

Podium Newsletter

July 2010



Welcome to the Podium Club!

The information found at www.antiquetractorpullguide.com is like no other information out there. The tips, tricks and secrets of successful tractor pulling are designed to improve your performance at the next tractor pull, while having more fun at the same time.

How come my weight percentages are different than other tractors I pull against?

There are many different factors that affect weight balance that are outlined in The Antique Tractor Pull Guide. One of the ways to track weight balance is through weight percentages, that is, the amount of weight on the front wheels vs. the amount of weight on the rear wheels. So what affects percentages between different tractors? One of the factors is Wheelbase (there are certainly other factors too, but let's focus on wheelbase for the moment). Tractors that pull in the same weight class may have a similar center of mass, but their weight percentages may be totally different due to Wheelbase. Let's look at an example:

We'll look at two very different tractors, just to make the effect of wheelbase a little more apparent – a Ferguson TO-30 vs Oliver 66.

| Tractor Make & Model | Engine | | | | Horsepower | | Stock Tire size | Wheelbase (in) | Weight (lb) |
|----------------------|-----------------|-------|-----------|------|------------|----------|-----------------|----------------|-------------|
| | Bore & Stroke | Displ | No of cyl | RPM | Drawbar | Belt/PTO | | | |
| Ferguson TO-30 | 3.25" x 3.875" | 129 | 4 | 1750 | 24.37 | 29.32 | 11.2-28 | 70.00 | 2602 |
| Oliver 66 | 3.3125" x 3.75" | 129 | 4 | 1600 | 21.03 | 24.91 | 11.2-38 | 86.75 | 3023 |

See full gearing and specification data for over 100 different tractors in The Antique Tractor Pull Guide

Notice the difference in wheelbase of the tractors. Now, let's assume that the weight balance is to be about the same for these tractors, in other words the center of mass is about in the same location. They are competing in a 3500lb weight class and each tractor weighs in at the top of the class. The TO-30 drives onto the scale first, and it's front wheels weigh 1500lbs, which means 43% of the total weight is on the front wheels. That makes the center of mass of the TO-30 at 30" in front of the rear axle. Now, as mentioned above, these two tractors have the same location for the center of mass. That means when the Oliver 77 rolls onto the scale with it's longer

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How come my weight percentages are different than other tractors I pull against? (cont)

wheelbase, the scale only shows 1210lbs for front wheel weight. That means that the Oliver 66 has a front wheel weight percentage of 34% and the balance on the rear wheels. How can this be? The Oliver's front wheels are located 16.75 inches further forward, which is the same effect as having a longer lever arm for the wheels to support the weight, thus lowering the required force. This is why percentage weights can be confusing for pullers. It is also why so many pullers will boast about what percentages work well, when in fact wheelbase alone can make a dramatic difference in the actual percentage numbers. Always track your own percentages to make sure you know what works for your own tractor.

So what are good percentage numbers? Again that depends on the tractor. The good news is that most rules about weight placement will level the playing field no matter the wheelbase of a tractor. The 11ft rule for instance – no weights shall extend further forward than 11ft from the center of rear axle, is a good rule that allows shorter wheelbase tractors to compete with longer wheelbase tractors. As seen by the above example, shorter wheelbase tractors may have significantly different weight percentages, but that certainly does not mean they will pull any better or worse. The percentage numbers are simply a way to track weight balance on a particular tractor for a given track condition.



More weight on front wheels than Oliver 66, but similar weight balance.



Less weight on front wheels than Ford (or Ferguson), but similar weight balance.

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New Changes at www.antiquetractorpullguide.com

Regular visitors to the site will notice some major changes that were made during the last week in July. The membership area of the site no longer exists and now the Photo Gallery and Video library are available to all visitors. The available pictures and videos are great references for any tractor enthusiast, especially those who are looking for specific information. Hitch design is one major part that goes into every great pulling tractor, and in the Photo Gallery all hitch examples are separated by manufacturer. More pictures and videos are added on a regular basis.

Also, as you probably have noticed, the very popular Podium Newsletter is now completely free (only requiring name and email for delivery), which is a great monthly compliment to the information found in The Antique Tractor Pull Guide. The monthly notification email for the latest issue will also contain a link to the Podium Newsletter archives for reference.

Antique Tractor Pull Guide

Home Order Now **Photo Gallery** Videos Contact

Farmall IHC Hitches

New Links!

This is the Farmall Hitch Gallery

More hitches below

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Massey Harris 444 Maiden Pulls

With the extremely wet spring in the Northwest, most pullers have been chomping at the bit to get out onto the track for some pulling. After the wettest June on record, Mother nature turned off the faucet on July 3rd and there has been no measureable precipitation since.

The first opportunity for the Massey Harris 444 to hit the track was at Elma, WA on 7/10. This pull features a great track and is well attended as part of a local tractor show. The 444 was weighed in for one pull only – 5000lb, 3mph class. Without much weight balance room, the only weight added to the tractor was a 40lb suitcase weight on the new front weight bracket. The track was dry and appeared to have loose dirt on the surface, although it was definitely a power track. Many tractors pulled to a stall as I waited to pull the 444. For this reason, and for the 3mph class, the bone stock 444 was pulled in 1st gear, high range, which is about 2.6mph.

So how was the pull – GREAT, to a certain point when the “live power” clutch started to slip. How does the live power clutch work? It’s a small clutch in the right brake housing that has a handle to actuate it. Spring tension keeps the clutch engaged and when the handle is pulled, the right wheel is disengaged, which causes the differential to freewheel. The forward motion of the tractor stops, but the PTO keeps turning – voila! Crude live power take off. The problem with this design, which was also used on MM, IH and others, is that they tend to slip under heavy drawbar loads unless adjusted correctly. I THOUGHT the clutch was adjusted properly, but I was wrong. The 444 didn’t finish last, but also was no where near the podium.

The Massey Harris 444:
First Hook



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Massey Harris 444 Maiden Pulls (cont)

Between pulls the 444's slipping live power clutch was fixed. How? The clutch is a multiple friction disk clutch that is held together with 9 bolts. The bolts have spacers, and when removed, the clutch can be tightened solid so it will not slip.

With a good live power clutch, the next tractor pull was the Benton County Fair in Corvallis, OR. The 444 was again weighed into the 5000lb class, but this time there was only a 5mph class. The track at Benton County is a notoriously soft rodeo arena and for these conditions the gear selected was 3rd, low range. This yielded about 3mph. With it's tall 14.9-38 tires, the 444 finished in 2nd place out of 8 tractors, just barely behind a screaming Cockshutt 40 - its first podium finish!

Other update – the ZA successfully defended its 2009 win in the 4000lb class by pulling to another 1st place in a field of 10 tractors.



The ZA and 444 waiting to unload at Benton County

The 444 ready for the parade

Video of these pulls will be available soon at www.antiquetractorpullguide.com



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Learning the Hard Way – Lost Parts

Working feverishly day in and day out on the Massey Harris Mustang project has been both enjoyable and frustrating. There was an unexpected set back this month that was cause for alarm.

As seen in last month's Podium Newsletter, the Mustang's chassis was nearly ready for paint. Starting with the front end, the frame was unbolted, front pedestal removed and front wheels and hubs taken apart. These parts were tediously cleaned to bare metal. To paint these parts, a makeshift painting area was established in front of our house. Since we live at the end of a dead end street with nothing but farmland around us, painting in this area is never a problem. The parts were all painted in grey primer at the same time. The red parts were covered next, then reassembled to the rear half of the tractor. That left the front rims and hubs to paint in "yolk yellow", an identical color to the original straw yellow.

The front rims and hubs were suspended off our trailer on a pair of 2x4's for painting. This setup allowed easy access to paint the major surfaces. After carefully applying the last of three coats of yellow paint, the rims were left outside on the 2x4's to dry overnight. The parts had been left out before without problems, and it never crossed my mind that this time would be potentially different.

The rims and hubs were left out on a Sunday evening. On Monday morning they were slightly tacky, and left to dry during the day. When returning home from work that day, the rims were finally dry to the touch. Still not wanting to handle them too much, I figured I would leave them outside until they were ready for tires. My pickup truck was parked near the trailer where the rims were sitting, to obscure any onlookers from down the street.

The next day, Tuesday, I looked at the rims in the morning, thinking that after work I would take them down to Les Schwab (the best tire store in the Northwest) to have the new front tires mounted. With the pickup truck still parked near the trailer, I didn't give any second thought. At work during the day, I talked to Les Schwab on the phone, telling them the rims were ready.

When we returned home – THE RIMS AND HUBS WERE GONE!!!

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Learning the Hard Way – Lost Parts (cont)

I was astounded, as were the neighbors when I talked to them. The rims and hubs had been stolen in broad daylight; the gall of some people! The hubs had no bearings in them and the rims are a 15x3 rim. There is hardly any weight in the parts, plus they will literally not fit anything except a Massey Harris tractor. It wasn't so much the rims missing that bothered me, it was the time spent cleaning, prepping, priming and painting the rims. The most disappointing part was notifying Les Schwab that I couldn't get the new tires mounted since I no longer had rims.

After filing a police report, notifying all local scrap metal yards, talking with several neighbors, and putting up flyers, there was nothing really left to do – the rims were simply gone.

One of my rules to live by is to **always take responsibility for your own success**. Instead of stewing on what had happened, whining & angry, it was easier to move on, find another set, and get this Mustang project moving again.

I made a few phone calls, one to Dale Canterbury in Twin Falls, Idaho. Dale runs a large parts yard in that area and always seems to have what I'm looking for. He's also a good friend and a great guy to do business with. This particular time, he came through again with a Massey Harris 22 parts tractor. He was able to get the parts ready to ship within a week and I was back in business.

What's the moral of this story???

ALWAYS POWDER COAT RIMS!!! (no open air dry time, ha!)

Rims and hubs ready for tires.



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Learning the Hard Way – Lost Parts (cont)

One final note about **taking responsibility for your own success**:

This statement doesn't only apply to accepting the fact that rims and hubs are gone. It also applies to many things that happen to us and things that can happen by us. For instance, there are always stories about the disagreements people have at tractor pulls over results. Things just happen, whether they are fair or not. The good news is that by taking responsibility for our own success, we can create the conditions for better results. This could simply be studying the track more, or the tractor's setup, paying attention to tire pressure, dyno tuning between pulls, and so on. In other words, instead of dwelling on the past, always look forward to a new opportunity.

Massey Harris Mustang update

With the setback of the missing rims and hubs, progress was slowed, but not stopped. The crack in the frame was welded and ground, and prepped for paint. Once the frame was painted, it was reassembled to the rear end, and the rear wheels removed for painting. The rear end of the tractor was primed and painted, as was the engine, still dangling from the hoist. At this time, the engine is just about ready to bolt back into the frame.

The frame crack



Original crack (bottom of frame)



Welded



Ground and ready for primer

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Massey Harris Mustang (cont)



Painted frame and front pedestal



Engine – ready for bolt in



Moving tractor for overall painting.
Note dolly in place of missing front wheels.



Rear End in primer



Painted Rear End



Painted rear wheels

Podium Newsletter



Coming next month...

- How to stay prepared for a trip to the track
- Is a wheelie really a bad thing?
- Massey Harris Mustang – a puller takes form
- And more...

August issue will be available on 8/26

I want to hear from you! If you have feedback, requests or information you would like featured, please send an email to: zack@antiquetractorpullguide.com.

Hitch completely
breaks off Massey
Ferguson 35.

