

THE SARUM MODEL TRACTION ENGINE CLUB

Affiliated to the Southern Federation of Model Engineering Societies.

Newsletter number 24. February 2013

www.sarummodeltractionengineclub.co.uk

Welcome to the Sarum Model Traction Engine Club newsletter.

Your Committee members are:

Pete Parrish, Chairperson.

Charlie Warne, Treasurer.

Roger Melton, Committee member.

John Findley, Committee/webmaster.

Martyn Jones, Secretary/Newsletter editor

Forth Coming Events. (First six months only)

16th, 17th March **Model Engineering and Hobbies Exhibition.** At the Michael Herbert Hall, South Street, Wilton. 10.00am-5.00pm. Further details contact Pete Parrish, club stand details contact Martyn Jones.

24th March **Spring Steam Up and Boiler Test Day** at the club house, Andover.

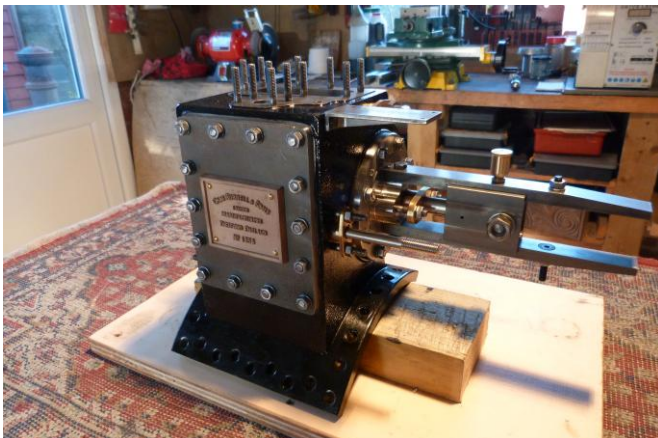
19th April. **Club AGM,** venue Idmiston and Porton Village Hall, 7pm for 7.30pm start.

4th, 5th May. **Annual Exhibition and Model Steam Rally at Woodgreen, Nr Fordingbridge.** Coal and water supplied plus light refreshment. Camping will be available, details from Charlie Warne 01725 512805 (note two day event this year)

21th July. **Durrington Village Show and Classic Vehicle Gathering.** Coal and water supplied. Details Martyn Jones 01980 653385.

Please note the amended date for the **Durrington Village Show and Classic Vehicle Gathering** 21st not the 14th my mistake.

Club members Steve and Jackie Anderson are currently in the process of building a 4" Burrell from parts supplied by Steam Traction World, to date the wheels have been assembled and painted with vulcanised tyres, tender assembled and painted along with the smoke box chimney and front axle. Pictured below are the cylinder assembly and the tender during its preliminary slave assembly. More pictures and news of the build will appear as the engine progresses.



Comparing scale weights and speeds of miniatures against full size weights and speeds.

I have often wondered about how hard miniature engines have to work when being driven around rally fields, lanes, hills etc so I have tried to establish the scaled up speeds and the towed weights that are typical of miniature traction engines. I have made some tables that should provide an understanding of the relationship between the different scales and a full size engine.

For example:- Quite often, when I am giving rides, I have got a typical towed weight of 750lbs behind my 3” Burrell. This is made up by the following:- 2 trailers (total weight 150lbs), myself (200lbs) and a load consisting of 2 adults (200lbs each) or 4 children (100lbs each) , and can be pulled over soft wet grass at a speed of 2 to 2.5 mph. Tarmac is better as a speed of up to 3.5 mph is possible with ease whilst on the flat. These weights are approximate and can easily be exceeded. This equates to just over 21 tons and with a speed for a full size engine equating to 8 to 10 mph on grass or 14 mph on tarmac. To do the same loadings/speed on a 4.5” engine the load would be just over 1.1 tons with a road speed of 3 to 4 mph on grass and about 5.5 mph on tarmac.

Some more comparisons

If you take a 2” engine and assume it is on tarmac or dry hard ground. With a speed of 1 to 1.5mph and a typical load of 200lbs to 250lbs this equates to 6 to 9mph with a load of 19.3 to 24.1 tons with a full size engine.

A 3” engine’s driver and driving trolley weighs typically about 275lbs or 7.9 tons if scaled up.

A 4.5” engine’s driver and driving trolley weighs typically about 275lbs or 2.3 tons if scaled up.

The conversion factors for weights for the different scales are as follow:-

1”	1728	5”	14	
2”	216	6”	8	A 1 ton weight in a 3” scale equates to 64 tons full size.
3”	64	6.75”	6	A 8 ton weight in a 6” scale equates to 64 tons full size
4”	27	7”	5	
4.5”	19	9”	2	

Below are two tables that give examples of various weights and scales.

Table showing:- Scale weight to true weight.

Scale (”/ft)	Scale Weight (lbs)	Conversion Factor	Scaled up Weight (lbs)	Weight (tons)
1.0	500	1728	864000	385.7
2.0	500	216	108000	48.2
3.0	500	64	32000	14.3
4.0	500	27	13500	6.03
4.5	500	19	9481	4.23
5.0	500	14	6912	3.09
6.0	500	8	4000	1.79
6.75	500	6	2809	1.25
7.0	500	5	2519	1.12
9.0	500	2	1185	0.53
12.0	500	1	500	0.22

Table showing:- True weight to scale

Scale (”/ft)	True Weight (tons)	Conversion Factor	Scale Weight (as lbs)	Scale Weight (as tons)
1.0	10	1728	13	0.01
2.0	10	216	104	0.05
3.0	10	64	350	0.16
4.0	10	27	830	0.37
4.5	10	19	1181	0.53
5.0	10	14	1620	0.72
6.0	10	8	2800	1.25
6.75	10	6	3987	1.78
7.0	10	5	4446	1.98
9.0	10	2	9450	4.22
12.0	10	1	22400	10

It looks like the smaller scale engines are more likely to be worked hard, even if the driver only is being pulled. I have heard about a 1” Minnie pulling a car back in the 1950/60s and that equated to a lot of weight if you scale it up.

The speed it is very simple to convert from scale speed to the equivalent speed of a full engine, you just multiply by the speed of the model by it's scale, ie
 1" scale you multiply by 12
 2" scale you multiply by 6
 3" scale you multiply by 4
 4" scale you multiply by 3
 4.5" scale you multiply by 2.67

Table showing actual road speed to scale speed.

Road speed (mph)	Scale (inches to the foot)										
	1"	2"	3"	4"	4.5"	5"	6"	6.75"	7"	9"	12"
1	12	6	4	3	2.67	2.40	2.0	1.78	1.71	1.33	1
2	24	12	8	6	5.33	4.80	4.0	3.56	3.43	2.67	2
3	36	18	12	9	8.00	7.20	6.0	5.33	5.14	4.00	3
4	48	24	16	12	10.67	9.60	8.0	7.11	6.86	5.33	4
5	60	30	20	15	13.33	12.00	10.0	8.89	8.57	6.67	5
6	72	36	24	18	16.00	14.40	12.0	10.67	10.29	8.00	6
7	84	42	28	21	18.67	16.80	14.0	12.44	12.00	9.33	7
8	96	48	32	24	21.33	19.20	16.0	14.22	13.71	10.67	8
9	108	54	36	27	24.00	21.60	18.0	16.00	15.43	12.00	9
10	120	60	40	30	26.67	24.00	20.0	17.78	17.14	13.33	10
11	132	66	44	33	29.33	26.40	22.0	19.56	18.86	14.67	11
12	144	72	48	36	32.00	28.80	24.0	21.33	20.57	16.00	12

Once again, the smaller the scale the higher the scale speed

I have used an excel spreadsheet to convert scale weights or speeds to and from true weights or speeds and this could be available via email. If you would like a copy then contact the newsletter editor who will contact myself.

By Trevor Clay

Latest engine to leave the work bench of Pete Parrish is this 2"scale Burrell Gold Medal Tractor, this engine was purchased last year from a dealer as an un-painted part finished model with many parts missing or un-finished. Pete has spent the last six months or so completing the engine ready for the coming Wilton Model Engineering and Hobbies Exhibition.



Club member Steve Aldred and his wife are pictured with their 4” Foster outside Buckingham Palace in the February edition of the “Old Glory” magazine along with fellow group members of the “Miniature Steamers for Charity”. They took part in London’s New Years Day parade along with US marching bands and many other forms of entertainment, the engines are rallied all over the country supporting many local and national charities.

A Life Time Passion for Steam, by Mike Penny. (continues in the March Newsletter)

“Just The Ticket Engineering Supplies”, Roger Melton (club member) can supply from stock tools and materials for the model engineer and the light engineering industry. Typical stock includes drills, reamers, taps and dies, various lathe and milling cutters, BA nuts, bolts and washers, rivets, paints, steel/brass stock and much more. Catalogues are available so please give him a call on 01980 610058.

For Sale and Wanted

Please send/email/ phone your adverts to the editor.

Model Engineering and Hobbies Exhibition

After the success of the exhibitions held in 2003, 2005, 2007, 2009 and 2011 Pete and Anne Parrish are organising another Model Engineering and Hobbies Exhibition on the 16th and 17th March 2013 (10am – 5pm) at the Michael Herbert Hall, South Street, Wilton. Wilts.

Club members are invited to exhibit and we have been allotted table space inside the hall for our models, the stand will be manned by club members throughout the weekend and any additional help on the stand during the exhibition would be appreciated.

Setting up is on Friday 15th March, exhibits must be in place by 8.00am 16th March at the very latest.

If you would like to exhibit please complete the tear off slip and please return to.....Martyn Jones, 6 Westfield Close, Durrington, Salisbury, Wilts SP4 8BY. (closing date the 28-02-13)

Club members proposing to run their models under steam (outside) should contact Pete Parrish direct on 01980 610346. (coal and water supplied)

Name,
Address,
.....
Contact telephone number.....
<u>Details of exhibit</u> (to enable a small detail sheet to be produced).
Model type..... Scale.....
Drawings/Plans supplier
Further details and history.....
.....
.....

