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STEAM IN THE GARDEN

In this issue.....

Aster Castle Class, History & Review
Sewage Hauler
Building RGS 0-6-0 #14
and lots more.....

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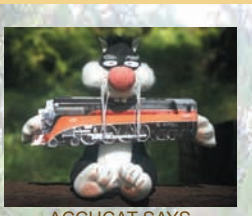

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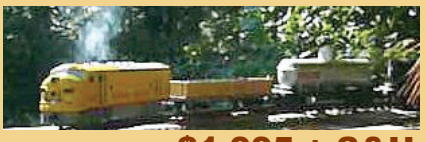

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STEAM IN THE GARDEN

Vol. 19, № 3
Issue № 105

Gather, friends, while we inquire, into trains propelled by fire...

Articles

Departments

FRONT COVER:

St. Mawes Castle on the South Devon Group track at Buckfastleigh. Aster's Castle Class locomotive is reviewed in this issue.

Photo by David Stick

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Foxy Assistant
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CAD & Other Drawings in This Issue
Dan Rowe

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We're back online! Due to popular demand, our web site is back..... www.steamup.info

CALENDAR OF EVENTS

Southern California Steamers - contact Sonny Wizelman for dates, places and any other pertinent information. 310-558-4872 - sonnyw04@ca.rr.com

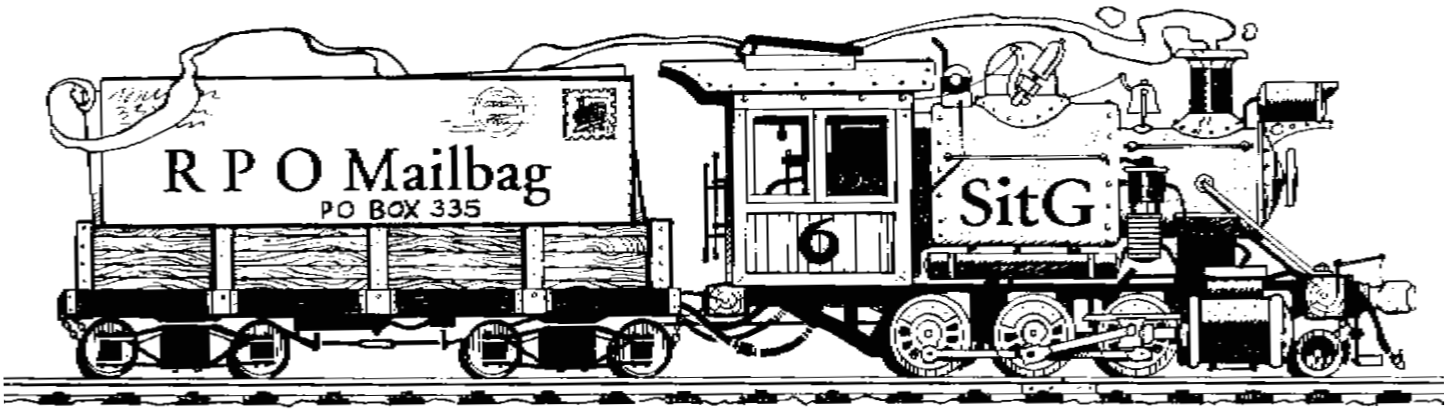
Michigan Small Scale Live Steamers (MSSLS) hosts a large number of steamups. For details on What, When and Where, go to their web site at http://www.mssls.info/

Upstate Steamers, upstate New York steamup calendar. If you are in the area, come out and join us!
http://gold.mylargescale.com/Scottychaos/upstatesteamers/

Puget Sound Garden Railway Society steamup schedule: We have 2 steamups per month, one at the Georgetown Powerplant in Seattle on the second Saturday of every month, and a steamup at a member's track on the fourth Saturday of the month. Here is a link to our steamup timetable.
http://psgrs.org/livesteamtimetable.html

The 2009 National Summer Steamup has been scheduled for July 22-26, 2009, at the Lions Gate Hotel in McClellan, Calif., a suburb of Sacramento. The National Summer Steamup gives owners and operators of small-scale (1:13.7-1:32) live steam locomotives the opportunity to meet and run equipment in a secure, indoor, friendly setting. The 2009 event will feature both 45mm and 32mm tracks, a Saturday night BBQ dinner, clinics and workshops, exhibitor displays and swap tables. The Lions Gate Hotel, on the grounds of the former McClellan Air Force Base in suburban Sacramento, will provide the steamers with a ballroom setting of more than 6400-square-feet. Event organizers say there will be 10 loops of trackage, two of them dual-gauged in 32mm and 45mm. The hotel is providing live steamers with the low room rental rate of $89 per night (double-occupancy). Reservations can be made with the Lions Gate toll-free at 1-866-866-7100. For more information on the 2009 National Summer Steamup, please visit the web site at http://www.summersteamup.com/ or e-mail steamup@summersteamup.com or call (650) 557-2993.

July 31 - August 2, 2009...Finger Lakes Live Steamers 40th Anniversary Celebration. Located midway between Syracuse and Rochester at Marengo NY. Run on our gauge 1 layout with over 800' of track, and then ride the 7 1/4" and 4 3/4" gauge trains. For full information and registration, see our web site at http://fingerlakeslivesteamers.org/



Pennsylvania, USA
via e-mail

Dear Ron,

I wanted to let you know how much I enjoyed Dan Rowe's article about the Sykes locomotive *(SitG #104)*. I also have been tempted to somehow fabricate a Sykes since I saw Taber's book many years ago. I've gotten a start, but I haven't progressed as far as Dan has. Rather than use the Stock Drive Products gears and chain, I'm using Serv-O-Link's delrin sprockets and chain. One thing which has concerned me is the extent to which the power transmission chain from the locomotive's deck down to the central cross shaft in the trucks can undergo twisting as the truck rotates around curves in the track. Has Dan done any bench testing to discern this? Also, taking the easy way out, I'm using the Regner's stationary boiler and twin oscillator, designed for boat applications, for my powerplant. The boiler is fatter than Sykes's prototype, but I rationalized it by pretending the shop crew of the Linwood Mineral Tram salvaged the steam plant from a derelict steam launch, fabricated in Germany by the Regner boat works, in hopes to put it to use; William Sykes would've done something similar, I'm sure, were he presented with the opportunity.

As always, another great issue of SitG!

Rob Kuhlman

* * * * *

Author Dan Rowe responds to Rob Kuhlman's query about chain twist.....ed.

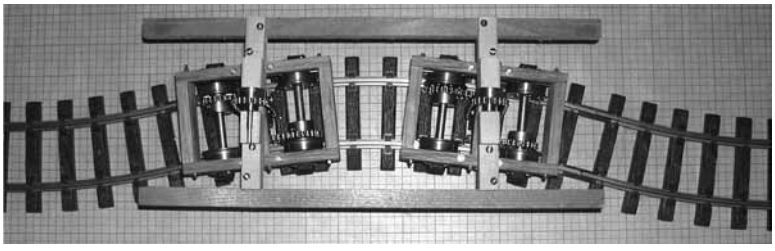
Dripping Springs, Texas
via e-mail

Dear Rob,

I have not had a chance to test the chain twist on a curve yet. The photo shows how much the chain will twist, but I have not finished the trucks yet. A comment Ron made when I described the loco, about the chain possibly causing problems, is why I chose Stock Drive Products chain. I have a bunch of Serv-O-Link chain but I wanted a more realistic test of the ability of the Sykes to navigate curves.

Dan Rowe

And here's a followup from Dan.....(ed.)



The photo (above) shows a a temporary frame for a test of chain deflection on a curve. The track is LGB 600mm radius, set up in a worst-case scenario. I am sure that a smaller radius would work, I just do not have one to test the design on.

Dan Rowe

* * * * *

Maryland, USA
via e-mail

Tom (Bowdler) and Ron,

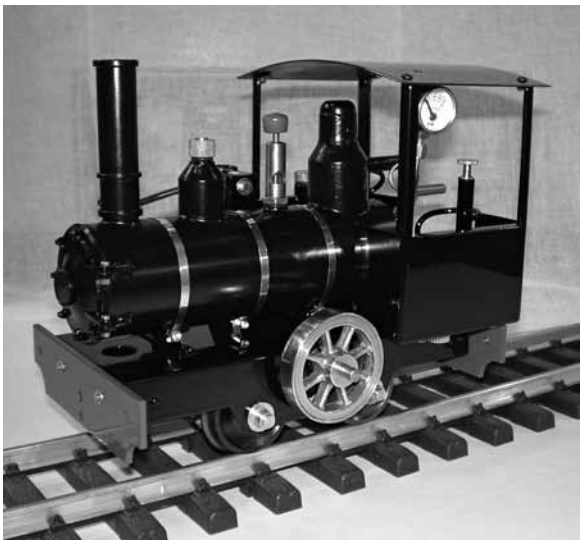
Finally have had a chance to read the issue #104 of SitG. Really like your little poop hauler, Tom. In the write up of hauling the "stuff" to the drying fields and then to waiting farmers to spread on their fields, I have personal experience in this. Back in the late '50s after dad finished putting an addition on to our house, he leveled the east lawn (actually another lot he owned) and planted Kentucky Blue Grass. He then spread dried "stuff" from the local poop plant for fertilizer.

After the first rain the neighbors called the city to complain about the treatment plant smell. We kept very quiet and after a few days the odor died down and the plant engineer was off the hook. Dad never could explain to the neighbors why we had so many tomato plants suddenly growing in the east lawn. After a while the lawn became thick and a very dark lush green. Guess who had to mow the blasted "East Lawn"?

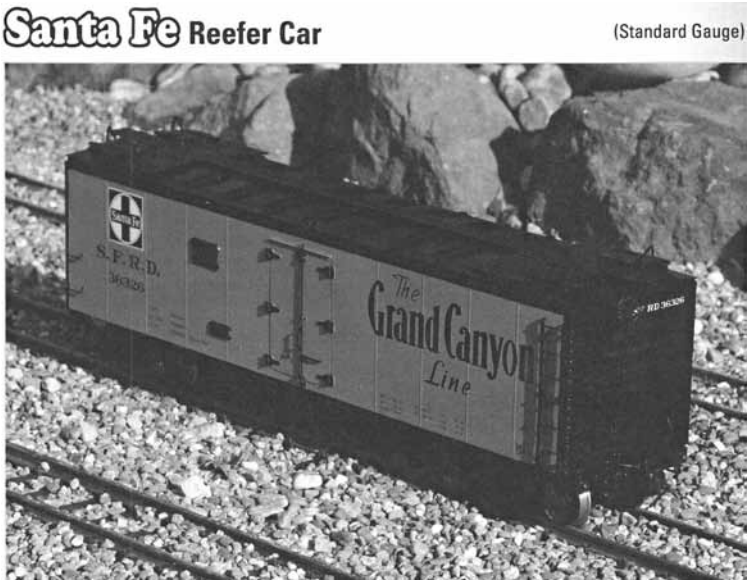
Noel Crawford

* * * * *

WHAT'S NEW?



BACK IN PRODUCTION: Westminster Loco Works has resumed limited production of the Cricket MKII Live Steam Motor. They are finishing locos from the original order lists and continue to take a no deposit reserve list. All sales and orders are now in house at WLW and they no longer have ties to Purkey's Toy Trains. There is a small website at www.cricketlivesteammotor.com which goes into a little more detail. Please let Mike know that you saw it in SitG.



Just one of the many new 1:32 scale rolling stock items available from Custom Model Products.

Custom Model Products, Inc. announces that they have acquired Row & Company and their entire inventory of 1:32 scale locomotives and rolling stock. These models are meticulously hand crafted from brass and stainless steel, with superior detail. For photos of the models and full information, call CMP at 1-800-443-8567 or visit their web site at: www.custommodelproducts.com

AMS (a division of Accucraft Models) has announced a Wheel and Tie Car in 1:20.3 scale. The review sample we received is lettered for D&RGW 06092 and is one of the more unique and interesting pieces of rolling stock for your MOW division. Quality is typical of AMS, which is to say.....excellent! Faithful Assistant unpacked this one and it was love at first sight. Available lettered or unlettered in Box Car Red or D&RGW Gray.

SPECIFICATIONS
Scale/Gauge 1:20.3 Scale / 45 mm Gauge
Minimum Radius 1.2 M, 48 in.
Construction Plastic body
Features Die-cast trucks, Metal wheels, Detailed underbody, Working couplers, Brass handrails, Ladders & Corner steps
Length 457 mm (18 in.)
Width 127 mm (5 in.)
Height 114 mm (4 1/2 in.)
Weight 1.8 kg (4.0 lbs)

Workshop Project

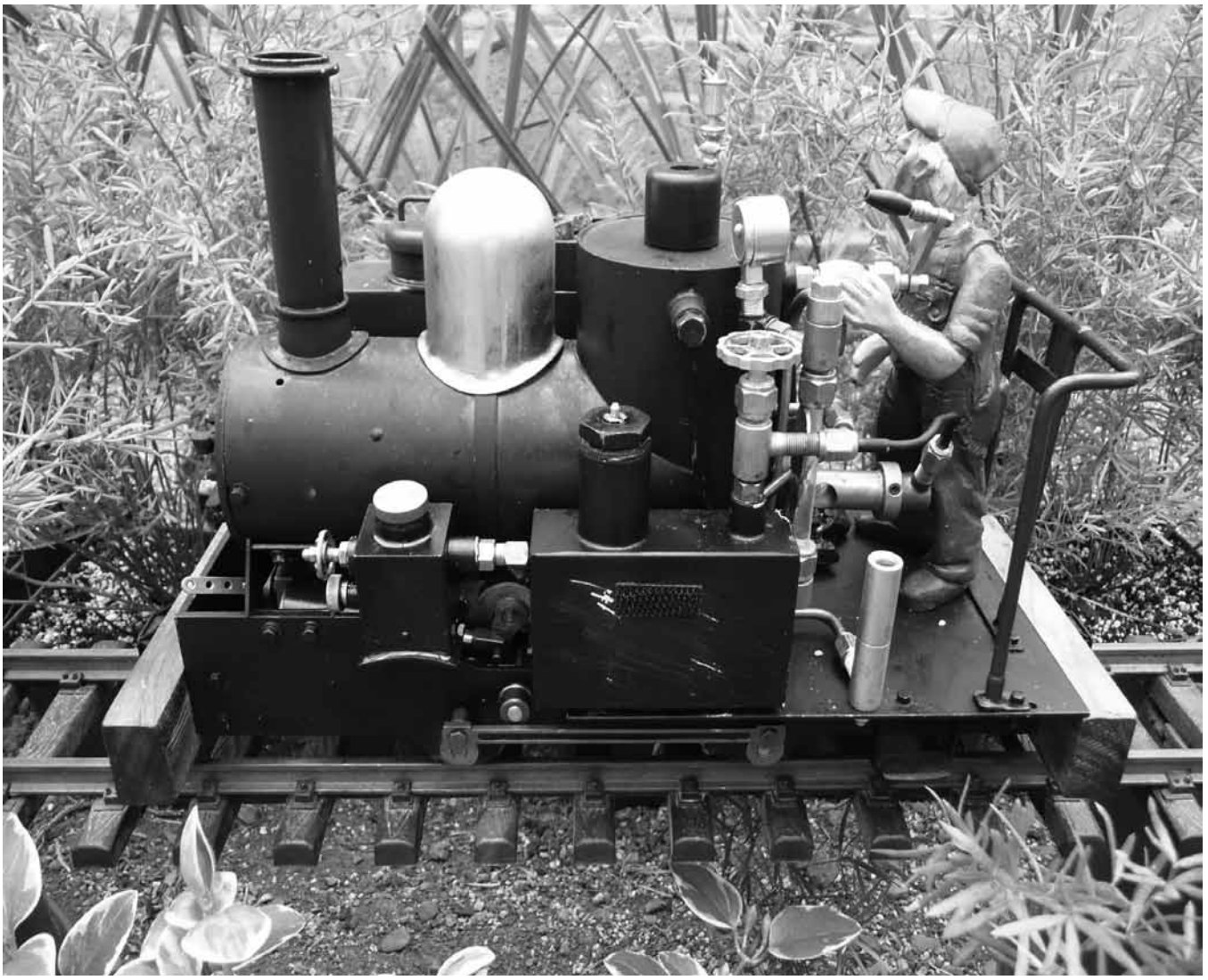
Tom Tries Seven Eighths Scale

by Tom Bowdler

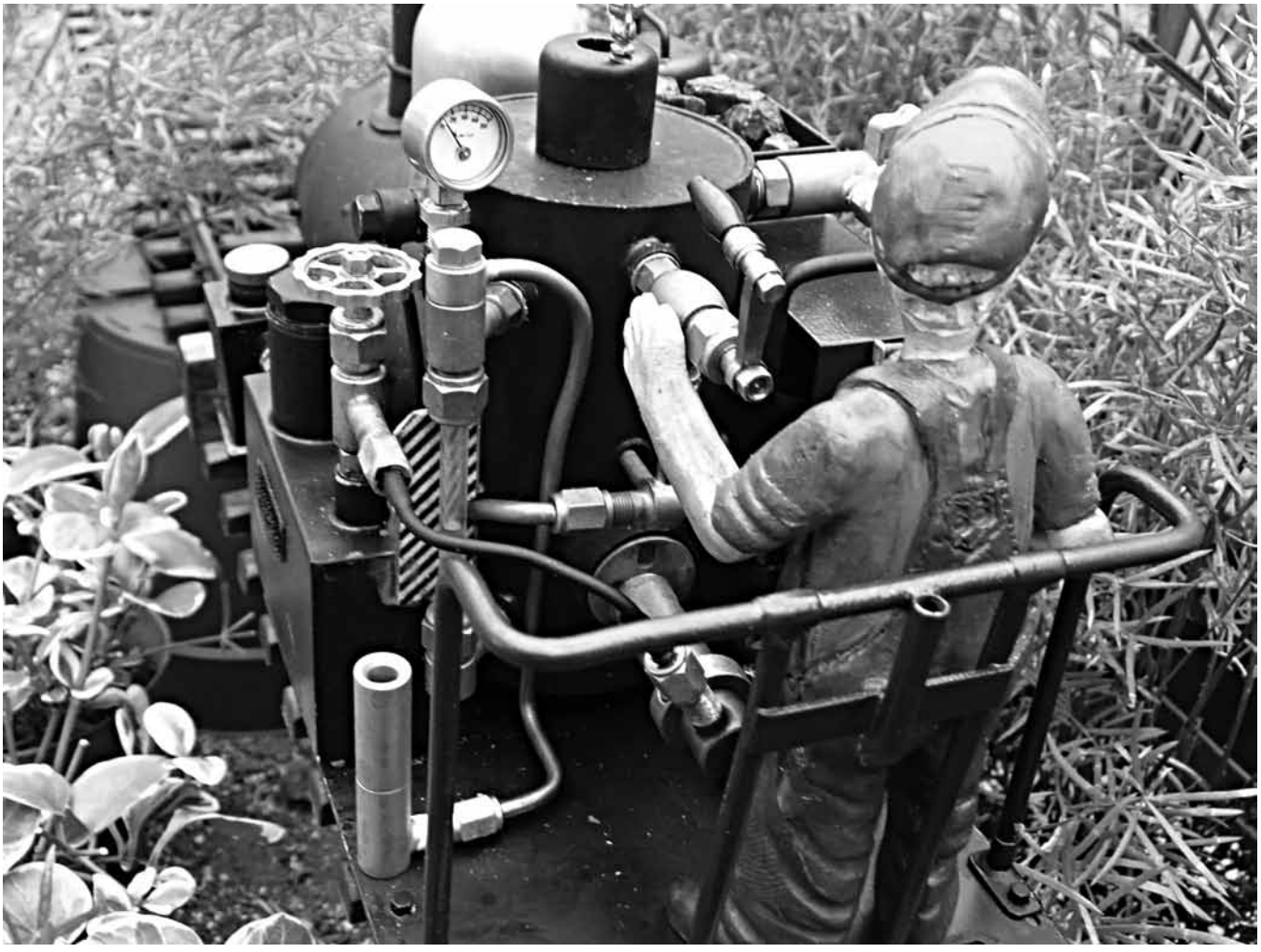
(As promised in the caption about our cover photo in the last issue, here is the full poop on Tom Bowdler's Sewage Hauling Loco - ed.)

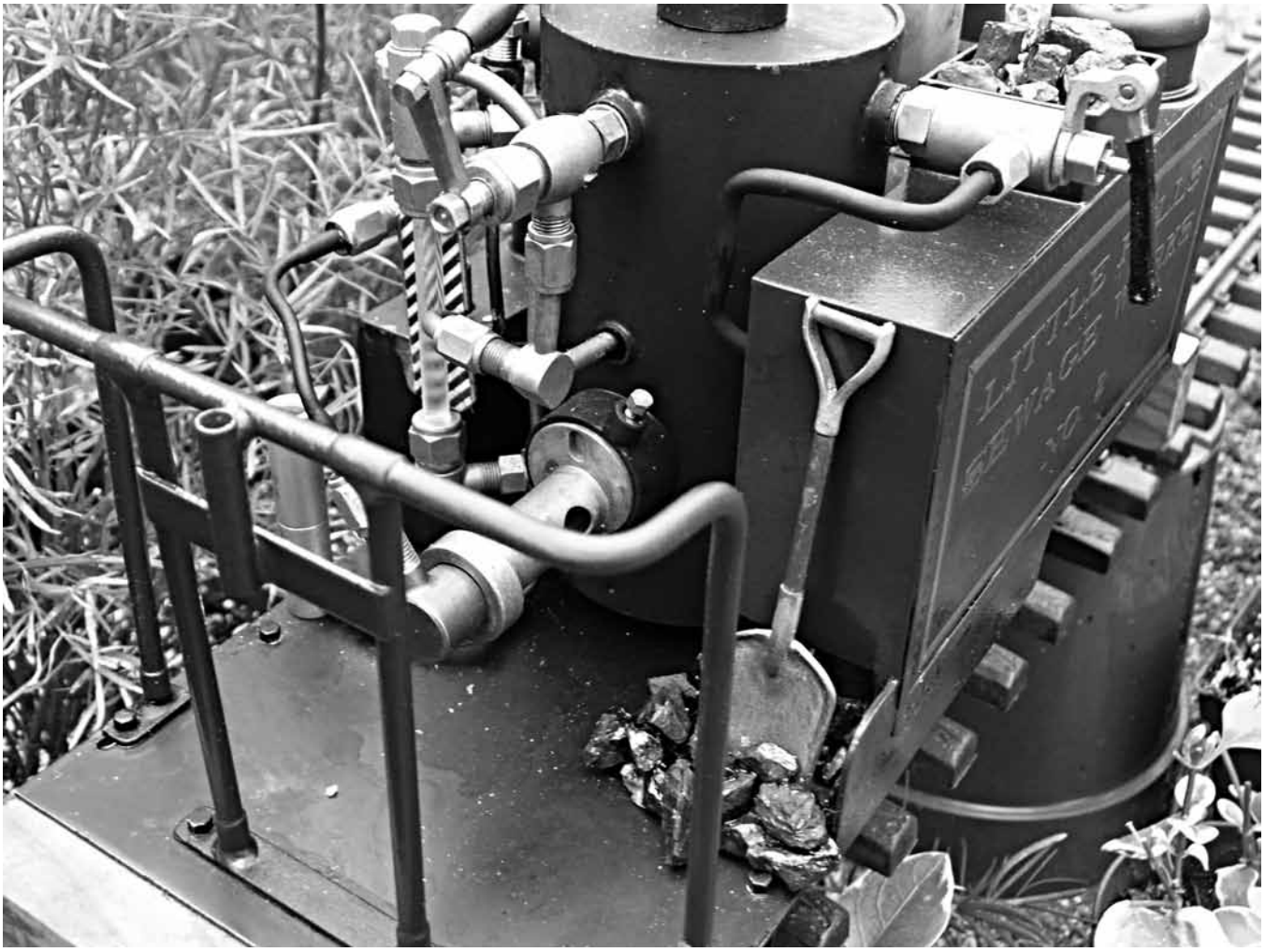
T.W. Edwards, Sewer Commissioner of Little Falls Township, wanted to bring his agency into modern times for '09, 1909 that is. Faced with a growing population and an increasing quantity of effluent to process he reasoned that the horses and wagons that were used in sludge processing were too slow and maintenance too costly. Communications with other similar enterprises gave him the answer, a locomotive!

I had built a Regner Lumberjack from a kit some time ago but had not begun to personalize it. The Lumberjack has dual oscillating cylinders mounted



Little Falls No 2 with its port side tank removed shows the relocated butane tank and lubricator and the boiler re-feed system.





between the frames. Gear reduction drive produces plenty of power and relatively slow running even though the cylinders are flailing away mightily. The front and rear axles are connected by beautifully made side rods similar to other Regner Easy Line locomotives. The kit is easy to construct with excellent drawings and instructions to guide the builder. Components are pre painted, some (the twin cylinder steam motor and boiler) are assembled at the factory and small parts are bagged ready for each building step. Anyone who can follow directions will have a nice running loco, albeit one that is not a model of a specific prototype.

Influenced by friends Dave Graley, Kevin Schindler, Rob Cooley and Carl Malone I decided to have a go at seven eighths scale. Looking through Dyer and Hodge's "Cane Train" I spied a little side tank loco which was the first from John Fowler Works shipped to the Fiji Islands for sugar cane duty. The shape of the tanks and open back cab appealed to me and construction commenced.

Lumberjack's fuel tank is located at the rear of the cab footplate and the lubricator is mounted on top of the boiler, retained by one of the boiler bands. Both were moved to the port side of the boiler where they could be concealed in a dummy side tank. Regner's boiler refill kit was added and tank construction made it obvious that the stock sight glass would be partially hidden and difficult to read. I tried a technique illustrated by Charles McCullough in SitG issue #97 which showed the use of a strip with diagonal lines behind the sight glass. The water in the glass refracts the lines, making it easy to determine water level. It works! A miniature pressure gauge from Acme Engineering completes this side.

On the starboard side a matching tank conceals the Regner whistle, a big hit with folks at train shows. The coal load (real coal attached with JB Weld) is modeled both on top where it is loaded and on the rear tank sheet where the engineer shovels it into the firebox. The water hatches on both tanks were constructed from copper pipe, shortened pipe caps, fender washers and brass rod for the handles. The tanks were constructed from brass that originally did

its duty as the scraper on the bottom of a processing arm of an actual sludge tank in a sewer plant. How authentic is that? Both tanks have rivet strips from Phil's Narrow gauge attached with JB Weld and gold stripes from pin stripe tape. The lettering was made by Del Tapparo of G-Scale Graphics who suggested the numbering of the locomotive, appropriate for the whimsical nature of the project.

The rear cab railing was fashioned from 1/8" brass rod with larger telescoping tubing soldered on to represent flanges welded to the tubing and to plates bolted to the locomotive deck. There is a socket for an umbrella to protect the driver from the elements. I made an umbrella from plans in Garden Railways for one for an ice cream cart but it is not represented in the photos. The driver was assembled and painted from a Rob Bennett Busy Bodies kit. I was able to position the head and arms appropriately and named him Luke, a nickname of my father's, who was the inspiration for this project and served as the Sewer Commissioner of Little Falls Township, NJ.

The buffer beams were cut from some Walnut I had on hand, to which were added brass Trackside Details link and pin coupler pockets. Trackside Details also supplied the brass smokebox door to slightly de-Europeanize the boiler front. I made the safety valve cover from a pipe cap with a smaller piece of tubing soldered in the center to better fit the diameter of the safety valve. The crowning touch is a Roundhouse Russell brass dome, given to me by my friend Dave Graley, and held to the boiler band by a U-shaped friction retainer. When preparing to paint the project what other color could I appropriately choose for a sewage works locomotive besides brown?

For now there is no weathering yet applied but I will do so when I learn more about how to make appropriate "dirt". You may notice some chips in the finish because this locomotive is no shelf queen, I run it every chance I get. I have begun detailing some Bachmann wooden side dump ore cars for sludge duty and have an idea for some scratchbuilt tippers which will be of a more whimsical vein to better match the locomotive. In the mean time I am the recipient of a fantastic Honey Wagon built by Carl Weaver and detailed in the accompanying article. I have enjoyed this foray into 7/8 scale and it probably won't be my last project of this size.

Workshop Project

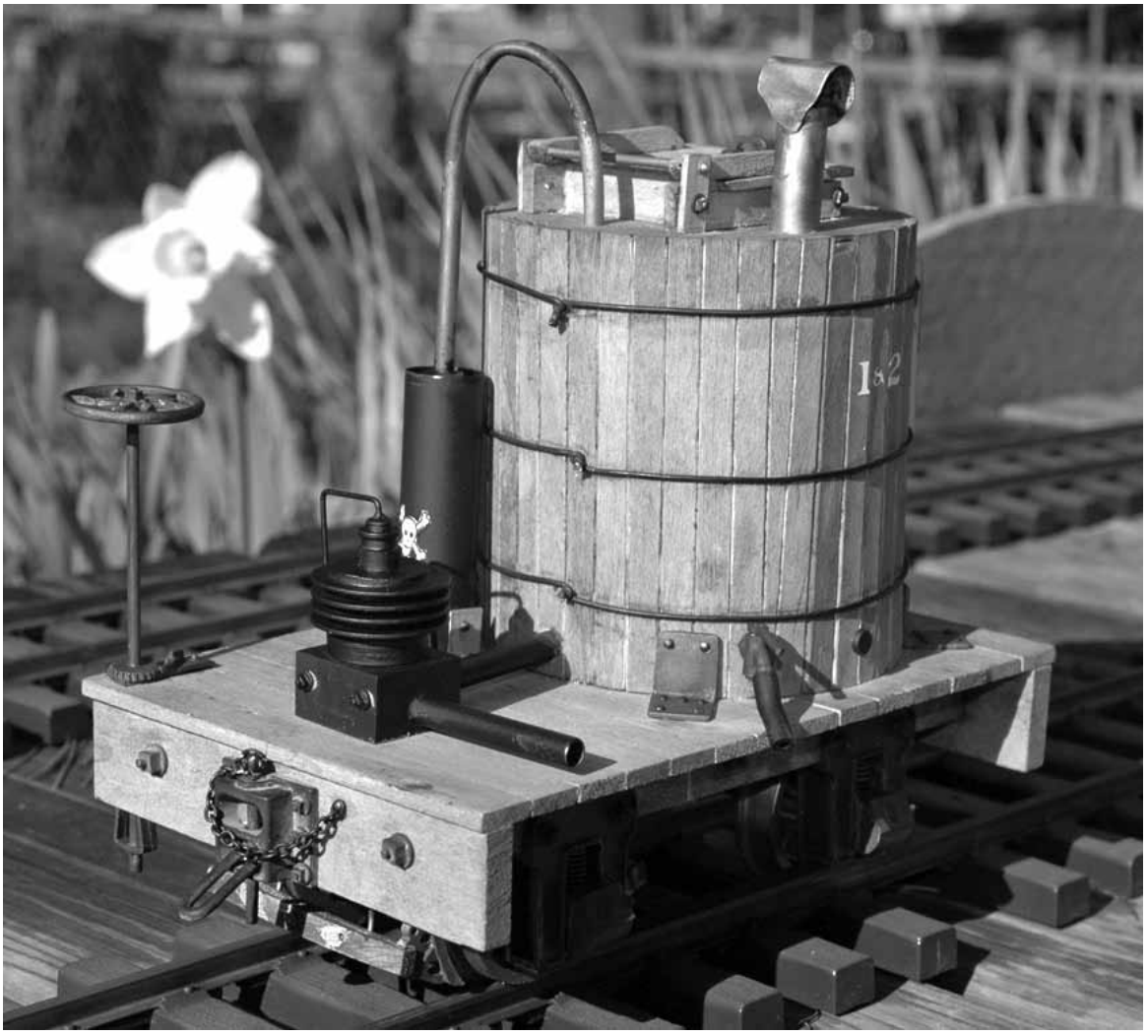
A Honey Wagon for the LFSW

by Tom Bowdler and Carl Weaver

About those flies.....

After Carl Weaver saw my 7/8ths scale sewage locomotive at Diamondhead, ECLSTS and the cover of SitG , he told me he had an idea for a car it could pull. He said he would scratch build it according to strict engineering principles. Since I'd seen some of his 7/8ths scale creations before, I couldn't wait for the project to start. Unfortunately, Carl was stingy with his concept formulation specs and drawings, so I had to be content with two crude sketches and an undetermined wait time.

One major concern of mine is the hauling capacity of my little locomotive since sewer sludge has a density of 73.61 pounds per cubic foot with water at 8.34 pounds per gallon accounting for a major part of that. Since there are 7.48 gallons in a cubic foot, or 62.39 pounds of water, only 4.22 pounds per cubic foot are left for other components such as poop, toilet paper and other flushables. With a tank capacity of approximately 44 cubic feet, or 330 gallons, that's a load of about 3200 pounds on a car weighing another



Honey Wagon designed and built by Carl Weaver for Tom Bowdler's Little Falls Sewage Works.

4500 pounds, The honey wagon may have to be a solo consist.

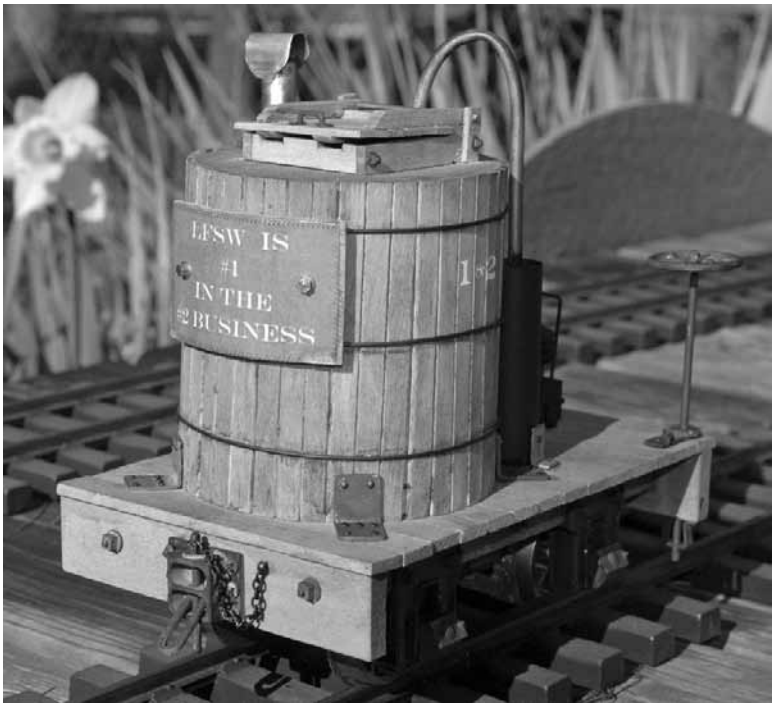
Other concerns of mine are global warming, greenhouse gasses and ozone depletion. I insisted that the honey wagon be environmentally friendly. Carl informed me that there is a "secret environmental thing-a-ma-bob doohickey contraption" to reign in poisonous Methane and turn it into sugar crystals. Furthermore, air is required for this process. so a smoke jack like appliance with a one way valve is fitted to the roof of the tank to let air in and not out. Carl told me "not to worry, it's all engineering stuff."

Further questioning revealed that the design was sort of made up as Carl went along. His concept began with the idea of a round tank covered with vertical boards made from popsicle sticks. The car frame was made from wood scraps cut on a Proxxon table saw and weathered with A-West's Weather It. The metal pedestals, wheel sets, couplers and NBWs were obtained from Sierra Valley and aged with A-West's Blacken It. Other details came from Carl's scrap box, including the poop pump, which was made from small and large washers with 1/4-inch holes around a 1/4-inch dowel.

Certainly a fitting slogan enhances any business, especially when there is instant name recognition by the general public. The managers of the Little Falls Sewage Works are indebted to Carl for a company buzz phrase on a sign on the rear of the honey wagon that says, "LFSW is #1 in the #2 Business."

Thank you Carl, for a superb piece of rolling stock!

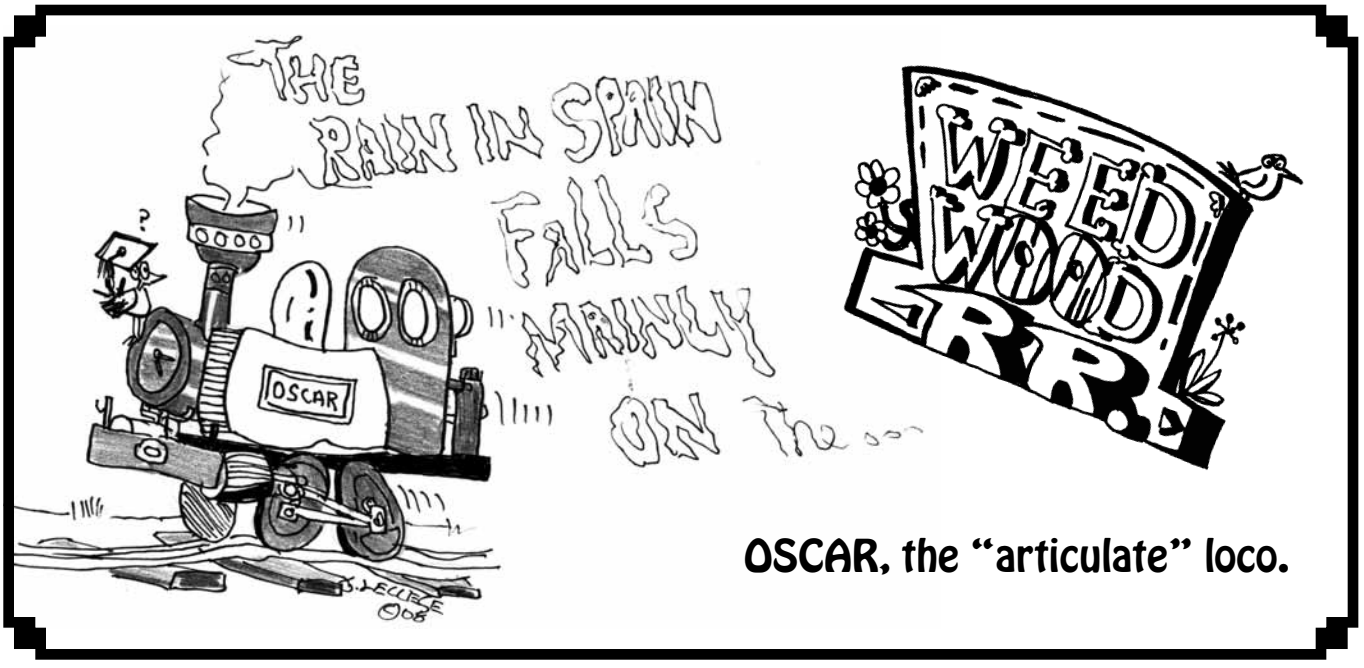
Photos below and on the facing page: Various views of Carl Weaver's Honey Wagon, featuring leading edge technology to deal with all the pollution problems facing our globe today.



A SHINE FOR TODAY

by Jerry Reshew

My experience over the years indicates that most Live Steamers are truly spiffy dressers and take extra effort to look exceptional at the get togethers , Here's a hint to help you keep looking sharp and at the same time having your locomotive shine as well. KIWI wipes, a product designed for smooth leather shoes is the secret. This product consists of a disposable paper sheet containg a silicone compund . By first using the sheet to get your shoes sparkling you can then use the wipe on the locomotive to get it shining as new. The wipe can be saved in a plastic baggie for many applications. Our hobby needs some attention from the operator to the engine to impress the less aware in the attending crowds.



Building RGS 0-6-0 #14 – A Learning Project

by Rob Lenicheck

So, how do you go about scratchbuilding your own steam engine? I asked myself this question a few years ago after dreaming about it for a few years before that. This seemed like a natural progression for me - I wanted to take my skills to a higher level. As one might imagine, learning new skills can be challenging and you must sometimes expect setbacks such as having to make parts multiple times before you get it right. Rest assured, though, anyone can do it if you're willing to learn some new things, take some risks and make some mistakes.

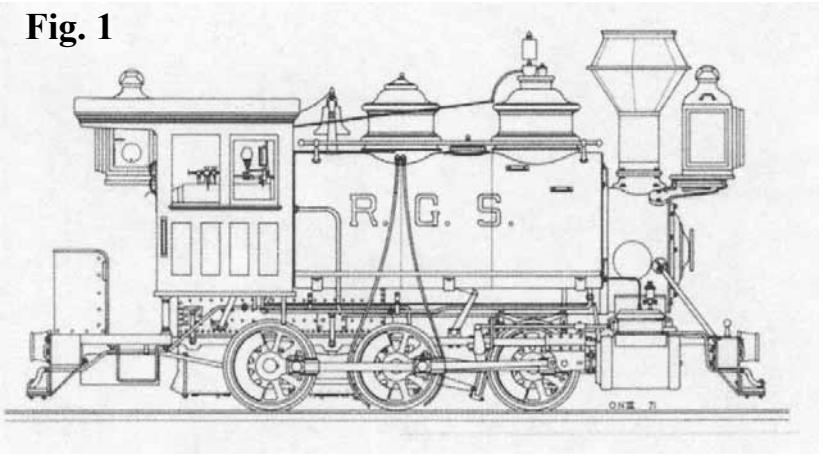
I started off by reading as many how-to books as I could, some worthwhile and some not so, to make sure I was up to the task and find out what equipment was needed. The best ones I've found which show construction methods and tools are those by Kozo Hiraoka – ***"Building the..."*** series. Even though written for engines in a larger scale, these books are so thorough and have such proven construction methods it's hard not to understand the demands and requirements of the endeavor.

The next step was to decide what I wanted to build. After visiting Diamondhead for the first time in '07 I wanted to build something more portable than the C-16 I carried on the plane with me that year. (Yeah, things were a bit looser then. But I still suffered a high

The author's completed locomotive....a hand crafted beauty!

anxiety attack after they made me check the carry-on which contained the loco when I had to board a puddle jumper flight.) Some sort of tank engine would be perfect. As most of my rolling stock is 1:20.3 I decided on a prototype found in the back of the Mallory Hope Farrell book on the Rio Grande Southern entitled ***Silver San Juan***. It would be about the right size, including a container box, for fitting in an overhead. (As an aside, I did take this engine on the airplane to DH this year with no problems, although I shipped the butane tank separately. On the outgoing flight they did not even open the box!)

Fig. 1



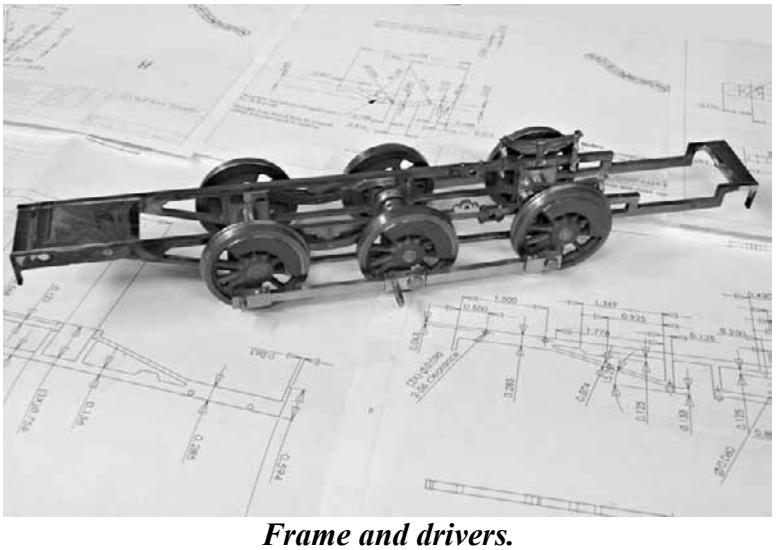
So, what I then started with was a good set of 2D plans, the sideview of which looked like **Fig. 1**.

I know from my engineering experience that you need a good set of plans from which to build any complex assembly. And the best way to do that is to draw up a 3D Computer Aided Design (CAD) model of what you intend to build so that when you start "cutting chips" you know everything is going to fit together. Although I already knew how to use software such as this, it's not as hard as you might expect to generate these 3D models. There are many good modeling programs out there, some selling for as little as $200 and all of which can run on a laptop. This task is kind of like doing all the prep work for painting a house - it's time consuming but well worth the effort upon looking at the finished product.

One of the things which must be decided early on is the type of valve gear you're going to use. This engine probably had Stephenson's gear, as evidenced by it's vintage along with the observation that it had no additional rods hanging outside of the driver main rods. Anyone who has studied a bit of valve gear design knows that the Stephenson gear is fairly complicated, enough so that I didn't want to tackle it on my first engine. I finally decided on using a slip-eccentric gear. Don't know why this gear is not used more often in our steamers - it's very simple to design and build, the only drawback is that you must manually push the engine drivers 180 degrees in the opposite direction to switch directions. I knew I wouldn't be putting R/C into this engine given the size of the cab area, so this was okay by me. (This was my first lesson learned. I mistook the design of the eccentric pusher and had to JB Weld the fix into place.)

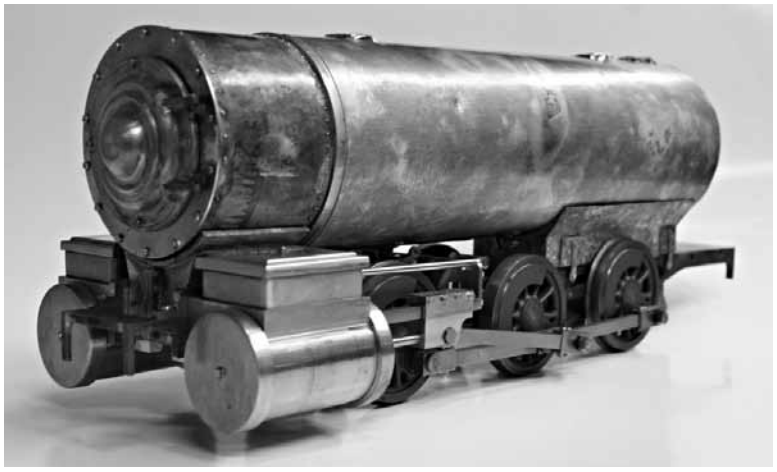
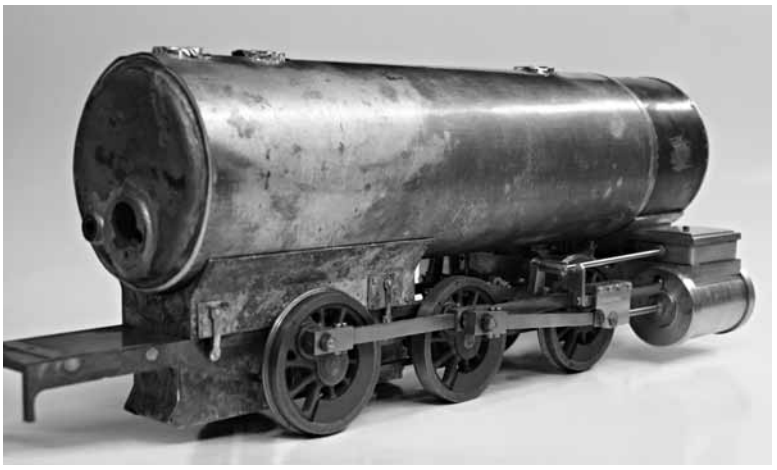
Beyond the valve gear decision I wanted to maintain the KISS (Keep It Simple, Stupid) principle for the design: gas fired, single flue boiler, follow known practices, etc. Nothing fancy for this one.

I starting fabricating parts when I thought I was far enough along in the design so that major changes would not be necessary. This required that I have enough tools at my disposal to start the job. A decent listing of the tools which are needed for the shop are posted in Kozo's books but the mainstays of the work are a lathe and a mill. Mine are both tabletop jobs which don't take much room. I bought most of the tools as I went along so I could minimize the impact to the home budget and still take my other half out to dinner on occasion.



Frame and drivers.

It makes some sense to start on the piece which supports everything else – the frame. It's kind of intimidating to think about how much is riding on this piece of work: the driver journal locations, the location of the cylinders, the location of the valve gear rocker

Front and rear views under construction.

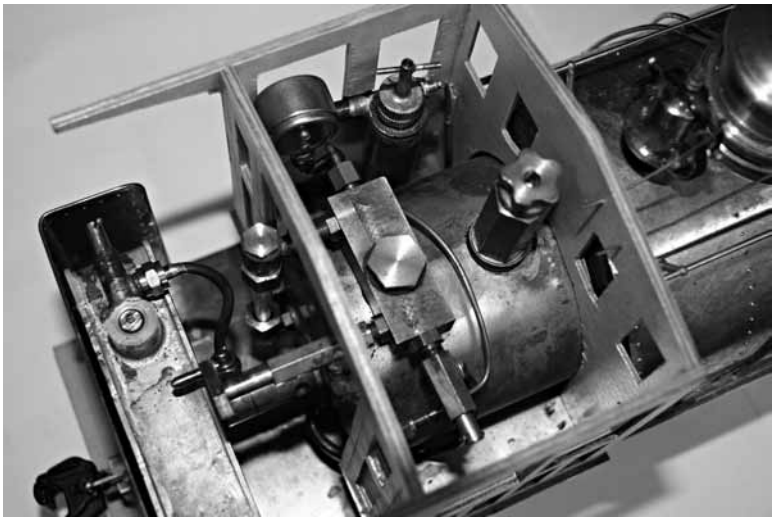
arm, etc. Any of these items being out-of-location will have a detrimental effect on the performance of the engine. So much is riding on this that some people elect to have the frame laser cut. Since I wanted to "experience it all" I milled the sideframes myself out of 1/8" steel plate. It turns out not to be that hard if time is not an issue. (I might mention that I did upgrade my mill with a 3-axis digital readout system. This really helps in the precision of the work, as some slide indicator wheels which come on mills are not calibrated to the actual slide movement.)

In making your choice of materials for the different components it is wise to remember that where two pieces of metal are in a rolling or sliding joint the materials should not be the same. That is, no steel on steel, no brass on brass, etc. Fortunately, if you review Kozo's books as you go you won't have problems with this.

After fabricating the main mechanism the model was starting to take shape:

One of the major skills to be learned when building a live steamer is silver soldering – soft solder really shouldn't be used in areas which need strength such as frames and boilers. The reason silver solder is superior is because, unlike soft solder which "glues" the two mating surfaces together, silver solder actually forms a molecular bond between the two pieces. Silver soldering is not particularly hard to do, with the caveat that the mating surfaces have to be really clean. A good propane torch is all that's really necessary.

Making the boiler was probably the most intimidating work of the entire engine. There simply cannot be any leaks when it's tested at double the working pressure. I elected the use a straight, 2 1/2" ID, 2 5/8" nominal OD copper pipe which I bought at a local plumbing supply store. This puts the wall thickness at 1/16" which I thought was about right. Copper is a very malleable metal in general so when it's annealed by heating with a torch it's very easy to bend and



Bird's eye view into the cab.

Rear view of the finished model.

form – until it gets hardened again by your work. That's exactly how you form the boiler caps for the ends.

Now on to the cylinders and major lesson learned number two. When I started this project I thought I had read enough to assure myself that having a 3⁄4" bore would be fine for an engine this size. So, that's what I fabricated initially. However, after the initial steaming trials it became apparent that the boiler just could not keep up with the need. Had I been a little more well-read I might have discovered formulae for this and the resulting design problem early on. No matter – since I didn't really want to fabricate a new cylinder set I simply re-sleeved the cylinder walls down to 1⁄2". With this bore size the engine is now very efficient but still has lots of power.

The butane tank was the last major milestone and it had to be a specific size to fit into the wood tender area of the engine. There was nothing I could find commercially to maximize the space available so I made my own. Since there's so much riding on this component it's best to make the walls as thick as you can. Mine are 1/16" thick brass, made of two U-shaped pieces silver soldered together. It was not as hard to fabricate as I expected. However, I could not get a good consensus as to how it should be pressure tested. I ended up filling it with butane and dunking the entire tank in a bath of COOL water. This would assumably expose any leaking seams which could then be fixed. As an aside, you can see that the close proximity of the tank to the burner, in addition to being mounted to the brass footplate, helps the tank stay warm during use.

From here on the construction took on a more "cosmetic" flavor with the exception of the steam manifold and controls at the backhead. The latter location provided me lesson number three: you never should use a line off of the manifold to plumb the top of the sight glass. The reason should have been obvious to me had I thought about it just a bit: since the steam line to the throttle also comes off the manifold, the sight glass line experiences a pressure drop as the steam gets delivered. This, in turn, causes the water in the glass to be drawn up causing a false reading. The fix: I just have to stop the engine periodically to check the water level.

The cab and its roof were made out of two layers of 1/16" ply, laminated together with Titebond after the appropriate cutouts were made. These pieces were cut by hand as I didn't feel like paying someone to do the laser cutting. The ply is easily obtained from a good R/C airplane hobby shop.

I did cheat a bit and use a bell, stack, headlight and pressure gauge from Accucraft. These were the perfect size as scaled to the engine. As an added touch the builder's plate was made to match the exact build number as issued by Baldwin in 1881.

This project fulfilled a dream for me and has encouraged me to start planning the next one. If you have a similar dream it's not too late to get started – for the cost of another engine or so you could supply yourself with a well equipped shop and build your own - just as long as you are willing to learn some lessons along the way.

For those interested, I'd be happy to answer any questions based on my experiences. Please email me at: **rlenicheck@yahoo.com**

Peter Jones
21.10.44 - 07.04.09

By his Son, Denys Bassett-Jones

Peter Jones will go down in garden railway history as one of the true legends of the hobby. His whimsical yet practical approach to building a railway outdoors on a number of different gauges has been well published over the years, and since his recent passing we as a family have been truly overwhelmed by the kind messages from enthusiasts from throughout the world, who have told us how much his ideas and writings have inspired them. As he was born in a Navy hospital in Portsmouth on Trafalgar Day 1944, Peter started his life showered in champagne, and that was a good precedent for the praise and tributes that he always enjoyed for his railway modelling, music and poetry. Living near Fratton engine sheds, he was never far away from steam engines and that was where his passion for all things that ran on rails began. He was also only a stones throw away from Fratton Park football ground, meaning that he became a lifelong Pompey supporter, which is something I have always enjoyed sharing with him.

The first incarnation of the Compton Down Railway occurred in 1949, when a visit to the Talyllyn Railway inspired a simple Hornby tinplate layout to be transformed by an imaginative five year old into a 16mm scale model of a narrow gauge railway.

The seeds were planted very early.

The rest as they say is history, which has been well documented by himself and others through the years, but this early start to the hobby, using the limited resources that were available to him, was the foundation to the innovative approach to railway modelling that he became so famous for. After leaving school and narrowly missing National Service, Dad trained as a Psychiatric nurse and applied his love of jazz to develop his musical abilities as well. It was through this he met Judith, when he heard her practicing piano in a local hall. After their marriage in 1964, which stood the test of time, they moved from Portsmouth to various places, looking to escape city life and find good surf. They eventually settled in Pembrokeshire, west Wales and are known amongst the older members of the local surfing community as some of the pioneers of the sport in the area. He is fondly remembered by some of them as the man who used to surf in a bowler hat, such was his ability to not fall off! His love of playing music with Mum also meant they were part of several bands together, leading the typical rock and roll lifestyle at various stages of his life, and another section of society will have many memories about him for this as well.

My sister and myself came onto the scene against this background, and we still both share his

and Mums love of music and surfing. We also had an interest in railways with him for a while, until the usual teenage distractions arrived, and it is a standard family joke that all the treasured photos of us of children have a railway theme to them! I never fully let go of that interest, and I will now have to flick through railway magazines in newsagents rather than nosing at his copies! And my excuse of "I'm taking this railway photo for Dad" won't wash either now! His last full time employment was as a restoration manager for one of the main local museums. He was involved with collecting and preserving a number of railway items that were an important part of the area's history, including a North Pembrokeshire Railway steam engine called Margaret. It was while he was arranging this display that he suffered a serious industrial accident, which meant he was unable to continue in employment. This meant he spent the next thirty years at home and in the garden, producing models in a variety of scales of many of the things that had captured his imagination through his life, sharing his exploits with the world through his humorous and well-loved writings.

Being where he loved to be, surrounded by his railway.

He also wrote more music and poetry, and this enforced retirement was in some ways a blessing for him to live out the contents of his very active mind. Despite his flamboyant and eccentric exterior, those who where closest to him will have seen his other side, a quiet and sensitive man who actually preferred to be on his own than being in a large social situations, happily working away in his workshop and garden. He had publicly said before his untimely passing that as 2009 would be the 60th anniversary of the Compton Down Railway, he would try and complete it fully and spend his later years running engines and doing all the small modelling jobs he wanted to do. But knowing him as I do I had a suspicion that would not be that for the CDR, as to him the joy of construction was almost more important than the final outcome.

Through his illness he knew that no matter what happened, the format of his beloved railway would have to change to reflect the level of fitness he thought he would be left with, and I could tell he almost relished the opportunity to start it all over again. Looking through his notebook after he unfortunately departed, it was filled not with morbid thoughts and final wishes, but with track plans and notes about his new lower maintenance railway. I think this above all sums Dad up very well, a positive thinker who was passionate and completely committed to his hobbies and interests, proving to us all that the fun things in life are far more important to fill our thoughts with than the daily grind. He was an inspiration to many, including myself, and will be sadly missed. To quote one of the best tributes that we have read, "If Peter Jones hadn't existed....we would have had to invent him". Nuff said.

Pearls of Wisdom from the Superstar of Simpson Cross

by Peter Jones

The Glory That Was Grease

This article by Peter Jones appeared in the very first issue of Steam in the Garden.....Volume One, Number One. Peter supported our efforts with many articles over the years, and we thought it appropriate to honor his memory and his contributions to our hobby by reprinting his first SitG article - ed.

I want to take a look at some of the lotions and potions that make running steam engines a little easier, a little kinder. Small scale locos have a technology all of their own; nothing complicated you understand - just different.

First off, I make no apology for repeating the oft-heard message that is most vital of all.. NEVER, NEVER, NEVER let anyone talk you into using ordinary auto oil in loco lubricators. They may sweet-talk you by saying that they have been using it for months and the engine works perfectly well. But they don't see the hidden disaster storing itself up. Non-steam oil should stay out of the kitchen as it can't take the heat. Those funny little molecules start breaking down - aided by the wiredrawing effect of very small pipes. They turn into solid lumps of carbon which block pipes up. Worse, lumps can get drawn into the cylinders and start damaging the bore. I'm sorry to paint a black picture, but it can and does happen. So, ignore peer pressure and stick to proper steam oil.

What is "proper" steam oil? Well, it's glop formulated to be man enough to do the job intended. It comes in various grades, from thin oil to black tar. The chances are that, if you order some stuff from a supplier, it will be a medium oil, looking a bit like gravy, sometimes with a green tint to it. Really thick stuff, as used on full size steamery, can bung up the pipes, especially when cold. In days of yore I used to run a full size traction engine with a friend. It would take about 4 hours to get steam up. We would put a sodapop bottle of thick oil next to the fire-hole door. After a couple of hours, it was nicely hot and would pour splendidly, But down in our scale, pipes vary between red-hot and ice-cold in a matter of inches (and seconds). The only use for such thick oil to us is to pour a drop over the wobbly interface between the bits of an oscillating cylinder such as a Mamod. It will take about 15 minutes for it to warm right up and run over the face before evaporating. This is just the right time for a run on a standard Mamod and makes for a poor man's lubricator.

Now the supply situation of oil in the USA can vary a great deal. Some have it on their doorstep, whilst others have complained that they have had to wait many weeks to get get the one small, grossly overpriced, bottle. Part of the problem is the fact that many supplies come from the English loco makers and you are at the mercy of whatever chain of import you plug into. If you are really stuck, fortunately there are alternatives. Grab yourself a copy of ***LIVE STEAM*** magazine and become aware of the model engineering scene. You will find a whole gang of suppliers who will be only too happy to sell you oil - often in larger (hence cheaper) quantities. There is, sadly, still a divide between what we do and the chunkier pure model engineering. This is a pity, because there is often a considerable overlap in components.

In the last resort, if you are really stuck in Middle Alaska, there is a third route. Check out your local gas station and try to get to see the visiting rep when he calls. The gas companies market a vast range of product - far bigger than just the juice we fill up our horseless carriages with. In the course of his duties he may take in airlines and steam-pumps in the industrial boiler houses. His product list will include medium steam oil. If you can interest him in your problem, you may get him to dig through his list and sort something out for you.

The downside is that he may want you to take a minimum of a gallon, five gallons, or (as in one case) five hundred gallons! If it is a question of buying five gallons - well, so be it. You will use a fair bit in the next twenty years of steaming. It is not unknown for several people to club together and provide for their mutual needs. In the last resort you can decant it into little bottles and start selling it yourself. But we are still only talking small sums of money. If you have a

couple of nice steam engines, it can be a small price to pay for being able to pass them on to your grandchildren in good running order (or getting a good price when you sell them years hence).

Ordinary auto oil will do nicely for doing a lube job on the external moving bits. In fact, here is a good economy. When you empty a big oil can into your sump, there is a significant little quantity left over which you can't be bothered to drain. Leave the can upended over a jar overnight. If your car doesn't use too much oil, go to your gas station again and scrounge a few plastic tubs that other drivers have used. The last time I bought general lube oil was in 1953, I think....

Grease is useful stuff to plaster over slidebars and the like. I have a tub of general purpose stuff which has lasted me for many years. It is cheap enough. Sometimes, when I'm in a good mood, I wipe off all the grease from the underside of the engine to get rid of the grit and general clag which accumulates. I then give a wipe over with fresh stuff.

Don't use mineral oil or grease for lubricating plastics. They don't like it. I rather like Teflon grease, which can be purchased from a general model store. This is a very slippery stuff which plastics just love. On occasion in the past I have built a gearbox and loosely filled it with flake graphite. Before Teflon grease, I used Molybdenum Disulphide grease (sold in UK as "Molyslip"). The result is that I have several battery locos which have been in use for nearly thirty years and the teeth are as sharp as the day they were molded.

No doubt you will have an aerosol of WD-40 or equivalent. This superfine exotic oil lubricates, frees, cleans - in fact does everything but play God Bless America at the touch of a button. It is a good emergency freer of stuck things, of course I don't like to use it for long term lubrication of moving parts because it just doesn't have the body to last long. Incidentally, if you are one of those into 2 rail (electric trains) in the garden, you will enjoy the pleasures of track cleaning. In an emergency you can squirt this oil on the track. It doesn't remove the dirt, but it makes it conduct electricity for awhile!

So....there we are - a quick tour around the subject. The problem is that you can break the rules and still have something which apparently runs well. But in the end, the Great Accountant In The Sky is gonna get you.

A Sophomore's Impressions of Diamondhead International Small Scale Steamup 2009

by Steve Baker

There are probably as many reasons to attend as there are folks who attended The Steamup. I'm sure the two most popular reasons are to raise steam as often as possible, and catch up with distant friends. I'd like to share a bit more as to why I came back a second time, as a "sophomore", and plan to be back next year.

The steam era in the United States ended before I was old enough to remember. My dad took the train into Boston, Massachusetts every day, and I was riding in the car when Mom dropped him off, and picked him up. We also had to cross the Fitchburg Division of the Boston and Maine Railroad to get from home to shopping, school, and just about every thing else, so we were often stopped at the crossing by either B&M Budd RDC's or freight trains.

I think that daily contact with trains gave me my lifelong love of them – both prototypes and modeling. Raising kids, working, and family activities kept me from train activities until more recently, so I missed some rail history here in the South, such as rail fanning the Saluda Grade, and various steam locomotive excursions that passed through on the Crescent Route.

When you are not running your locomotive at Diamondhead, it is great to sit or stand trackside and railfan. Cameras were always being used, and often you would stop to ensure the photographer had a clear shot of a moving locomotive. The variety of locomotives was incredible. Just a quick look at the program showed at least 103 different models from 36 manufacturers. There was equipment from Europe, the Americas, Canada, Japan and many other countries. Also, there were many eras represented, from the B&O Grasshopper, the British Lion, Shays of all varieties, all the way to the end of steam with Big Boys and SP cab forwards.

Lots of scratch built engines were to be seen. One of a kind logging engines were on display, where you could get up close, and chat with the builder, getting ideas and techniques to use on your next project.

It was great to be able to get up close, watch them fire up, and haul long strings of cars (or rakes for the British equipment). Pete Comely had his Johnson Spinner, a totally scratch built locomotive, and immaculately finished with maroon paint and striping. I enjoyed seeing Caleb Roberts' Southern Pacific Daylight, with a complete string of passenger cars. Watching him get steam up, put all the cars on the track (with the essential help of his sister Lequita), and run for his half hour session was a pleasure.

Andrew Finegan had his Accucraft Ruby running smoothly. Bruce Gathman's Shay recreating the past, pulling lots of log cars. Tanner Morgan ran his Mike / Berkshire, borrowing some freight cars, while his dad Mike enjoyed watching. So many different locomotives, it was a great time.

My locomotive was suffering from fuel starvation. It would fire up fine, but soon the feed from the tender would go dry, and the fire would go out. Talking with a couple different folks, I got the solution. Literally – a good tip on a cleaning solution that would clean out the foreign matter that was slowly coming off the walls of the fuel tank each time it was filled with alcohol, and clogging the needle valve. The tank was filled with white vinegar, and I let it sit all night. Draining it the next morning on to a white paper towel, lots of black flecks were seen. Examining the tanks innards revealed a smooth clean appearance, and that was the end of my starvation problem.

The atrium is a great place to find a fix to what ails your locomotive, or answers to any small scale rail question stumping you. The best part is that if the person you ask doesn't have the answer, he (or she) will try to find or recommend someone who has it.

Sometimes you just want to discover the solution yourself – but if you can't, or need a quick solution, Diamondhead is the place to be.

The weather was cool, but it was a whole lot warmer than that "other" event up north in Pennsylvania. The hotel staff was always helpful, and genuinely pleased to see us. Food and beverages were plentiful, and most important, the camaraderie refreshing. I look forward to seeing you there next year.

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Daniel Hekemian (l.) prepares his steamer at the Paradise East Steamup in August, 2007 while Corey Brown watches. The future of our hobby!
photo by Marie Brown

The Great Western Railway Castle Class

by Dave Stick

Assembling the kit version

(Thanks to Jim Pitts of Southern Steam Trains for suggesting this review for SitG - ed.)

When Andrew Pullen of Aster UK told me that their new loco was to be a GW/BR Castle my delight knew no bounds! It's the first Swindon engine for a long time so I couldn't wait to see how Aster had interpreted what to me was a stunning looking engine. There are many new features included resulting in a loco that has proved both a delight to build and operate. Andrew kindly loaned Ted Chatfield of South West Steam and me the prototype to take to the Exeter Garden Railway Show and it proved a big crowd puller!

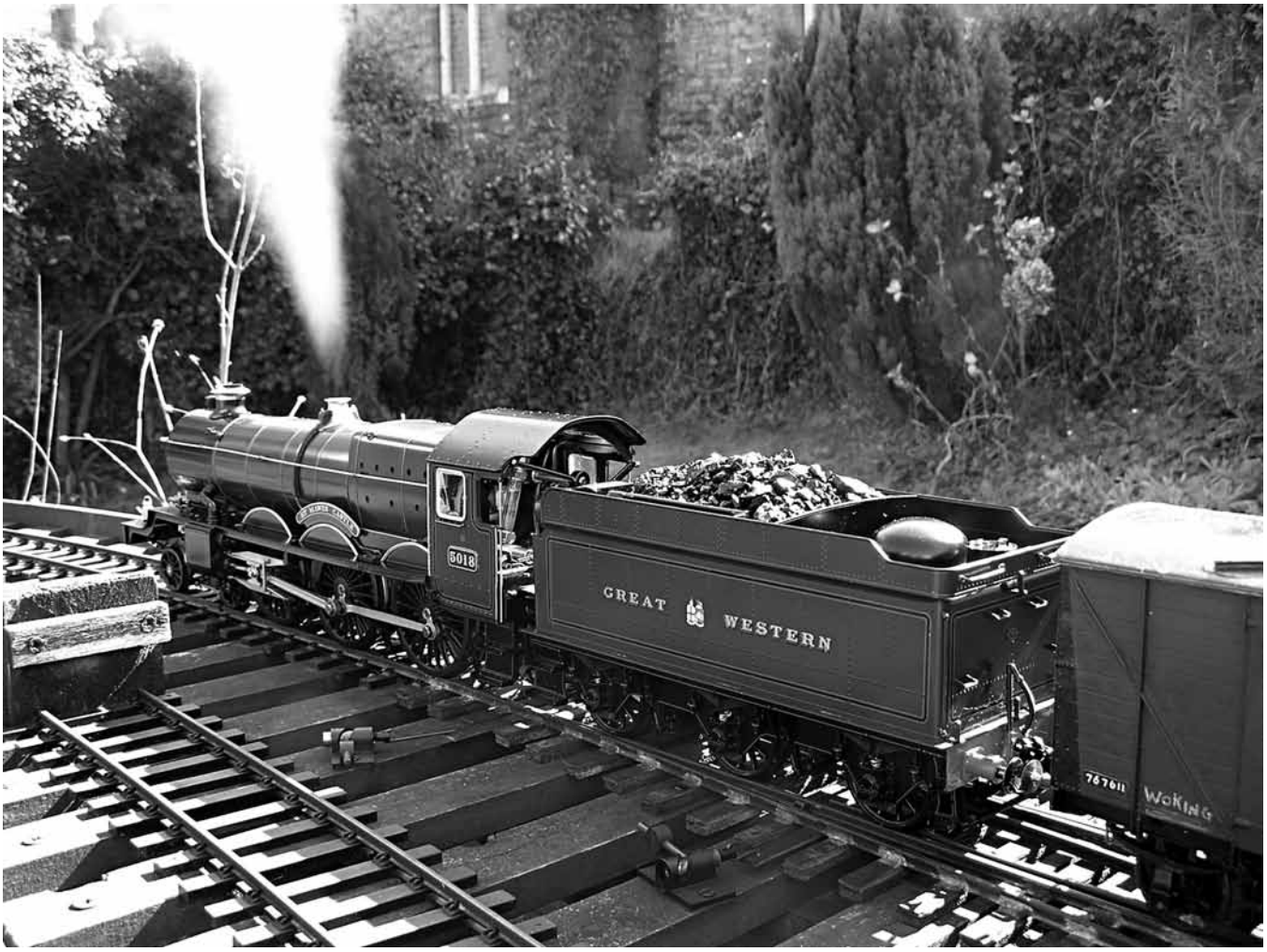
Along the coast and across the viaduct.

Both GW and BR versions of 5015 Kingswear Castle are fitted with the original elegant tall single chimney. But the shorter version, introduced in 1936, would be a simple substitution by shortening the base casting. The chosen prototype is of the 4th batch Lot No. 280 built in 1932 and numbered 5013 to 5022. The 5th and 6th batches appear outwardly identical and are numbered from 5023 to 5042, but from 5033 a speedo was fitted.

The design of the new Aster Castle is similar to the King of 1990 but is a completely new detail design incorporating many lessons learned during the intervening years. Those of us who own a King recognise its visual shortcomings and that regular and careful maintenance is required. Hard run, poorly maintained Kings have shown reliability issues and for the new Castle these areas have received particular attention. The wheels, crank-axle, eccentrics and valve gear have all been redesigned but retain the close to scale feel for which Aster are famous.

The kit is well packaged ensuring that an undamaged set of parts is received. Included is an excellent instruction manual containing the specification, an inventory of parts and detailed instructions on building and operating the loco. There is a splendid set of assembly diagrams showing each stage of the build on which all parts are clearly marked. This attention to detail places Aster products head and shoulders ahead of the competition. Note that parts are not stamped with the identification numbers shown on the diagrams. Hence, it's important to compare the drawing with each part and where the parts are similar, the diagrams show the key dimensions. An example of this is seen in the top right hand corner of the Section 1 drawing.

At each stage of construction builders should only unpack those parts necessary to complete the section shown in the diagram and examine each part using the inventory. There are a few occasions when you may have to temporarily 'borrow' parts from a



Awaiting the right of way.

later section e.g. to conduct air testing. Remember to restore these borrowed parts to the correct box on completion of the task.

Section 1 starts with the assembly of the cylinders and, as the loco has slide valves, lapping the port faces and valves must first be completed. The diagrams show how this is best accomplished to obtain the essential fine surface finish. Next, before assembling the pistons into the cylinders, pour a little steam oil over the assembled piston head and rings and trickle a little down the walls of each cylinder bore and into the steam chests. This will ensure good lubrication of the assembly during the short air test required later. It also aids the swelling process needed by the Rulon piston rings, normally complete after 2 to 3 hours running in steam. These rings have been used by Aster since the mid 1980s and have proved hard-wearing and reliable in service. I have never had a failure in 23 years and given a little patience and understanding, you will find that any initial evidence of blow-by quickly disappears.

When assembling the gaskets to the cylinders for both the covers and the steam-chest be extremely frugal with the application of silicone sealant. Take a small spatula and spread a THIN, EVEN coating of sealant to both sides of the gasket. Pick the gasket up using tweezers and carefully place it on the surface to be sealed. Failure to take these precautions will inevitably result in sealant getting into the steam ports and cavities!

When assembling the crosshead to the piston rod use a SMALL amount of nut lock to ensure that the piston and rod don't work loose in service. Be very sparing with locking fluids and only use them where parts are subject to vibration or rotation. For example, use it on gudgeon pins and other bearing pins in the valve gear, being VERY careful not to get it on bearing surfaces.

DON'T use super glue! I recently had to correct a very stiff chassis brought to me for rectification and found that many chassis bolts had been glued in using super glue. I had the devil's own job getting it apart and cleaned up!

Finally, leave the inside and outside cylinder slide bars and their brackets fairly loose at this stage. When you come to assemble them to the chassis later these will need to be adjusted to avoid any binding. Store assemblies upright where they will stay clean and dust free and the oil will not run out.

In Section 2 the bogie assembly is completed. This is a beautifully executed model of the full size loco providing axle-box, bogie stretcher and side control springing. When assembling the axle-boxes make sure that they slide well in the horns without rocking. Sometimes the paint in both horns and suspension holes makes them a little tight and this must be gently relieved using a fine file. Smooth operation in all planes is essential for good performance.

The buffer beam needs no comment, but next come the expansion links which require precision in your work. Many of the parts are laser cut and all bearing surfaces need smoothing. Polish the surfaces of both the links and the trunnions so that a fine finish is achieved without removing too much metal. The trunnions must slide in the links without rattle and remember to polish the slotted ends of the radius rods.

When assembling the eccentric straps note the joggle in the Pts 2-4 & 2-13 which are handed. The joggle aligns the bearing in each end with its expansion link. After assembling the expansion links to the 2-1 and 2-3 'bridging' plates ensure that the links all rotate freely in their bearing hangers and that the trunnions are free to move over their full range. Any off set or out of alignment built in will result in stiff operation and will be detrimental to valve performance. Last in this section is the fitting of the balance weights to the main driving wheels. No problems here but remember that the bolt heads are on the inside of each wheel.

Section 3 starts assembly of the frame and frame spacers which should be completed on a flat sheet of glass to ensure everything is true. The section then installs the inside cylinders between the frames together with the valve gear sub-assembly to which the front drivers are then attached. The right-hand crank pin leads the left when looking from back to front in the frames. PTFE strips are wrapped around the eccentric prior to fitting the straps and I smear silicone grease over them during fitting. These bearing surfaces have proved both hard-wearing and easy to fit in all recent products and in the future renewal will be a breeze.

The inside connecting rods are next assembled on their crank pins after first fitting the PTFE bushes. The technique for fitting these bushes is not difficult if the correct procedure is applied though it seems quite brutal at first sight!

The bush is made with a split in it into which a screwdriver blade is inserted to ease the bush open. It is then stretched further open until it can be pushed over the crank pin. The bush has a memory and will return to its original shape aided by its enclosure within the connecting rod big end straps.

The wheels are retained in the horns by horn keeps also acting as dummy springs under the axle

St. Mawes Castle leaves Polruan Station.

boxes. The suspension is provided by coil springs located on spigots in the top of the horn guides and in a small recess in the top of the axle box. The tuning of the chassis to get correct weight distribution and a level footplate is achieved by adjusting the length and hence preload of these springs on each axle.

The weight shaft and levers connecting to the radius rod are next assembled. Operation of the assembly must enable full range of movement of the trunnions equally either side of the centre pivot of the expansion link. You will now be able to judge how well you have prepared the bearing surfaces in the valve gear!

Section 4 tasks include fitting the remaining driving wheels and keeps, at which point the final adjustment of the springs should be made. Then fit the outside cylinders and slide bar supports, frame spacer-mounted axle pump and the associated bypass valve, cylinder lubrication tank and a frame spacer with additional weights to improve weight distribution over the axles. Aster returns to a pressurised cylinder lubrication system with this loco, as was used on the Duchess. I have been much impressed by this system and modified my King to this design some years ago.

The axle pump eccentric is also fitted with a PTFE strip bearing surface and the performance of the pump can be further enhanced by the fitting of 1/8" dia. nitrile balls replacing the 3 mm stainless steel balls provided. The assembly of the pump is straightforward but take care to keep the silicone sealant to the merest smear over the banjos faces to avoid ingress to the ports.

Next, having fitted the outside cylinders, the slide bar supports should be carefully adjusted so that the crossheads will slide over their full range of movement without resistance. The bolts left loose earlier may then be finally tightened.

Lastly, when assembling the bypass and oil control needle valves, smear grease over the threads to avoid damaging the O rings. Chamfer the mouth of the threaded holes using a Slocomb centre drill twisted between the fingers. This will guide the O rings and help to avoid ring damage.

Section 5 completes the motion and outside rods and great care should be taken in fitting the reverser gear and weight shaft assembly. Set up precisely in

mid gear as the next section depends on your accuracy here. This section also includes the fitting of the bogie stretcher and bearing pads and finishes with attaching the bogie itself. Personally, I leave the bogie off until much later but a trial fit now is recommended to check clearances.

The careful setting up of the valve gear in Section 6 is absolutely crucial to good performance. On the Castle the outside cylinders derive their valve gear motion from the inside cylinder's valve gear via the rocking levers fitted in the previous section. Hence any error in setting the inside cylinder valve gear will be transferred to the outside motion. Read Aster's instructions very carefully making sure that before you start on setting the outside gear you are satisfied that the inside is right. Make sure that as you set each slide valve you have the associated crank at exactly the right angle and have allowed for any backlash by coming up to the right position from the correct direction of rotation. Make sure the axle doesn't move whilst you set the valve and make the leading edge of the valve line for line with the port leading edge. Having achieved perfect setting in forward gear, when set for reverse you may have to make a small compromise. Rarely will the gear be exactly right in both directions. Since this is an express loco it is unlikely that you will run in reverse except when running light engine; hence I always favour forward gear setting but ensuring reverse works satisfactorily.

The next task is the air test in section 7. Cylinder covers and associated steam pipes are fitted taking great care not to get sealant into the steam ways. The smokebox saddle is fitted as are the superheater and the test adaptors provided. All bearings are oiled making sure that you have steam oil in the cylinders and valve chests. This, together with limiting your run to a few minutes, will avoid any danger of scoring on valve port faces. The chassis is then run on air using a compressor. After the test return the fittings borrowed to the right boxes and remove the screw reverser from the footplate until the cab is fitted.

Section 8 finishes the chassis detailing and includes fitting of the footplate and there are no surprises here and nothing difficult. Section 9 builds the C type boiler and is standard Aster practice. It uses a dummy backhead in front of a sight glass fitted with a blow down. There is a backhead clack to which I fit a 1/8" dia. nitrile ball. A fountain is fitted to the boiler top and feeds a pressure gauge, the blower and the oil tank. The regulator is of the usual screw-down type. Under the boiler is the firebox which is lined with ceramic sheet.

The superheater and blower are fitted to the front tube plate next and not in Section 11 to enable a boiler pressure test to be conducted prior to fitting the boiler to the chassis. These are attached trapping O rings that seal the high pressure steam from the smokebox. Failure of either of these two O rings will reveal itself as either a steam/water leak from the blower or bypassing of the regulator! I always bed these O rings in silicone sealant inside the O ring housing on the forward tube plate as a back-up, but being very careful not to allow any sealant into the steam passages. When the boiler is completed it should be pressure tested to check for leaks prior to fitting to the chassis.

Section 10 tasks mount all of the detail parts to the boiler outer casing and installing the boiler. The oil supply pipe to the cylinders is routed under the casing along the right side of the boiler. Care is needed here to avoid damaging the pipe as the boiler is slid into the outer casing. It's also important to make a good job of sealing the front end of the boiler to casing joint using ceramic sheet and yarn. Leaks from the smokebox would badly influence steaming.

Section 11 fits the boiler to the chassis and here some builders have had difficulty on earlier locos when fitting the main steam supply pipes between the cylinders and the superheater header. Care is needed to avoid cross-threading the banjo-bolts and also getting sealant into the steam passages. Next the oil delivery pipe protruding from the back of the boiler outer casing [see previous para.] is attached to the oil tank, as is the steam supply to the oil control valve. This section is then completed with the fitting of nice-looking dummy brake gear.

Section 12 tasks complete the fitting of the smokebox together with final few external attachments to both boiler and smokebox. The latter is a split design as used before and enables far easier access to the contents within! Both the top and bottom parts and the smokebox door are lined with ceramic sheet which is glued in place using silicone sealant. Care should be taken to mount this lining accurately to avoid air leaks which would otherwise destroy the partial vacuum created when running.

Different smokebox doors are provided for the GW and BR models, the latter having a number plate mounting pad. The smokebox door front mounting ring has a dummy steam lance cock mounted on it and this doubles as a lock for the smokebox door. Before leaving this section it is imperative to check that there is correct alignment of both the blast and blower nozzles with the chimney. Because of the very high toler-

ances maintained by Aster in their manufacturing process the chimney and blast nozzle are very unlikely to be out of alignment but it's important to check. The blower however, may require a tweak to bring it into position as indicated in the diagram provided. A small length of suitable straight brass wire helps in sighting the alignment here.

Section 13 completes the engine by mounting the cab and associated fittings. Make sure you have full range of movement on the screw reverser and that the reach rod doesn't foul anything. Make up the burner as recommended but remember that after a few hours running you will probably have to remove one or two wicks as they swell in use.

In Section 14, 15 and 16 the beautifully detailed tender is assembled. Axleboxes that are free-sliding are essential to good running and a light polish with a fine Swiss file on the outer faces of each axlebox is usually sufficient. Tune the chassis spring length to ensure that the chassis running plate is level and that the axleboxes do not bottom in their horn cheeks. Seal the water tank seams using silicone sealant on a cotton bud before mounting the pump and assemble the steps to the back wall of the tender before fitting the tank inside. The top deck of the tender is removable on the Castle and this enables the meths tank and water pump to be accessed easily if required.

There you have it, one of the most beautiful G1 locomotives ever, with the details and paintwork accurately portraying a Great Western Castle at its finest. It has none of the mistakes made with the King at a time when Aster was still learning their trade. Judging by the running experience I have had so far it will also be one of the best performers too!

Permission to print this article by Dave Stick has been graciously granted by the author, Dave Stick. Also, we express our thanks to Nick Rudoe and Peter Trinder, Editors, Gauge 1 Model Railway Association's Newsletter and Journal. Originally published in the G1MRA Newsletter and Journal (Issue 220) Winter 2008/9. Also, our gratitude to Andrew Pullen, Aster Hobbies (UK) LLP.

Specifications:

Scale/Gauge: 1/32 scale, Gauge One (45 mm)
Weight: 5.38 kg (locomotive 3.74 kg + tender 1.64 kg) (11.86 lbs)
Length: 628 mm (24.72 inches)
Width: 91 mm (3.58 inches)
Height: 128 mm (5.03 inches)
Wheel Arrangement: 4-6-0
Driving Wheel: dia 62.0 mm
Pilot Truck Wheels: 28.0 mm
Tender Truck Wheels: dia 39.0 mm
Axle Driven Pump: bore 5 mm ×stroke 6 mm - fitted to loco with by pass valve
Cylinder: 4 cylinders bore 10 mm × stroke 20 mm with slide valve
Valve travel 6 mm. Cut-off at full gear: 75%
Valve Gear: Walschaert with screw type reverser
Boiler Type: modified "C" type with 4 flue tubes
(dia 16 mm smoke tubes x 2. dia 5.35 mm water tubes x 2)
Water Capacity: 254 cc (at 80% full)
Normal Working Pressure: 4 kg / cm2
Burner: 3 tube alcohol burner
Boiler Fittings: Water Gauge, Pressure Gauge, Safety Valve, Check Valve, By-Pass Valve, Regulator Valve, Blower Valve
Lubricator: Roscoe Displacement Type in cab under footplate
Tender: Lift out fuel tank. Water tank with hand pump.
Water Tank Capacity: 250 cc
Fuel: Methylated alcohol
Fuel Capacity: 258 cc
Minimum Radius: 2 Meters (6 1⁄2 feet)
Please note: specifications are subject to change without notice.

A History of the Castle Class

by Dave Stick

The origins of this highly successful design date back to Mr. G. J. Churchward's famous 'Star' Class of 1907. These 4 cylinder 4-6-0s with long travel valves, and belpaire fireboxes were an immediate success on the GWR's top-link express duties to the west of England. However, with increasing loads the Stars had little in reserve to maintain the restored pre- World War One timings. Mr. C.B. Collett succeeded Churchward as Chief Mechanical Engineer in 1922 and faced an immediate task of providing more power with little ability to increase axle weight. Thus, the Castle class was born. When introduced they were heralded as Britain's most powerful express passenger locomotive, being some 10% more powerful than the Stars. The Castle class locomotives had a larger boiler and cylinders bores were increased from the 15 to 16 inch diameter. The first, No 4073 'Caerphilly Castle', made its debut at Paddington station on August 23, 1923.

During 1924, 'Caerphilly Castle' was exhibited at The British Empire Exhibition, Wembley alongside Sir Nigel Gresley's 'Flying Scotsman'. The Great Western engine was declared to be more powerful than its bigger LNER rival. During the subsequent 'Locomotive Interchange Trials' between the GWR and LNER No. 4079 'Pendenis Castle' operated on the East Coast Main line alongside Gresley Pacifics; while LNER 4474 'Victor Wild' was sent to work between Paddington and Plymouth alongside No. 4074 'Caldicot Castle'. All locomotives acquitted themselves well but the compact Castle class demonstrated their superior fuel and water efficiency.

So successful was the Castle class design that construction continued at intervals until 1950, by which time 171 has been built. This included 15 converted from the Stars class plus the rebuilding of 'The Great Bear', the Great Western's only Pacific locomotive.

In 1946 Mr. F. W. Hawksworth, Charles Collett's successor, introduced a higher degree of superheat to the Castle boiler with resulting increased economy in water consumption. From 1956, the fitting of double chimneys to selected engines, combined with larger superheaters further enhanced their capacity to sustain high speed performance. In 1958, No. 7018 'Drysllyan Castle', fitted with a double chimney and a four row superheater, ran 'The Bristolian' express reaching 100 mph. at Somerford.

The Castles handled all but the heaviest loads, these being entrusted to the thirty strong 'King' class (modeled by Aster in 1990). The King class were themselves a development of the Castle class with a larger boiler and slightly smaller wheels for increased tractive effort.

The final Castle to be run in British Railways service was No. 7029 'Clun Castle', which worked the last steam train out of Paddington in 1965. However, that was not the end of the story for this long lived and popular class of express locomotives.

Preservation

Eight Castles have been preserved. The pioneer No. 4073 'Caerphilly Castle' lies at the Swindon GWR Museum. No.7029 'Clun Castle' built in 1950 and fitted with a double chimney represents the final development of the class. No. 4079 'Pendennis Castle', which scored a triumph for the GWR in the locomotive interchange trials of 1925, is still with us having been repatriated in 2000 from a 23 year sojourn in Australia by the Great Western Society. Five others were rescued after languishing for years in a South Wales scrapyard and four have already been restored to working condition, including the popular 5029 'Nunney Castle'.

The Aster Model

No. 5015 'Kingswear Castle' was named after the fortification built in 1502 to assist in the protection of Dartmouth harbor, and the locomotive entered service in 1932 as one of the first of the '5013' Castle series. Furthermore, Kingswear Castle was one of just a few to retain its tapered front buffers, inside cab sandbox fillers and tall chimney into British Railway days. It was withdrawn in April 1963.

So today Great Western Castle class locomotives with their beautiful green lined orange / black livery and polished brass and copper fittings delight and thrill enthusiasts with their majestic beauty and exhilarating performance! Long may they steam!

Tips for Operating an Aster Locomotive

by Dave Stick

1. Oil around the chassis using a syringe type oiler with a fine needle fitted – 3 in 1 oil is fine.
2. Drain off lubricator and refill with steam oil if you didn't do it last time you ran.
3. Fill tender with water to just below the by-pass return pipe.
4. Close by-pass lever [down to close], open regulator and blower and using pump handle in tender hand pump, fill boiler to 2/3 rds. full. This will avoid possible priming when up to full steam pressure.

Note: Priming occurs when a boiler is over-filled either using the hand pump or if the by-pass is left closed too long when running. You will be aware of it because if running, the engine may suddenly accelerate and start to throw water out of the chimney and safety valve. Stop the loco immediately and open the blow-down valve on the bottom of the water sight glass allowing water out of the boiler until level is 2/3 rds. full again. Be careful not to scald your hand!

5. Close blower and regulator and open by-pass valve.
6. Make sure meths tank tap is closed and fill meths tank.
7. Place electric fan and plug in chimney, open meths tap one turn and start fan.
8. Using a gas torch, light the burner.

Note: If access to the under side of burner is difficult, a small twist of wick material on the end of a piece of wire is dipped in meths and ignited and the burning wick end inserted under the burner.

9. Watch pressure gauge until it shows 2 BAR and then open the blower a small amount and remove electric fan and chimney plug.
10. At 3.5 BAR approx. the safety valve will blow off. If it hasn't done so lift both s/v spindles with a small pair of needle nosed pliers. They very occasionally stick a bit particularly if you haven't run for some time and should be routinely checked using this method before every run. Almost close the blower but keep enough selected to retain the draft on the burner until the regulator is opened.
11. Open the cylinder drain cocks [if fitted] by pushing the button lever on either side under the boiler backwards [9F]. Open the regulator slightly and steam will be seen to issue from the drain cocks under both cylinders. Move the loco forward two or three feet and water will be seen to be expelled [this will need to be repeated several times for non-drain cock fitted locos]. Close the regulator and stop when you are only getting steam out and close the button lever fully.
12. You are now ready to go. I recommend a quick circuit of the track once to warm through the cylinders before backing on to your load.
13. Attach your load and when you have the OK to proceed, open the regulator slowly closing the blower as you accelerate away. With a light load you may find it necessary to keep a little blower going to keep the draft up.
14. From now on driving is a question of balancing water consumption [steam usage] with water supply via the axle pump. Remember that the by-pass is open still so keep a watch on the water level in the sight glass and when you see it drop to half a glass almost close the by-pass valve. Watch the water level in the sight glass and see what happens. Take appropriate action by closing if water level is still dropping in the glass, opening more if it rises too far to avoid priming.
15. Try and remember to maintain a scale speed depending on the load. A freight train, even fitted [braked] was usually driven at slower than 50 mph. An express was rather quicker but in the case of the 9F never more than 90 mph and then only recorded at that once!
16. Keep your eye on the water level in the tender and don't let the level get below 1/8 inch from the bottom. If you do, the axle pump will start to suck in air and pumping will stop. If this occurs you should stop the train and after closing the by-pass fully, give the hand pump a few strokes to re-prime the water system. Try and fill the tender to a level a little below the by-pass return pipe so that you can see how much is being pumped and by-passed back to the tender.
17. When you have had enough or you run out of meths bring the train to a halt prototypically. DON'T slam the regulator shut but close it slowly. If you stop the engine too quickly you will notice a roar from the chimney. The water surges forward in the boiler and may well start priming with water shooting out of the chimney. Sometimes there can also be a meths surge which should be avoided where ever possible as a track fire may result.
18. If you have finished your run turn off the meths tap even if the meths has all gone [good discipline]. Make sure the sight glass water level is sufficient to allow for the cooling down period and open the blower a bit. Keep an eye on the engine as it cools and when the blower goes quiet – pressure below 1 BAR, open the regulator to avoid it seizing.
19. When it's cool and pressure is at zero drain off residue in oil tank using a syringe and refill with steam oil. Drain off the water in the tender and wipe the engine down with a cotton cloth.

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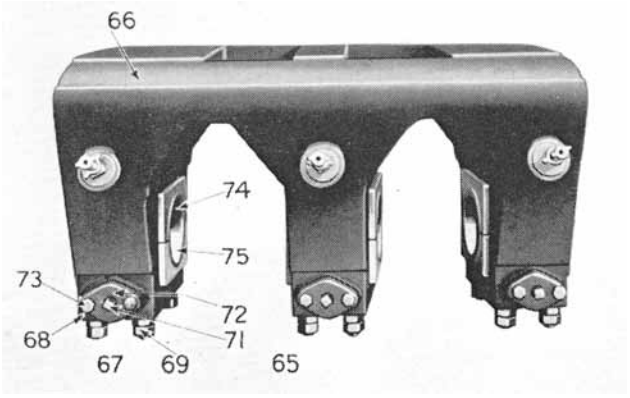
The Nuts and Bolts of Shays

Plan 1553 Engine 2-6"x10" Cylinders Part 1

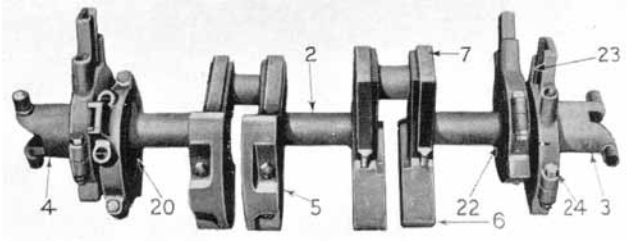
by Dan Rowe

The steam engine of a Shay locomotive is the most interesting part of it, in my view. That might be because I once was a marine engineer and keeping the engine running and the screw turning was job one. A vertical engine with a line shaft simply makes a Shay locomotive a marine engine that got lost in the woods.

The first Shay locomotive to be designed with a crankcase bottom bracket was S/N 1553. This was the first Shay built to this plan, and the Lima practice at that time was to assign the shop number as the Plan number. The last few of the 2-6x10 class of Shays were built with a different plan. The boiler was changed to an extended wagon top boiler. The same engine design was used with the new boiler.



2 Cylinder Crankcase Bottom Bracket



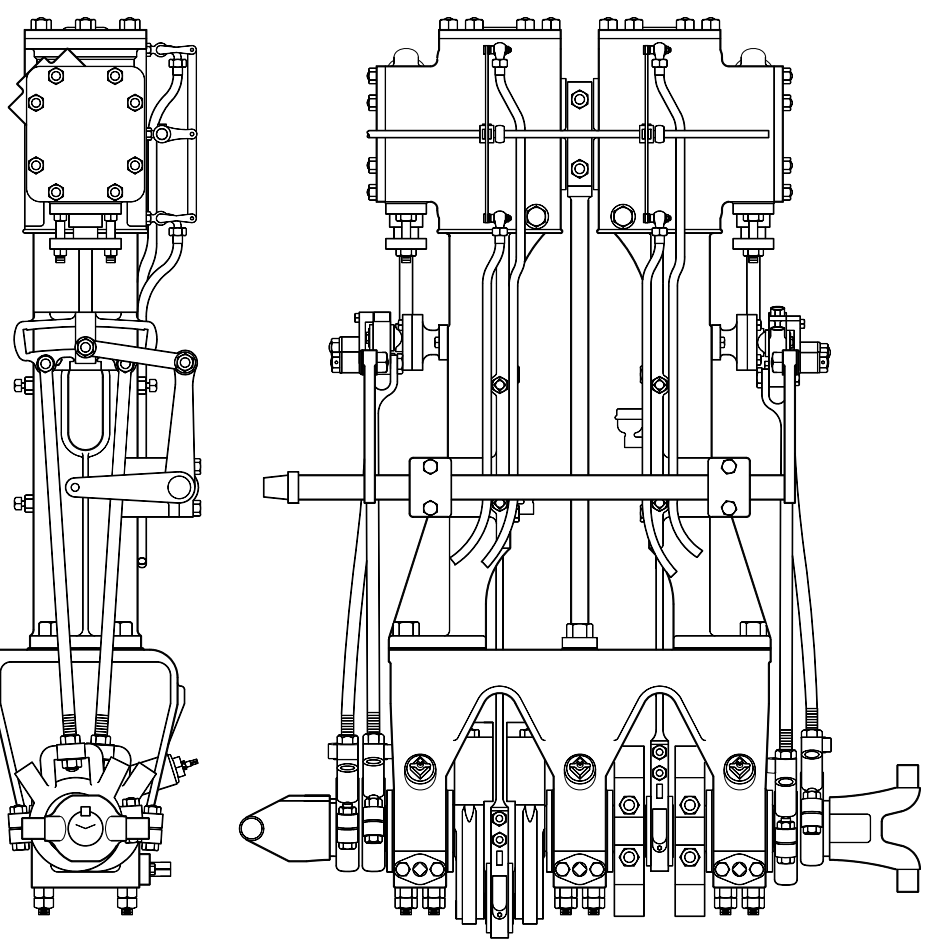
2 Cylinder Crankshaft

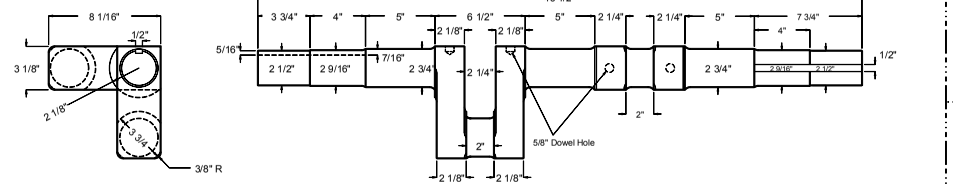
I think the photo of the crankcase bracket is a 2-6x10 engine but the crankshaft is one of the larger Class A Shay engines because the eccentric strap has a mount for a flat bar type of eccentric blade. The 2-6"x10" engine used a round rod for the eccentric blade.

There are more than 30 drawing cards needed to draw and assemble this engine. This will be the first of two articles that will include all the parts needed to make the engine for the Mapleton or the Dulong or any Class A Shay with 2-6"x10" cylinders built after 1905. This first half of the article has the engine assembly drawing. Engine assembly drawings were not made by the Lima Locomotive Works, or at least I have never seen one for any Shay and none of the drawing catalogs list any promising title. I have assembled several Shay engines with a CAD drawing board.

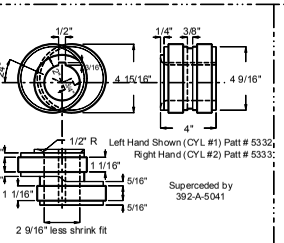
I had to use a few of the superseded drawings for this engine. In the case of the cylinder the superseded version is the only one that survived. In other cases it just happened that I have the superseded drawing. When I have both versions of the drawing, they are nearly identical. I believe that with a few exceptions all the late version 2-6"x10" engine parts were interchangeable from S/N 1553 to the end of production. The changes to the parts in the drawings in this article are slight. The crankcase bracket drawing is slightly different than the photo of S/N 1553. There is not a drawing of the early version and I believe it was only used for the first few engines built to plan 1553. The eyebrow ridge above the cut out sections was added to all the crankcase brackets. I believe that was to keep rain water from dripping on the bearings. The only other change in the drawing is that the bolts holding the eccentric strap halves together were changed from 21/32" to 5/8", which is a much more common size.

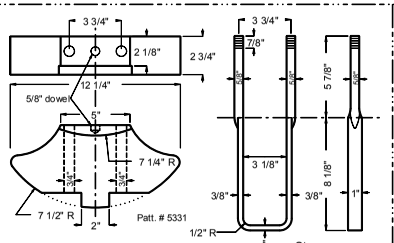
This will be my second attempt to construct a 7/8ths Shay engine using Lima drawings. The first time I made both eccentrics with the same set up. This seemed the simple way to do it, and the results were sitting on the bar at Diamondhead for a few steamups. No one ever noticed that both of the eccentrics were left handed. The big advantage of a 2 cylinder Shay is the eccentrics can be keyed on to the crankshaft with no pesky center eccentric. I know for a fact that the eccentrics have to be made right and left handed, as no amount of turning one over will solve the problem.

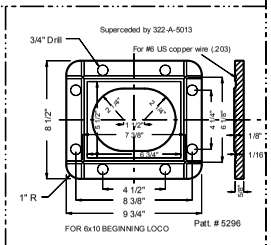


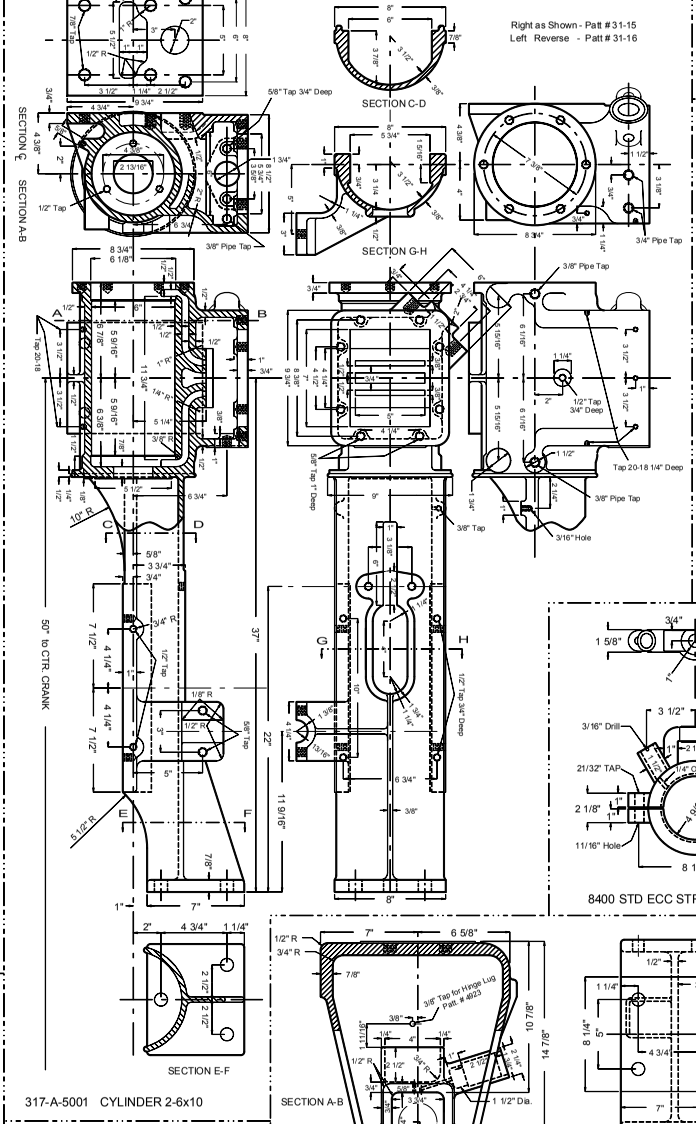


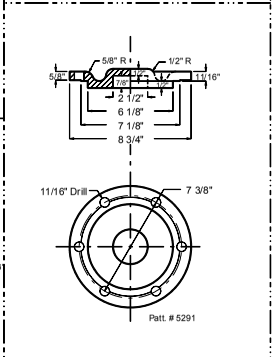
45-A-5017 CRANK SHAFT No. 58 2-6x10

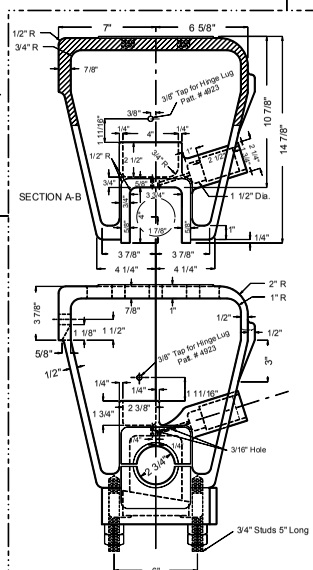


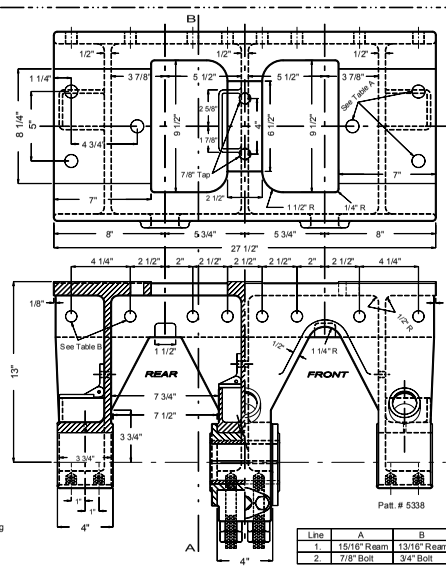


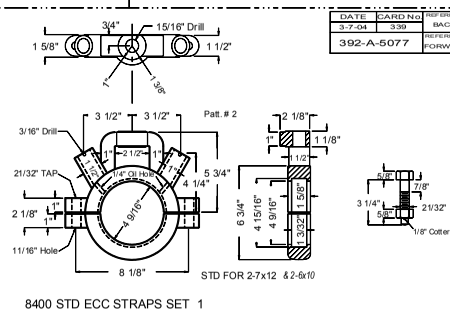












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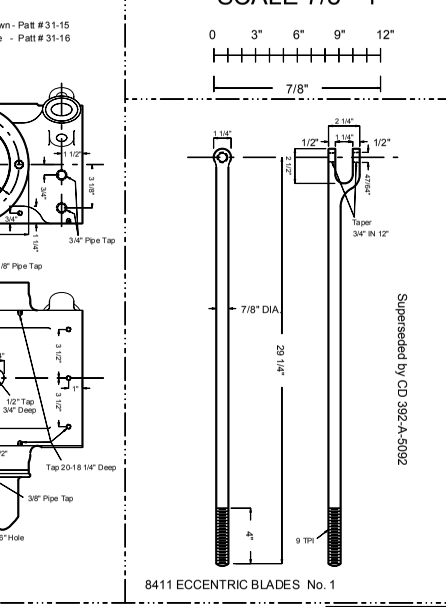

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Workshop Project

Replacing a Broken Boiler Gauge Glass

by Steve Baker

My Aster Reno needed sprucing up, as the brass was showing its age, very dull, under a heavy layer of tarnish. This also was a good opportunity to get more familiar with my locomotive's internals, and get some Loctite on key fasteners, before heading off to the Steamup at Diamondhead.

Long story short, the gauge glass ended up broken. After it was broken, I realized this was a good component to measure and record all dimensions for future reference, before it broke. I now have the dimensions, as best I could determine, recorded in my assembly instructions. Length, outside diameter, and inside diameter are all key to obtaining an exact replacement, or making one from a longer piece of glass tube.

A little research on the web found both flint and borosilicate glass types available. Pyrex® is a brand name of borosilicate glass. Borosilicate is superior to flint glass in heat, thermal shock and corrosion resistance. Using distilled water virtually eliminates the issue with corrosion (which would result in hazing of the glass). Thermal shock normally isn't an issue, but our small boilers can be subject to rapid heat up and cool down, which can thermally stress glass. Borosilicate glass tubes are more expensive than flint, but can provide long term performance improvements which are worth the small price difference.

Gauge glass fittings have a variety of configurations. The Reno has end washers, and the two rods clamp the tube ends down on the flat washers. The other common fitting has a gland nut, and O-ring for sealing at each end. The gland nut and O-ring are less critical on length, but both require accurate cutting to length.

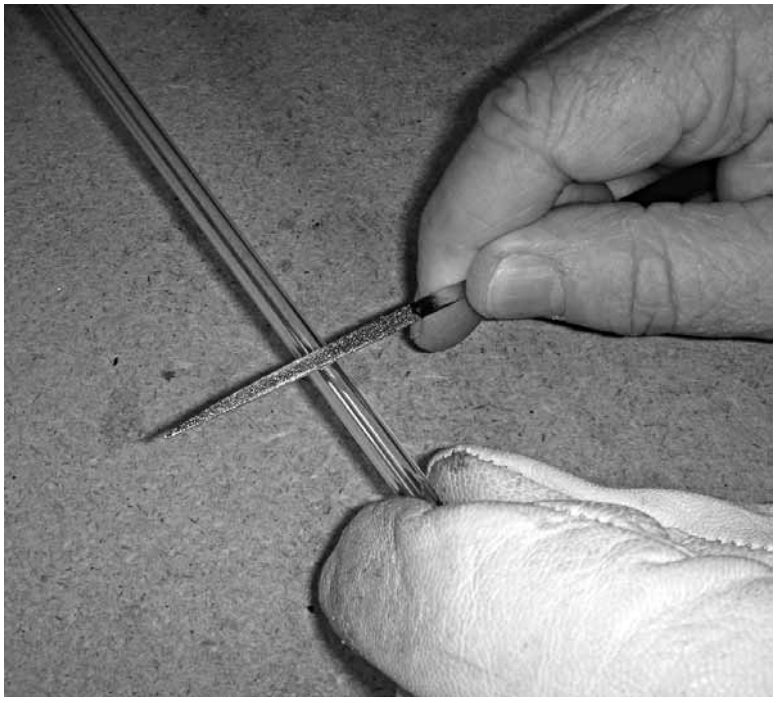
The process of cutting, fitting, flame polishing and final installation doesn't take long. Tools needed are;

Safety glasses
Gloves
Triangular Diamond file
Propane torch
Caliper / Precision scale

If you have planned ahead, and have your tube measurements, you can skip this step. Carefully measure the opening of your gauge glass holder. Make sure you include length for the O-rings to fit on the ends of the tube, if you have the gland nut style. If you cannot measure the diameter of a fragment, then check the diameter of the O-ring, making sure you do not distort it while measuring. Use a bolt, or visually compare the O-ring inner diameter to an open end wrench. This will get you close enough, as tubing is virtually always in whole number metric sizes (e.g. not 5.5 mm, 6.7 mm but 4 mm, 5 mm, etc.). Check wall thickness, it should be 1 mm, almost regardless of tube diameter. Remember to record these measurements, for future reference.

Wearing safety glasses and gloves, use a sharp edge of a diamond file (any shape file with a sharp edge will work fine) to score the tube. Make 5 or 6 strokes, making sure the file doesn't drift. See the photo for how to grasp the tube for snapping to length. (A good example of a picture being worth 1000 words). Gently increase pressure, and the tube should snap easily. The end should be quite straight, but will have sharp edges.

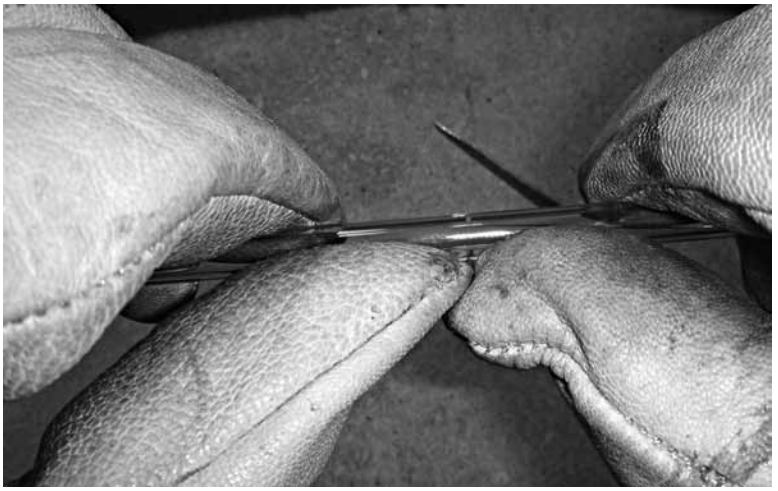
Flame polishing will eliminate the sharp edges. This is an important step, for safety, and to prevent damage to either the O-ring or washers during installation. Fire up your propane torch, and hold the tube with pliers. Put the end of the tube into the flame, and you'll soon see the end glow red, and emit a yellow flame. At this point, remove the tube from the flame.



Scribing glass tube with a file.

The end should exhibit a rounded, polished end. Polish the other end if necessary. While you have the torch lit, polish the end of your tube stock, for safe handling in the future.

Finally, install your new gauge glass. Make sure you pressure test your boiler before you apply heat, using your boiler maker's instructions or standard pressure testing procedure.



Breaking the glass tube on the scribed line.

Using a torch to polish the raw end of the glass tube.

Taming the Taig

by Rob Kuhlman

Making more chips

Many readers of SitG will get their start in lathe work, as I did, with the Taig. The Taig is a wonderful lathe -- inexpensive, lots of accessories, terrific precision -- it's got to be one of the very best values in machine tools. There are, however, two disadvantages of the Taig: the lack of change gears and lead screw for thread-cutting operations, and the high spindle speed and resultant lack of torque which precludes cutting tough metals like cast iron. I tried to tackle the latter concern by fabricating an intermediate shaft, with the twin objectives of cheap and easy.

The local home center supplied two floor flanges, three straight lengths, and two 90 degree elbows of 5/8" galvanized pipe fittings. I also purchased a length of 3/8" diameter steel bar for the intermediate shaft. From MSC I ordered two 3/8" (0.375") pillow blocks. These mounted onto home brew aluminum clamps which, in being able to slide up and down the vertical pipe framework uprights, allow the intermediate shaft to be positioned for square and appropriate belt tension. The aluminum was hacksawed, filed, drilled, and tapped from scrap aluminum bar which I picked up at Cabin Fever this winter; a good hardware store or home center should have something comparable.

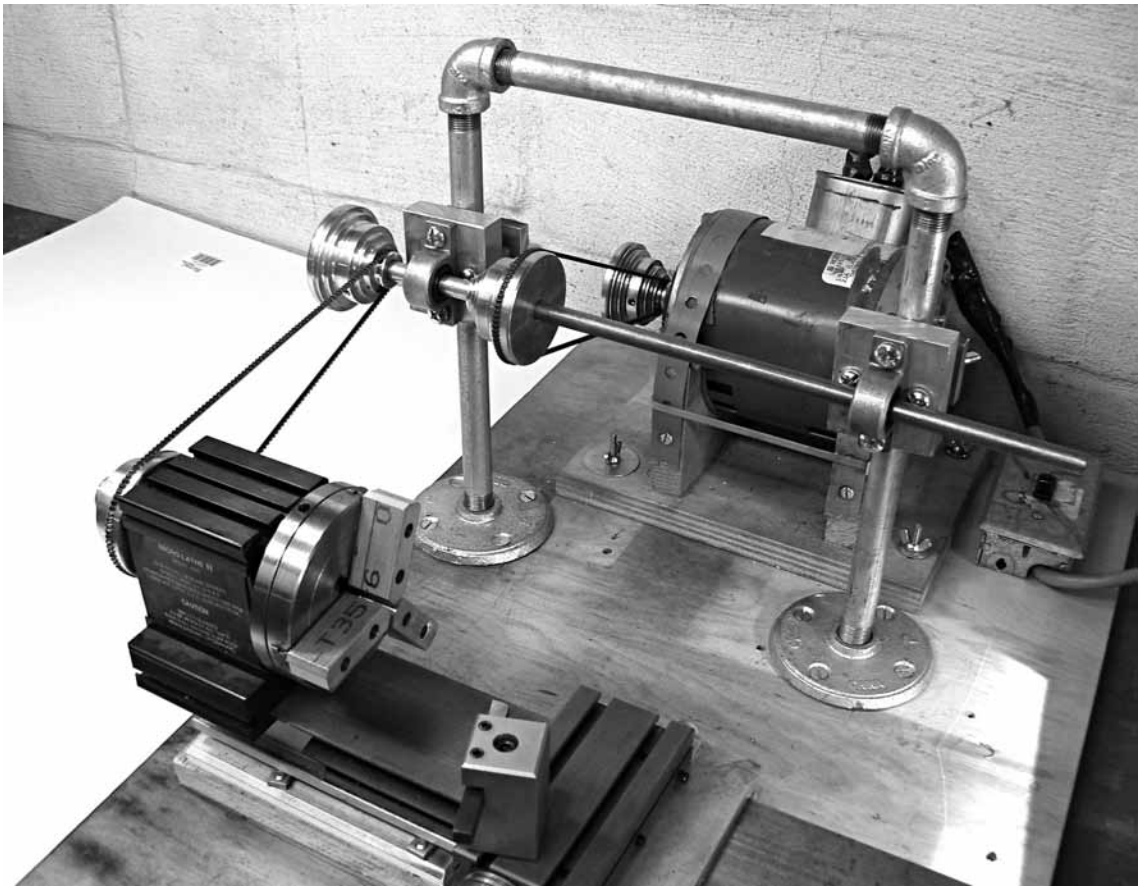
From Nick Carter I obtained an extra pair of Taig belt pulleys and another Gates V-belt. The trick here is to make sure the bore of each of the two pulleys matches that of your intermediate shaft (says one who had to learn the hard way). An assortment of 1/4X20 nuts, bolts, washer, spring washers, and wing nuts completed the hardware purchases. I also cut two short lengths of thin wall telescoping brass tubing to serve as spacer sleeves; these fit over the shaft between the pulleys and one of the pillow blocks and keep the shaft from migrating along its axis. The overall design is straightforward, and rather than giving you specific dimensions it'd probably be best for you to size the pieces and their spacing to suit your particular Taig layout; I hope the photographs will give you an idea of what you're aiming for. I should mention that while the Taig was dismounted I took the opportunity to insert a piece of 1" plywood spacer to raise the Taig bed up a tad more to facilitate the removal of chips and swarf.

I have no digital readout for the spindle rpm, but with the new setup, I've reduced the minimum spindle speed from the stock 550 rpm to approximately 150 rpm -- not ideal for cast iron, but it's a lot better than it was. My first task with the new setup was to face the backs of some cast iron driver castings, and the cutting tool grunted its way to the center without complaint. One caution to be alert for is that using an intermediate shaft enables you to increase the spindle speeds beyond stock specifications -- this you certainly do not want to do. When you position a drive belt, make certain that the driven pulley's slot diameter is always larger than the slot diameter of the pulley doing the driving, and you'll be OK. My design could be improved with custom-fabricated pulleys which would provide not only further reduction of the spindle speed but also the use of wider and deeper V-belts to minimize belt slippage. Now that I've gotten the Taig tamed a bit, I might take that task on and turn my own pulleys. But for now I'm pretty satisfied -- cheap and easy.

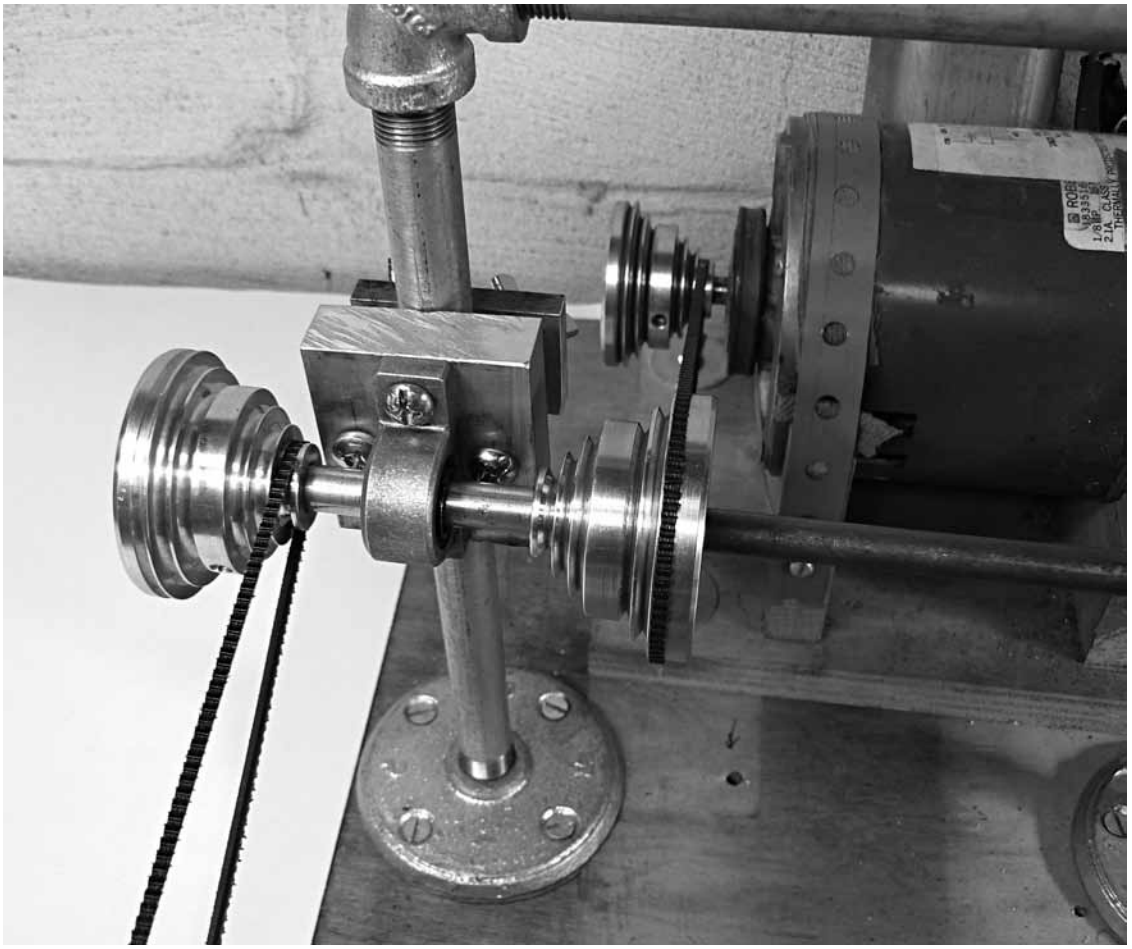
List of specialized suppliers:

Nick Carter:
http://www.cartertools.com/catalog.html
#1161 pair Taig 6 step pulleys, 3/8" bore, and belt

MSC:
http://www1.mscdirect.com/cgi/nnsrhm
#07571144 Spiraflow Self-Aligning Needle Roller Mounted Bearings, i.d. 0.375"



The author's Taig after modifications were installed.



Closer view of the pulleys, bearings and support arrangement.

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FOR SALE: Canadian Pacific Royal Hudson #2860 by "Accucraft". Live Steam- Gas Fired, Burgundy and Grey Livery, never run. US$4,000. If interested and would like more information please contact me, Bill Burgess, at willbur@cogeco.ca or 905 849 8623. (104)

FOR SALE: Aster Mikado, kit built, with axle pump and partial detail package installed. The rest of detail is at hand but remains to be installed. Please contact me with any questions at sparks@pvco.net . It also comes with custom oak carrying case, spare parts and tools. I have the 18 cars that can be seen in the video that I am willing to part with. $3900.00 for the engine. We can talk about the cars if you want. Check out the video at: http://www.youtube.com/watch?v=rGPCwCz66KI (104)

FOR SALE: Argyle Locomotive Works 2-6-0 Mogul "Old Star" built by renowned model engineer Gordon Watson: 1:22.5, 45mm. It is outside framed with sprung drivers and full Stephenson valve gear reversible from cab, butane fired single flue boiler with s/s super heater, pressure gauge, sight glass with blow down valve, whistle valve with whistle, roscoe displacement lubricator, hand pump and butane tank in tender and Kadee couplers. It is in very good used condition and is an excellent and sedate runner. This engine was featured on the cover of SITG #34. For sale at $2250. Contact me for pictures and specifics at 209-293-4326 or JimMcDavid@msn.com (104)

FOR SALE: 1:32 Aster German Class 44 2-10-0 Loco that has been steamed up twice. I have photos on request. I would like $5500.00 for it. Alan F. King, phone: 801 554 3738 or e-mail: alanfking45@hotmail.com (104)

FOR SALE: Accucraft Rolling Stock, Set of 4 W&L Goods Vans - $65 each; 2 W&L Guards Vans - $95 each. All in new condition, never run. Following wagons are used, but in very good condition. Set of 4 L&B Open Wagons in SR Brown - $150 for all 4 or $40 each; 2 W&L Flat Wagons, dark grey - $30 each; 2 W&L 1 Plank Wagons, dark grey - $30 each. All with original boxes, extra set of 32mm wheels, etc. Take six or more, shipping is free, otherwise shipping is extra. Jeff Tomecek, 443-567-5777 or TomecekJ@comcast.net (104)

FOR SALE: For CP Royal Hudson fans: Candian Pacific Steam, Vol 1 [in color]; Candian Pacific Steam, Vol 2 [in color]; Canadian Pacific Color Guide to Freight and Passenger Equipment [in color]; Candian Steam in the Prairies, Towns & Cities [B&W] with many photos of the Royal Hudson, list price $186.80, sale price $170 plus shipping. THESE BOOKS ARE ALL NEW. Also included at no charge is a collection of zerox drawings of passenger cars [inc. interiors] and some freight equipment. Contact Will Lindley at Thumper12225@prodigy.net. (3/14/09)

FOR SALE: Accucraft America Mainline USRA 0-6-0 CB&Q #505, Item # G731-02. Steamed 4 times as demonstrator. Excellent steamer and runner. New $1695.00 asking $1300.00. America Mainline PS-1 Box Car 4 car set# G401-12, Frisco car numbers 17402, 17439, 17465, 17489 Set of 4 $300.00. Contact Peter, email: trainyard1@cox.net (3/18/09)

FOR SALE: Accucraft C-16. "Rio Grande" number 278, black livery. Excellent runner. $1,695. Contact Paul Kenney. E-mail cocopalms@bellsouth.net, phone 985 868 0826. (3/20/09)

FOR SALE: Accucraft K-28 DRGW #478, includes Accucraft snowplow attachment. New in the box. $4200 plus actual shipping from Virginia. John Reeder, 703-757-5989 or JFR1945@gmail.com -- email me for pictures or additional information. (3/27/09)

FOR SALE: Aster Nickel Plate Road 779 Berkshire, which I built from a kit. The engine has been air tested but not fired. I have built two other Aster kits before the Berkshire and both ran fine. (I was coached by the great Jerry Hyde on the first one.) $6,500.00. Call John Leonard at 269-857-2860 or email me at john@jmlllc.com (4/1/09)

BUSINESS FOR SALE: Robert Dustin has been supplying decals, builders plates and related items to the model railroading hobby for many years. Robert has recently retired and is offering his business to anyone who would be interested in continuing this service. The qualifications are simple:
1. A knowledge of railroads and the hobby at large.
2. An ability to reproduce images.
3. Print by silk-screen (a craft very easily learned).
4. This may be the tricky one - some creative computer drawing ability.

Robert has all the printing equipment, material sources, tools and a 40 odd year old library of images and film layout. Contact him at RDustin@aol.com

BACK IN PRODUCTION: Westminster Loco Works has resumed limited production of the Cricket MKII Live Steam Motor. They are finishing locos from the original order lists and continue to take a no deposit reserve list. All sales and orders are now in house at WLW and they no longer have ties to Purkey's Toy Trains. There is a small website at www.cricketlivesteammotor.com which goes into a little more detail.

FOR SALE: 1) Ruby 2, unmodified, in orginal box. Has been used some. Good condition. $300 plus shipping and insurance.
2) IP Engineering Jane. Spirit fired, burgundy color. $250 plus shipping and insurance. I can be contacted at e-mail: steamnteach@aol.com Steve Jarvis (5/7/09)

Swap Shop listings are offered at no charge as space permits. No dealers and no phone-in ads, please! Send your listings to SitG, PO Box 335, Newark Valley NY 13811 ● fax to 253-323-2125 ● e-mail to <rbrown54@stny.rr.com>. Ads must contain sellers name, plus address and/or phone number. Ads will be run one time only unless previous arrangements are made.

END OF THE LINE

Peter Jones

As you have probably already read or heard, we lost a giant in our hobby recently when Peter Jones passed away. Peter made too many contributions to count, and he definitely made his mark. He was a Renaissance Man in every sense of the word in the small scale live steam arena, and he will be missed.

Magazine Business

Hopefully the change will be transparent to our readers, but beginning with this issue we are using a different printer. Our former printer has served us well, but in these tough economic times we have to keep a close eye on the bottom line, and the new printer promises equal quality while saving us a few bucks on each issue. They also will make it possible for us to add additional pages of color, which is something we have wanted to do for a long time. The savings will enable us to keep our subscription rates and ad rates at the current level, which should be good news to all of us. With the price of paper going up and postage making a jump every year, it's as close as we can come to a miracle.

Editor's In Box

Now that the steaming season is upon us we hope most of our readers will be attending steamups all over the country and around the globe. Please take the time to shoot a few good photos and send them to us, along with a writeup on the event, so we can share them with the small scale steam community.

Take the time to write about something you've built or improved or repaired. It might serve as inspiration to someone else.

Until next time.....

Happy steaming!

Ron

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