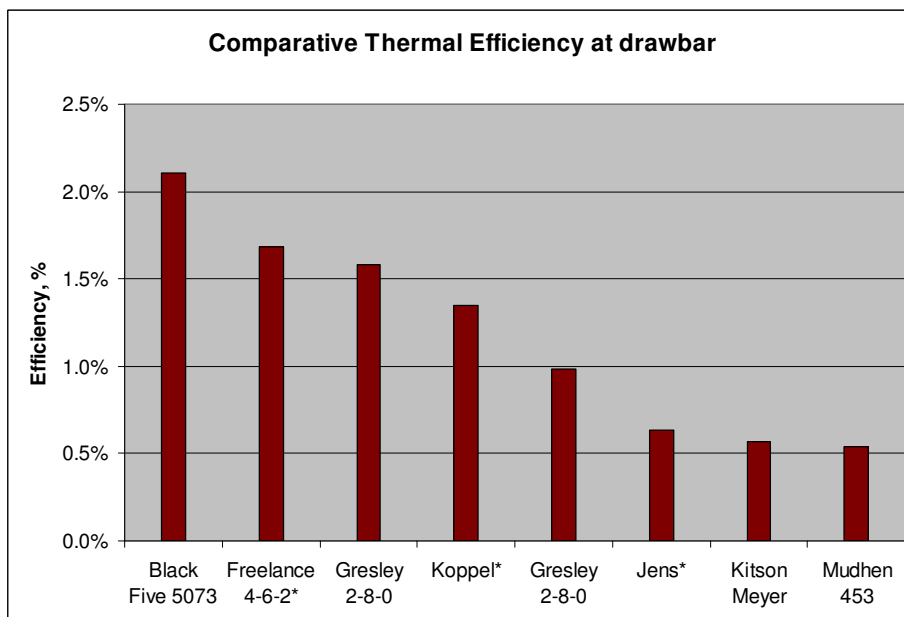
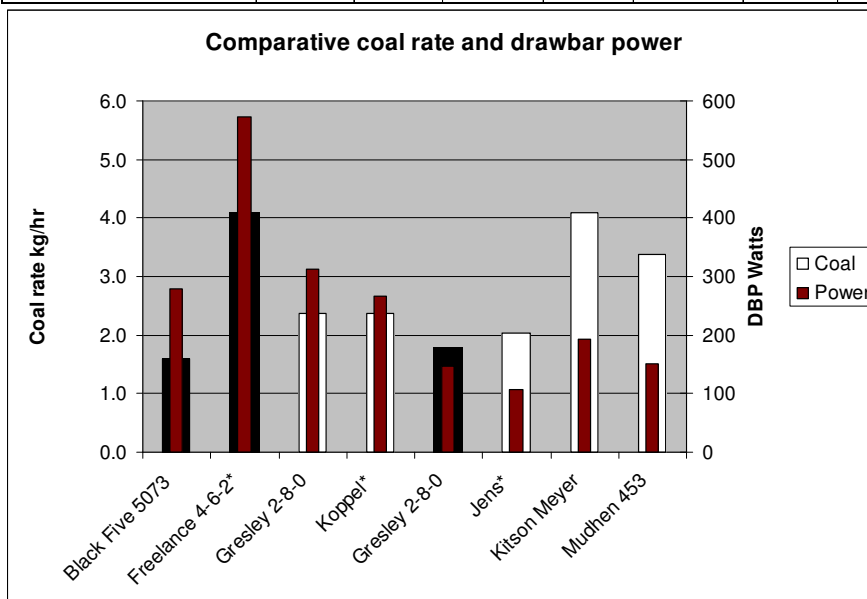


Sasmee Steam Locomotive Efficiency Trials 27/8/2005

Allan Wallace 8332 8183 allanw@avocetconsulting.com.au

Loco. (* = 7.25" g, else 5" g)	Coal used	J coal	J drawbar	Trip Mins	Distance m	Efficiency	Coal Rate	DBPower	Av Speed
	grams						kg/hr	Watts	kph
Black Five 5073	918	27.5E+6	581.0E+3	34.6	5572	2.1%	1.6	280	9.7
Freelance 4-6-2*	2151	64.5E+6	1.1E+6	31.6	5346	1.7%	4.1	573	10.2
Gresley 2-8-0	1236	37.1E+6	587.0E+3	31.4	5564	1.6%	2.4	312	10.6
Koppel*	1213	36.4E+6	490.0E+3	30.6	4268	1.3%	2.4	267	8.4
Gresley 2-8-0	900	27.0E+6	266.0E+3	30.3	5248	1.0%	1.8	146	10.4
Jens*	1084	32.5E+6	206.0E+3	31.8	4592	0.6%	2.0	108	8.7
Kitson Meyer	2132	64.0E+6	362.0E+3	31.3	3936	0.6%	4.1	193	7.5
Mudhen 453	1770	53.1E+6	287.0E+3	31.5	4260	0.5%	3.4	152	8.1

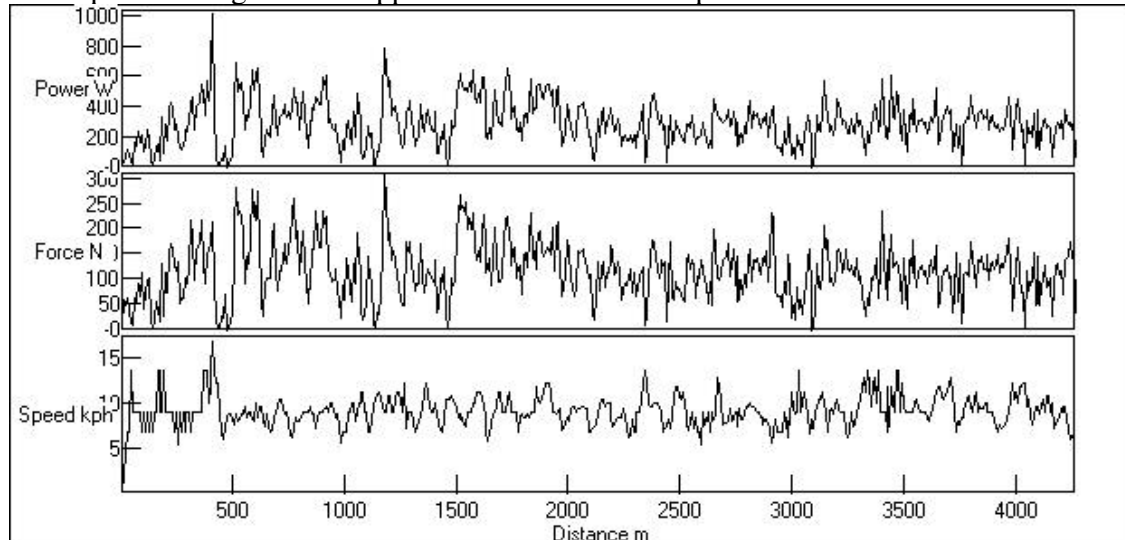


Sasmee Steam Locomotive Efficiency Trials 27/8/2005

Run ended at: 27-08-05 10:20:58

Filename: 050827Koppel

Description: 7.25" g 0-6-0 Koppel Bob Nash/Glen Templeman



Calculation of drawbar thermal efficiency

Coal used 1213 grams
Calorific value 30000 kJ/kg
Energy from coal 36390.0 kJ
Drawbar Work Done 489.7 kJ
Thermal Efficiency 1.35 %

Trip summary values...

Trip Time 30.6 min
Trip Distance 4268 m
Average Speed 8.4 kph
Average Power 267 W
Trip Energy 489.7 kJ

Peak values...

Min, Max Force -5 310 N
Min, Max Speed 0.0 17.5 kph
Min, Max Power -11 1038 W

Calibration values...

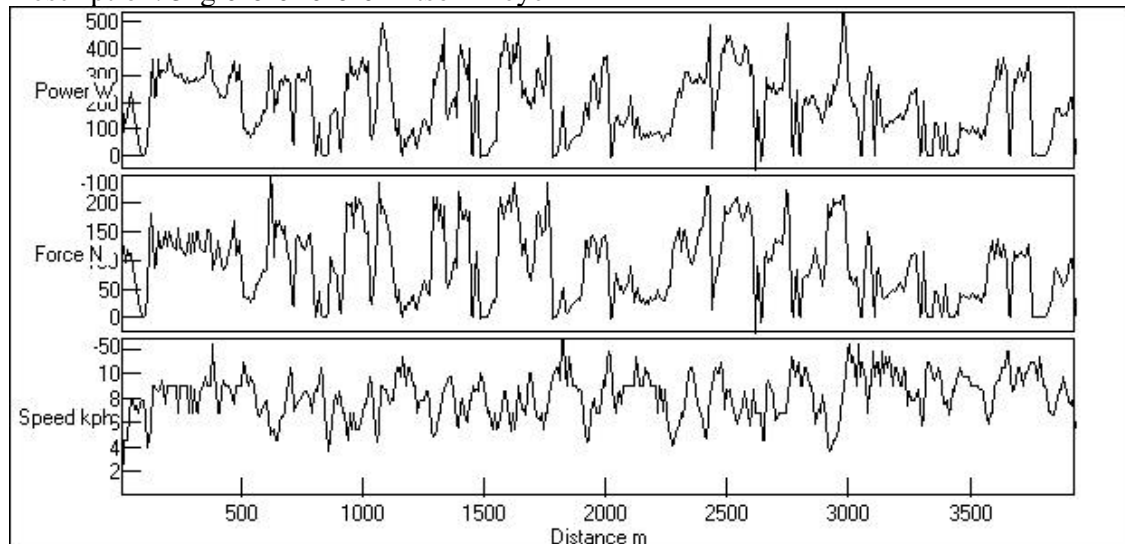
Internal Load Cell
Force offset, gain 53 2.3311
Speed offset, gain 124 -0.0531
Volts offset, gain 0 0.0550
Wheel Diameter 0.0750 m

Sasmee Steam Locomotive Efficiency Trials 27/8/2005

Run ended at: 27-08-05 11:07:13

Filename: 050827GDriscoll

Description: 5" g 0-6-0+0-6-0 Kitson Meyer



Calculation of drawbar thermal efficiency

Coal used 2132 grams

Calorific value 30000 kJ/kg

Energy from coal 63960.0 kJ

Drawbar Work Done 361.8 kJ

Thermal Efficiency 0.57 %

Trip summary values...

Trip Time 31.3 min

Trip Distance 3936 m

Average Speed 7.5 kph

Average Power 192 W

Trip Energy 361.8 kJ

Peak values...

Min, Max Force -28 249 N

Min, Max Speed 0.0 12.8 kph

Min, Max Power -52 535 W

Calibration values...

External Load Cell

Force offset, gain 51 4.7621

Speed offset, gain 124 -0.0460

Volts offset, gain 0 0.0550

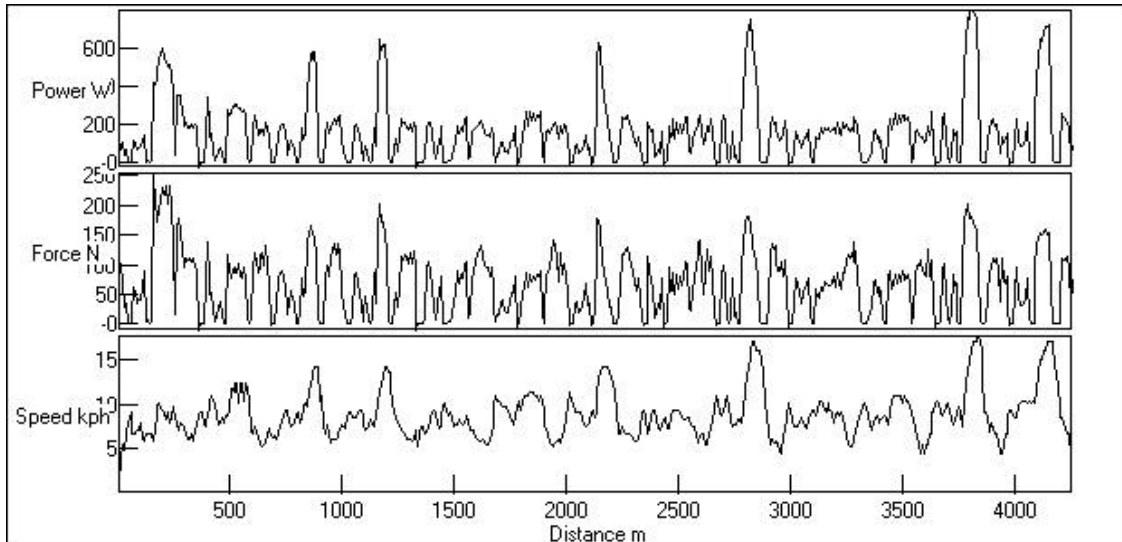
Wheel Diameter 0.0750 m

Sasmee Steam Locomotive Efficiency Trials 27/8/2005

Run ended at: 27-08-05 12:08:04

Filename: 050827hoye

Description: 5" g 2-8-2 453 Mudhen Peter Hoyer



Calculation of drawbar thermal efficiency

Coal used 1770 grams

Calorific value 30000 kJ/kg

Energy from coal 53100.0 kJ

Drawbar Work Done 287.9 kJ

Thermal Efficiency 0.54 %

Trip summary values...

Trip Time 31.5 min

Trip Distance 4260 m

Average Speed 8.1 kph

Average Power 153 W

Trip Energy 287.9 kJ

Peak values...

Min, Max Force -11 254 N

Min, Max Speed 0.0 17.6 kph

Min, Max Power -25 794 W

Calibration values...

Internal Load Cell

Force offset, gain 53 2.3311

Speed offset, gain 124 -0.0463

Volts offset, gain 0 0.0550

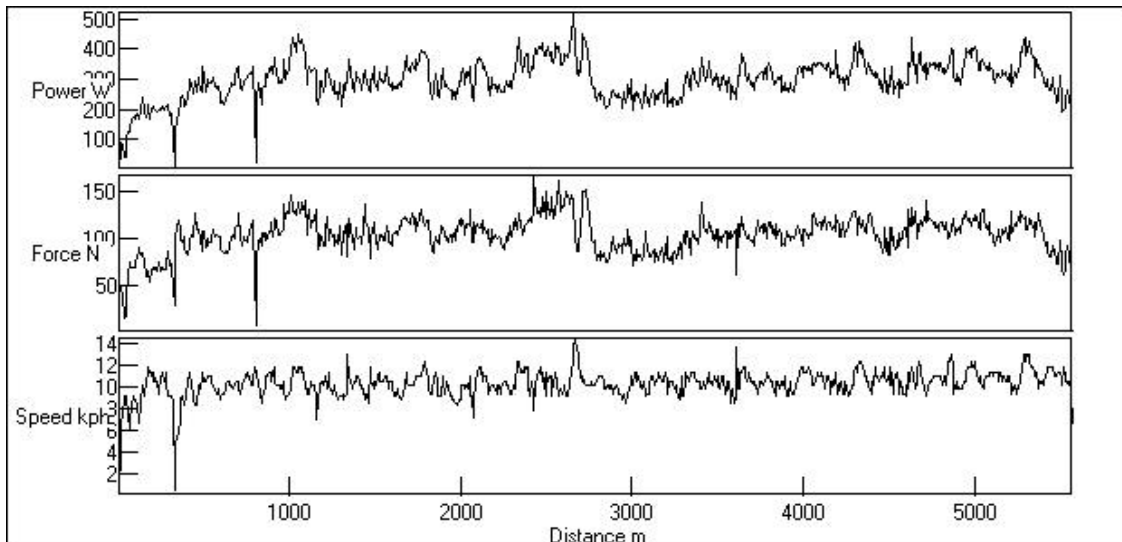
Wheel Diameter 0.0750 m

Sasmee Steam Locomotive Efficiency Trials 27/8/2005

Run ended at: 27-08-05 12:54:43

Filename: 050827AllanW

Description: 5" g LMS 4-6-0 Black 5 Allan Wallace



Calculation of drawbar thermal efficiency

Coal used 918 grams
Calorific value 30000 kJ/kg
Energy from coal 27540.0 kJ
Drawbar Work Done 581.6 kJ
Thermal Efficiency 2.11 %

Trip summary values...

Trip Time 34.6 min
Trip Distance 5572 m
Average Speed 9.7 kph
Average Power 280 W
Trip Energy 581.6 kJ

Peak values...

Min, Max Force 0 168 N
Min, Max Speed 0.0 14.4 kph
Min, Max Power 0 521 W

Calibration values...

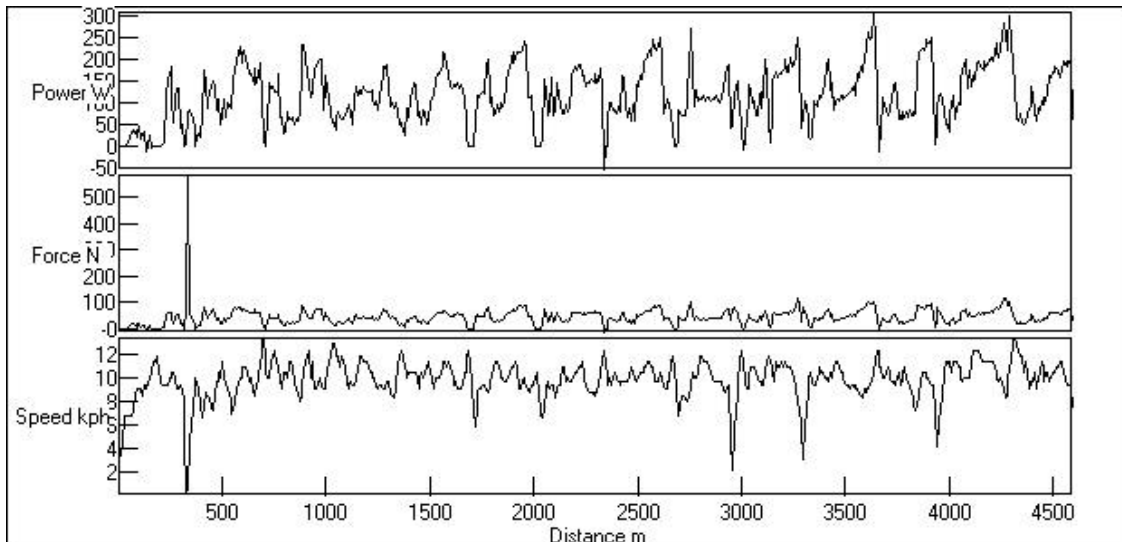
External Load Cell
Force offset, gain 42 4.7621
Speed offset, gain 124 -0.0453
Volts offset, gain 0 0.0550
Wheel Diameter 0.0750 m

Sasmee Steam Locomotive Efficiency Trials 27/8/2005

Run ended at: 27-08-05 13:41:37

Filename: 050827BillColesJens

Description: 7.25" g 0-4-0T Jens Bill Coles



Calculation of drawbar thermal efficiency

Coal used 1084 grams
Calorific value 30000 kJ/kg
Energy from coal 32520.0 kJ
Drawbar Work Done 205.7 kJ
Thermal Efficiency 0.63 %

Trip summary values...

Trip Time 31.8 min
Trip Distance 4592 m
Average Speed 8.7 kph
Average Power 108 W
Trip Energy 205.7 kJ

Peak values...

Min, Max Force -15 585 N
Min, Max Speed 0.0 13.4 kph
Min, Max Power -53 308 W

Calibration values...

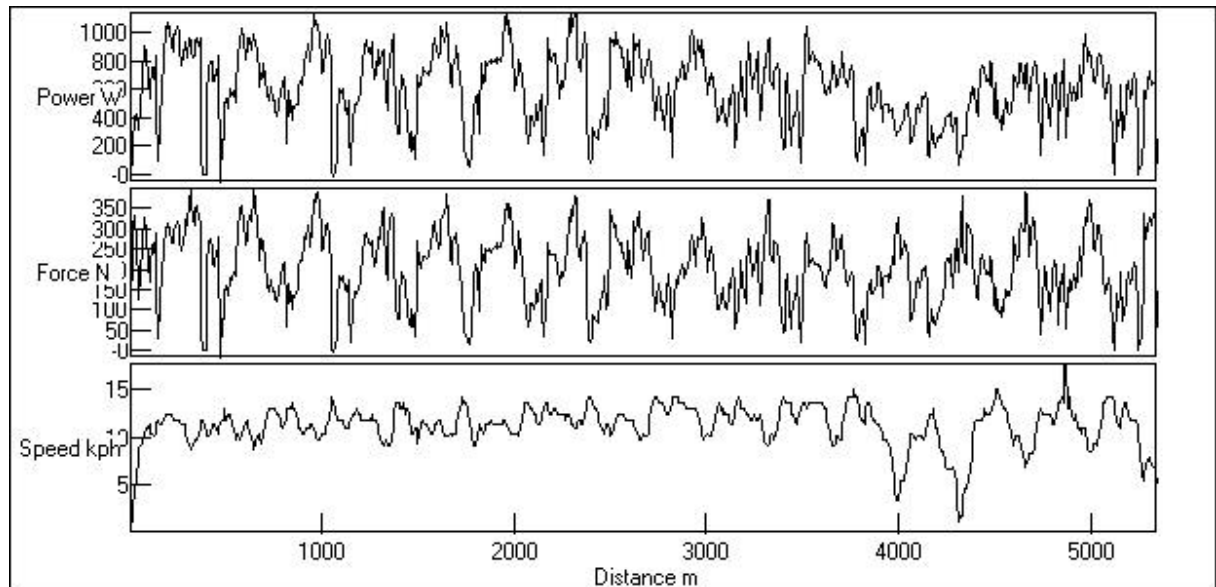
External Load Cell
Force offset, gain 42 4.7621
Speed offset, gain 124 -0.0425
Volts offset, gain 0 0.0550
Wheel Diameter 0.0750 m

Sasmee Steam Locomotive Efficiency Trials 27/8/2005

Run ended at: 27-08-05 14:43:40

Filename: 050827IanThomas

Description: 7.25" g 4-6-2 8443 Ian Thomas



Calculation of drawbar thermal efficiency

Coal used 2151 grams

Calorific value 30000 kJ/kg

Energy from coal 64530.0 kJ

Drawbar Work Done 1086.6 kJ

Thermal Efficiency 1.68 %

Trip summary values...

Trip Time 31.6 min

Trip Distance 5346 m

Average Speed 10.2 kph

Average Power 573 W

Trip Energy 1086.6 kJ

Peak values...

Min, Max Force -17 398 N

Min, Max Speed 0.0 17.6 kph

Min, Max Power -55 1140 W

Calibration values...

Internal Load Cell

Force offset, gain 53 2.3311

Speed offset, gain 124 -0.0425

Volts offset, gain 0 0.0550

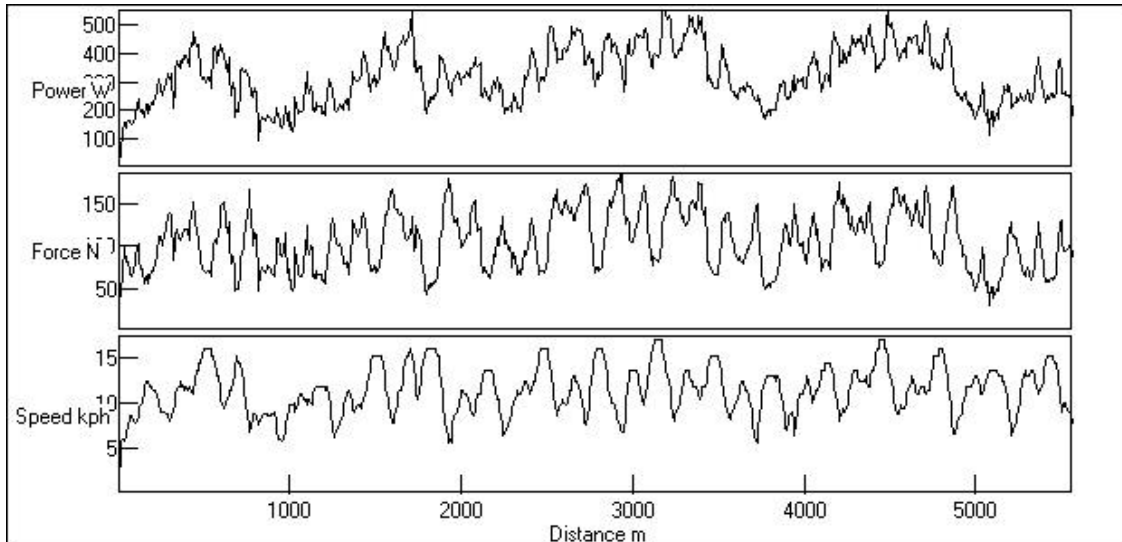
Wheel Diameter 0.0750 m

Sasmee Steam Locomotive Efficiency Trials 27/8/2005

Run ended at: 27-08-05 15:34:30

Filename: 050827BryanH

Description: 5"g Gresley 2-8-0 Bryan Homann



Calculation of drawbar thermal efficiency

Coal used	1236 grams
Calorific value	30000 kJ/kg
Energy from coal	37080.0 kJ
Drawbar Work Done	587.7 kJ
Thermal Efficiency	1.58 %

Trip summary values...

Trip Time	31.4 min
Trip Distance	5564 m
Average Speed	10.6 kph
Average Power	312 W
Trip Energy	587.7 kJ

Peak values...

Min, Max Force	0 186 N
Min, Max Speed	0.0 17.3 kph
Min, Max Power	0 552 W

Calibration values...

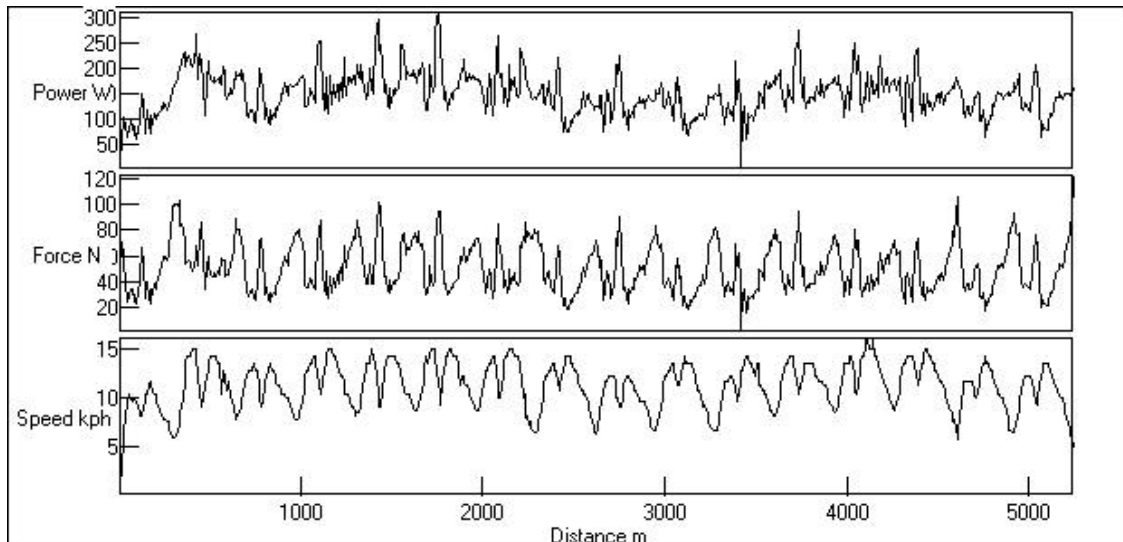
External Load Cell	
Force offset, gain	42 4.7621
Speed offset, gain	124 -0.0425
Volts offset, gain	0 0.0550
Wheel Diameter	0.0750 m

Sasmee Steam Locomotive Efficiency Trials 27/8/2005

Run ended at: 27-08-05 16:11:55

Filename: 050827PeterHGregsley

Description: 5" g Gresley 2-8-0 Peter Homann



Calculation of drawbar thermal efficiency

Coal used 900 grams
Calorific value 30000 kJ/kg
Energy from coal 27000.0 kJ
Drawbar Work Done 266.9 kJ
Thermal Efficiency 0.99 %

Trip summary values...

Trip Time 30.3 min
Trip Distance 5248 m
Average Speed 10.4 kph
Average Power 147 W
Trip Energy 266.9 kJ

Peak values...

Min, Max Force 0 123 N
Min, Max Speed 0.0 16.2 kph
Min, Max Power 0 312 W

Calibration values...

External Load Cell
Force offset, gain 42 4.7621
Speed offset, gain 124 -0.0423
Volts offset, gain 0 0.0550
Wheel Diameter 0.0750 m