. We will examine this phase in a future newsletter as we take a closer look at the student projects from last years Museum of Agricultural Technology Design Studio that produces student architectural drawings such as the one pictured below. Jeremy Steele

Museum Development Associate



LUEBBEN ROUND HAY BALER

Bill Splinter



ASABE Historic Landmark #31

It is a very common sight to see round bales of hay in the field. It is interesting that the round bale originated in Nebraska. In 1892 Hugo Luebben and his sons Ummo and Melchior, who lived near Sutton, NE, began working on a round baler that used twine rather than wire and did not require tying. A patent was issued on September 5, 1905 for a machine for "Reeling Edible Fibrous Materials" to Melchior Luebben. His initial idea was to develop a machine to twist straw tightly to provide heat for cooking.: (Luebben baler)

The first round balers were manufactured by the Luebben Baler Company, Beatrice, NE. They were mounted on a wagon chassis and could be powered by a gasoline engine mounted on the frame. The hay had to be brought to the baler as with the conventional square balers at that time but the two men tying bales with wire were eliminated. This baler was offered for sale for \$750 without an engine and \$1150 with the engine.

The Beatrice company was purchased by another company and production of the baler ceased. The company was reorganized as the Round Baler Company, Lincoln, NE about 1910 by Ummo Luebben where development continued. The bale was now called the Ummo Round Bale. One interesting innovation was the modification of the baler into a self propelled unit towing a hay loader that fed the baler as it moved down the windrow.

The company moved to Omaha, NE as the Rotary Baler Company and manufactured and sold machines until 1940 when it was licensed by Allis-Chalmers.

A pickup unit was developed to eliminate the need for the hay loader and the power take-off of the tractor was utilized for power, resulting in a much more compact and mobile machine. This configuration was patented in 1934. Six of these machines are known to still exist, two of them by Eric Luebben, Melchior's great grandson.

The Allis Chalmers Mfg. Co. marketed the round baler as the Roto-Baler. Over 77,000 of these balers were sold. One problem remained, the need to stop to eject each bale, requiring several manipulations of the clutch and gearshift. The solution to this problem was the development of the Allis Chalmers WD tractor that had both a hand and foot clutch, allowing forward motion to stop while the bale was completed and ejected. The most serious problem was the operator's attempting to remove hay jammed in the belts while the machine was running. This resulted in many very serious injuries, leading to the termination of manufacturing this baler.



The principle of using a span of flat belts to form round bales of hay has become the principle means of harvesting hay, now in the form of 1000 pound bales rather than 70 pound bales. This idea that originally started out as a means to twist straw into bales for fuel for farm stoves (early pioneers had exhausted the supply of buffalo chips and Nebraska had no timber or coal resources) has evolved into a high level of technology and use that the Luebben brothers could never have imagined.

The significance of the commercial development of the round baler was recognized by ASAE in 1993 and a plaque is mounted on an Allis Chalmers Roto Baler at Pioneer Village, Minden, Nebraska.

Bill Splinter
10/2/06

MUSEUM FRIEND MEMBERSHIP

This is the last newsletter before the year 2007. It is now time to renew your membership if you joined the Museum Friends Organization or renewed before July 15th, 2006. First year Friends and Nebraska State Fair Exhibitors joining or renewing after July 15th will not need to renew their membership until next year.

Please renew by providing a check for \$10.00 to: Friends of the Lester F. Larsen Tractor Museum and provide any necessary changes (below) for our current records. We will also appreciate your email address for the Tractor Museum E-Friend email list. If you have any questions regarding your membership status, email Jeremy Steele at jsteele4@unl.edu or call the Museum at 1-402-472-8389. If you currently are not a member and would like to join, please provide the membership fee of \$10.00 and the following information.

Name: _____

Address: _____

Phone: _____

Email: _____



MUSEUM DONATIONS

Also at this time, we also encourage each of you to consider making a donation towards the development of Lester Larsen's Tractor Test and Power Museum. The funds needed to operate this Museum come from people like you. This Museum is a privately funded organization located at a public university. This past year over \$100,000 was donated to the Nebraska Tractor Test Museum.

Can we reach \$100,000 in donations for the year 2007?

Monetary donations can be made a number of ways.

- 1) A donation can be made to the Tractor Museum General Operating Fund. This money is immediately available for Museum improvements. Please write a check to Larsen Tractor Museum
- 2) A donation can be made to the Friends of the Lester F. Larsen Tractor Test and Power Museum. This money goes towards funding the needs of the Museum as determined by the Board of the Friends Organization.
- 3) A donation can also be made through the University of Nebraska Foundation. This can be made on line at <http://www.nufoundation.org/Shop/showDivision.sp?cat=222> These donations contribute towards the Museum's spendable earnings fund. For more information or to learn about establishing memorial gifts and other named endowed funds, please contact:

Ann Bruntz, Director of Development-IANR, University of Nebraska Foundation, 1-402-472-0372

Thank you for supporting Lester Larsen's Tractor Test Museum with your donation of _____ and for establishing your membership with the Museum Friends Organization.

The Nebraska Tractor Test Museum is a nonprofit organization, making your contributions tax deductible.

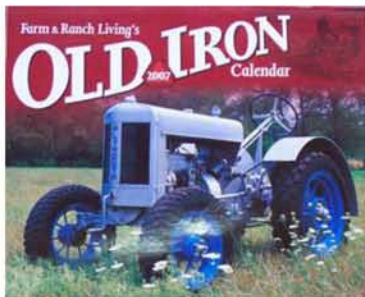
MUSEUM GIFT IDEAS

The Holiday Season is just around the corner. We would like to encourage each of you to consider giving a gift available from the Tractor Test Museum. The following gifts can be purchased at the Tractor Museum. Please stop by, visit the Museum and purchase a gift for this upcoming Holiday Season.

MUSEUM FRIEND MEMBERSHIP GIFT

For only \$10 dollars, give a gift that keeps on giving all year long, a Tractor Museum Friend Membership. Each Friend will receive a quarterly newsletter and will be informed of Museum events and activities that occur throughout the year.

2007 OLD IRON CALENDER



For \$10.00, receive this 2007 calendar of colorful antique tractor photos, restoration stories and anecdotes, fascinating tractor trivia and hundreds of tractor show dates in locations across North America.

UNL TRACTOR MUSEUM CAP



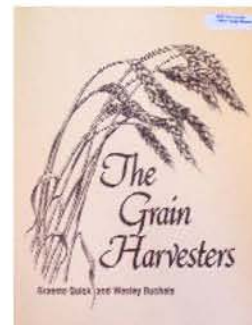
For only \$12, receive a Nebraska Tractor Museum cap. This sharp looking embroidered cap is 100% cotton, one size fits all.

FARM TRACTOR BOOKS 1855-1995



Do you know someone interested in tracing the development of the tractor? This three book series is a tremendous reference for those interested in any tractor manufactured from 1955 to 1995. Each book is available for \$20.00 or buy the entire series of three for \$50.00

THE HISTORY OF GRAIN HARVESTERS



Trace the development and evolution of grain harvesting equipment. In this book you can read about the beginnings of agriculture, the use of a hand sickle. Keep reading to discover the birth of the International Harvester Company and the grain harvesters of the future. This book is available for \$20.

CHILDRENS BOOKS



Discover what Johnny the Tractor and his friends are up to in these John Deere Story Books available for only \$7.50.

Lester F. Larsen
Tractor Test and Power Museum
UNL East Campus
35th and Fair Streets
P.O. Box 83083-0833

Contacts:

Phone: (402) 472-8389
Fax: (402) 472-8367
Email: tractormuseum2@unl.edu

Officers:

President: Don Edwards
Vice President: Russ Tooker
Secretary: Harold Borman
Treasurer: Bob Kleis

Board of Directors:

Past Pres.: Charles Borcharding
Vern Anderson
Larry Ehlers
Earl Ellington
Charles Fenster
Richard Gooding
Lawrence Hermann
Jerry Kohl
Dave Morgan
Bill Overturf
Ervin Rolofson
John Smith
Glen Vollman
Ron Yoder

Ex-Officio:

Louis Leviticus
Ann Bruntz
William Splinter
Mark Nickolaus

Museum Hours:

Mon-Fri: 9:00 – 4:00
Saturday 10:00 – 4:00
Sunday Closed

For tour information, please call the Museum at 1-402-472-8389. For more information about Nebraska's Tractor Test and Power Museum and upcoming events, visit: <http://tractormuseum.unl.edu>.

FIRST FRIENDSHIP MEETING HELD

On Tuesday, August 15th, the first friendship meeting was held in the Museum Showroom at 7:00. Thirty friends attended the meeting to discuss upcoming events and the future of the Museum.



Packed between all of our tractors, over 30 Museum Friends attended the first Friendship Meeting for the Museum.

Friends President, Don Edwards gave an introduction and welcome to the friends stating the significance of this great Museum and the importance of the friends organization.

Director Bill Splinter followed up with a State of the Museum Address informing the audience of recent developments concerning the museum.

Museum Development Associate, Jeremy Steele gave a power point presentation about upcoming events such as the State Fair and Husker Harvest Days.

Potential Friendship committees were discussed for the Museum to help organize fund raising activities and to help create a vision for the Museum's future.

The meeting concluded and the rest of the evening was a time for visiting and enjoying refreshments and treats provided by Museum Friends.

The next Friendship meeting will be held once again in the Museum Showroom on Tuesday, December 12th at 7:00pm.

Attending the next Friendship Meeting will be a great opportunity for you to become more involved with the direction and future of this great Museum. Please consider becoming more involved with the Nebraska Tractor Test Museum.

Friends of the Lester F. Larsen
Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833

ADDRESS CORRECTION REQUESTED



John Deere has been testing their 8030 Series Tractors at the Nebraska Tractor Test Lab. To date 1890 tractor models have been tested since the first test in 1920 on the Waterloo Boy.

"In 1980 it was thought that Lester Larsen's only regret in a long career of achievement may be that his dream of a great comprehensive Museum of tractors at the University never came true. Today, his dream is indeed coming true because of each of you. Thank you for supporting Lester Larsen's Tractor Test and Power Museum." Jeremy Steele Museum Development Associate.

We would like to thank the Nebraska Ethanol Board for donating just over \$250.00 of 10% Ethanol blended gasoline to power our Museum Tractors throughout the 2006 Nebraska State Fair.

Thank You Nebraska Ethanol Board!

A special thanks goes to Orscheln Farm & Home for providing one free, and two additional discounted toy tractors for our State Fair Toy Tractor Raffle.

Thank You Orscheln Farm & Home!

Fairbury Steaks provided our Museum with 144 hot dogs for the recent Tractor Tailgate. These hot dogs were delicious and very much appreciated.

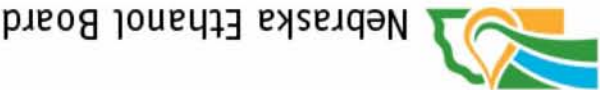
Thank You Fairbury Steaks!

HyVee donated the hot dog buns for the Tractor Tailgate on September 30th. We appreciate their donation towards our event.

Thank You HyVee!

Thank you Pepsi-Cola of Lincoln for donating 240 cans of pop for the Tractor Tailgate. The new flavors were enjoyed by our tailgaters.

Thank You Pepsi-Cola of Lincoln!



Tractor Test Times
Newsletter for Friends of Nebraska's Tractor Test Museum
Newsletter #27
Jeremy Steele – Editor
Fall 2006





Tractor Test Times



Newsletter for *Friends of the Larsen Tractor Test Museum*

Newsletter #28

Jeremy Steele – Editor

Winter 2007

Our Mission: To Collect, preserve, research, and interpret the traditions and technologies of agriculture.

This first newsletter of 2007 is available in digital form upon request (jsteele4@unl.edu). We encourage this issue to be printed and sent or emailed to potential new Friends of the Museum. Thank you - Editor

MUSEUM MEMBERSHIP CARD

If there is not a

TRACTOR TEST MUSEUM FRIENDSHIP CARD

(ATTACHED HERE)

Your membership is important to us!

With this complementary issue of

THE TRACTOR TEST TIMES

We encourage your consideration towards
renewal or the establishment of a new

TRACTOR TEST MUSEUM FRIEND MEMBERSHIP

(see **NEW MEMBERSHIP BENEFITS**, page 2)

2007 GOAL SET TO RECOGNIZE CONTRIBUTORS

Important goal of 2007

is set to recognize contributors through museum display. It has been nearly 10 years since the official dedication of the Tractor Test Museum. Throughout the years, many individuals have made contributions. It is our goal to recognize past and future generous donors through a new museum display set to be complete in time for the 2007 Open House, April 21st.



FRIENDS S.H.A.R.E MUSEUM ONLINE



www.TractorTestFriends.com

Friends of the Tractor Test Museum now have an official web site. This site is designed to increase the awareness of the *Friends* organization while promoting the newly established **Friends S.H.A.R.E Program**. This program encourages the contribution of resources towards the overall mission of the Tractor Test Museum. Museum projects are designed to enhance the exhibition of agriculture while focusing on: **Showroom, History, Agribition, Resources and Education**. (see **WEB SITE ENHANCES FRIENDSHIP**, page 6)

UNL RESTORATION CLUB ESTABLISHED

University student involvement leads to new club, John Deere D restoration project, and cooperative promotion of Museum Open House and Burr Hall Bull Fry, April 21st, 2007.



NATIONAL ATTENTION FOR YOUTH

The 2nd annual Drawing Contest receiving help with promotion and prizes from National Farm Toy Museum.

We were pleasantly surprised with a recent article about our upcoming Tractor Drawing Contest in the National Farm Toy Friends of the Museum Newsletter. Sarah and I were able to visit the Museum and meet with Amanda Schwartz in Dyersville to



discuss promotion, prizes, and incorporating hand made drawings from former museum associate, Luis Vasquez. It is important to create interaction between the museums and individuals of all different ages. Our connection with the National Farm Toy Museum greatly enhances this interaction.

DUES NOW \$15 BENEFITS INCREASE

New 2007 *Friends* benefits include a subscription to the newsletter *Tractor Test Times* along with free exhibitor registration to Tractor Test Reunions and the Nebraska State Fair. In addition, two Nebraska Tractor Test Reports are available upon request through **TRACTORPEDIA**, the museum's new resource center and your gateway to the Nebraska Tractor Test Archives. All of this for only \$15 a year!!



TRACTORPEDIA RESOURCE CENTER



Located at the University of Nebraska-Lincoln East Campus and online, **TRACTORPEDIA** serves as the gateway to the Nebraska Tractor Test Archives within the Tractor Test Museum. **TRACTORPEDIA** provides access to materials collected throughout the history of tractor development and testing dating back to the Winnipeg Industrial Exhibition of 1908.

TRACTORPEDIA was established to aid the processing of requests from museum *Friends* to view Nebraska Tractor Test Reports, tractor operator manuals, parts and service manuals, and additional materials that together provide:

1. Unbiased information of proven tractor performance.
2. Instructions for safe tractor operation.
3. Tractor maintenance schedules and procedures.
4. Resources for tractor repair and restoration.

TRACTORPEDIA was also established to provide visitors of the museum with information about the

Friends organization and their goal of maximizing the accessibility and educational value of the resources found within the Nebraska Tractor Test Archives of the Tractor Test Museum.

TRACTORPEDIA hopes to be staffed with volunteers and *Friends* to assist with the processing of new memberships and the fulfilling of requests from *Friends* of the Tractor Test Museum whom may inquire about the additional educational resources available through **TRACTORPEDIA** related to their particular tractor of interest.



TRACTORPEDIA can access nearly 2,000 Nebraska Tractor Test files containing tractor test reports, manuals, and advertising literature related to each particular tractor tested at the Tractor Test Lab.



Services provided by **TRACTORPEDIA** are performed by the staff of the Tractor Test Museum along with *Friends*, and University of Nebraska work-study students and our very much appreciated museum volunteers.

To further develop **TRACTORPEDIA's** outreach program, *Friends* are encouraged to find sponsors or business partners to assist with or fund the digitization of educational materials within the Tractor Test Archives. Individuals, clubs, organizations, businesses, and corporations, are encouraged to contribute.

Those sponsors or business partners donating \$100 or more are eligible to become 2007 online sponsors of available Nebraska Tractor Test Files. **TRACTORPEDIA** sponsors will receive recognition and advertising information viewable online through www.TRACTORPEDIA.com.

As mentioned above, the scanning and processing of educational materials from the Nebraska Tractor Test Archive is a service provided by current *Friends* for potential new *Friends* requesting resources in person or through online avenues.

Please consider donating your time, knowledge, and educational resources to the *Friends* of the Tractor Test Museum to enhance the development of THE TRACTORPEDIA RESOURCE CENTER. Please contact Jeremy Steele, jsteele4@unl.edu, 1-402-472-8389, to volunteer, make a donation, or for more information. Thank you

Lester F. Larsen
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Email: tractormuseum2@unl.edu

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President: Russ Tooker
Vice President: Jerry Kohl
Secretary: Larry Ehlers
Treasurer: Bob Kleis

Board of Directors:

Past Pres.: Don Edwards
Charles Borcharding
Vern Anderson
Larry Ehlers
Earl Ellington
Charles Fenster
Richard Gooding
Lawrence Hermann
Jerry Kohl
Dave Morgan
Bill Overturf
Ervin Rolofson
John Smith
Glen Vollman
Ron Yoder

Ex-Officio:

Louis Leviticus
Ann Bruntz
William Splinter

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Sunday: Closed

For tour information, please call the museum at 1-402-472-8389. For more information about Nebraska's Tractor Test and Power Museum and upcoming events, visit: <http://tractormuseum.unl.edu>.

DIRECTORS REPORT

Bill Splinter



View looking up at new HVAC system.

We now have heating and cooling from an air-to-air heat pump. The areas affected are the two offices, the library, the break room, the tool exhibit and antique plow areas. Up until now, we had only a window air conditioner for one office and 1500 watt resistance heaters for the winter months for the two offices. The additional areas were subject to room temperature that fluctuated through a wide range, causing potential damage to the historic booklets and tractor test reports. We are grateful to Bob Mitchell and his wife Celia for including the Tractor Test Museum in their will.

We are also in the process of developing the Behlen building into a restoration center. Right now all of the materials that had been stored in the building are outside under canvas while the interior is insulated. A heat pump has also been installed for that building so that we can use it year around. Again, this is courtesy of the Mitchells.

Our volunteers continue to provide support in moving the program ahead. Four tractors are in various stages of restoration, the Moline Universal, the John Deere "D", the Minneapolis-Moline "R" and the Case "SC". The Farmall Regular sports a new fan belt courtesy of museum friend John Swanson and the Farmall "A" has its steering system tightened up so that it will not vibrate as you drive it. It is always a feeling of accomplishment to hear a tractor fire up after a long period of silence.

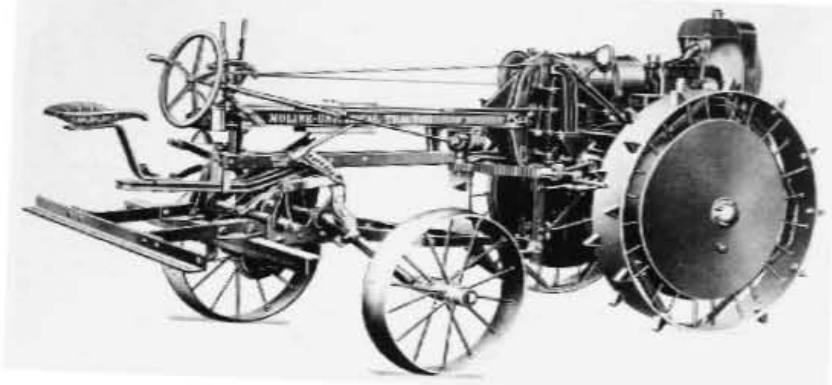
We continue to attract a broad range of visitors, including ones from Alaska this past week. This is what we are all about.

SPECIAL TRACTOR THANKS TO ROGER WELSCH AND HIS DONATION OF 100 TRACTOR NUT BOOKS TO THE MUSEUM FRIENDSHOP!! - Thank you Roger

A FLY BY WIRE TRACTOR

By Bill Splinter, Director

We have all read where the new age giant jets and fighter aircraft are controlled by electrical signals carried by wire rather than by rods or cables from the cockpit to the engines and control surfaces..... Did you know that a similar type of control was found on a tractor 90 years ago to regulate engine speed? Proof of this can be seen displayed on the Moline Universal donated to the museum by Dr. Larry Bitney, retired University of Nebraska Professor of Agricultural Economics.



Engine speed on the tractors we may be most familiar with is controlled by either a rotating or a push-pull lever going to the governor. An exception to this was found 90 years ago on the 1917 Moline Universal tractor, a model of such we have just restored. It is a strange looking tractor with a bulky engine-transmission sitting over the front drive wheels, controlled by a driver riding on a sulky. In addition, this tractor utilizes articulated steering (long before the Steiger) where all controls except for the throttle pass through the tractor's pivot point.

Taking a closer look at the throttle, we see that it presents a very clever and unique way to control engine speed. The RPM's are set using a rheostat instead of a lever. A rheostat is a resistor constructed so that its resistance may be changed without opening the circuit in which it is connected, thereby controlling the current in the circuit.

To further explain, the voltage from the 6 volt battery is brought to one arm of the rheostat (by wire obviously). A series of resistors steps down the voltage as a wiper is rotated by a knob. There are 10 voltage pickoff points and wires then lead this voltage to the field windings of the tractor generator. Changing the voltage changes the current going through the windings; this changes the strength of the magnetic field going through the rotor. The stronger the magnetic field the more voltage the generator develops and that causes a drag on the stator that houses the field windings.

An ordinary generator is bolted to the engine and cannot rotate, but the Moline's generator rotates against a spring so that the greater the speed, the greater the torque and the greater the rotation of the stator against the spring. A lever connected to the stator housing is connected by a short rod to the throttle. Therefore changing the voltage coming from the rheostat changes engine speed.

As stated earlier, the museum has a one of these 1917 Moline Universal tractors on display. After replacing the field windings and the rheostat wires that were burned out along with replacing the exhaust muffler and some gaskets, this tractor is now in running status. Be sure to stop by and see it when you have a chance.

For the next issue of *Tractor Test Times*, we will have Harold Borman, a member of our *Friends* Board, relate his experiences in operating this unique and complex model of tractor as a youth in Sarpy County.

2007 BRINGS IN NEW FRIENDS PRESIDENT RUSS TOOKER

Russ Tooker lives and farms west of David City, NE where he raises dry land corn and soybeans. He also has farm ground and pasture land south of Silver Creek, NE, and until 15 years ago, ran irrigation wells with "B" John Deere Tractors.

Russ and his wife, Julie, met while attending UNL. Both have B.S. Agronomy degrees. Julie is a quality control technician at Becton-Dickinson Pharmaceutical in Columbus, NE. Their son, Garrett, is 14 years old and attends the eighth grade at David City Public Middle/High School. Garrett's interests include 4-H trap, skeet, sporting clays, and target shooting; upland bird and deer hunting with Dad; video and computer games; building with Lego's; reading; playing with the family's three dogs; and anything associated with "Star Wars" or "Harry Potter."

Russ would like to see the museum continue to grow and expand as a hands-on living history museum. He also would like to see the museum used as a teaching facility with hands-on learning for grade school children, 4-H, FFA, and UNL Ag Engineering. When he is at the museum, Nebraska State Fair, or Husker Harvest Days, he enjoys listening and learning from our most valuable resource, the people who stop by and reminisce about their old tractors or life experiences on the farm, and the way things used to be.

Because of the recent internet site improvements, the museum now has a greater opportunity to make major advances in spreading information / knowledge on antique tractors and farming history. The internet site improvements can also improve the museum's ability to obtain and record historical information before it is lost forever.

MUSEUM FRIEND MEMBERSHIP INCREASES TO \$15 FOR 2007

This is the first newsletter of 2007. It was decided by the *Friends* Board during the October board meeting to increase Friends membership dues from \$10 to \$15 effective January 1st, 2007. If you have not already done so, it is now time to renew your membership, or decide upon joining for the year 2007. As always, please encourage others to become a member of this organization.

Please renew by providing a check for \$15.00 to: Friends of the Lester F. Larsen Tractor Museum and provide any necessary changes (below) for our current records. We will also appreciate your email address for the Tractor Museum E-Friend email list. If you have any questions regarding your membership status, email Jeremy Steele at jsteele4@unl.edu or call the Museum at 1-402-472-8389. If you currently are not a member and would like to join, please provide the membership dues of \$15.00 and the following information.

Name: _____

Address: _____

Phone: _____

Email: _____



MUSEUM FRIEND CONTRIBUTIONS

We encourage our *Friends* to consider making a donation towards the development of the Tractor Test Museum. The funds needed for operation come from people like you. This Museum is a privately funded organization located at a public university. Find out how you can donate on the following page.

HOW TO DONATE

This past year over \$100,000 was donated to the Nebraska Tractor Test Museum. Can we reach \$100,000 in donations for the year 2007?

Monetary donations can be made a number of ways.

- 1) A donation can be made to the Tractor Museum General Operating Fund. This money is immediately available for Museum improvements. Please write a check to Larsen Tractor Museum
- 2) A donation can be made to the Friends of the Lester F. Larsen Tractor Test and Power Museum. This money goes towards funding the needs of the Museum as determined by the Board of the Friends Organization.
- 3) A donation can also be made through the University of Nebraska Foundation. This can be made on line at <http://www.nufoundation.org>. These donations contribute towards the Museum's expendable earnings fund. For more information or to learn about establishing memorial gifts and other named endowed funds, please contact: Ann Bruntz, Director of Development-IANR, University of Nebraska Foundation, 1-402-472-0372

The Friends of the Tractor Test Museum is a nonprofit organization, making contributions tax deductible.

For those of you wishing to designate funds from your donation towards particular areas of need, we have established the *Friends S.H.A.R.E* Program designed to provide various avenues for contributions that will lead to the museum enhancement. These five avenues include:

Showroom Enhancement
History Captivation
Agribition Development
Resources for Research
Educational Programming

The *Friends S.H.A.R.E* Program is defined in greater detail through this newsletter and is also available online at www.TractorTestFriends.com.

WEB SITE ENHANCES FRIENDSHIP

SHOWROOM
HISTORY
AGRIBITION
RESOURCES
EDUCATION

The Tractor Test Museum is becoming a well respected, nationally recognized museum despite minimum online exposure. A web site has recently been developed (www.TractorTestFriends.com) to enhance online exposure, increase the museum's visibility, membership and participation of the museum's *Friends*.

The mission of the TractorTestFriends is:

To equip all Friends of the Tractor Test with inspiration to contribute and direct resources towards promoting and enhancing the ambition for the exhibition of agriculture.

This web site has the opportunity to accomplish goals designed to stimulate interest in our current *Friends* and also plant and cultivate interest for acquiring new members.

The mission and goals from TractorTestFriends can be accomplished through projects sprouting from *The Friends S.H.A.R.E* Program. The following page provides a description of projects related to this program.

Showroom Improvement Projects

The museum has approximately 6,000 sq - ft of showroom space. Contributions, materials, volunteer hours, and additional resources are in continuous need to enhance the museum's designated showroom space.



Showroom Saturdays are announced throughout the year as workdays encouraging *Friends* to volunteer at the museum towards the completion of Showroom Improvement Projects.

History Captivation Projects

There is a tremendous amount of history stored as personal experiences and knowledge related to the development, testing, and advertising of agricultural power and performance. It is important this history is captured and shared with others before the experiences and memories are forgotten or lost forever.



Friends are encouraged to contact the museum if interested in learning more about designing a History Captivation Project or would like to donate information, knowledge, experiences, and memories towards a potential project or during a designated Capture the History Day.

Agribition Projects

Successful Agribition Projects are designed to focus on enhancing the exhibition and education of agriculture. Projects are encouraged to be developed by Ag in the Classroom participants, 4-H clubs, and FFA chapters. The Tractor Test Museum anticipates the development of successful Agribition Projects by many individuals, organizations, and institutions in the years to come.

The museum's staff and volunteers are striving to catalog and digitize the contents of the archive to create an online resource that continues to develop

and is utilized in the years to come for research and education.



Resources for Research & Development

A great wealth of information can be found and utilized within the walls of the Tractor Test Museum. Information has been archived consisting of nearly 100 years of horsepower testing history dating back to the Winnipeg Plowing Contests and the Fremont Test Trials prior to the development of the Nebraska Tractor Test.

Additional information related to testing tractors such as tractor operation, service, and parts manuals, along with advertising literature is available and is encouraged to be utilized for education and exhibited through various Agribition Projects in the future. We encourage museum *Friends* to utilize and contribute towards developing TRACTORPEDIA, the museum's Agribition Research and Development Center.

At this time, the museum is seeking funds for a high quality scanner. If you are interested in making a contribution towards this, please contact the museum. Your contribution will be greatly appreciated and utilized by many individuals.



Education and Career Path Enhancement Projects

The theme of the Tractor Test Museum's educational program is: *Chase Dreams, Plow Trails*. It is our mission to enhance the sharing and acquisition of knowledge through all avenues so dreams are continued to be pursued and every trail to success is accessible to all.

The Tractor Test Museum is striving to play a significant role in the education through Agribition projects, online animations and videos for classroom curriculum enhancement, and continues to create career path awareness for students of all ages.

The museum has goals to provide scholarships and internships for individuals pursuing dreams while plowing trails for others. Friends are encouraged to consider making a contribution towards the development of a *Chase Dreams, Plow Trails Scholarship* or a *Museum Internship Fund*.

Friends of the Lester F. Larsen
TRACTOR TEST MUSEUM
P.O. BOX 830833
LINCOLN, NE 68583-0833



THE NEW TRACTORPEDIA CENTER
WWW.TRACTORPEDIA.COM

Providing access to the Nebraska Tractor Test Archives!

PICK UP AN ISSUE OF TractorHouse NOW AVAILABLE AT THE TRACTOR TEST MUSEUM!



Upon recent discovery of your museum, the founder and developer of www.AntiqueFarming.com, Artie Zabel, packed up his most valuable possession, his son Adam, and traveled 11 hours by car for a visit. Artie received a tour of both the museum and the Nebraska Tractor Test Lab. He then discussed with us different strategies of how to develop and provide our resources to as many people as possible. Upon his understanding of what each of you have contributed toward the museum's development over the years and recognizing the current potential of the museum, Artie joined the *Friends* organization and is helping the Tractor Test Museum reach the 2007 goal of raising \$100,000 in donations through his web site www.AntiqueFarming.com. We would like to take this opportunity to thank the many individuals that truly define our *Friends* organization by directing resources towards the enhancement of this great museum.

We would like to encourage each of you to visit: www.AntiqueFarming.com
Discover what a new *Friend* is doing for each you!





Tractor Test Times

Newsletter for *Friends of the Larsen Tractor Test Museum*

Newsletter #29

Jeremy Steele – Editor

Spring 2007



MUSEUM OPEN HOUSE SATURDAY APRIL 21st

The 9th annual Tractor Test Museum Open house is scheduled for Saturday, April 21st from 10:00 to 4:00 during the University of Nebraska-Lincoln College of Agricultural Sciences and Natural Resources CASNR Week Celebration. Select events for the day are included below. (See **OPEN HOUSE** inside for more details)



See restoration shop improvements at Open House!

8:30am – 1:00pm Little Ak-Sar-Ben, Animal Science Complex, Livestock Show

10:00am – 4:00pm: Tractor Test Museum Open House, 1:00 Parade

11:00am – 2:00pm: Burr Hall Classic Car Show

11:30am – 2:00pm: Burr Hall Bull Fry, East Campus Mall, Backyard Barbeque

7:00pm: UNL Rodeo, Lancaster Event Center, tickets available at the door

(For more information, contact Sue Voss, events coordinator, at (402) 472-0609.)

YOUR PERSPECTIVE: TRACTOR TEST TIMES

The 2007 Tractor Test Season is underway. John Deere 7030 tractors recently arrived to undergo testing at the Nebraska Tractor Test Laboratory. Six new tractor models including the 5403 (model pictured below on right), 7630, 7730, 7830, 7930 and the 7930 IVT have recently spent time at the Test Laboratory. Next on the test schedule are the 215 and 245 Case and New Holland Models. A total of 13 different models will be tested this spring and 10 models will be arriving in the fall.



Consider this:
1957 John Deere
820 Diesel

+

50 Years

=

2007 John Deere
5403 Diesel



Upon researching the 1957 test season, an interesting comparison between two tractor models can be made. The John Deere 820 Diesel was tested at Nebraska in 1957 as test number 632. The tractor model above on the right, a John Deere 5403 was tested at Nebraska Tractor Test Lab 50 years later during the spring of 2007 as test number 1892. Over 1,200 tractor models have been tested during the 50 year span between the two, yet the models appear to display many similar characteristics at first glance. What will the Nebraska Tractor Test Reports tell about these two tractor's similarities and differences in horsepower and performance? Stay tuned....

We are requesting information from each of you for a future issue of Tractor Test Times. We are asking our *Friends* to address "What has changed, what is the same and what is on the way regarding tractor development and testing." Please write to us with your perspective and encourage others to do so also.

Tractor Test Museum – P.O. Box 830833 – Lincoln, NE – 68583 or email: jsteele4@unl.edu

Lester F. Larsen
Tractor Test and Power Museum
UNL East Campus
35th and Fair Streets
P.O. Box 83083-0833

Contacts:

Phone: (402) 472-8389
Fax: (402) 472-8367
Email: tractormuseum2@unl.edu

Officers:

President: Russ Tooker
Vice President: Jerry Kohl
Secretary: Larry Ehlers
Treasurer: Bob Kleis

Board of Directors:

Past President: Don Edwards
Charles Borcharding
Vern Anderson
Larry Ehlers
Earl Ellington
Charles Fenster
Richard Gooding
Lawrence Hermann
Jerry Kohl
Dave Morgan
Bill Overturf
Ervin Rolofson
John Smith
Glen Vollman
Ron Yoder

Ex-Officio:

Louis Leviticus
Ann Bruntz
William Splinter

Museum Hours

Mon-Fri: 9:00 – 4:00
Saturday: 10:00 – 2:00
Sunday: Closed

For tour information, please call the museum at 1-402-472-8389. For more information about the museum and upcoming events, you can visit us online at the following sites:

<http://tractormuseum.unl.edu>
www.TractorTestFriends.com
www.TractorPedia.com

OUR VALUABLE VOLUNTEERS

I would like to take this time to extend my appreciation to Tractor Test Museum volunteer Larry Ehlers.

Larry has been volunteering with the Tractor Test Museum for a number of years. He consistently stops by twice a week to check in on things.

Larry has been a part of a successful “*Charter Friends*” project in the office. He and volunteer Sarah Pankoke have sorted through six years of Friends membership lists and organized all of our past members into a computer database.

Serving as secretary of the Friends, Larry has learned to enter new members and renew the memberships of previous members within this existing database.

This project has been completed just in time as we hope to inform the previous members of the museum’s upcoming 10 year anniversary in 2008. (see CHARTER MEMBERS for more information inside).

Volunteer Note: Volunteer Phil Dinges will be having knee replacement surgery on April 19th. We wish Phil a speedy recovery from this operation.

OVER 750 IMAGES AVAILABLE ONLINE

The University of Nebraska Digital Libraries have provided over 750 historic images of tractor testing available on the internet. These images can be accessed by clicking *Images* on the bottom of the web page: www.TractorPedia.com. This issue of Tractor Test Times will display some of these images for those of you without online opportunities.

Please consider visiting the Tractor Test Museum to view the entire collection of images on our computers. We would enjoy providing this opportunity for you on your next visit.

TRACTOR TEST DRIVE

The 2006 Tractor Test Times fall issue announced museum development associate, Jeremy Steele, planned to drive one mile for every new member the *Friends* organization receive during the last quarter of 2006. A total of 19 new members joined to establish a 19 mile trip for Mr. Steele during the year 2007. This inaugural trip, hopes the become the beginning of an annual Tractor Test Drive. For information about a future Tractor Test Drive, contact Jeremy Steele.

1-402-472-8389 or jsteele4@unl.edu.

DIRECTOR'S REPORT

Bill Splinter

The project operated on "University Time" but the renovations to the historic Behlen building are complete and we are in the process of moving back in. This building survived an atomic blast in a test on May 5, 1955 in New Mexico. It was 15,000 feet from a blast equivalent to 30,000 tons of TNT. It was donated to the Agricultural Engineering Department by Walter Behlen of Behlen Mfg. Co., Columbus, NE. Over years of exposure to the weather the building developed some rust spots and Tony Raimono, current President of Behlen, allowed the funding of a protective coat of paint.

Through a donation by Robert Mitchell and his wife Celia, a heat pump has been installed so that the building now has heating in the winter and cooling in the summer, which will allow us to use the building year around. Just this week a sprayed on insulation has been applied so that the building is energy efficient. While a student in Agricultural Engineering in the '40's, Robert worked in the Nebraska Tractor Test Laboratory. He had maintained loyal support of the Ag. Eng. Dep't over the years and left a donation of over \$80,000 to the Museum in his will.

The intended use of the building will be restoration of tractors and historic agricultural machines. Up until now we have been restoring tractors in the Museum but this detracts from the exhibit by having pistons and various tractor parts lying around.

A second major impact on the Museum program follows from a donation by Vinod Gupta, President and CEO of infoUSA, an Omaha company providing businesses with customer information. Vinod graduated from the Indian Institute of Technology, Kharagpur, India and came to Nebraska where he completed a M. Sc. in Agricultural Engineering in 1966. While a graduate student he worked in the Tractor Test Laboratory. He then went on and received an MBA from the University of Nebraska. Vinod established a company in Omaha called infoUSA that markets customer information to various businesses. He has been very successful, and, like Mitchell, he has made a donation of \$100,000 to the Museum in appreciation for his experiences and the opportunity to fund his education through the Test Lab.

We appreciate these three important donations to our program. We will be recognizing those who have made donations of money or time to our program with a wall plaque..

TRACTOR TEST ANECDOTES

From Lou Leviticus

"John Carlile and the leaky Tire" or John and "Tauka's Trickle"

John was very observant and probably the best all-round technician we ever had.

Tires which were filled with Calcium-Chloride solution leak sometimes due to corrosion of the valve. We couldn't run track tests with leaky tires so we always made sure that the tires were OK. You just look and see – there would be a dark streak on the side of the tire.

We, I and four John Deere reps, were standing outside on the track before a John Deere test. Tauka, my dog, was nosing around after ground squirrels of rabbits. Sometimes she forgot that she was female and peed like a male. She did, this time on one of the rear tires. We all saw it.

John came out of the building, stood with us for a moment, looked and, being a man of action, went to the tractor, examining "Tauka's Trickle". He then extended his finger, bent over and touched the mark, brought the finger to his lips and tasted..... There were 5 bent over people and an embarrassed John on the track that day.

"The Order of the Iron Bladder" Awards

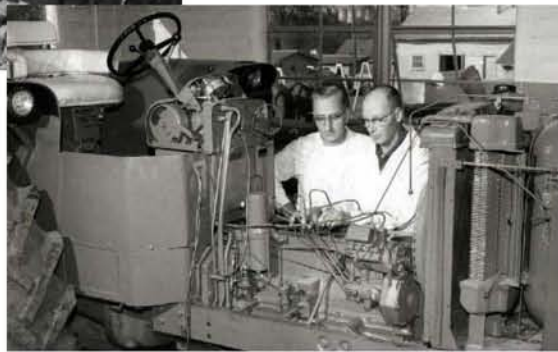
No one, I think, is really sure how or when this started. Brent thinks it was actually in 1972, when the first Russian Belarus, an MTV80, was tested here. The Russians always had a hierarchy of a Boss, Engineer (he could be boss too), Technician/Mechanic and driver(s).

The drivers drove.....period, nothing else. That time they only had one driver and we ran a 10-hour (continuous) test. So this poor guy sat on the tractor for ten-plus hours, without going potty.

Later we instituted special mounting platforms for exchanging drivers, but one day Bob Jeros from IHC decided to try his luck. After one abortive attempt with one tractor he succeeded with another. That is when he was awarded as a KNIGHT OF THE ORDER OF THE IRON BLADDER.

Others trained and prepared for this event after this and they all received their certificate. None of the attempts was as hilarious as the British crew's attempt when the CASE-DAVID BROWN visitors were here. One of their crew, a big florid guy, prepared for the test, not drinking (I don't know about the night before in the bar) and getting on the tractor. The test started, but about 5 or 6 hours into it his "friends" decided to play tricks. They came out and stood by the track, drinking coffee or water. The driver tried not to look at them, but you could see him getting redder in the face. Then one of the guys came out with a bucket of water and threw it on the track. That did it! The poor guy signaled that he was giving up. The exchange was made while the test went on and the hapless driver ran for the toilet.

IMAGES FROM THE ARCHIVES



See more than 750 images of the Nebraska Tractor Test online at www.TractorPedia.com. View the images at the museum on your next visit.

CHARTER MEMBERS

Recently, volunteers sorted through all of the museum's records of previous members in hopes of creating a database for previous and future members. We were able to located membership lists back to the year 2001. Since that date, the *Friends* organization has had a total of 376 different members. Below is the number of members the *Friends* organization has had during the past 6 years.

2001 – 183 Members*
2002 – 125 Members
2003 – 131 Members
2004 – 140 Members
2005 – 171 Members
2006 – 167 Members
2007 – 172 Members

(Membership began in 1998, no records have been found prior to the year 2001)

The Nebraska Tractor Test has a deep history of influencing the development of agricultural power. This organization has a great responsibility of preserving history and ensuring future generations become aware of the significance of the Nebraska Tractor Test.

Many members have been involved with the *Friends* organization for a number of years. We would like to hear from our members throughout this next year. Please write, email or call the museum to contribute information, a story or two for future newsletters.

Throughout the years, the museum has continued to develop because of the *Friends* organization. Each member located throughout the United States and around the world is greatly appreciated. Thank you for being a part of the Lester F. Larsen Tractor Test Museum.

2007 1st QUARTER

Mark Nickolaus is a lifetime member of the museum. He has been giving tours throughout the museum's approaching 10 year history. As our visitors and tours increase, Mark has done an excellent job of making sure each guest feels welcome and that they learn a thing or two along the way.

Since January 1st, 2007, Mark has helped with 437 signed in visitors from 19 different states and 5 different countries. In addition, Mark has been involved with tours for area antique tractor clubs and for students representing 12 Nebraska FFA Chapters. The museum greatly appreciates Mark's volunteer services throughout the years.

The 2nd Quarter is filling up with tours. Currently, we have 10 tours totaling just fewer than 300 individuals on the schedule. With the open house event coming up, our 2nd quarter numbers may reach the 1,000 visitor mark.

VOLUNTEERS WANTED

The Tractor Test Museum has been developing throughout the years into a destination for hundreds even thousands of visitors each year.

The museum continues to function with the much appreciated volunteer staff. We are encouraging additional individuals interested to consider becoming a volunteer at the Tractor Test Museum.

There are plenty of volunteer opportunities involving tractor repair and restoration, providing tours and helping with activities and events. Please contact the Tractor Test Museum staff if you are interested in more information about becoming a volunteer. 1-402-472-8389 or email jsteele4@unl.edu.

TRACTOR TRIVIA

What was the last tractor tested using Kerosene?

What tractor had hydraulic power assist steering in 1954?

When was the concrete test course constructed at Nebraska?

When was the last use of distillate fuel during a Nebraska Tractor Test?

CAMP CREEK THRESHERS

SWAP MEET

&

FLEA MARKET!

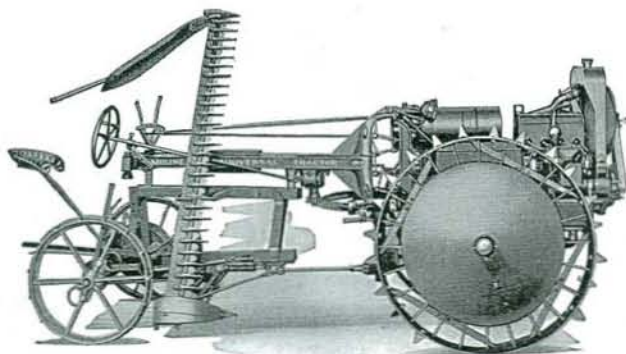
SATURDAY MAY 19, 2007

WAVERLY, NEBRASKA

FOR INFORMATION CALL
402-484-0298

MOLINE UNIVERSAL

Last issue, Director Bill Splinter provided an article about the Moline Universal tractor recently restored and currently found on display at the Tractor Test Museum. We have had a number of comments about the tractor since the article. Below is a copy of an actual brochure used for advertising the tractor in the early 1900s. The entire 16 page brochure is available through the museum.



Moline-Universal Tractor and Moline Mower

From these figures it can readily be seen why one man can farm more land with the Moline-Universal Tractor. Neither with other tractors or horses can one man do so much work nor so well. It is the solution of the farm help problem.

Here's What Users Say

Read how the Moline-Universal Tractor solved the farm help problem for these men:

"My son, with the Moline-Universal Tractor, has performed the work of six horses and two men in the same length of time."—E. B. Jacobs, Carthage, Mo.

"I plowed deeper than I was able to plow with horses other years. I was able to do all my work alone, even harvesting, something I never did before."—Harry Cook, Davenport, Ia.

"I have 120 acres of land to work and have been without hired help most all summer. The way help is, the Moline-Universal is as good as a man for me."—John Schreider, Allenville, Wis.

"In cultivating corn I knocked down 20% less corn than my team driven by my hired man did. In farming my 150-acre farm the expense for hired help of all kinds was \$100."—Levert Geer, Mechanicsburg, O.

Cheaper and Better than Horses

Edison says: "A horse is the poorest motor ever built. He eats 12,000 pounds of food a year. He eats the whole output of five acres. And yet his thermal efficiency is only two percent."

The cost of horse labor is almost one-half the gross operating expense on the average farm.

In U. S. Farmers Bulletin No. 645 is stated that a horse requires 3 tons of hay, 53 bushels of oats and 53 bushels of corn. At present prices of feed and figuring interest, depreciation, cost of shoeing, harness depreciation, veterinary charges and labor for care, each of your horses will cost from \$200 to \$225 a year to maintain.

From data gathered from farmers in three typical sections of Minnesota by the Minnesota Experiment Station, it has been found that the average horse can be expected to give 900 to 1,000 hours of labor per year or an average of from 3 to 3½

hours per day. Thus every hour a horse works it costs not less than twenty cents.

The Moline-Universal Tractor will do the work of from six to eight horses in every farm operation. As a comparison of horse and tractor costs, the following illustration is given:

On a corn belt farm which will require the services of six horses 100 days, the same amount of work, including all necessary belt work which horses cannot do, can be done with a Moline-Universal Tractor in 60 days. Six horses cost \$1,200. Cost of operating the Moline-Universal would be approximately \$557.50, allowing 6% interest, 12% depreciation, 4% for repairs, \$225.00 for fuel, (900 gallons of fuel at 25c a gallon), and \$50 for oil. A very conservative estimate would be one-half the cost of operating with horses, to say nothing of the time saved.

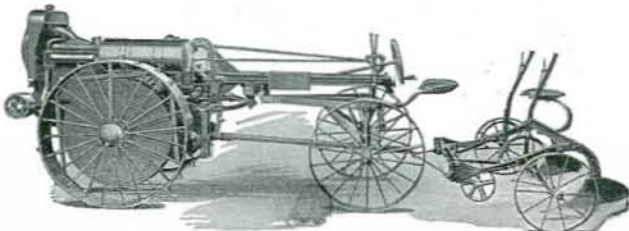
In an all-purpose experiment conducted at the Oklahoma-Agricultural and Mechanical College with a Moline-Universal Tractor, a 150-acre farm was run without horses. The cost of operation was found to be one-half horse cost.

H. J. Hallock, a Moline-Universal owner of Ridgeway, Mo., says: "It can be run at the expense of three horses."

Of course conditions vary on every farm and it is impossible to estimate anything but the average saving in cost of operation. Cost of operating the tractor varies with the work. On heavy work, such as plowing 15 to 20 gallons of gasoline are required in 10 hours, 7 to 10 gallons are required for operating a two-row cultivator and for medium work from 10 to 15 gallons per 10-hour day are required. On an average the Moline-Universal will consume 1½ gallons an hour. 2½ gallons of lubricating oil are required every four days. Depreciation and repairs are directly dependent upon care and intelligent operation.

The extent to which the Moline-Universal replaces horses is surprising. Many Moline-Universal owners are operating farms from 100 to 200 acres in size with only 2 or 3 horses on the place. Several Moline-Universal owners report that they have done away with horses entirely.

However, even if the cost of operating were the same as with horses, the Moline-Universal would be a better investment due to the time it saves, ability to work at top speed night and day during rush seasons, better quality of work, freedom from fatigue, less time required for care, and less space for housing.



Moline-Universal Tractor with Carrying Truck and Lister Plow

OPEN HOUSE

The 9th Open House is scheduled to occur on Saturday April 21st. We are expecting a great turnout with many activities for visitors of all ages. Like years past, a parade is scheduled around the outside of the Tractor Test Track. This year we are planning on extending the route through the East Campus Mall for those attending the Burr Hall Back Yard BBQ.

Many changes occur throughout the year at the Tractor Test Museum. The annual open house event is a celebration of history not only for individuals who have been involved with the Nebraska Tractor Test, but for all of those who appreciate agriculture's great heritage.

Visitors on this day will be able to view the restored Behlen Building and check out the progress on the UNL Tractor Restoration John Deere D project. In addition, the museum's benefactor wall is scheduled to be completed and on display. A noticeable difference can be made in the main show room. A coat of paint has brightened things up quite a bit.

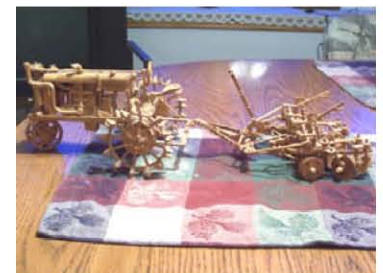
Drawings received for the National Tractor Drawing Contest will be on display. In addition, a pedal pull tractor and sled will be exhibited within the museum depending upon sponsorship, we may have a Pedal Power Tractor Pull for kids up to 12 years of age.



The Museum is looking for volunteers to help throughout the day. If you would like to attend and volunteer, please contact Jeremy Steele at 1-402-472-8389 or email: jsteele4@unl.edu.

WOODEN TRACTORS ON THE WAY

Bob Fey and Bud Johnson are planning on attending the Tractor Test Museum Open House. Bob and Bud have enjoyed carving tractors and agricultural related themes out of wood throughout the years. The Tractor Test Museum will have an exhibit area for both throughout the day. Pictured below are just a few of the wood carvings you will see. Be sure to stop by and visit with these gifted individuals sometime during the day.



TRACTOR TEST MUSEUM

OPEN HOUSE

SATURDAY APRIL 21st

10:00 – 4:00

UNIVERSITY OF NEBRASKA EAST CAMPUS

It is the purpose of the Tractor Test Museum Friends organization to bring together resources to enhance their museum for education, preservation, and exhibition of the development, testing, and advertising of agricultural power and performance.



UNL TRACTOR RESTORATION CLUB
WORKING ON 1929 JOHN DEERE D

ADDRESS CORRECTION REQUESTED

FRIENDS OF THE LESTER F. LARSEN
TRACTOR TEST MUSEUM
P.O. BOX 830833
LINCOLN, NE 68583-0833



Tractor Test Times

Newsletter for *Friends of the Lester F. Larsen Tractor Test Museum*

Located at 35th & Fair Streets University of Nebraska East Campus. Open M-F 8:30 – 4:00 Sat 10:00 - 2:00

Newsletter #30

Jeremy Steele – Editor

Summer 2007



1956 TEST TRACK REPLACED THIS SUMMER



The 1956 Nebraska Tractor Test Track was recently demolished and hauled away. A new testing surface 7 feet wider and 2 inches thicker is set to be installed in time for the fall test season. At this time, workers are removing subsoil and adding a sub-surface drainage system. The new 9 inch thick concrete track will be on a base of gravel and crushed rock. It will also have banking which will allow for higher speed testing.

The Lincoln engineering firm involved, HWS, has not only designed the new track, but also designed the track constructed in 1956. Another 50 years of testing is anticipated on the new surface. Director Roger Hoy reports more through his report along with pictures found on the back of this issue.

FUTURE TRACTOR ENTHUSIASTS ON THE WAY?

Nicole Hollander is a young tractor enthusiast. She knows enough about her Dad's 1934 John Deere A to spin the flywheel and drive it away as soon as her arms and legs will let her. Nicole will always remember her Dad and his tractors. She will remember the shows, parades and the pop-pop noise coming out of the garage.

Many have interests in tractors because they or the ones they loved drove tractors in the fields and fixed them in the shop. The next generation may have an interest in tractors because they or the ones they love drove tractors in the parades and restored them in the garage. Please write with your ideas of how we can cultivate today's young interest in tractors.



Tractor Test Museum – P.O. Box 830833 – Lincoln, NE 68583

NEBRASKA TRACTOR TEST EXPO: 100 TRACTORS



Once again the Nebraska State Fair August 24th through September 3rd will be providing the Tractor Test Museum with an exhibit area large enough for 100 tractors. Due to the national interest in the Nebraska Tractor Test and the growing interest in our museum, it is our goal to someday fill this space with tractors not only from Nebraska, but from other states.

Though the tractor test law is exclusive to Nebraska, the tractor tests have been of great value and interest to individuals across the land. It is only fitting to celebrate this by developing an exposition of the Nebraska Tractor Test with a collection of tractors at the annual Nebraska State Fair. Check the mail for details about exhibiting your tractor this year with us.

OLD TRACTOR HAS NEW HOME



A 1917 Advance-Rumely Oil-Pull Model "H" tractor was recently donated to the museum by Bill Overturf (current museum board member) and his two daughters Kay Knutson and Pamela Pearson.

The tractor is in excellent condition. The addition is very significant to our collection. It was this model that Wilmot Crozier, founder of the Nebraska Tractor Test Law, purchased and soon became convinced that tractors were more than adequate replacements for any team of mules or horses. Because of this tractor, Mr. Crozier was determined to push the Nebraska Tractor Test Bill through the legislature so all tractor companies would be held accountable for their product and farmers were as satisfied with their purchased tractor as he was with this Rumely Oil-Pull.

DIRECTOR'S REPORT

We were invited to exhibit five of our tractors at the celebration of the 100th anniversary of the founding of the American Society of Agricultural Engineers (now the American Society of Agricultural and Biological Engineers), held at the Convention Center in Minneapolis, MN. They paid the cost of shipping the tractors, using two semi's and they were placed with about 30 other tractors to show the development of the tractor over this past century. We were asked to bring our 1909 Ford (the tractor causing the Nebraska Tractor Test Law), Waterloo Boy (first tractor passing the test), Farmall Regular (first tractor that could be used to cultivate corn), Oliver Hart-Parr (first with adjustable rear axle wheel spacing) and the Allis-Chalmers U (first with rubber tires). These were placed among a number of other early tractors and with the latest Case-IH, Challenger and John Deere's.

The photos show our Ford surrounded by a Challenger and a Case-IH, the Waterloo Boy just ahead of an IHC 10-20, and the Allis-Chalmers U leading a Case steamer. The display was well presented and they especially appreciated our participation. I took 200 of our brochures and returned with about 50.

The Behlen building, now insulated and provided with HVAC is proving to be a real asset for our restoring activities. We have completed restoration of our 1917 Minneapolis "U" and a Minneapolis Moline "R". The student club has our John Deere "D" in about a thousand parts and we hope they remember where things came from.

We have re-arranged our tractors to allow us to bring the 1917 Advance Rumely Oil Pull tractor into the building. This now improves our story about the Tractor Test Law as Wilmont Crozier first purchased a Ford tractor, was totally unsatisfied with it, then bought the same model of Rumely that we have. He was very satisfied with the Rumely and that was his impetus for establishing a law to provide farmers with an independent test to verify the advertised claims by tractor manufacturers.

Museum Director Bill Splinter



FROM THE CURATOR'S DESK

Lou Leviticus

New "Finds among the Museum 's "Old Stuff"

"Look and ye shall find" is an old true saying. I constantly find something new in our collection and I have still a huge drawer full of the "stuff" to go through. I also learned about some of the things going on at the time.

Here are some examples of the materials I found and am in the process of cataloguing:

1. There was a "Nebraska Tractor Testing Advisory Board". The Board consisted of Nebraska farmers, Department of Agriculture, Dealer Association and Tractor Test Board members and Laboratory Staff. Its "task" was to counteract efforts of individual dealers, who wanted the test program abolished. Today there is still that effort, but now it is with the help of the Iowa-Nebraska Dealers Association out of Des Moines, Iowa.
2. Loads of catalogues and correspondence with companies. First of all they are sorted according to manufacturer, then they will be arranged according to dates.
3. I found some interesting info on plans which might have caused the destruction of the old TTL building, which houses the current museum. This was in a letter by former VC Omtvedt to Mr. John Skold and Dr. Glenn Hoffman.
4. Old reports and photographs on various tests conducted by people connected to tractor Testing. As an example, les Larsen tested, and apparently developed, a "Basin Lister", which was meant to make small ponds between rows for improving water penetration and reducing runoff. This was work done in 1948.



5. In Other reports:

- 1925: "Draft of Farm Wagons as affected by Height of Wheel and Width of Tire" (Wooley and Jones)
- 1941: "Drawbar Performance & Soil-Tire Efficiency Comparison (Firstone, Arnold Skromme)
- 1922:" Choosing a Tractor (For a Corn-Belt Farm)". (USDA, Reynoldson, Tulley) Great Photographs; One with our Moline universal at work, the first one I've ever seen like that
- 1936 "Motors Laboratory Manual" (UN-L Ag. Eng. CHAUNCY SMITH, R.H.Heller)
- 1915/1925 "Farm Power" (International Harvester Company – ASAE Reprint)

All of these will have to be catalogued after sorting and so I think that I'll be busy for at least 5 more years. The archiving of photographs is continuing and I've had positive feedback from viewers.

See images online at: http://tractorpedia.unl.edu/image_archive.shtml

AN I&T SPECIAL REPORT

NEW NEBRASKA TEST TRACK DEDICATED



Photos: Univ. of Nebraska

L. F. Larsen, Engineer-in-Charge of tractor testing, is seen driving a Massey-Harris diesel in Test 577 on new concrete test course recently dedicated. Larsen said that concrete did not materially affect drawbar rating and reduced substantially test preparation time and cost and also permitted testing in bad weather.

Two new tractor testing courses, one concrete; changes in test procedure and reporting, and a review of 36 years of accomplishment mark dedicatory exercises

DEDICATION of the new tractor testing courses July 19 at the University of Nebraska marked another major advancement in the 36-year history of that University's testing program. The two new tracks, constructed at a cost of \$30,000, were dedicated by the Honorable Victor Anderson, Governor of the State of Nebraska, Dr. W. V. Lambert, Dean of the College of Agriculture, and a group of eminent men long identified with the University's tractor testing program.

Prominent among over 4000 in attendance at the appropriate ceremonies were: Giles Haney, Prof. Emeritus of Mechanical Engineering, who designed most of the equipment used in the first testing program; Claude Shedd, first tractor test engineer; Carlton Zink, immediate past engineer-in-charge of the tractor testing program, and Merlin Hansen, Deere & Co., representing the ASAE-SAE Tractor Testing Code Committee.

Prof. L. F. Larsen of the Agriculture College's Engineering Dept., who is the engineer-in-charge of the tractor testing program, said that the new tracks were urgently needed because of the continuously expanding testing program resulting from more models being introduced. He also reported that the new models use a wider variety of fuels and are more complex mechanisms than the early models tested. Consequently, more exacting standards requiring greater precision in measuring and testing devices are needed now.

Prof. Larsen anticipates completing about 40 tests in 1956, the largest number since 1920 when 65 tractors were brought to the college. Thirteen tests were completed at the end of July, 1956. To test an average farm tractor requires about one week and costs the manufacturer about \$1000. From such fees the University is able to maintain and replace equipment used in testing as well as provide capital needed



A banked turn makes possible a travel speed of 20 miles per hour for testing tractor road speeds and high speed gears. Test car pulled behind the tractor contains recording instruments for drawbar tests.

for expansion as in the case of the new test courses, one of which is concrete.

In commenting on the new concrete course, Larsen pointed out several important facts. He said that contrary to the opinion of some, the concrete track would not yield higher drawbar hp ratings and for evidence he called attention to the ratio of the belt hp to drawbar hp of the first five tractors tested. The relationship between the two measures of power was substantially the same as yielded on the soil track. The concrete track not only provides a uniform, identical surface for all tractors tested but requires none of the tedious, expensive man-hours of preparation to assure as comparable surface conditions as practical. The concrete track will also prove a time-saver in so far as tests can proceed in weather unfavorable for testing on the soil track.

In Larsen's 10-year tenure as engineer-in-charge tractors have been brought to the testing laboratory from Canada, England, and France. This year some models from "behind-the-iron curtain" are expected. The program also provides for testing garden tractors, although to date only a token of the models available have been submitted for testing.

The idea for a tractor testing laboratory was first conceived in 1919 by the late L. W. Chase, then Chairman of the Agricultural Engineering Dept. of the College, C. J. Warner,

now deceased and W. F. Crozier, Osceola, Neb. The latter two were active in state government and worked so thoroughly in the preparation of the Nebraska Tractor Testing Law that it passed with only one dissenting vote. The purposes were to encourage improved design and manufacture of farm tractors offered for sale in Nebraska, to force sales and advertising claims to conform with some objective tests of performance, and to require a stock of repair parts in the state. Today the test results are accepted as providing some basis for impartial, ob-

jective sales presentations concerning performance.

In addition to the new test courses a few changes in testing procedure and reporting and the acquisition of new equipment in the laboratory also marked mid-summer 1956 as a point for reviewing and reassessing the Nebraska Testing Program. On July 11, the joint ASAE-SAE Tractor Testing Code Committee met with L. W. Hurlbut, head of the College's Engineering Dept., and other members of the board of tractor test engineers. At that meeting some changes were recommended in test procedure and reporting. The only significant change was the establishment of Test L to show the change in torque, as applied to the dynamometer, that is obtained as the engine is lugged below rated speed. The figure as published is a relative, that is, it is published as a per cent showing the relative rated speed torque obtained at various percentages of the rated rpm of the engine. It might be described as a profile of the torque curve of the engine and indicates on a comparative basis how well the tractor will respond when operating at rated speed when a sudden load, sufficient to cause the engine to lose speed, is imposed on the engine.

One change in detail has been made in presenting test data in tabular form. The column formerly devoted to the amount of water used during the test has been replaced



Chief among prominent guests attending track dedication ceremonies at Univ. of Nebraska was Governor of the State, The Hon. Victor Anderson, who arrived on the new test course by Army helicopter.



New Board of Tractor Test Engineers at Univ. of Nebraska are: (l. to r.) John Sulek, George Steinbruegge, L. W. Hurlbut, Chairman, and L. F. Larsen, Engineer-in-Charge.

by two temperature readings—one, the air wet bulb temperature and the other, the air dry bulb temperature. The foregoing applies to both drawbar hp test and to belt hp test. The amount of water used during the test is now shown in the textual presentation accompanying the table.

Now included with individual test reports are the specifications of the belt used in driving the dynamometer. Formerly, dimensions of the belt and amount of slippage were shown only in the annual report of the board of tractor test engineers or the information was given on request.

The tests and methods of recording and reporting results otherwise are substantially the same as in the recent past. A quick review of the tests and their purpose follows:

Test A: The preliminary run permitting the factory representative to limber up the tractor remains unchanged.

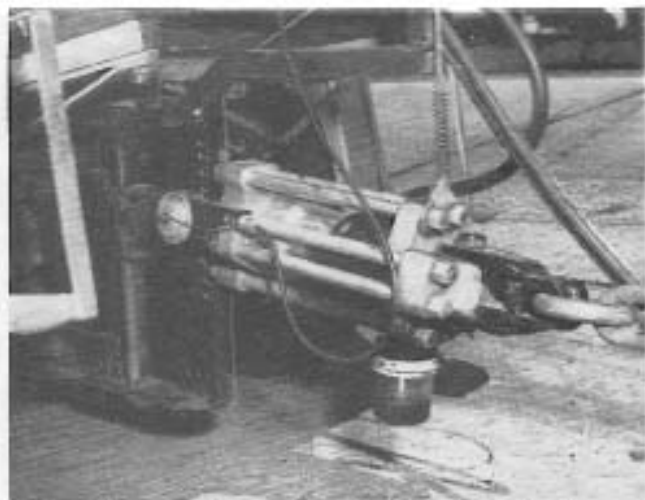
Test B: This 100 per cent maximum belt horsepower test during which engine is operated at maximum load for 2 hours remains unchanged.

Test C: This unchanged test of one hour's duration affords the manufacturer opportunity to lean carburetor setting used in *Test B* to obtain better fuel economy.

Test D: No changes in this 85 per cent load belt horsepower test similar to *Test B*.

Test E: Same specifications as previously and is designed to test governor performance by varying belt loads.

Test L: New test; see text of article for explanation.



This is the new 10 square inch hydraulic cylinder used in pulling power test of crawler type tractors. Engineers at Univ. design and build much of testing equipment.

Test F: A drawbar test and like *Test B* is a 100 per cent maximum test and is run in the rated transmission gear. Power attained is multiplied by 0.75 to yield "rated drawbar horsepower". No changes in the test except for running on concrete course.

Test G: This unchanged test determines the maximum drawbar horsepower attained in each gear within a maximum allowable wheel slippage range.

Test H: In this unchanged test tractor must develop its rated horsepower (75 per cent of power developed in *Test F*).

Test J and K: No changes in these tests run without ballast. *Test K* is run with smallest tires and lightest wheels offered by the manufacturer.



Improved weighing devices for tractor fuels have been added to lab equipment. One weighs LP-Gas because of increasing number of LPG units being manufactured.



The ASAE-SAE Tractor Test Code Committee (l. to r.): Wayne Worthington, J. W. Bridwell, W. A. Compton, L. W. Hurlbut, A. Rutherford, P. J. Sperry, M. Hansen.

FEATURED FRIENDS



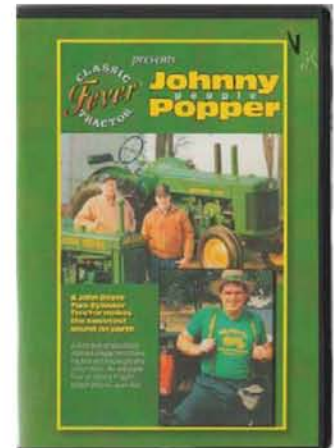
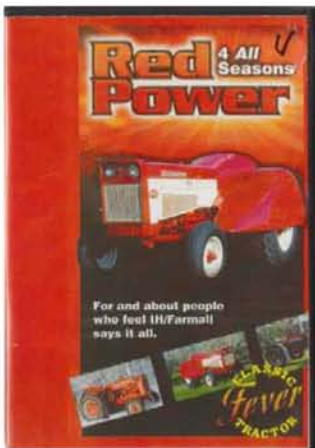
Bill and Betty Tomes, aka, B & B keep the museum informed of unique tractor pictures.

We appreciate our Friends keeping us on top of anything related to tractors.

Thanks Bill and Betty!



Todd Daringer is an active Friend who has been pursuing donations of videos and dvds for the museum. Todd has been instrumental in the museum's acquisition of nearly 30 new videos and dvds from Timeless Tractor, Classic Tractor Fever, and many others featuring tractor shows from across the nation. Videos and dvds will be available for viewing at the museum in the near future.



Todd's efforts have created a unique opportunity for another Friend and great exposure for the museum. Classic Tractor Fever not only donated videos to our museum, they also visited the museum to shoot pictures of a Plymouth tractor owned by Friend Bob Kleis for their 2008 Calendar. The museum will be selling this calendar for 2008.



Members of our Friends organization such as Bill, Betty, and Todd, are actively enhancing the museum with their involvement. There are other Friends that are making a difference in the direction the museum is headed. We encourage all members to become more involved with the museum.

Please contact Jeremy Steele at 1-402-472-8389 (jsteele4@unl.edu) to discuss how your involvement can enhance the museum and provide opportunities for others.

Visit: www.TractorTestFriends.com

Friends of the Lester F. Larsen
TRACTOR TEST MUSEUM
P.O. BOX 830833
LINCOLN, NE 68583-0833



Stop by to meet our new cat, Allis!

FarmTrac Tractor Model



This fall represents another busy test season for us. We will be dominated by Case-New Holland who will bring five tractors from Fargo, ND and four more from Burr Ridge IL. We will also test a couple of under 100 HP John Deere tractors and at the end of the fall season we will have our first visit from FarmTrac. Finally, at the beginning of the season, we will conduct some drawbar tests with a New Holland TG 245 tractor that was officially tested this spring. CNH kindly left this tractor with us over the summer so that we can conduct some testing to verify that there is no difference in performance between the old and new drawbar tracks.



Work is proceeding on a new test track. As of July 12th, the old track has been removed. All utility work (storm sewers, water lines and electrical conduits) underneath the track have been replaced. By the time you are reading this article, the flat portion of the track (22 ft. width oval) will be completed. During the next several weeks, additional concrete pours will take place to form the banked ends and the approach drive to the track. Work will conclude with the installation of drain tile and gravel around the inside of the track to carry away any water that might find itself on or under the track. It appears that the work will conclude sufficiently soon that our fall test schedule will not be affected. Landscaping and seeding around the track will take place in the fall when it is seasonally appropriate.

From Nebraska Test Laboratory: Director Roger Hoy



Tractor Test Times



Newsletter - Friends of the Lester F. Larsen Tractor Test Museum - Fall 2007

2007 Nebraska Tractor Test Track



The new tractor test track was dedicated on Thursday, October 11th at 3:00pm. Representatives of tractor manufacturers such as CNH Case New Holland and John Deere, track designer HWS Consulting Group of Lincoln and university officials were among those invited to the gathering. The track now provides adequate room for testing the largest tractors manufactured.

Museum and Associate Receive New Positions

The University of Nebraska Board of Regents approved the repositioning of the Tractor Test Museum from the Nebraska State Museum System to the Department of Biological Systems Engineering

The University of Nebraska Foundation will continue to solicit contributions from individuals and from agricultural tractor and equipment manufacturers. Income from the UNL Foundation funds for the benefit of the Tractor Test Museum will be transferred to BSE for administration. The Director of the Tractor Test Museum will report to the Head of the Department of Biological Systems Engineering.

We greatly appreciate the role the State Museum has provided throughout the early development of the Tractor Test Museum.

The two year temporary position as Museum Development Associate for Jeremy Steele expired on August 15th, 2007. Jeremy was offered and accepted a permanent position through the same department the Tractor Test Museum is now positioned, Biological Systems Engineering and will continue with responsibilities at the Tractor Test Museum related to educational outreach while serving as a volunteer coordinator.

The last page of this newsletter is for those interested in increasing their involvement with the general operation of the Museum. As the Museum develops, the opportunities for volunteers increase. Please review the information provided. Consider how you may help enhance the Museum as it preserves history and provides education for others.

2007 Nebraska State Fair Review

A special thank you to all who helped with the fair! One of the largest exhibit of antique tractors in recent years provided great exposure for the Tractor Test Museum at the 2007 Nebraska State Fair. A total of 62 tractors were on display and three of the 10 daily parades consisted of 30 or more tractors.

The Nebraska State Fair grew for the fourth straight year. This year's attendance nearly reached 300,000 which was more than 10,000 visitors above the 2006 attendance.

Nebraska State Fair Officials provide room for us to exhibit 100 tractors. Each year we set a goal to exhibit this number. Please contact the museum if you would like to receive information about exhibiting next year at the Nebraska State Fair. We look forward to the continued growth and success of the Nebraska State Fair. Next year we are anticipating 100 tractors!



The State Fair provided the perfect opportunity for Museum Associate Jeremy Steele to propose to his girlfriend, Sarah Pankoke. Also pictured is Mark Taylor, the parade announcer, Mark Nickolaus, museum docent, and Bob Hollander, museum Friend.

DIRECTOR'S REPORT: NEW DONATIONS ARRIVE AT MUSEUM

There have been a number of events since our last newsletter. In August, the museum management and budget were transferred from the Nebraska State Museum to the Biological Systems Engineering Department. The affiliation with the State Museum was fortuitous for the organization and management of a museum and we were greatly assisted by students earning a Master's degree in Museum Studies serving a practicum with our museum. With a little maturity in the manner of operating a museum it became more logical to affiliate with the Department of Biological Systems Engineering as nearly all of our library and artifact holdings deal with the history of the Department.

At the museum, In addition to the new test track you will notice a newly planted lawn where we once exhibited our conservation tillage equipment. These items were moved to the Rogers Memorial Farm. This research farm has been operated by the Department since 1965 to study conservation tillage techniques. There are tours of people interested in soil conservation and our equipment is now a part of these tours. It is planned to have a gravel base and a shed over the equipment which is much better than we had west of the museum.

We have four new donations that enhance our collection and greatly improve our ability to participate in tractor shows. The first is a 1946 Minneapolis Moline RTD, donated by Dr. Keith W. Saxton, Pullman, WA. This tractor was discovered while driving by his father's old farm near Crawford, NE and was sitting exposed to the weather. Keith acquired the tractor, which was his father's tractor, and on which Keith had spent many hours working in the field and had it restored in Crawford. The tractor is in very good shape, with excellent paint and is a valuable addition to our collection.



Keith provided us with a second donation, a 16' implement trailer that, conveniently, hauls the RTD. This will greatly assist us in taking tractors to shows such as Old Trusty, Platte Valley, Camp Creek and the State Fair. Dr. Saxton also made a significant cash donation to maintain the tractor and trailer and his name is now on our Lester F. Larsen Tractor Test and Power Benefactors board. To go along with the trailer, the Tractor Test Laboratory donated a 1993 Ford extended cab pickup that we had been borrowing off and on. They had acquired a newer pickup, but this one will take care of our needs very well. The fourth donation is an International Harvester cataway engine. The engine is unique in that it was started on gasoline and then switched to diesel. The cataway was done professionally and clearly shows the workings of the engine as it is driven by an electric motor. The engine was donated by Bill Overturf, Oak, NE from his extensive collection of historic tractors.

The ONL Tractor Restoration Club is moving along with the restoration of the John Deere D. We hope to get it back on exhibit soon. We are also replacing a connecting rod on the Massey Harris 101 Junior. It should also be back on exhibit soon. We have a number of tractors needing attention for various problems so the Repair and Restoration Shop will be kept very busy. *M. E. Splinter, Director*

The Tractor Restoration Shop

With the new insulation and a HVAC system, two defined bays found in the restoration shop are now being utilized for tractor repair and restoration. Many individuals utilized this facility in a variety of ways.

Now everything is situated, it is hard to believe in 1955, this same building stood 15,000 feet from a nuclear explosion at the Atomic Energy Commissions Nevada Test Site. Before the renovation, the shop's organization provided plenty of evidence.

The Restoration Shop bay #1 is being utilized by museum volunteers. Currently work is being performed on a Massey-Harris 101 Junior. The engine is beginning to be reassembled. The Tractor Restoration Club is utilizing bay #2 as they restore the 1929 John Deere D. The shop renovation has been a great contribution towards the museum's program and has become a destination for museum tours.



All Friends of the Museum are encouraged to volunteer towards the repair and restoration of museum tractor. Volunteer during museum hours or on Wednesday evenings with the Tractor Restoration Club.

Homestead National Monument of America Acquiring Tractor from America's Last Homesteader

I recently received what first seemed to be a normal email from the Homestead National Monument located in Beatrice, Nebraska. Museum Technician, Keely Rennie-Tucker, requested the weight and dimensions of a tractor, the popular Allis-Chalmers B.

"Jeremy, I am hoping you can help me with a project that I am currently working to complete. I am looking for the dimensions of the Allis Chalmers Model B tractor, specifically one from 1942."

This sounded easy enough, we had all of this information in our files.

"I need this information because we have someone who would like to donate his 1942 AC Model B to us."

I was glad to hear the relatively new Homestead Museum will be displaying a tractor. But then the uniqueness of the situation began to surface.

"I need to figure out how to transport it from Alaska to Beatrice."

Wow! That is quite a distance. No big deal, just find a shipping company and it will be on its way. I do wonder what it will cost though.

"The biggest hurdle with this project is getting the tractor from the old homestead off the Stony River to Anchorage. There are no roads, only rivers and air that we can transport the tractor. We have talked about heavy lift helicopters, flying or boating it out."

At this point, I began to think this has to be a joke or there is a really good story behind this tractor. The second though happened to be true. The tractor does have a fantastic story. The very last homesteader, Ken Deardorff, has generously donated the tractor to the Homestead Museum. The only challenge is getting it there. The following is an article provided by the National Park Service about Ken, the last Homesteader.

The Homestead Act of 1862 had an amazingly long life compared to most American land laws. It became effective on January 1, 1863 and was in effect until 1986. Over these 123 years, some two million individuals used the Homestead Act to attempt to earn the patent to a piece of land. Along the way, they settled approximately 270-285 million acres-around eight percent of all the land in the United States.

The passage of the Federal Land Policy and Management Act of 1976 repealed the Homestead Act in the 48 contiguous states, but it did grant a ten-year extension on claims in Alaska. In 1974, a young Vietnam veteran and native Californian named Kenneth Deardorff, filed a homestead claim on 80 acres of land on the Stony River in southwestern Alaska. Over the next ten years, he and his family lived on and worked the land. He built all the buildings on the property from white spruce trees. He fished for salmon and hunted moose and other wild game for food and often woke up in the morning to find grizzly bears in his front yard. Transportation was limited to a boat or a dog team. Temperatures often dipped as low as 65 degrees below zero.

America's last homesteader dealt with many of the same challenges as his historical predecessors. Wildlife, extreme weather, the difficulties of farming, battling fire, isolation, all were commonplace for Deardorff and his family in the Alaskan wilderness. At the same time, his homesteading experience was also very different. Early homesteaders did not have boats in which to travel or power tools to help build homes. Planes could not be chartered when travel to far-away spots was necessary.

In June 2001, the Bureau of Land Management and the National Park Service worked together and recognized Deardorff as the nation's final homesteader. Though he had claimed his land in 1974 and fulfilled all requirements of the Homestead Act in 1979, he did not actually receive his patent until May 1988. Therefore, he is the very last person to receive the title to land claimed under the provisions of the Homestead Act.

In July 2001, the historian at Homestead National Monument of America and a newspaper reporter traveled to Alaska to meet with and interview Deardorff and hear about his homesteading experiences. Though he no longer lives on the homestead, he shared many fascinating stories as well as leading a guided tour of his former property. The home he built there still stands as a tribute to the determination and perseverance of one of America's last true pioneers. As the last individual to take advantage of the Homestead Act, Deardorff represents the end of an era. He is also living proof that ordinary people can live extraordinary lives.

The latest on the situation involving the transportation of the 1942 Allis-Chalmers B from the Alaskan wilderness to Beatrice, Nebraska involves researching the archives of the Tractor Test Museum to view the manuals available on the tractor. The Homestead Museum hopes to disassemble the tractor and transport it from the homestead via boat or air. My suggestion is that they bring it out the same way it was brought in. Whatever that is.

I have yet to visit The Homestead National Monument in Beatrice, but hope to do so soon. For more information about the Homestead National Monument, contact them at: 402-223-3514. Stay Tuned...

ROLL-OVER PROTECTIVE STRUCTURES (ROPS)

From The Curator's desk - Lou Leviticus

Following is an approximate timeline of the history of the development of protective structures. I have added background I found during my wanderings through the literature. Revisions made after 1985 are not included. One source was some of Frank Walters's (Deere & Co) material written for a SAE and ASAE committee meetings. If anyone sees an error or has an addition, please contact us.

- 1917 The Fordson F came out with fenders which were supposed to prevent a rearward overturn.
- 1952 The first Roll-Over demonstration was held at the Tractor Power and Safety Day on the University of Nebraska East Campus (Tractor Test Lab Track)
- 1954 First sturdy protective enclosure for a Case LA manufactured by Egging Mfg Co from Gering, NE turns out to provide protection for a driver involved in an overturn.
- 1956 US Patent No. 2729462 for a "Safety Guard" issued. Tests of Roll-Over Protection for Ag Tractors performed in California.
- 1957 US Patents No. 2783056 and 2785002 issued for Roll-Over protection. Swedish Test Code for ROPS tests are being written
- 1958 ROPS for US Army Crawler tractors required by US Corps of Army Engineers in the Portland (OR) district.
- 1959 Sweden passes law requiring ROPS on tractors. Law takes effect. ROPS installed on Highway Tractors in North Dakota.
- 1961 FEI (Farm Equipment Institute) begins ROPS study
- 1962 OECD test code for ROPS adopted. Largely based on Swedish Code. Deere & Co starts design on ROPS 2-poster structures.
- 1964 Development of ISO (International Standards Organization) for ROPS is started. US is signatory to ISO through ANSI (American National Standards Institute). Norway Passes law requiring ROPS on Ag. tractors.
- 1966 ROPS required on Earthmoving equipment in California. FEI starts work on proposal to develop ROPS test procedure. Deere & Co announces availability of 2-Post ROPS. Iceland passes law requiring ROPS on tractors
- 1967 Publication of ASAE 305.1. Recommended ROPS for Tractors. National Safety Council passes resolution for requiring ROPS as standard equipment. Denmark requires ROPS on tractors.
- 1968 SAE J333 requiring ROPS as standard equipment was adopted.
- 1969 Annual Tractor overturn deaths in US are 10 / 100,000. Finland requires ROPS on tractors. US patent # 3433833 issued for 2-Post RollGuard (Deere)
- 1970 ASAE S305.2 defines ROPS as standard equipment for tractors. UK and "West Germany" require ROPS on tractors.
- 1971 Sweden's tractor overturn fatality rate reduced from 19 to 2.4 per 100,000 after introduction of ROPS requirement law. Co engineers recommend use of SAE paper written by Deere & ROPS as standard equipment on tractors.
- 1972 California requires ROPS on all tractors operated by employees. ROPS as standard equipment requirement eliminated from ASAE 305.2. 4-post RollGuard introduced by Deere
- 1974 US Patent #3787085 issued for 4-Post RollGuard to Deere & Co. ROPS as standard equipment requirement eliminated from SAE J333.
- 1976 OSHA requirement for ROPS on farm tractors in effect for farms with more than 10 employees.
- 1983 Tractor overturn fatalities in US reduced from 10 to 3.8 per 100,000.
- 1984 ASAE proposes to make ROPS standard equipment. Deere & Co announces that ROPS will be standard equipment on all their tractors.
- 1985 ASAE S318.8 making ROPS standard equipment is adopted by ASAE



The Tractor Test Laboratory first demonstrated tractor rollovers in 1952. On display at the Tractor Test Museum is the Allis-Chalmers WC tractor pictured in both images above. This tractor was overturned an estimated 250 times to provide safety education related to improper hitching and dangerous slopes.

General Operation of the Museum

At the recent Board of Directors meeting, ten areas affecting the general operation of the museum were identified. These areas are:

Membership Relations
Events & Activities
Exhibits & Displays
Facility Maintenance, Repair & Restoration
Tractor Maintenance, Repair & Restoration
History, Library & Archive Development
Multimedia & Online Resources
Marketing & Advertising
Strategic Planning
Fundraising

Board of Directors elected for 2008 will be encouraged to oversee these recognized areas. Each area may be influenced by goals established by the Directors and volunteer service towards those goals provided by *Friends* of the Tractor Test Museum.

In the near future, the nominating committee consisting of past presidents of the Tractor Test Museum Friends Board will meet to develop a slate of nominees for the 2008 Board of Directors. Once the slate is determined, each member, or *Friend* of the Museum will receive a mailing containing a ballot to vote for a number of nominees determined by the nominating committee.

Along with your vote through the provided ballot, you will have the opportunity to also indicate which of the 10 areas affecting the general operation of the Museum you may find interest in. Through a provided form, you may indicate your level of interest, experience, and expertise. This information will be presented to the volunteer coordinator and newly elected Directors. This provided information may assist efforts toward increasing the involvement of Museum members and ultimately enhance the overall development of the Museum.

Also at the recent Board of Directors meeting, the Museum's Annual Meeting Date was set to occur on the *Tuesday evening of January 15th of 2008 at 7:00pm*. At this event, volunteer service towards the museum will be recognized and the new Board of Directors will be introduced. Each of you are invited and encouraged to RSVP through the upcoming ballot mailing which will help with the planning of this event.

The role of the Museum *Friends* is to bring together resources which may enhance the Museum's role of preserving history, providing education and cultivating the interest of others. While identifying the areas affecting the Museum, the list of words happens to form an arrow, a symbol of direction. With limited involvement from *Friends*, the arrow points down with fundraising appearing to be the foundation of the Museum. With Membership Relations as the foundation for the Museum's development, the same list of areas affecting the general operation of the Museum creates an arrow pointing up in a positive direction. All ten of these areas depend upon volunteers. Please consider how you may direct resources towards enhancing this Museum.

Fundraising
Strategic Planning
Marketing & Advertising
Multimedia & Online Resources
History, Library & Archive Development
Tractor Maintenance, Repair & Restoration
Facility Maintenance, Repair & Restoration
Exhibits & Displays
Events & Activities
Membership Relations

We are looking forward to an increased involvement from our *Friends*. The following page briefly describes each of the listed areas and may help identify how members of the *Friends* organization may enhance the development of the Tractor Test Museum. Please contact the Museum with any questions or suggestions related to these areas. Tractor Test Museum - P.O. Box 830833 - Lincoln, NE 68583 - 1-402-472-8389.

The following are brief descriptions for the 10 areas affecting the general operation of the Tractor Test Museum. Each area is not limited to the provided description and may be more clearly defined and developed as *Friends* become more involved as volunteers.

Membership Relations

Volunteer to help maintain membership records. Type and prepare letters to members. Maintain and increase membership numbers and membership involvement. Prepare quarterly newsletter for mailing. Establish benefits for members. Track donations and volunteer hours of members

Events & Activities

Volunteer to help with events and group tours at the Museum. Represent, attend, and provide information about the Museum at other events. Develop schedules of events recognized by the Tractor Test Museum. Help transport tractors to and from the Nebraska State Fair.

Exhibits & Displays

Volunteer to provide individual and group tours of the Museum. Maintain display appearance through general cleaning and dusting of tractors and artifacts. Develop plans for changes in current exhibits. Propose plans for new exhibits, implement approved changes with the help of other volunteers.

Facility Maintenance, Repair, & Restoration

Provide general maintenance and repairs to the museum. Volunteer to perform duties such as general cleaning, painting, and repairing drywall. Develop plans to renovate areas of the museum, increase the square footage of exhibit space, and provide for a conference room area.

Tractor Maintenance, Repair & Restoration

Provide maintenance to the Museum's collection of tractors. Create a schedule for the charging of batteries and starting of tractors throughout the year. Prepare tractors for the Nebraska State Fair Exhibit. Be involved with the Museum's Tractor Restoration Club.

History, Library & Archive Development

Provide history related to the Mission of the Tractor Test Museum. Document oral history from individuals. Volunteer to research the Tractor Test Archives, the Nebraska Historical Society and other avenues for information related to tractors. Develop Tractor Test Museum library, catalogue books, magazines and related literature. Prepare items for digitization.

Multimedia & Online Resources

Volunteer to help maintain the web sites related to the Tractor Test Museum. Update online schedule of events, create web pages. Work through avenues to create an online presence for the Museum. Scan items prepared for digitization and submit scans into the ONL Digital Archives. Identify and present multimedia such as videos and DVDs at meetings.

Marketing & Advertising

Create an advertising and marketing strategy to promote the Tractor Test Museum and attract visitors throughout the year. Develop a schedule and budget for effective advertising. Address logos and branding issues for the Museum.

Strategic Planning

Develop and revise strategic plan for the museum. Incorporate short and long term goals for museum development from the 10 areas affecting the general operation of the museum.

Fundraising

Volunteer to help manage the museum Gift Shop. Track and order inventory. Maintain records of donations and the donor recognition plaques. Develop fundraising strategies for the Museum. Access the museum budget, memorials, gifts, endowments and other funds provided by the Friends Organization.

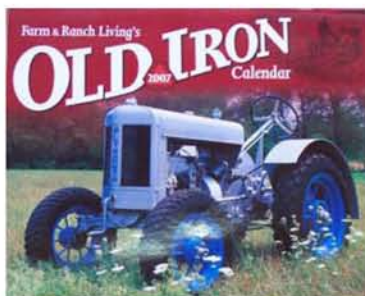
MUSEUM GIFT IDEAS

The Holiday Season is just around the corner. We would like to encourage each of you to consider giving a gift available from the Tractor Test Museum. Please stop by, visit the museum and purchase a gift for this upcoming Holiday Season. The following gifts can be purchased at the Tractor Museum.

MUSEUM FRIEND MEMBERSHIP GIFT

For only \$15 dollars, give a gift that keeps on giving all year long, a Tractor Museum Friend Membership. Each Friend will receive a quarterly newsletter and will be informed of Museum events and activities that occur throughout the year.

2008 OLD IRON CALENDER



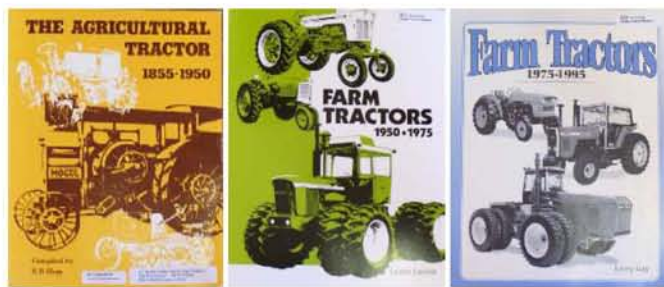
For \$10.00, receive the 2008 calendar of colorful antique tractor photos, restoration stories and anecdotes, fascinating tractor trivia and hundreds of tractor show dates in locations across North America.

ONL TRACTOR MUSEUM CAP



For only \$12, receive a Nebraska Tractor Museum cap. This sharp looking embroidered cap is 100% cotton, one size fits all.

FARM TRACTOR BOOKS 1855-1995



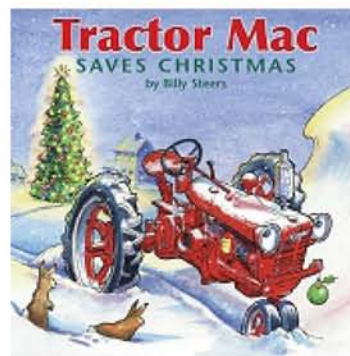
Do you know someone interested in tracing the development of the tractor? This three book series is a tremendous reference for those interested in any tractor manufactured from 1855 to 1995. Each book is available for \$20.00 or buy the entire series of three for \$50.00

THE HISTORY OF GRAIN HARVESTERS



Trace the development and evolution of grain harvesting equipment. In this book you can read about the beginnings of agriculture, the use of a hand sickle. Keep reading to discover the birth of the International Harvester Company and the grain harvesters of the future. This book is available for \$20.

CHILDRENS BOOKS



Learn how Tractor Mac saves Christmas or discover what Johnny Tractor and Friends are up to in the story books available for only \$7.00.

Images from the Nebraska Tractor Test



For the first time in recent years, the old Oliver Test Car was used to perform testing at the Nebraska Tractor Test Laboratory.



Friends of the University of Nebraska
Tractor Test & Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833



Lester F. Larsen Tractor Test Museum

Tractor Test Times

Newsletter #32 – Winter 2008



New Directors Equipped for 2008

On January 15th, 2008, the Tractor Test Museum's Annual Meeting was held. Director Bill Splinter provided a report of the museum's 10 year history which is found within this newsletter.

In addition, new members of the board of directors were introduced and had the opportunity to say a few words. Each new member of the board in attendance was presented with a unique item to help them as they serve throughout their terms. Chris Ford, pictured to the left, was presented with a steering wheel.

There were 44 Friends at this annual meeting held in the Nebraska Tractor Test Laboratory. The next board meeting will be in April. Until then, the new board will be brainstorming and establishing goals for their focus area. (see story inside)



Director Reports on Museum's First 10 Years of Progress – Bill Splinter

The year 2008 is the 10th anniversary of the dedication of the Lester F. Larsen Tractor Test and Power Museum. I think it is timely to review the path we have followed to reach our present status and to project avenues we may take in the future.

Our point of origin is the construction of the Nebraska Tractor Testing Laboratory building in 1919. This building served as the first official testing laboratory for agricultural tractors. As a result of the continuing increase in the size and power of agricultural tractors larger laboratory facilities were needed and during the winter of 1979/80 the testing operation was moved to new facilities, thus vacating the present museum building. The building was then used for one year to house the teaching program in welding and machine tools but these were then moved to the renovated L. W. Chase Hall, leaving the building vacant again. The intent of the University Administration was to demolish the 1919 building as it had stood for 60 years with minimal maintenance.

Lester Larsen had started collecting tractors with historic significance in 1960 and had housed them in a rammed earth building that had been constructed as an experiment in building materials in the 1930's. Unfortunately, when the new tractor testing facility was built the rammed earth building was destroyed, leaving Larsen's tractors without a shelter. They were moved into this building and Larsen volunteered his time to show them to visitors and, with student's assistance, restore tractors and a Model T Ford that had been donated to the Nebraska State Museum.

The University stopped all services to the building and it fell into very serious disrepair, with not large, but huge holes in the roof. Several concerned individuals met to discuss alternatives in preserving the historic building and the historic tractors.





Dr. Glenn Hoffman, Head of the Biological Systems Engineering Department at the time, set up the Agricultural Tractor Testing and Power Museum Committee in 1991 and the Friends of the Museum was organized with former State Senator Richard Maresh as the first Chair in 1993. The first need was to restore the roof so a fund drive was organized and sufficient moneys were raised to completely replace the roof in 1997.



The year 1998 saw the development of the program into that of a working museum. The Board of Regents approved naming the facility the Lester F. Larsen Tractor Test and Power Museum, in recognition of the years of leadership by Professor Lester F. Larsen, on April 4. The museum was dedicated on May 2 and designated a Historic Site by the American Society of Agricultural Engineers.



The Friends organization became recognized as a 501c3 organization by the IRS. The first Newsletter was published with an informative article on tractor testing by Dr. Louis Leviticus, the museum's curator. The library was organized by Dr. Robert Kleis and steam and electrical power were reconnected.

In 1999 the Larsen Tractor Museum was incorporated into the Nebraska State Museum with the assistance of Dr. Jim Estes, the Director, and Judy Ray was hired on a ½ time appointment as office manager. Also that year Luis Vasquez, a student in the Master's program in Museum Studies took his practicum with the museum, bringing a professional structure for exhibiting and preserving historic artifacts. Roger Welsch showed his support by donating the first tractor he restored, an Allis-Chalmers WC. It was named the "Woodpecker", since it was found in a fence row with a tree growing through the frame. This tractor was raffled off, providing much needed support. Welch has been a steady supporter of the program, providing copies of his books that we can sell.

The year 2000 saw continued growth in the museum program and activities. Brian Mancuso joined us as a Museum Studies intern. A Massey-Harris Pony was raffled off, building renovation continued with the replacement of the large north door and major areas of the interior were painted. Larsen had been storing tractors that could not be placed in the museum in the old horse barn, but the University demolished the horse barn so we found room for six tractors in the Behlen building. The first Open House was held on May 5. Norm Tooker helped develop our first brochure.



In 2001 an Allis-Chalmers B was raffled off. Cleanup and painting continued. Yungju Kim, a Museum Studies student, developed a display comparing the energy costs for man, horse and tractor to perform work. She also developed a more effective way to display our tractors and greatly improved our tool room exhibits. In 2002 the Board elected Mark Nickolaus as an Honorary Member, recognizing his volunteer contributions as Docent.

The University moved the historic Behlen building from a site needed for an electrical substation to a position immediately north of the museum in 2003. This became the site for our restoration projects and the shop in the museum was moved there, freeing more space for exhibits.



In 2003, this year also saw the termination of the Museum Studies Master's degree program, a program that had provided significant professional support to the organization and structure of the Larsen museum. Luis Vasquez was hired allowing us to be open for visitors each weekday.

In 2004 Phil Dinges and Jared Teichmeier led the renovation of the interior of the garage on the west side of the museum. The garage space was being used for restoration of a John Deere "H".

In 2005 we had several important donations, among them, a 1917 Moline Universal, a brass plate John Deere "B" and a 1910 International Harvester Motor Wagon. Jeremy Steele was hired as our Museum Associate but Judy Ray's time with us was decreased because of time demands at the State Museum. The John Deere "H" restoration was completed and the garage area was changed into exhibits of our Colonial hand tools, early plows and cultivators. The exterior of the garage was cleaned of the old stucco and replaced by stucco board.

Bob Mitchell, an Ag. Engineering Alum that had worked at Tractor Test as a student, included the museum in his will amounting to over \$86,000 in 2006. These moneys were used to insulate the Behlen building and provide heating and air conditioning for the office, library, hand tool and early plow exhibit area and the Behlen building. This has greatly improved the working environment and the Behlen building has been developed into a very pleasant restoration area. Judy Ray was assigned full time with the State Museum. Her work as office manager since 1999 had contributed greatly to the organization and program that we have today.

The most significant event in 2007 was the transfer of the Museum budget and reporting functions from the Nebraska State Museum to the Biological Systems Engineering Department. The association with the State Museum provided essential professional support in the organization and operation of a museum, the restoration and preservation of artifacts and the management of our library. However, with the maturation of the program into a functioning museum there was need to affiliate more closely with the Department and, especially, the Tractor Test program as the museum holdings derive, in major part, to artifacts from these sources.

As we enter 2008 we have two major issues as I see them. The first is space. We have loaned three tractors to the Farm and Ranch Museum near Mitchell, NE. We have five historic tractors sitting outside in the weather. We have two tractors being restored but no space to put them in when they are finished. We have a number of historic pieces of the original of conservation tillage machines, as well as other research tillage machines sitting outside at the Roger's Memorial Farm. We continually turn down offers of donations of historic tractors. We need a place to house them.

We do have support in the design of facilities that could accommodate these machines but we must convince the faculty committees and the administration that our needs are of benefit to the educational responsibility of the University. Once that is accomplished we must generate the funds to construct the facilities and that will be another task. However, we need the University's support before we can expect to receive contributions for the project.

The success of our museum could not have been realized without the strong support of our volunteers. I would like to recognize their contributions. Bob Kleis has served in a number of roles, as one of the committee members organizing the Friends, as President of the Friends, as organizer of the library and as Treasurer. Louis Leviticus has assisted in restoration of tractors, organization of the tool collection, documentation of our historic documents and artifacts. Mark Nickolaus has served as Docent and leads many visitors on tours. He is most knowledgeable of tractor statistics. This is his 10th year of volunteer service. Jerry Kohl brings his many years of experience as shop teacher in High Schools in support of our restoration activities. He supervises students and other volunteers as they help out. Phil Dinges is skilled in about everything. Many of the "to do" projects that face us every day are taken care of by Phil. When we needed to repair the headlight of the Motor Wagon Phil's craftsmanship resulted in a perfect fix. Larry Ehlers has charge of the information on the signs for each tractor and exhibit. He also maintains the Friends informational data such as names, addresses and dues. Larry Bitney donated his father's 1917 Moline Universal and helped restore it to a running condition. He maintains and upgrades the tractor and "pilots" it on occasion. Andrea Carter has worked in our library for going on 4 years. She is currently cooperating with the University Libraries to have our books on their register. Don is inventorying and cataloging the archives. He is also our master gardener and keeper of the looks of our museum. Elliot Henning assists with restoration and upkeep of the tractors. Each of these volunteers are very much appreciated.

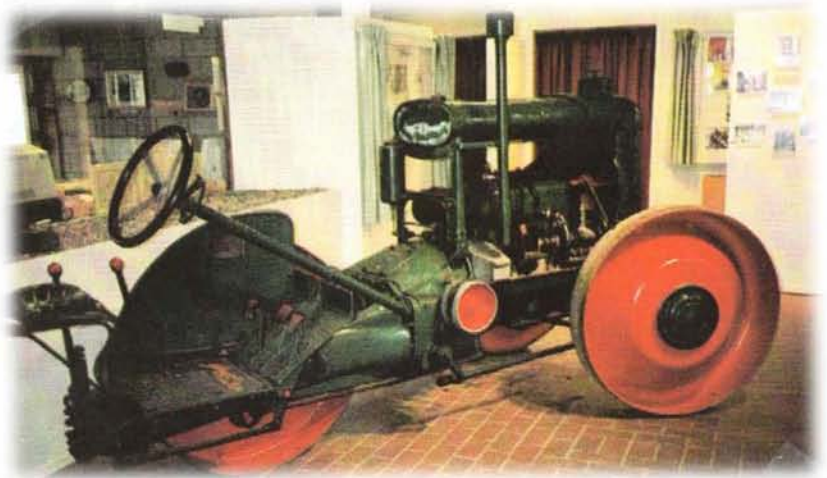


The "Glasgow" Tractor

From our Archives by Lou Leviticus

I found this rather interesting material about a tractor I had never heard of nor ever seen anything about. My sources were publications written by David Brown (Published by the Scottish Country Life Museums Trust in 1978) and an article by Ian. J. Fleming (1994 University of Edinburgh Journal).

This tractor and its engine were developed and built in Scotland because farmers were dissatisfied with the performance of American made tractors in the Scottish Highlands conditions. It was marketed first in 1919 by the Wallace family which had a long history of building machinery for Scottish agriculture. It even caught the eyes of the military as is shown in this quote from a Brigadier General G.R.W. Cheape:



"After witnessing the trial of your new tractor I wish to say that I consider it a great success.... The fact of having a three wheel drive, all wheels crossing over different ground, seems to have solved the difficulty of ploughing steep land....."

As it states in the material, both the engine and the all-wheel drive three-wheeled tractor were developed by the John Wallace Ltd company's engineer, W. Guthrie, of Ayrshire. One of the reasons for the effort the company put into the building was the statement by American tractor company representatives that: "...If it is too wet for our tractor, it is too wet to plough" That didn't help the Scottish farmer!

Steering was on the front wheels and the drive to them was of the ratchet (overrunning) type. The 4 cylinder engine produced 27 hp. The weight was 4032 lbs with fuel, oil and coolant. The engine could run on Gasoline or Kerosene with a Zephyr Carburetor in both cases. Three gears gave 5 mph and 2.5 mph forward and 3.75 mph reverse (rather fast for hill country if you ask me).

The engine could be tilted relative to the front axle in order to keep it horizontal. During demonstrations this tractor was driven up slopes of 1 in 1.7 ! This tractor was not only popular in Scottish Hill country but because of its unique footprint was also popular in countries as far as Spain, where it was popular in flooded rice fields.



One Tractor Many Parts

Like a tractor having many parts, the Friends organization is assembled to work towards a common purpose. Having a board of directors in place as the organization's engine, energy can be directed towards enhancing the museum. To illustrate this at the annual meeting on January 15th, each new member of the board was introduced and presented with a tractor part or item specially selected to assist them while serving towards fulfilling the purpose of the Friends organization.

According to the bylaws, this purpose shall be to support and enhance a museum at the University of Nebraska-Lincoln for education, preservation and exhibition of the development of power in agriculture. This is to be accomplished through:

1. Research
2. Education
3. Communication
4. Personal Involvement
5. Financial Support
6. Collaboration



Chris Ford was presented with a steering wheel. Giving this part to Chris seemed fitting as he will be serving in the area of strategic planning. Strategic plans determine where an organization is going and how it's going to get there. Chris will work towards further developing a plan and mission for the Friends organization and the museum.

Bob Hollander was presented with a tractor seat. A tractor's seat positions individuals where they may choose to either help steer the tractor or to just enjoy the ride. Members of the Friends organization may provide ideas, volunteer service hours, and financial contributions towards the organization while keeping track of the progress of the museum through this newsletter. Bob will focus on increasing membership involvement and contributions towards the organization. Keith Sheets will serve in areas to ensure contributions are documented and the donation plaques are up to date.

Events and activities can create interest in the museum, but they require energy. Because of this, a tractor battery was presented to Donelle Moormeier as she begins serving on the board to focus on events and activities. She will encourage the Friends to generate ideas and provide volunteer service towards the work involved with planning and putting on events.

Prior to an event or after a development occurs, those who may have an interest will need to hear about it. This is why Amy Struthers was presented with a manifold from a John Deere D. Amy will help the Friends organization determine their message and identify avenues for promoting it.

Howard Raymond is positioned near the center of Nebraska to serve toward extending the message across the state and throughout the nation. He was presented with an arm to a three point hitch to help him reach difficult places.

Dana Boden and JoJen Allder are positioned on the board to address challenges related to cataloging the Tractor Test Archives and making them more accessible in printed or digital form. In addition, Leslie Roper serves to identify possibilities related to the sales of printed materials, books and additional items found in the gift shop. They were presented with a can of spray paint and a tractor manual needing to be touched up a bit.

To address issues related to preservation of the museum building or development of additional space for exhibits, Mike Hootman is positioned on the board to assess the situation and provide insight. He was presented with a hard hat as he focuses on this area. Also along these lines, Luis Vasquez provides experience and expertise related to developing ideas into interactive educational exhibits.

Brian Mariska is on board to assess the fleet of tractors and discover the potential for improvement through acquisition, repair, and restoration of tractors. Brian was presented with over 100 miscellaneous keys for a variety of tractors to help him get started. Curt McConnell will serve on the board to examine the restoration program and pursue the implementation of uniform restoration procedures. He, pictured above, was presented with a carburetor ready for attention.

Wish List for Tractor Restoration Program

The restoration shop has been dramatically improved over the past year. The building was insulated and a HVAC system was installed. There is now a workable layout in place with two defined bays. One bay is designated for tractor repairs and the other for tractor restorations. A University recognized Tractor Restoration Club currently meets twice a week to work on tractors.

Curt McConnell has joined the Friends board of directors with a special interest in the restoration program. He would like to help position the museum to repair their fleet of tractors more efficiently and restore them accurately and thoroughly. In order to accomplish this, repair and restoration procedures hope to be developed and implemented in the near future. Until then, a list of needed and preferred tools and supplies is being generated.

To assist Curt as he accesses the situation, the entire restoration shop was inventoried to help determine what tools and supplies are available to work with. We have discovered there is a shortage of a number of tools such as the popular $\frac{1}{2}$ and $\frac{7}{16}$ end wrenches and complete standard and metric socket sets and ratchets of various drive sizes notably that of $\frac{3}{4}$ inch.



We would like to generate a list of tools that could be donated to the museum's tractor restoration program. If you know of items the program may be interested in, please contact us at 1-402-472-8389 or mail a list of items to:

**Tractor Test Museum
Tractor Restoration Program
P.O. Box 830833
Lincoln, NE 68583**



Acquiring a large single phase air compressor, air tools, an oxyacetylene apparatus, a hydraulic press and a bead blasting cabinet may assist the museum's restoration program in reaching the next level. The museum's restoration program may then have a better opportunity to repair and restore with efficiency and accuracy.



Image Review of 2007



Allis Chalmers joins the museum staff.



Mark turned 50!



Bill and Ron take a drive.



Larry's Moline put on display.



New test track is constructed.



Wyatt at the State Fair!



Oil-Pull arrives at the museum.



Proposal considered and accepted!



Tested tractor number 1900.



Mike Hootman ready for work.



Tractor Restoration Club established.



Amy Struthers at the annual meeting.



Volunteer Christmas supper.



Old test car back to work.



Tourism press conference held.

Friends of the Tractor Test Museum
P.O. Box 830833
Lincoln, NE 68583-0833



44 Attended the Annual Meeting January 15th.

**Thank You for Your Support
The Lester F. Larsen Tractor Test and Power Museum**

2008 Board Members

Joen Alder
Dana W. R. Boden
Chris Ford
Bob Hollander
Mike Hootman
Brian Mariska
Curt McConnell
Donelle Moormeier
Dave Morgan
Howard Raymond
Leslie Roper
Keith Sheets
Amy Struthers
Luis Vasquez

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Larry Ehlers – Secretary
Bob Kleis – Treasurer

Past Presidents (pp) - Senior Advisors (sa)

Charles Borcharding (pp)
Earl Ellington (pp)
Larry Hermann (sa)
Bill Overturff (sa)
Charlie Fenster
John Smith (sa)



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Lou Levitticus – Curator
Jeremy Steele – Associate
Mark Nickolaus – Docent

Museum Hours
Mon – Fri 8:30 to 4:00
Saturday 10:00 to 2:00
Sunday Closed



Friends of the Lester F. Larsen Tractor Test and Power Museum

Tractor Test Times

Newsletter #33 – Spring 2008



HELP CELEBRATE OUR FIRST 10 YEARS!!

Saturday, April 26th 2008

LARSEN MUSEUM & TEST LAB OPEN HOUSE

10:00 – 4:00

VOLUNTEER FAIR

1:00 – 3:00

TRACTOR PARADE

3:00 – 3:30

PROGRAM

Volunteers
Needed!

4:00 – 5:00

Tractors
Welcome!

(Free Flier Inside)



2008 JOHN DEERE TESTING TAKING PLACE AT NEBRASKA TRACTOR TEST LAB

Below are images of the Nebraska Tractor 2008 Test Season



John Deere Tractor Models Arrive for Spring Testing.



The 7130, 7230 and 7430 Models Tested for Power-Take-Off and Drawbar Performances.



The 9530T (475 hp) is at the lab. The 9630T will arrive soon (530 hp).

View New Image and Video Archives: <http://tractormuseum.unl.edu>

QUESTIONNAIRE LEADS TO VOLUNTEER FAIR

The Lester F. Larsen Tractor Test and Power Museum has come a long way in 10 years. The road traveled has been steered by volunteers working together to develop the 1920 Nebraska Tractor Test Laboratory into what it is today. Throughout the museum's history, 424 have joined as Friends to support and enhance the museum through membership.

At the end of 2007, the Friends had 213 dues paying members. This marked the highest membership level at one time in the organization's history. During this first quarter of 2008, Friends Secretary, Larry Ehlers, pictured below, has processed 164 membership renewals thus far. This number excludes 71 members who may have a partial year membership remaining, or those who historically have been members and may likely renew as the year goes by.



Enclosed and sent with the membership renewal invoice at the end of 2007, was a questionnaire. This was distributed to measure the level of interest and potential involvement from current and future membership. The museum received 64 of 225 questionnaires back from the membership.

Specific areas of interest were indicated and levels of involvement were defined. The number one area of interest was tractors, so we will probably keep them around. Right behind tractors, activities were indicated as specific interests of members followed by museum exhibits.

The questionnaire provided an opportunity for members to indicate specific ways they would be interested in serving. It also allowed for the suggestions of individuals who may find interest in joining or serving in some capacity in the future.

The completed questionnaires indicated member's willingness to serving on the board of directors for the friends or on established committees. Some would be willing to be available to provide consulting, while others indicated an interest in researching the archives, donating funds and/or items. The willingness to serve as a general volunteer was the most common indicated interest.

An objective for this year's open house is to connect individuals with the activity of the Friends organization. Together ideas, volunteer service, consulting and funding can be directed towards enhancing the museum. The open house will provide an opportunity from 1:00 to 3:00 for visitors to meet and greet the Board of Directors for the Friends organization and the Museum Staff. This opportunity will allow for individuals to join and all members to become connected with a specific area of interest within the organization and the museum.

APRIL 15th BOARD MEETING

At 7:00pm on Tuesday evening of April 15th, the first board meeting for 2008 will be held for the Friends organization's Board of Directors. At this meeting, in the Nebraska Tractor Test Laboratory north of the museum, a number of items may be addressed.

-All directors present will draw lots to determine term lengths except for those serving as an officer. This is done to create three classes for electing an equal number of directors each year to serve three year terms.

-The board will discuss and determine the location and frequency of meetings for the board. It may consider meeting any day of the week either in the morning, afternoon or evening.

-Plans will be reviewed for the upcoming April 26th Open House. Needs for the event will be recognized and addressed including considerations for an improved gift shop area.

-Recognized focus areas will be presented by the Museum Associate. The board may then consider the establishment of committees and the President may appoint chairs accordingly.

-The board will review the recent brainstorming meetings hosted by Chris Ford.

-The role of Museum Stewardship will be defined and discussed to ensure all areas of the museum are cared for properly and in a timely fashion.

-Friends membership categories and affiliations will be discussed.

-The board may discuss recognizing an annual schedule of events and activities.

-Discussion surrounding objectives for the current and future fleet of tractors

-Review of and suggestions for shop facilities to repair, restore and develop exhibits.

Those interested in becoming involved with the museum program are encouraged to attend!

Guess Who?



Can anyone guess who this guy is? For a hint, contact the Friends Vice President Jerry Kohl.

MARK AND THE MUSEUM MOUSER



As you can see from the pictures, Mark has a history with tractors and cats.

Recently, Allis Chalmers, learned that she can get a ride on Marks shoulders by jumping on a tractor next to him.

Talk to Mark to find out how you can help provide for Allis throughout the year as she lives in the museum.



FRIEND WYATT DREW DONATES TOOLS TO SHOP



Wyatt Drew graciously donated a number of items to the Tractor Restoration and Repair Shop including the following:

- 1) Pittsburgh $\frac{3}{4}$ " Socket Set – 1" through 2" with ratchet, extension and T-bar
- 2) Pittsburgh long handle wrenches 7/16" through 1"
- 3) Pittsburgh Jumbo wrench set 1-3/8" through 2"
- 4) Craftsman (5) wrench set 1" through 1-5/16" Wyatt has a set just like this – he calls them the knuckle breaker prevention wrenches!

We greatly appreciate Wyatt's contribution to the museum as a member of the Friends! If you would like to contribute towards enhancing the museum through the Friends organization, please contact the museum staff or any member on the Board of Directors for the Friends.

THANK YOU WYATT!!!

THE FIRST DIRECTOR

Submitted by Bill Splinter, Museum Director

In previous issues of the newsletter and in several other publications there has been extensive coverage of the roles – Crozier, the Nebraska legislator who was the primary author of the Nebraska Tractor Test Law in 1919 and Leon W. Chase, who was probably the preeminent authority on the testing of agricultural tractors, played in establishing the tractor test program at Nebraska, but what of the engineer named the first Director of the Nebraska Test Laboratory? In case you had not heard of it, his name was Claude Kedzie Shedd.

Shedd had been an Associate Professor and Acting Head of the Agricultural Engineering Department at Iowa State College when he was hired for this position. This is what he stepped into: The requirement, by law, passed March 13, 1919, that any tractor sold in the State of Nebraska must have its advertised claims for horsepower verified by testing at the University created serious pressure by manufacturers to have their tractors tested. At that time there were an unknown number of manufacturers, perhaps on the order of 100. There was no building to conduct belt tests, there was no track for drawbar tests, there was no test car or the instrumentation to measure either drawbar or belt horsepower. There were no test procedures or people trained to operate the equipment. And finally, Chase who had been involved with testing tractors from the time of the Winnipeg tests in 1908 chose to leave the University and become a manufacturer of plows, listers, cultivators and other agricultural equipment in the Chase Plow Company in west Lincoln.

So there was Shedd.

He undoubtedly had some help from Chase, but to his credit everything was put together so that official tests could begin by March 31, 1920. They then operated at a frenetic pace, testing 44 tractors by August 9 whereupon Shedd decided there were less exciting things to do in life and left the University. The lab went on to test a total of 69 tractors that year, ending October 27.

So just who was Shedd? He had been born near Pickrell, NE in 1884 and enrolled in the University of Nebraska in 1905. He graduated from the Farm Mechanics program in 1909 and was hired by Chase to teach in the Agricultural Engineering Department, having just changed its name from Farm Mechanics that year. (The Industrial College was also split into the Colleges of Engineering and Agriculture that year). He was subsequently hired to teach in the Agricultural Engineering department at Iowa State College, and was hired back to direct the Tractor Test Laboratory.

Shedd went on to a distinguished career serving on faculties at Kansas State College, the University of Missouri and finishing his career back at Iowa State. He was elected to the grade of Fellow in ASAE in 1965 and passed away in 1966.

CHEATING BY TRACTOR COMPANIES? NEVER !!

Submitted by Lou Leviticus, Museum Curator

There has always been a certain level of suspicion between testers and company reps, although generally it was never something personal. The company wanted to sell its product and it had to be as good (and cheaper) or better than the competitor's. For a long time, we used to conduct after-test inspections of the engines. Engine and transmission oils were also checked to insure that there was no "light oil" in the "tranny" (transmission for the uninitiated).

Here are a few cases, without mentioning the offending company's name. The ensuing discussions caused a bit of a ruckus at times.

1. One company knew that their power would not meet their advertising and so they polished all of the air intake system. They were hauled before the Board of Test Engineers and told that the test would be passed if they would polish ALL the tractors sold in the State of Nebraska.

2. One company had a cooling problem. So, instead of the 4-bladed fan, they installed a 6-bladed fan. That fan took a lot more power with the result that the tractor never made its advertised power. Moreover, it slowed the engine down so much that the governor never was able to reach its maximum setting. One of the mechanics was caught trying to change the blade-pitch behind the lab with a stone and a hammer.

3. I remember a few cases, before we started testing the hydraulic lift system, where the pump pressure had been set down or relieved.

4. Inspection after the test showed in more than one case that the crankshaft had been ground in such a way that only the center part of the surfaces were in contact with the bearing shells, thereby reducing the power requirement.

5. One engine came in with no possibility to drain the engine oil!!

I wonder who that engineer was.

6. One company was to test 2 models – one a row-crop and one a wheatland type. Only one tractor arrived and the company wasn't sure when the other one would arrive. Les Larsen became suspicious and he and some of his workers put three punch marks on the engine. Sure enough, when the nicely repainted tractor finally arrived, the punch marks were found. It was the same engine, which thus had many more running hours on it than in the company declaration. It also showed a slightly better performance.

7. One tractor engine had a silvery color, but it also had an overheating problem. It was suggested to them, that they should paint the engine black, so they would have a little more radiation loss. They didn't do that, but solved their problem in another way.

These are just a few of stories of the past. Today there is really no way to run an inspection because of the size and complexity of today's systems. The amount of time and work would be prohibitive in addition to the specialized equipment and instrumentation needed.

CELEBRATE OUR FIRST 10 YEARS!!

Friends of the Lester F. Larsen Tractor Test and Power Museum

1998-2008

SATURDAY, APRIL 26TH 2008

Tractors Welcome!!



Historic Tractor Test Laboratory



Larsen Tractor Test Museum

Registration

8:00 – 10:00



New Volunteer Tractor Shop

**LARSEN MUSEUM
NEBRASKA TRACTOR TEST LAB
OPEN HOUSE**

10:00 – 4:00



Nebraska Tractor Test Lab Tours

NEW FRIEND VOLUNTEER FAIR

1:00 – 3:00

**TRACTOR TEST TRACK
EXHIBITION OF POWER**

Parade

3:00 – 4:00



New Test Track Exhibition



Parade of Power

PROGRAM AND PRESENTATIONS

4:00 – 5:00

For More Information Contact:

402-472-8389

jsteele4@unl.edu

<http://tractormuseum.unl.edu>

University of Nebraska-Lincoln East Campus - 35th & Fair Streets – Lincoln, NE 68583

Museum Staff

Bill Splinter – Director (pp)
Lou Leviticus – Curator
Jeremy Steele – Associate
Mark Nickolaus – Docent

Museum Hours

Mon – Fri 8:30 to 4:00
Saturday 10:00 to 2:00
Sunday Closed

Museum Contact

1-402-472-8389
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jsteele4@unl.edu

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Larry Ehlers – Secretary
Bob Kleis – Treasurer (pp)

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Dave Morgan
Howard Raymond
Leslie Roper
Keith Sheets
Amy Struthers
Luis G. Vasquez

Thank You for Your Support
The Lester F. Larsen Tractor Test and Power Museum



ATTENTION: OPEN HOUSE - SATURDAY - APRIL 26, 2008

Friends of the Tractor Test Museum
P.O. Box 830833
Lincoln, NE 68583-0833

Tractor Test Times

Summer 2008 - Newsletter #34

State Fair Registration Begins

The Tractor Test Museum will once again be coordinating the antique tractor exhibit and tractor parade at the 2008 Nebraska State Fair Friday August 22nd through Monday September 1st.

Registration of tractors is required prior to August 15th. The registration form is included inside this newsletter. This year we are expecting the total number of tractors to exceed 100.

Registered exhibitors will receive one free ticket to the fair for each of the days they participate in the tractor parade. One additional ticket can be purchased at a discounted price. These are available for spouses or immediate family members accompanying the exhibitor.



2007 State Fair Andrew Helmink on his Allis C



Parade Schedule

6:00pm

Saturday Aug-23 – Thursday Aug-28
Saturday Aug-30 & Sunday Aug-31

12:00pm

Friday Aug-29 and Monday Sept-1

State Fair Registration and Friends Membership

Each year the Nebraska State Fair is a positive experience for everyone involved. The event increases the general awareness of state and national interests in antique tractors. Nearly 300,000 visitors pass by the museum exhibit and enjoy the tractor parade during the 10 day event.

The Tractor Test Museum encourages participation at the fair by providing free registration for 2009 Friends. Because of this, many renew their membership or join for the first time around the time of the state fair each year.

It is time to get your tractors ready for the Nebraska State Fair!

Tractors, Volunteers Needed for the Nebraska State Fair!

2008 Open House Welcomes 500 to Museum

Even though it looked like it was going to rain at any minute throughout the day, the Open House event was well attended. Special thanks to the Cortland Tractor Cats who grilled hotdogs and helped run the event sales booth. Proceeds raised are going towards funding a new traveling exhibit for the Friends organization.

A number of additional volunteers donated time greeting visitors, transporting tractors and serving our guests. Several new board members were also present to meet and greet individuals who attended the event.

Several tractors were brought in from the area and participated in two tractor parades around the new tractor test track. A number of 2008 John Deere models slated for testing at the Nebraska Tractor Test Laboratory were also on display throughout the day.

A special thanks goes out to all who volunteered and attended the event. We are already looking forward to next year.



Jeff Helmink, Ron Moormeier, Roger Olson, Norv Papke and Craig Heidecker at the 2008 Tractor Test Museum Open House.

The second quarterly board meeting for the Friends of the Tractor Test Museum is scheduled for July 15th at 7:00pm in the Nebraska Tractor Test Laboratory. Topics include: shop improvements, traveling exhibit, museum affiliations, and budget for the upcoming fiscal year.

The Friends organization directs resources towards enhancing the Tractor Test Museum. Please contact one of the board members if you have suggestions or ideas for the Friends organization.

Contact information available through the museum

President – Russ Tooker

Vice President – Jerry Kohl

Secretary – Larry Ehlers

Treasure – Bob Kleis

Past President – Don Edwards

Advertising – Amy Struthers

Archives – Dana W. R. Boden

Events – Donelle Moormeier

Exhibits – Luis G. Vasquez

Facilities – Mike Hootman

Fleet – Brian Mariska

Membership – Bob Hollander

Outreach – Howard Raymond

Parts and Service – Doug Koozer

Restoration – Curt McConnell

Sales – Leslie Roper

Stewardship – Dave Morgan

Strategic Planning – Chris Ford

Senior Advisors

Charles Borcharding

Earl Ellington

Charles Fenster

Larry Herman

Bill Overturff

Keith Sheets

John Smith

Director – Bill Splinter

Curator – Lou Leviticus

Docent – Mark Nickolaus

Mouser – Allis Chalmers

Associate – Jeremy Steele

Museum Hours

Mon – Fri

8:30 to 4:00

Saturday

10:00 to 2:00

35th and Fair Streets

UNL East Campus

Lincoln, NE 68583

402-472-8389



The premiere season of the Successful Farming Machinery Show began on RFD-TV this past November. Viewers tuned in for shop tips, "hot iron," farmer inventions, Machinery Pete, Roger Welsch, and more.

This next season, four of the 16 episodes will feature familiar tractors from the Tractor Test Museum. The tractors and drivers involved will be: Bob Kleis and his Avery, Larry Bitney on a Moline, Jerry Kohl on his Cletrac and Larry Herman on the Minneapolis-Moline. The season will begin on September 4th.

You can watch Successful Farming's Machinery Show on RFD-TV each Thursdays at 7:30 p.m. CST (8:30 EST). You can catch rebroadcasts Fridays at 3:30 a.m. and 11:30 a.m. CST (4:30 and 12:30 p.m. EST), and Sundays at 8:30 p.m. CST (9:30 EST). You'll find RFD-TV on DirecTV channel 379 and DISH Network channel 231.

Curt Arens has put together an article on the Tractor Test Laboratory and Museum for Nebraska Life Magazine. This spring, both Curt and the publisher of Nebraska Life, Christopher Amundson, spent time interviewing staff and taking photos. The article will be in the July/August 2008 issue.



Jerry Kohl provides a demonstration of his Oliver HG Crawler.

In addition, Classic Tractor Magazine, a monthly magazine printed in the UK, will also be printing an article on the museum and test lab. The magazine covers issues of particular interest to owners and users of tractors and farm machinery built in the last forty years.

By Don Arp, Jr.

Given the lethality of the industrialized battlefield of the nineteenth century, inventors placed great emphasis on the development of devices and vehicles that could protect troops and give them an advantage in the midst of combat. A new class of combat machine, known as armored fighting vehicles or AFVs, was born. Powered by either animals or steam, these contraptions were designed to enter combat and shield troops, while providing firing platforms for various artillery pieces and small arms. Many of the designs put forth during the late-nineteenth century were too imaginative to be useful and few were ever built, even as prototypes. Some designs, although sound in concept and strategy, were hampered by a lack of suitable technology. Instead of inventing completely new vehicles, the most practical plans sought to use existing machines that could be modified for a military purpose.

Agriculture in the nineteenth century was a field experiencing increased mechanization. With improved technology and its own breed of inventor, the farm provided the machines that would serve as the basis for a new class of war-fighting vehicle—the steam road locomotive or traction engine. The history of road locomotives as a platform for war is incomplete. In certain circles, names like Cowan and Redstone are well known. However, along side these names should be John Flanagin, a Nebraskan who, in a letter to President Abraham Lincoln, envisioned using the steam tractor as a fighting vehicle during the Civil War.

A New Breed of Inventor

The wars of the late 1800s and early 1900s inspired a new breed of inventor, mainly civilian, who sought solutions to the age-old issues of protection and violence of action with the technological advancements brought about with the advent of industrialism. These inventors, most being private citizens with no military affiliation, embraced the concept of the AFV and based their designs on machines familiar to them.

Variations of the standard road locomotive or ‘tractor’ were advanced, making it the foundation for a plausible and technologically sound armored fighting vehicle designed to serve in the niche later filled by the tank. Inventors on both sides of the Atlantic advanced different designs for armored fighting vehicles utilizing the steam tractor as a power source. Many of these ideas were impractical; others were ridiculous.

One idea, albeit ignored and forgotten, came from a Nebraska farmer who had no military or engineering training. John Flanagin of Pawnee City, Neb., advanced an idea for a fighting tractor and accompanying gun car or battery that was ahead of its time. Even though he sent letters to President Abraham Lincoln detailing his concept, the battlefield would not see an idea like Flanagin’s come to fruition until almost 30 years later in the South African or Boer War. Unfortunately, Flanagin has been all but forgotten by those who record the evolution of the AFV.

The Tractor Goes To War?

As exhibited in the American Civil War, it was possible to design vehicles that could lay down serious amounts of firepower on an enemy, while often maintaining a high degree of mobility and safety. Using trains and railroad locomotives, along with various methods of armoring and arming, accomplished this. These vehicles were the direct descendants of the ironclad warships that were popular in the conflict.¹ Fighting trains, however, had detriments. The chief problem with a train, namely its reliance on a track, often prevented it from entering battle alongside troops. A vehicle that could roam the open battlefield and provide troops with cover and firepower would be a great advantage to any army who possessed it. Using horses or other draft animals to power an AFV on the industrialized battlefield was not practical, for obvious reasons. The only other option available was steam road power.

John Flanagin formulated, like many others of his time, an idea for a weapon that would aid the Union in its battles with the Confederate States of America. Flanagin based his concept, sketched out in two letters written to President Abraham Lincoln in 1862, on the aspirations for and observations of a steam road locomotive in Nebraska City, Neb.

Flanagin wrote his first letter to President Lincoln around March 1862, but this note is lost and may have never reached its destination. In September 1862, Flanagin composed another letter elaborating on his idea for an armored battery driven by a tractor. The following is the complete text of the letter. Grammatical and other errors were too numerous to correct while maintaining its informational integrity.



A steam tractor of a much later vintage than those seen by Flanagin, but nonetheless illustrative of what he and other inventors were working with (photograph from the Library of Congress).

Sept 17th 1862
Pawnee city Pawnee co Nebraska

Sir

I wrote to you some six weeks since suggesting the practicability of an iron clad Battery on wheel to be drawn or pushed by an iron clad (Locomotive or steam wagon). I think you must have either not received the letter or have considered it impracticable or I would have heard from you. There is a steam wagon in this territory built for the purpose of hauling provisions to Denver City it is calculated to draw 60 tons in cars or wagons made for the purpose; now if this will work on the plains here why cant a Battery be drawn by stem wagon

If a Battery cannon ball proof would be too heavy to be drawn it might be rifle ball proof except in front and cannon ball proof in the front and be pushed instead of drawn in going towards the enemy and drawn when retiring from the enemy Thus it would never have to be turned round It could be managed to steer both The Battery on advancing on the enemy and steer the Locomotive on retiring from the enemy This could be easily done by having the running gear of both Locomotive and battery after the fashion of two pair of fore wheels of a wagon and coupled together by a coupling pole on advancing towards the enemy have a bolt put through the coupling pole and back slide of both the Battery and the steam wagon and on retiring shift the bolt to the other slide The power could be transferred from one set of wheels of the steam wagon to the other in the same way.

Supposing you received my other letter I have written enough I beg you to give it your practicle consideration (for the sake of the nation) If I have written any thing you may consider dictatorial or inpertinent I ask a thousand pardons I will not be likely to ever write again without I hear from you.

Your Most [illegible] John Flanagin
Pawnee city Pawnee co Nebraska

To President Lincoln Pat [illegible]¹

Examining Flanagin's Tractor

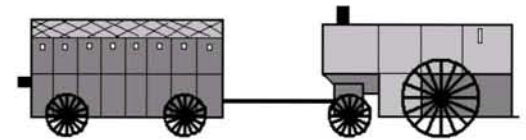
Although innovative, Flanagin's plan of using a steam road locomotive to push or pull an armored cargo car into battle has a flaw: misinformation. Flanagin noted in his letter that the road locomotives of the day could pull 60 tons of cars and freight and that such a vehicle was used to haul goods to Denver. This is only partially correct. In July 1862, noted entrepreneur "General" Joseph R. Brown of Minnesota arrived in Nebraska City with what he felt was the solution to the transportation woes of the day: a steam tractor.² Despite its early trial successes, the tractor only made it twelve miles outside the city with a load of five tons before it suffered a damaged drive crank.³; some sources say the tractor only made it about four miles out of town.⁴ Brown attempted to obtain replacement parts for his machine in the East, but a Native American uprising threatened his homestead in Minnesota, forcing him to return to his home state to combat the insurrectionists. His actual intention of returning to Nebraska was always debatable and was finally dashed by the construction of the Union Pacific Railway.⁵

Despite this technological misstep, Flanagin exhibited some modicum of engineering knowledge when he determined a way to cut down on the weight of the battery car. He suggested that the sides of the armored car or battery should be rifle-ball resistant only, to save on total weight. Since the steam road locomotive pushed the car into battle, the front side of the battery was the only portion that needed armor capable of withstanding the impact of a cannon ball or similar projectile. This armoring strategy was theoretically functional, as it would have reduced the weight the tractor had to move, but it would not have made the battery as invulnerable as the inventor envisioned it would. In battle, it is impossible to say, even with the battery being pushed into combat, that artillery and cannon projectiles would only contact the forward face of the battery. In all likelihood, shells would have impacted the sides and the roof. It may have been better to do away with the heavy armor on the front side all together. The lower weight may have given the vehicle a little more speed that it could have used to maneuver, although it would never have been fast enough to dodge an incoming projectile from an artillery piece.

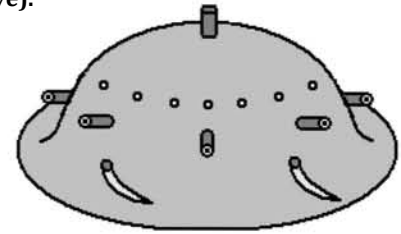
Another issue is the locomotive. Flanagin did recognize the necessity of shielding the locomotive with more than just plate armor, suggesting that the armored battery be placed in front of the engine, allowing it to shield the boiler. With the battery in front, the tractor could maneuver and not expose itself to direct fire unless enemy forces flanked it. A direct hit on the tractor with an artillery projectile would have caused severe damage. As with railroad locomotives, the boiler is the most vital piece of equipment. If it is damaged, the tractor is stuck. If it explodes, those nearby would be treated to a scalding bath of steam and boiling water, in addition to shrapnel. In theory, the vehicle was based on sound principles and in an infantry battle, it may well have served successfully as a firing platform for artillery and/or riflemen. It is doubtful, however, that the vehicle would have performed at the level Flanagin intended with the technology of the era.

Flanagin's AFV in Perspective

The concept of using steam tractors in war was not new in 1862. In 1854, a Boydell steam engine was used to transport supplies during the Crimean War.¹ A year later, the British government issued a patent for an AFV designed by James Cowan of Great Britain, an inventor with many patents for agricultural machinery under his belt.¹ Cowan's vehicle, built only as a model, was turtle-shaped and utilized a steam tractor as its propulsion system.¹ The vehicle was armed, in addition to cannons, with large blades that could spin around the circumference of the hull.¹ These blades would devastate any infantry soldiers who might attempt to storm the vehicle and would have caused panic if the vehicle progressed towards infantry formations. The design was interesting and well illustrates that attention was paid to protecting soldiers, increasing firepower, and using a road locomotive as an armored fighting vehicle. This design was not practical, both in its armaments and in its integration of the tractor into the battery. Further, it was termed "uncivilized" by none other than Lord Palmerston, the Prime Minister of England.¹



Flanagin's Armored Road Locomotive and Battery (conceptualized and illustrated by the author and Lt. Col. Alan R. Koenig, US Army Reserve).



Cowan's Fighting Vehicle (based on an illustration in Ffoulkes' *Arms & Armament*).

Flanagin was not alone in designing a steam-powered armored fighting vehicle during the American Civil War. An inventor from Indianapolis, Ind., named Redstone, proposed building what he termed "Land Monitors" for the Federal government that would be capable of leveling firepower on a target and traveling across the battlefield at 20 miles-per-hour. Redstone stated that his vehicles, economically priced at \$900 per unit, could handle any grade less than 45 degrees, would be maneuverable, and could do the fighting and labor of hundreds of soldiers. This was no small feat considering only two men operated the vehicle.⁶ Little is known about the specifics of Redstone's monitors as the design was never constructed, but they may have had limitations and vulnerabilities similar to Flanagin's vehicle. A man named Joseph Harvey also proposed an idea for what was termed a "land battery" in 1862. Harvey suggested constructing a large iron barrel about 15 feet in diameter housing a gun platform and powered by a steam engine. An article announcing the idea says that the "thing could be transported only along roads;" this is only the first of several shortcomings.⁷

The use of road locomotives in combat was hindered by several factors. Inventors often designed vehicles of ridiculous complexity and function, often ignoring the limits of available technology. Steam technology was not that advanced or efficient in the 1850s and 1860s. It was cumbersome and afforded engineers many challenges when they sought to use it as a power source. Despite the lack of a convenient, reasonably sized power source, the designs themselves actually postponed the development of steam tractors as tools of war. It would take applying the tractor to a non-combat role in warfare to begin the next stage of development for the armored road locomotive.

Logistics

Advancements in steam technology and mechanics made it possible to develop a stronger, more compact steam engine that would serve as the power source for the next generation of tractors that were more powerful, more reliable, and better constructed than the machines of the previous decade. By the end of the 1870s, the military applications of the tractor were explored in ways not conceived of before. Instead of shielding soldiers and raining down firepower, tractors were beginning to serve a more important function: they were keeping the supply lines moving at a rate capable of supporting the increasingly industrialized armies of Europe.

Steam road locomotives served in logistics roles during the Prussian War (1870-71) and the Russo-Turkish War of 1878. In both conflicts, the machines, none of which were armored, hauled large quantities of supplies and transported artillery pieces.⁸ During the South African War (or Boer War) of 1899-1902, armored road locomotives similar in design to Flanagin's were developed. The British War Department sought a steam tractor and wagon design that could be used in battle. John Fowler and Company of Leeds, Great Britain, built most of the engines,⁹ while other firms like Charles Burrell, J & H McLaren, and Aveling & Porter provided the remainder.¹⁰ Fowler produced a model of armored tractor, the Class B5 "Lion", which consisted of an armored tractor, three armored wagons, and two howitzers.¹¹ The armor on the tractors and wagons could withstand rifle fire and artillery shrapnel.¹² Further, each wagon could mount cannon.¹³ A direct artillery hit would, as was noted with Flanagin's design, been highly damaging, even lethal. Unlike Flanagin's concept, the cars were pulled and not pushed into battle. Despite the design intentions, these tractors proved their worth not in pitched battle, but in logistical operations where they could move more cargo and were faster, cheaper, and less vulnerable than oxen or other draft animals.¹⁴ Tractors provided a constant source of supplies that fueled the British war machine and caused the Boer fighters endless nightmares. In addition to haulage, some tractors turned the soil, building trenches and other earthworks.¹⁵

Due to their success, road locomotives served in the armies of Great Britain, Germany, Austria, Russia, Switzerland, Italy, and the Ottoman Empire until World War I. A series of trials in England and abroad further developed the road locomotive.¹⁶ Advancements in technology and application could only do so much. Steam road locomotives became obsolete on the battlefield and on the farm with the perfection of the internal combustion engine. Although combustion engine tractors are a still facet of agriculture today, they never became AFVs. With the introduction of the tank in World War I, the chapter was closed the use of tractors as AFVs.

An Idea Ignored

There is an error in the available literature about the developments made in armored tractor warfare. Many sources note the advancements made in Europe and even note the strange lack of any concepts for road locomotive vehicles in the American Civil War.¹⁷ Flanagan's idea was unnoticed, although it was very close to the concepts put forward and built for service in the South African War, over 30 years later. One source does note that a person from Pawnee City, Neb., advanced an idea for an armored locomotive, but they misidentify it as a railroad locomotive and not the clearly described road locomotive or steam tractor.¹⁸ Flanagan's concept was ahead of its time. The idea was sound, as vehicles similar to his design eventually served with great success, albeit not in the exact military niche he intended. Interestingly, Flanagan heard of the tractor's ability to move cargo and felt it had a battlefield application. If he had thought of it from a logistical standpoint, he might have advanced an idea on which the Union army would have been willing to act.

Little is known about John Flanagan. He was, like many of his contemporaries, a resourceful, intelligent, and driven man who lived in a time when success or failure rested on one's own shoulders. Through his diligence and effort, Flanagan weathered hard times and created for himself a family and reputation that was known and respected throughout the territory.

Flanagan, born in New Jersey on February 12, 1835, came to the Nebraska Territory in 1858. He settled in Pawnee County, eventually marrying Sarah Rogers, with whom he had six children. Flanagan, devoted to farming his 520 acres, was not politically active except for two terms as Clay County assessor. It was his proclivity for being "well informed" that no doubt fueled his idea for the steam tractor AFV.¹⁹



John Flanagan from *Portrait and Biographical Album of Johnson and Pawnee Counties*, 1889.

His Rightful Place in History

The harnessing of steam power during the Industrial Revolution provided inventors with a reliable method of propelling their armored fighting vehicles into battle. Many designs were put forth, but most proved impractical. The most practical ideas sought not to reinvent the wheel, but rather modify existing machines to fulfill a military purpose. This was the case with the use of steam road locomotives or traction engines in the development of AFVs. Variations of the standard road locomotive or 'tractor' were advanced, making it the foundation for armored fighting vehicles designed to serve in the niche that would later be filled by the tank.

Different designs for armored fighting vehicles using the steam tractor as its power source were advanced from persons on both sides of the Atlantic, but it was in a non-combat role that the steam road locomotive would serve for decades. A man with no military or engineering experience observed the use of tractors in Nebraska and formulated an idea he felt worthy of presidential attention during the American Civil War. Although it was ignored, the concept proved viable and reappeared some 30 years later in the South African War. John Flanagan has been all but forgotten by those who record the evolution of armored fighting vehicles. Even though his idea was not directly acted upon, Flanagan deserves credit for having the vision to see how an everyday machine could be used in a different setting and to take his place with men like Cowan and Redstone. Inventors like Flanagan took the first steps, theoretically and actually, in mechanizing the battlefield.

Acknowledgments

The author would like to thank LTC Alan R. Koenig, Ph.D., US Army Reserve, for his assistance, guidance, and mentoring. His pioneering research into the armored warfare of the American Civil War laid the groundwork for this article. Without his years of research, this work would not have been even remotely possible.

About the author

Don Arp, Jr., is a freelance historian and author of more than a dozen articles. He graduated from the University of Nebraska-Lincoln with a degree in history and was elected to Phi Beta Kappa. In 2007, Don received the Commander's Award for Public Service (U.S. Army), recognizing his work as a volunteer historian supporting several Army efforts. Contact Don at: donarpjr@hotmail.com.

¹ NARA, Record Group 156 (Office of Army Ordnance), Entry 994(Inventions), Box 32, Item: Misc.-355.

² William E. Lass, *From the Missouri to the Great Salt Lake: An Account of Overland Freightage* (Lincoln: Nebraska State Historical Society, 1972), 116.

³ *Nebraska City News*, August 2, 1862; _____, August 30, 1862.

⁴ William E. Lass, "Nebraska City's Steam Wagon," *Nebraska History* Vol. 79, No. 1, Spring 1998, 28.

⁵ Lass, *From the Missouri*, 116.

⁶ *Scientific American* 7, 20 (November 15, 1862), 312.

⁷ *Scientific American*, 7, 3 (July 19, 1862), 39.

⁸ *Notes* 137.

⁹ Richard M. Ogorkiewicz, *Design and Development of Fighting Vehicle* (Garden City: Doubleday & Company, Inc., 1968), 25.

¹⁰ Michael R. Lane, *The Story of the Steam Plough Works: Fowler of Leeds* (London: Northgate Publishing Company Limited, 1980), 204.

¹¹ Lane, 207.

¹² *Notes* 141.

¹³ *Ibid* 141.

¹⁴ Lane, 207.

¹⁵ *Notes*, 145; Howard Bailes, "Military Aspects of the War" in *The South African War: The Anglo-Boer War 1899-1902*, Peter Warwick and S.B. Spies, eds. (London: Longman, 1980), 68-69.

¹⁶ Lane, 219-221.

¹⁷ Macksey, *Tank*, 7.

¹⁸ Robert V. Bruce, *Lincoln and the Tools of War: Ordnance Edition* (New York: Civil War Book Club, 1956), 137.

¹⁹ Numerous, Unnamed Authors. *Portrait and Biographical Album of Johnson and Pawnee Counties, Nebraska* (Chicago: Chapman Brothers, 1889), 550.

The University of Nebraska Tractor Restoration Club has made an impact on the Tractor Test Museum. The club is developing UNL student interest in antique tractor restoration and their projects are enhancing the museum's tractor collection and restoration program.



The club is learning how to keep their projects structured and organized. Members first evaluate the status of the tractors, then they develop a plan, and throughout the project, a log is now being kept of what is being accomplished and why. In addition, they are keeping the shop clean and are utilizing proper storage for tools and parts.

Club members are obtaining knowledge and experience. They are learning from research, each other and those more familiar with antique tractors and how to repair and restore them.

Several museum volunteers and new board members have been instrumental in helping the club by meeting with them, providing advice, donating parts, decals and encouraging their efforts along the way.



A couple of club members have been working on projects throughout the summer, in two months, the rest of the UNL students will be back on campus. This fall will be another beginning of a new wave of UNL student interest and activity.

These students are valuable to the Tractor Test Museum and are making an impact on our program. Please contact the museum to find out more information about the club and how you can contribute towards their efforts.



The Tractor Restoration Shop was the main focus of discussion at the April board meeting. Curt McConnell put together a list of suggested items for improving the museum tractor shop. He also shopped around to find the best prices and presented his findings.

We hope to have final decisions made on Curt's suggested items so we can move forward with developing the tractor restoration program and have items in place by the time students are back for the fall semester.

Friends of the UNL Tractor Test and Power Museum
P.O. Box 830833
Lincoln, NE 68583-0833



The Challenger MT965B recently broke a maximum drawbar pull record at the Nebraska Tractor Test Lab. The 59,048 lb pull passed the previous 58,031 lb record set by the Challenger MT865 Crawler.

Mail to: Tractor Test Museum - P.O. Box 830833 - Lincoln, NE 68583 - Deadline: August 15th, 2008

Supplemental Information for State Fair Exhibit Sign:

Implement(s):

Tractor Make(s)/Model(s) Year(s):

Phone:

Email:

Address:

City, State, Zip:

_____ Please register my tractor(s) for the 2008 Nebraska State Fair.
_____ \$15.00 payment enclosed is for my 2009 Friends membership.

