

No. 149, May/June 2017

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STEAM_{IN THE}GARDEN

International Small Scale Steamup 2017 Diamondhead, MS

- * Coal Conversion
Episode V**
- * Remote Control Dora!**
- * Accucraft N&W 611
Review**

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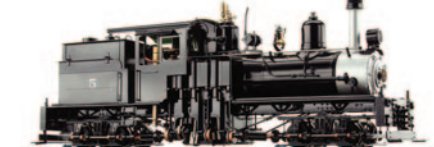
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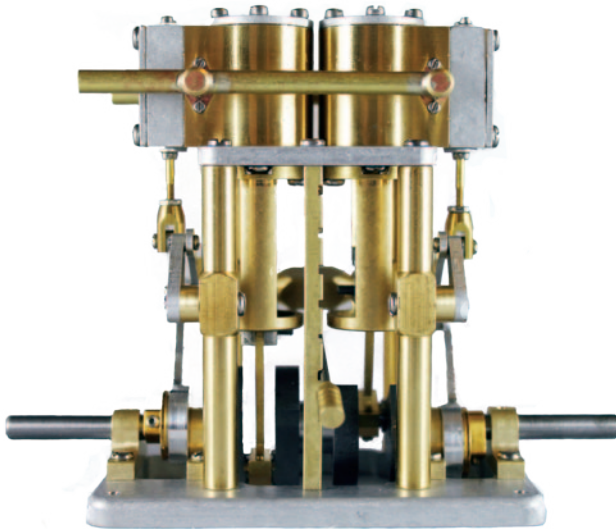
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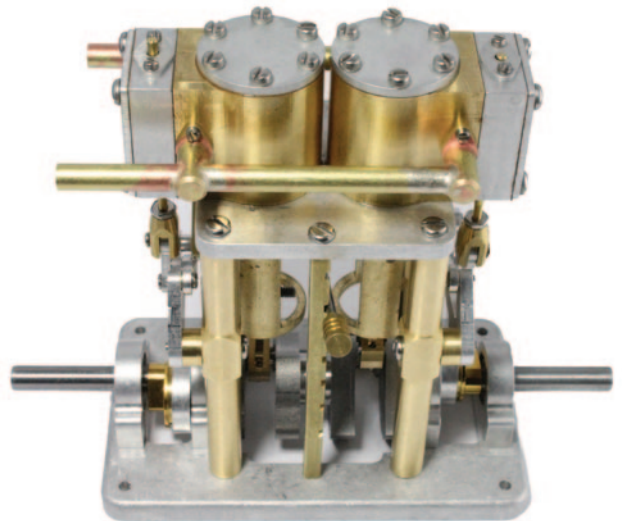
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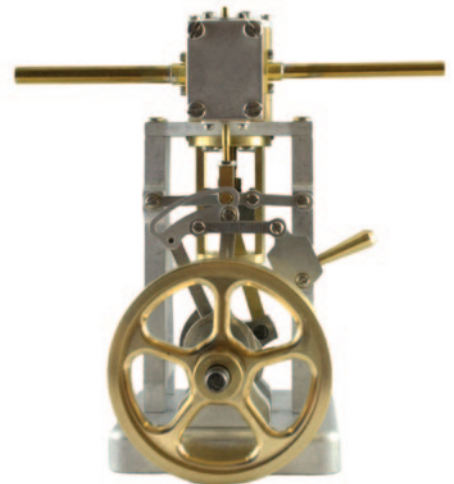
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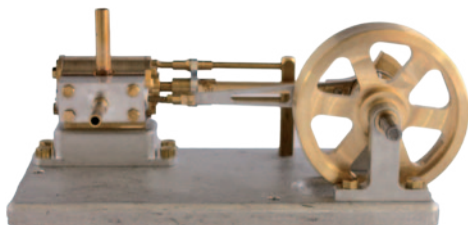


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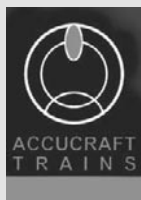
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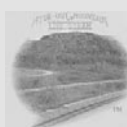
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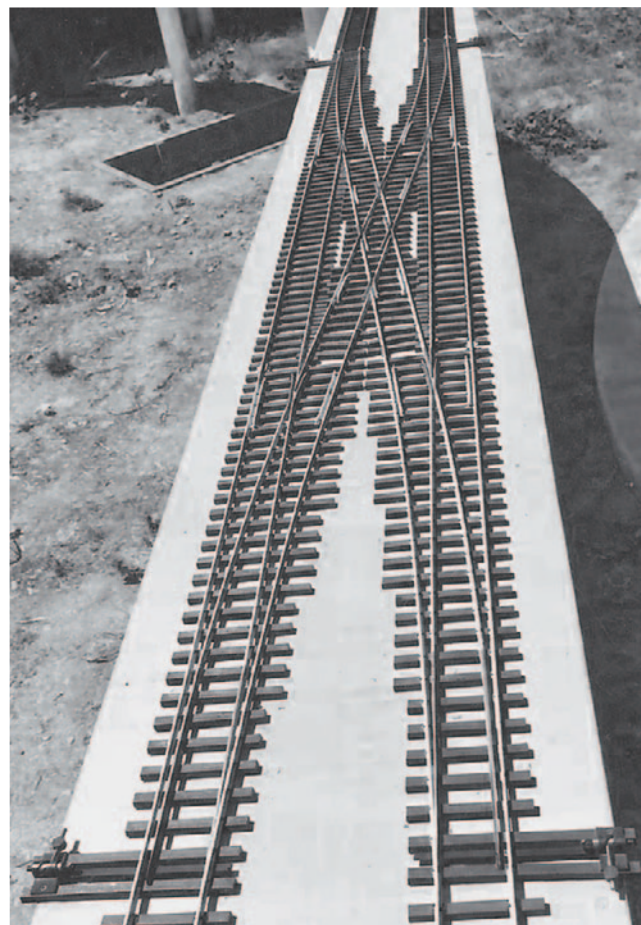
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STEAM^{IN}THE GARDEN

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

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

Cover: Attendees gather for the group photo at the International Small Scale Steamup, Diamondhead, MS. **Photo by Scott E. McDonald**

US DECAPOD


G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
 Butane Fired

US CASEY JONES


G1 Scale 1:32, 45mm Gauge
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 Butane Fired

US PENSY G5


G1 Scale 1:32, 45mm Gauge
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 Butane Fired

US HUDSON 490


G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
 Butane Fired

BRITISH BRITANNIA7000 BRITISH A4


G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
 Butane Fired



G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
 Butane Fired

BRITISH 8F


G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
 Butane Fired

BRITISH 4MT


G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
 Butane Fired

BRITISH GWR 14xx


G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
 Butane Fired

GERMAN 18 201


G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
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G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
 Butane Fired

GERMAN BR41

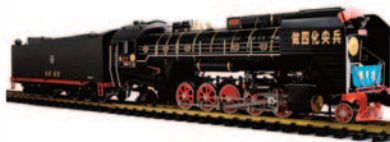

G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
 Butane Fired
 R/C Ready

CHINESE QJ7081


G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
 Butane Fired / Coal Fired

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 45mm Gauge / 32mm Gauge / 16.5mm Gauge
 Brass & Stainless Steel
 ELECTRIC

CPH (Australia)


O Scale 1:48, 32mm Gauge
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 Electric 24V DC

AUSTRALIA C38


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 Brass & Stainless Steel
 Butane Fired
 R/C Ready
 R/C Ready

AUSTRALIA C38 CLASS


G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel
 Butane Fired
 R/C Ready

44 Class (Australia)


O Scale 1:48, 32mm Gauge
 Brass & Stainless Steel
 Electric 24V DC

BRITISH MK1 COACH


G1 Scale 1:32, 45mm Gauge
 Brass & Stainless Steel



LATEST WAYBILL

In Memoriam: Dave Cole and Tom Myers

It is with very heavy hearts that the staff of Steam in the Garden has to announce the passing of our esteemed editor Dave Cole on 17 January 2017. Dave lost his battle against cancer and will be dearly missed.

Dave began as a small-scale live steam hobbyist in the late 1990s, Dave has been the editor of *Steam in the Garden* magazine since January 2011. He has built two live-steam railroads and owned a variety of live-steam locomotives and rolling stock. Dave had detailed much about his live-steam enthusiasm at his former web site <http://www.45mm.com>, where the builds of his two railroads are documented.

Dave was also a prime mover for the National Summer Steamup held each year in Sacramento, CA. Dave served as Newsletter Editor for the Bay Area Garden Railway Society and was also the editor of the 2006 National Garden Railway Convention program.

Dave had been a journalist since the early 1970s and was an editor at magazines and newspapers, including Rolling Stone and the San Francisco Examiner.

Dave co-founded a quarterly non-profit magazine in 1974 and continued to edit it through 1983. He has owned the weekly business-to-business newsletter www.newsinc.net/ since 1997 and has been a consultant to print and new media publish-

ers since 1989.

Dave is survived by his sister Sally. He has requested that his ashes be thrown into the belly of a live steam locomotive and blown out the stack. His live steam friends are working to make his last wish come true.

Tom Myers



Tom Myers enjoying a cold IPA with his lineup of locomotives at the International Small Scale Steamup. Photo by Bob Weltyk.

Tom died suddenly and unexpectedly on Saturday, January 14, 2017 while attending his 22nd consecutive International Small Scale Steamup at Diamondhead, Mississippi. Steam-Tom1 as he was affectionately called, grew up in Connecticut where he attended a small parochial elementary school and high school. On graduation, he attended Spring Hill College in Mobile, Alabama, the third oldest Jesuit college in the Nation. Even after graduation, and while attending steamups at the Diamondhead International Small Scale Steamup, he would return to Spring Hill College to attend Mass at the campus Chapel. After graduation from Spring Hill, Tom joined the U.S. Air Force and was deployed to the Philippines where he met and married his lovely wife, Lilia. On return to the mainland, Tom obtained a Masters degree in Electrical Engineering at the University of Illinois.

On his retirement from the Air Force, Tom's career took him to Chrysler where his electronic skills got him involved with several new vehicle launches. It was Chrysler that brought him to Michigan.

As for his hobby, Tom initially, became involved with the Lakeshore Garden Railroad Club, and



Dave presenting the Ron Brown Memorial Enthusiasm Award to Brittany Grimm at the NSS 2012. Photo by Rick Parker

while there, he was bitten by the live steam bug. Tom bought his first live steam locomotive, a Frank "S" while attending the National Garden Railway Convention in Cincinnati, Ohio. Later, while attending the National Garden Railway Convention in Washington, DC, he met and became good friends with a large group of "East Coast" live steamers. He kept in touch with many of these new found friends through the Pennsylvania Live Steamers located in Collegeville, PA. Simultaneously, he got truly hooked on the live steam aspect of the hobby, attending his first of 22 consecutive steamups in Diamondhead, MS. Tom always regretted missing the first two steamups in Diamondhead. Concurrently, Tom helped form the Michigan Small Scale Live Steamers (MSSLS), LLC. Tom was President of MSSLS on his passing.

Tom was my traveling buddy, whether to local steamups in Michigan, Ohio and Pennsylvania, or driving Dolgoch on the Talylyn in Wales and visiting the 16mm show in Peterborough. Then there was Diamondhead. We attended 11 years together and this year was our 5th trip driving together to Diamondhead. Each trip resulted in about 15 hours of wonderful conversation each way, and

never a contentious word. It's amazing how many topics you can cover over a two day period when confined to a minivan. On our trips home we would start planning for the next trip to Diamondhead and in the fall, we'd both start assembling what was in line for January. Tom, thank you so much for your friendship and all the wonderful memories. You are missed. -- Will Lindley

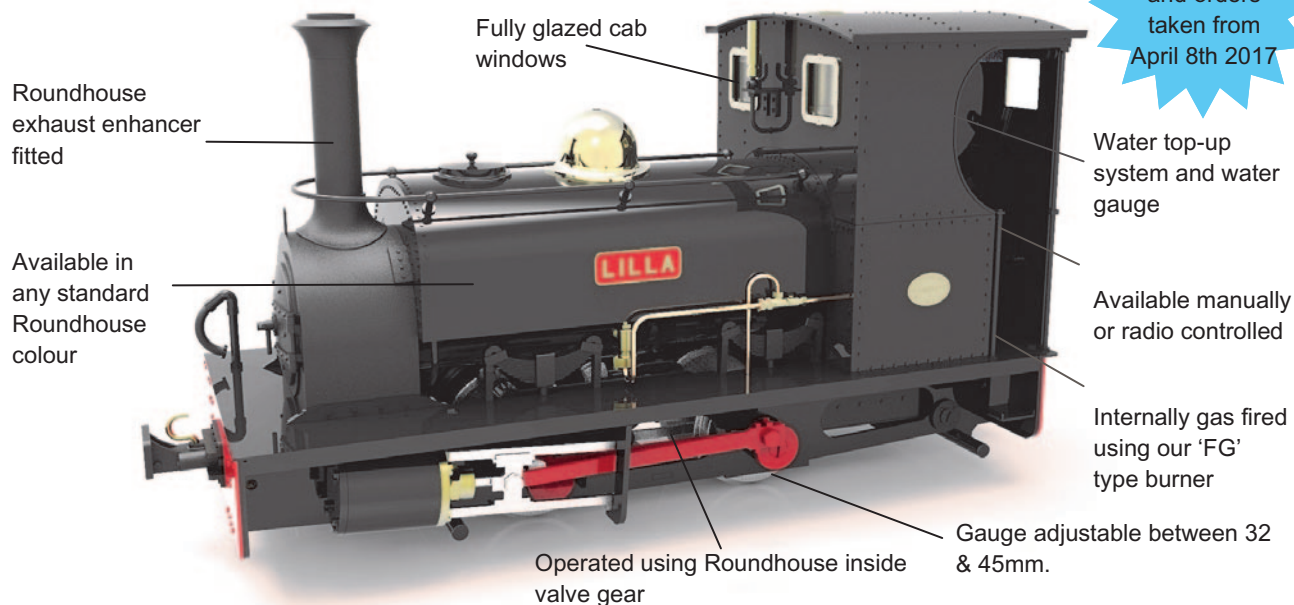
New Live Steam Special Interest Group

DENVER AREA SMALL SCALE STEAMERS

The Denver Area Small Scale Steamers (DASSS) is a new club that has formed in Denver, Colorado, to promote the small-scale-live-steam hobby. The intention is to have monthly meetings for show-and-tell, discussion, and running trains. The club has a portable track at its disposal that supports gauge 0, gauge 1, and gauge 3, and hopes to run trains at a variety of local events throughout the year. For more information, visit the club's website: www.dasss.club.

'Lilla'

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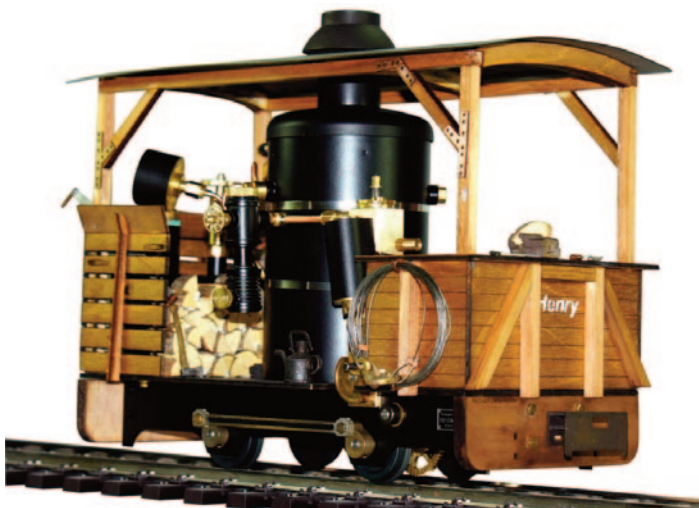
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Regner adds to its Easy Line



Regner Steam and Railway Engineering GbR of Aurach, Bavaria, Germany announces a new addition to their Easy Line locomotives with a kit of a Backwoods style engine named "Henry".

This locomotive is not based on any real prototype and follows a generic design that you would find running on a small line up in the mountains, perhaps supporting the logging industry.

The Train Department of Hazlet, NJ reports that this is an 0-4-0 with a single cylinder (10mm)

motor geared to the drive train. It is butane fired with a poker burner and a 110ml capacity boiler. The release photo shows a model with added details. Price for the kit is expected to be US\$750 and RTR is \$1000 at the current exchange.

Russian Decapod Makes Debut

Wuhu Brand Arts & Crafts announced and showed their latest offering of a Baldwin 2-10-0. Commonly referred to as a Russian Decapod, the pre-production model in operation at the 2017 International Small Scale Steamup in Diamondhead, MS sported the Western Maryland livery.

The locomotive is referred to as a Russian Decapod because in 1915 400 units were ordered by Russia from Baldwin Locomotive to support their



Russian Decapod in Western Maryland Livery as seen at the International Small Scale Steamup 2017 -- Photo by Scott E. McDonald

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NATIONAL SUMMER STEAMUP 2017

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efforts in World War 1. By 1917 there were 200 units that had not been delivered. Because of the Bolshevik Revolution the remaining units would not be delivered and Baldwin reengineered the remaining locomotives to ARA standards for use in the U.S.

Wuhu representative Stoke'm & Smoke'm of Mt. Airy, MD says that 2-10-0 will be available in four liveries: Western Maryland "Fireball," Erie with yellow diamond, Frisco Line, and a factory painted but unlettered version. This will be an extremely limited production with pre-order reservation only.



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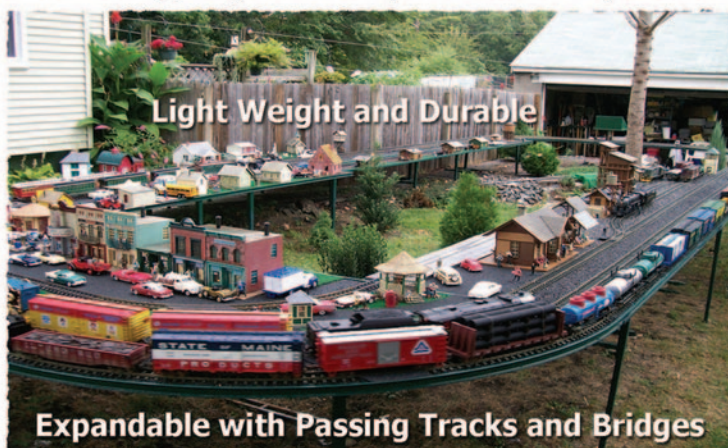
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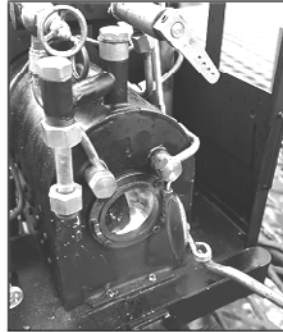
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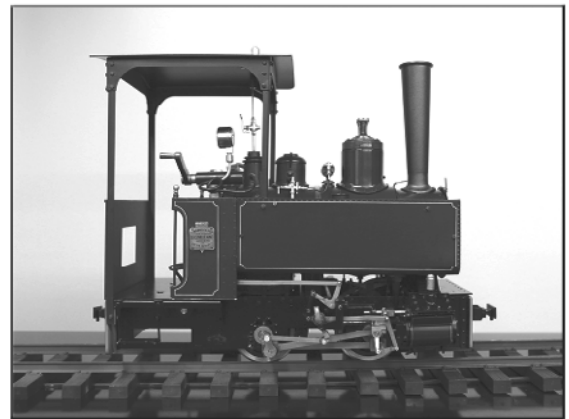
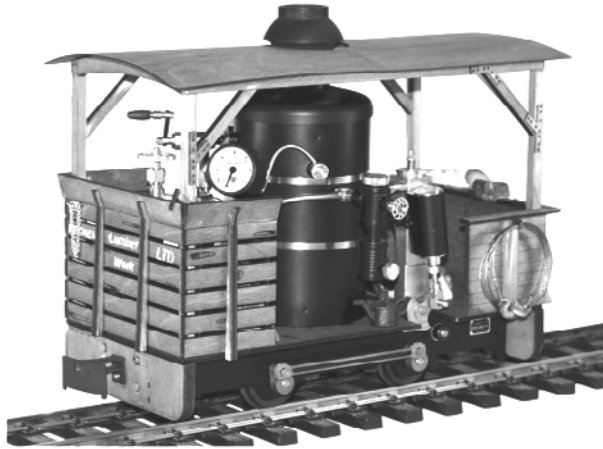


Coal Fired Emma Conversion

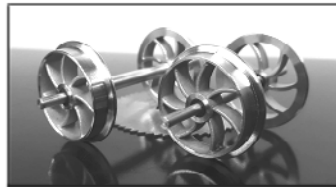
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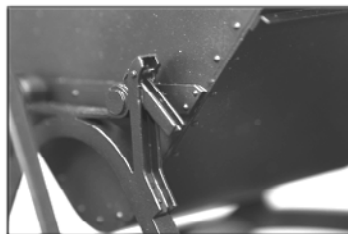
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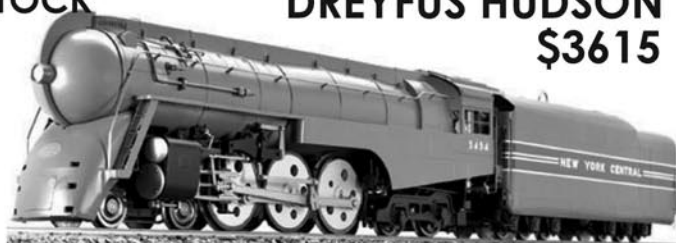
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SIG 7/8-2016

New Years 2017 B.C.

Text and photos by John Shortreid

The Greater Vancouver Garden Railway Club is a 'G' Gauge Club primarily located in the Greater Vancouver Area of British Columbia. However, the Club has some members from Alberta and Vancouver Island. We even have members located in Washington State, and one as far south as Texas. The GVGRC has approximately 129 primary memberships representing 230 family members. The Lower Mainland of British Columbia is not an ideal location for running trains outdoors during the late fall, winter and early spring. There are typically lots of rainy days during this period and this year we experienced an inordinate amount of snow. For

this reason the Club members look forward to any opportunity to run their trains on the Club's portable sectional demonstration layout. This lay-



Randy Reinsch's Aristocraft Mikado showing off a great plume in the greenhouse.

out is used not to just allow members an opportunity to run trains, but also to demonstrate the hobby to members of the public. The Club members are a mix of enthusiasts who run live steam, track and battery powered engines.

For many years now the Club has annually set up the sectional layout during the month of January in Art Knapp Plantland's greenhouse in South Surrey (a suburb of Vancouver). This activity is supported by Art Knapp's Garden Train Department at a time when the greenhouse is not normally in use. This allows the members to run trains anytime during store hours out of the weather elements. It also exposes the hobby to the many members of the



Dan Pantages really 'digs' the hobby with his steam-powered ditcher.



Dan's Hadden Heisler pulling a load of East Cost logs on the first car and a West Coast log on the second car.

public who visit the store. One weekend is dedicated to Art Knapp's 'Time 4 Trains' event, during which the Train Department offers many garden train-related sales items.

The sectional layout itself is made up of 28 sections in four- to six- foot lengths. The layout measures about 24 feet by 50 feet and has two

mainlines, an inner loop which has minimum 10-foot 6-inch radius curves and an outer loop with minimum 11-foot 3-inch radius curves. The layout has a lift-up bridge for easy access to the inside area, a tunnel, a large inside staging area and an outer steamup section with a transfer and turn table combination. The whole layout is supported



Interested potential new members (left) get an introduction from club members Jerry Coward and Peter Szolga (right)

by adjustable sawhorses, which make it easy to accommodate uneven surfaces. A laser level is utilized to ensure a level set-up for our live steam members. The inside loop is typically reserved for track and battery powered engines, while the outer

loop is left to the live steamers. It seems the members utilizing electric don't like to get their wheels dirty. This pictorial features some of the live steamers running on the sectional layout during the January set up at Art Knapp Plantland.



Randy Reinsch putting his Aristocraft Mikado on the steam-up bay track while a Accucraft Royal Hudson sits waiting for a turn on the main line.

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Changing an Accucraft C-16 from butane to solid fuel

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conversion

Text, photos and illustrations by Rob Lenicheck

Steam Manifold

Before we go any further we need to complete the steam manifold on the back of the boiler. The manifold itself is not particularly pretty – but it is functional. See **Figure 24**. The steam delivered to the manifold is very reliable because it originates in the steam dome. All of the threads in the manifold are 10X40. If you prefer to make them 3/16-inchX40 it's your choice - the nominal difference in the size is only 0.0025 inches so I consider them interchangeable. The M5 thread is needed for the pressure gauge. Depending on where you get your pressure gauge the threads might be different.

A bigger issue: if you are using commercial valves rather than the ones I have included here be sure that the manifold threads match what you need.

Also, I am including in **Figure 25** the drawings of the valves which draw off of

the manifold. Making valves is a somewhat tedious undertaking so you may wish to use valves available commercially. Some good sources for valves are steamfittings.co.uk, Roundhouse, and the Bruce Engineering branch of polymodelengineering.co.uk. There are probably others.

Fabricate the manifold plug, paying particular attention to the location of the 0.094-inch diameter through-hole which delivers the steam to the valves.

Rather than making gaskets to use between fittings like the ones you have just made, I like to use Loctite Gasket Eliminator 515. This stuff seals really well, is easy to apply, and comes apart when needed. When you mount the manifold spread a small amount on the boiler fitting and on top of the manifold where the plug will seat. Be careful that the amount you use is not excessive so as to not plug up any holes. It takes very little, as long as you

Coal conversion of a C-16

Rob Lenicheck's Accucraft C-16 ran very nicely once he got it "peaked and tweaked" to his satisfaction. So nicely, in fact, that it grew boring. What to do? Rob, a committed coal-burner, decided that he would convert the engine to "the dark side." Here's how he did it:

- **Part I:** Designing the valve gear, disassembly, modifying the frame.
- **Part II:** Starting the boiler.
- **Part III:** Finishing the boiler, pressure-testing.
- **Part IV:** Smoke box, ash pan and grate.
- > **Part V:** Steam manifold, fittings, blast pipe.
- **Part VI:** Axle pump & bypass plumbing, water glass, wrapping it up.

Steam manifold parts

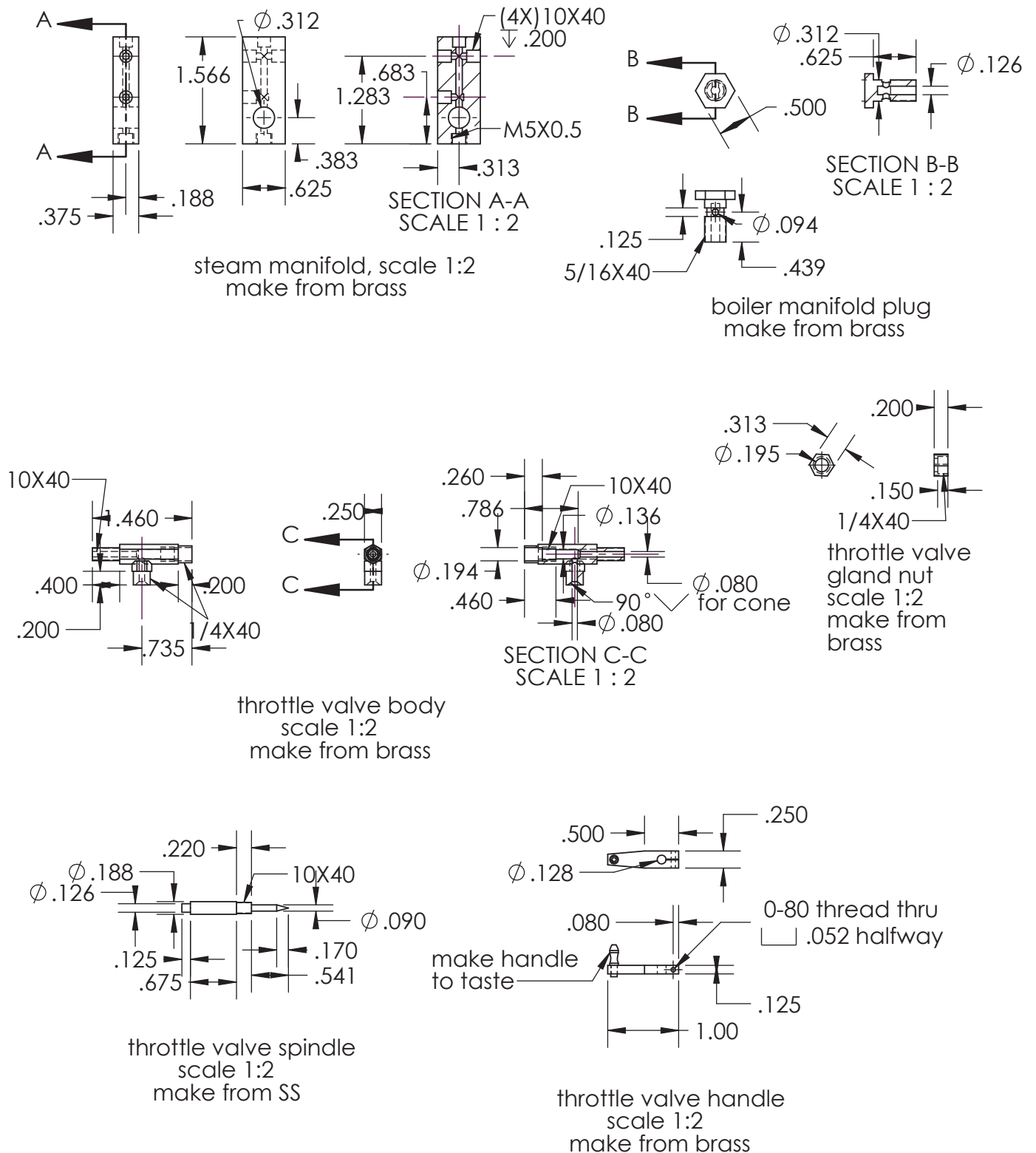


Figure 24

Miscellaneous parts, page 2

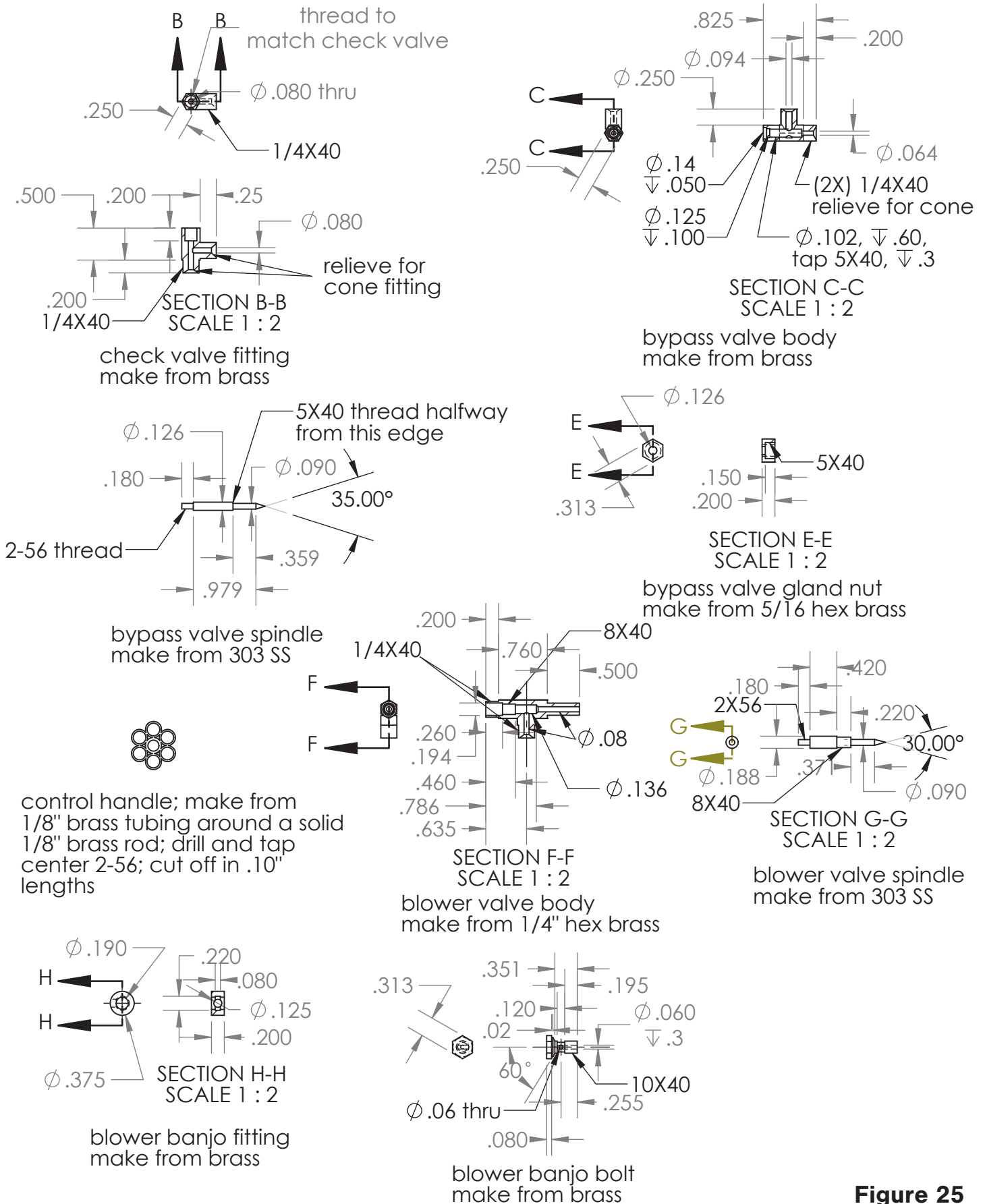


Figure 25

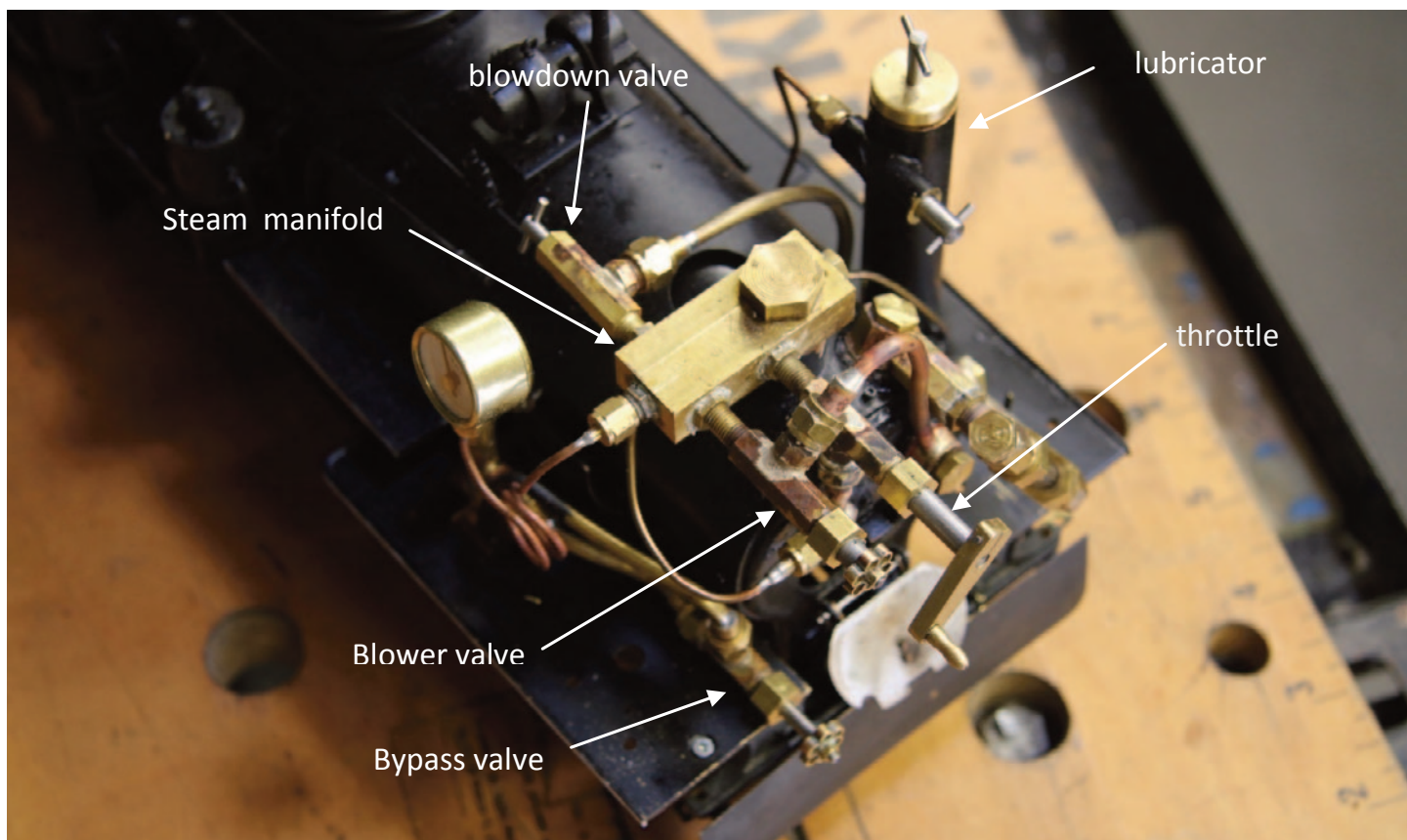


Photo 27

apply it in a continuous layer with no voids.

The first valve you'll have to connect is the one for the throttle. If you choose to make the parts please refer to **Figure 26**. To give you an orientation of the fittings on the manifold here's the broad view on **Photos 27 and 28**.

And some details and description of the throttle valve are in **Figure 27**.

The best way to make the valve body is to make it in two parts. The 90-degree takeoff for the steam line is made separately and silver soldered on. To join the two parts, make the takeoff with a small,

0.125-inch dia by 0.050-inch long boss. Drill the 0.080-inch hole through before parting it off. Locate and countersink the matching super heater hole in the body using a 0.125-inch end mill. If you're good you can make the parts a light press fit so they will stay together while you silver solder them.

Thread the throttle body into the manifold. Now it's time to make up the steam line into the smoke box. This tends to be a bit challenging as it needs to be made of 1/8 inch stainless tubing. Take a look at the photos of the back head once more and notice that a fitting for the lubricator line needs to be made and placed on the line prior to making the bend into the top of the firebox. Don't worry about the 1/16 inch hole for the lubricator line – that can be put in later. (This lubricator takeoff fitting drawing is found on the miscellaneous parts, page 1, in Part IV of this series.) Start the tube by making the only bend. I don't have a good method for doing this so you're on your own, but be careful you don't crimp the tube in the

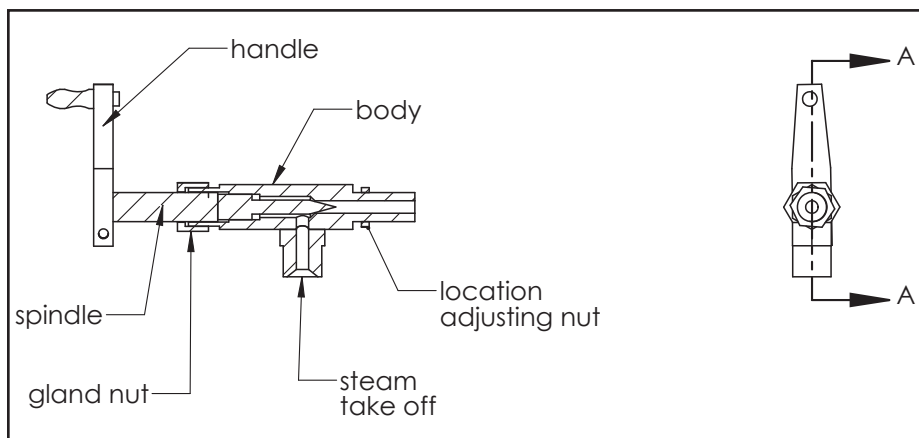


Figure 26

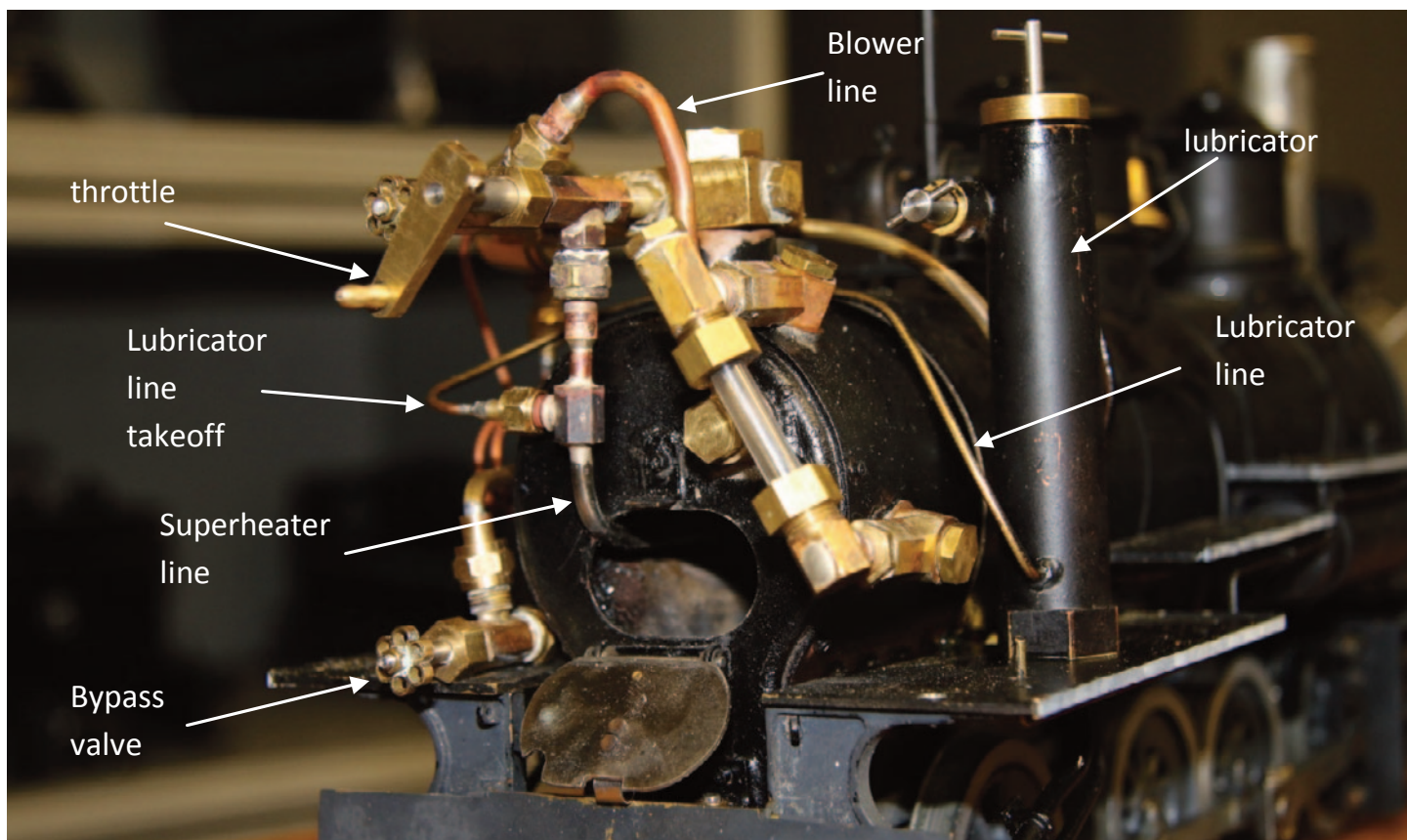


Photo 28

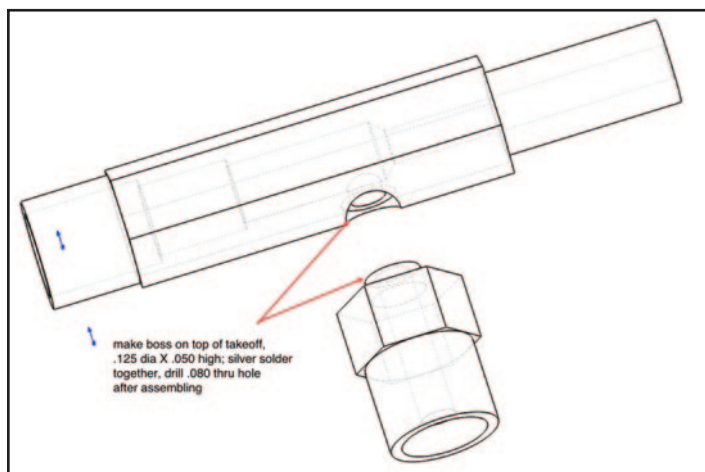


Figure 27

process. Test fit the tube by running it through the 0.500 inch flue, making sure it fits into the cutout in the back head so that the fire box door closes. Incrementally cut the vertical length down so that a cone fits onto the end of the tube and into the throttle takeoff.

Be sure that the length through the flue goes all the way through the smoke box. We'll cut this end off later. Before you silver solder the cone on. (I can't tell you how many times I've declared victory in this operation, only to discover that I neglected

to include the nut on the line.)

Now's the time to drill through the lubricator fitting with the 1/16 inch drill. Make sure the chips do not block the steam line.

Make up the fitting for the end of the steam line in the smoke box.

The super heater line should come into the smoke box with about 1 inch or so to spare. Silver solder the nut you just made to the end of the super heater line. The one-eighth-inch X .050 deep counterbore makes it easy to locate on the end.

You now should be in a position to attach the super heater line to the steam intake fitting in the smoke box. This extension can be made of copper or brass tubing. Take a look at **Photo 30** and notice how the tube gets bent around some 90-degree turns before attaching. This is necessary to assure room for the blower and blast pipes. It is a bit of a challenge to attach the super heater line to the pipe you just made but it is possible. Be patient.

Okay, blast pipe time. A great deal of the performance of the engine depends on this piece so take your time making it. See **Figure 29** for details. There is a chance that the smallest inner diameter of the stack does not match mine, which was

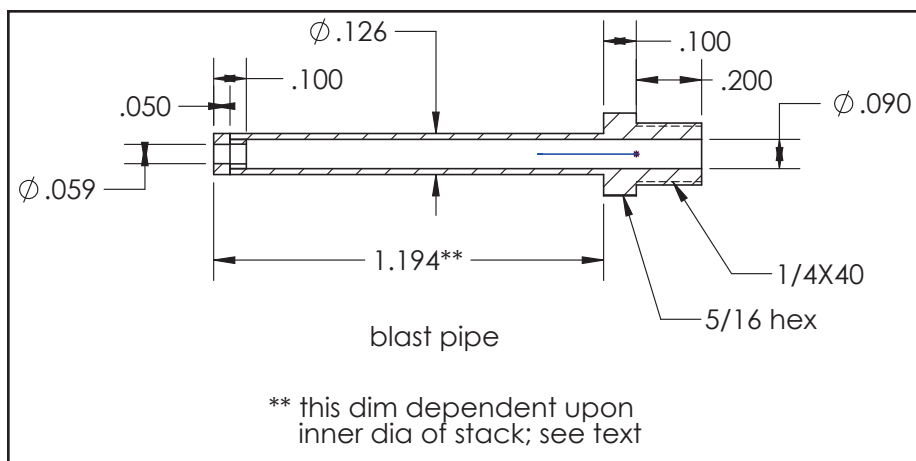


Figure 29

opened up on the lathe to 0.474 inches. This number is very critical because it is used to determine a ratio of 1:3, the optimal for developing good draft flow. (In my experience, this number is far more important than the 1:6 ratio to the top of the stack which is promoted by some). The 1:3 ratio is formed by a triangle, with the “1” being the radius at the smallest section of the bottom of the stack. Three times that number, or the “3”, then becomes the distance to the top of the blast pipe. Thus, since my minimum stack ID measures 0.474”-inch diameter, the radius of which is 0.237 inches, the distance to the top of the blast pipe from the bottom of that smallest diameter is then three times 0.237 inches equals 0.711 inches. (This is reflected in the length of the blast pipe on the drawing. If your stack does not match this diameter you have a choice to either open it up or change the height of the blast pipe to match.)

Go ahead and thread the blast pipe into place on the exhaust fitting. If you sight down the top of the stack you can see why we had to make the pipe from copper tubing rather than having it be rigid. I’ll bet you a good IPA that the blast pipe is not central to the diameter of the stack. Reach your finger into the smoke box and gently bend the pipe into position so it’s centered.

The final item which goes in the smoke box is the blower line. The nut and cone for this line attaches to the fitting way inside the smoke box on the front flue sheet. Impossible, right? Except that Kozo has once again saved the day by suggesting a tool. On page 160 of the Pennsy A3 Switcher book he has

sketched what he calls a “union nut driver.” See **Figure 30** for our version.

Take a look once more at **Photo 30**, the picture of the tubing inside the smoke box,—and notice that the blower nozzle gets threaded up through the bends in the super heater line and right up next to the blast pipe. Make the bends to accomplish that before you silver solder on the small nozzle fitting into the end of the

line. See **Figure 31**.

The blast pipe and blower should now look like **Photo 31**, looking down through the stack hole in the smoke box.

Lubricator

The lubricator can be considered a sort-of hydrostatic lubricator; it’s a design which I first saw from Torry Krutzke. See **Figure 32**. The lubricator is “pressured” by a 1/16 inch steam line off of the super heater line which goes into the bottom of the lubricator body. The oil then runs through another

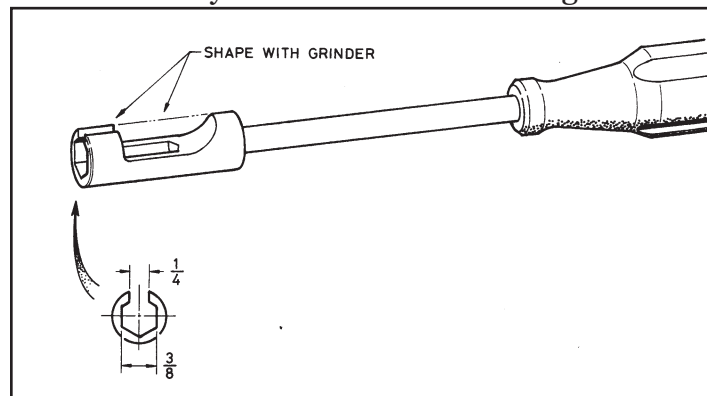


Figure 30

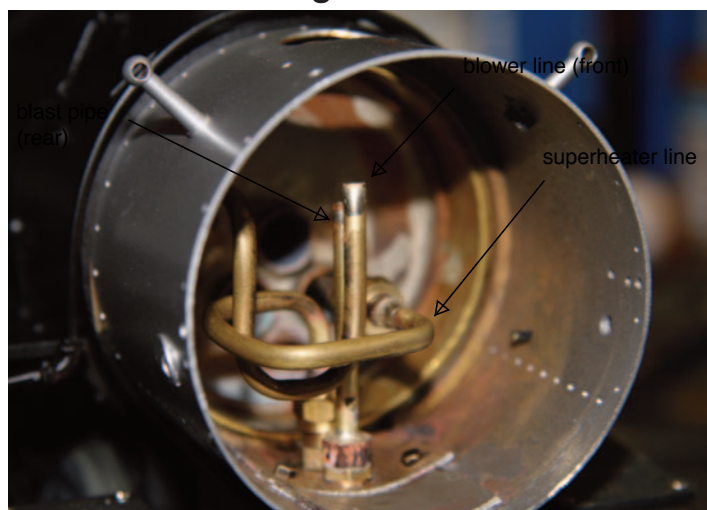


Photo 30



Photo 31

1/16 inch line from the valve at the top of the body. That line snakes its way to the fitting at the smoke box-saddle to feed the cylinders. (Please refer to **Photo 32** for clarification.)

Make up the lubricator body, with brass fittings at the top and bottom, as shown on the “miscellaneous parts, page 1” page from Part IV. Since it’s so close to where the action is I recommend silver soldering when adding the top and bottom fittings. The last thing which needs to be done to the body is to drill a 1/16-inch diameter hole about one-quarter-inch from the bottom of the body tube for the steam pressure line extending from the super heater line. Insert the end of a piece of 1/16-inch brass tubing into the hole, making sure the end is clear inside, and leave about 8 inches outside the body for attaching to the steam line. Silver solder into place.

The top cap is also made from brass. Make the stem from one-eighth-inch stainless for strength and then add the 1/16-inch cross piece to the stem. Both of these are light press fits into their holes and I secure them with the Loctite 609 retaining compound I’ve mentioned previously. Be sure that you add in a groove for the O ring which seats in the corner above the threads. Make up a special lathe toolbit which is profiled to reach into the corner. Rotate the toolpost on your lathe to reach into it using this tool. See **Photo 33**.

Continue making up the remainder of the parts: the valve body and valve. The main body needs to be machined out with a 0.25 diameter mill from

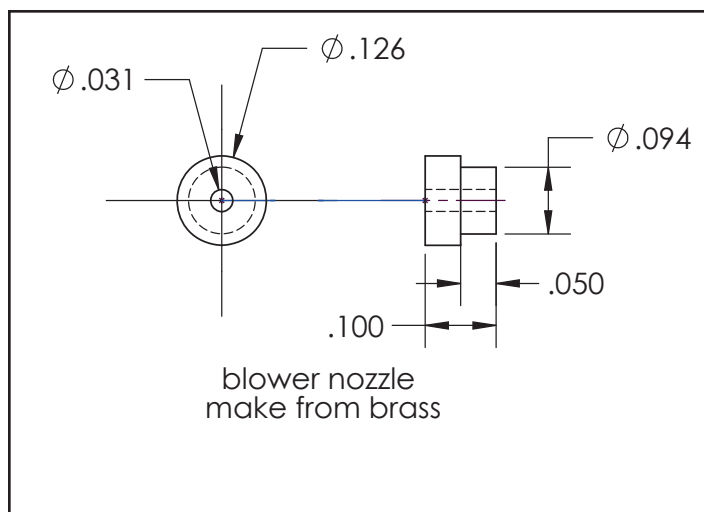


Figure 31

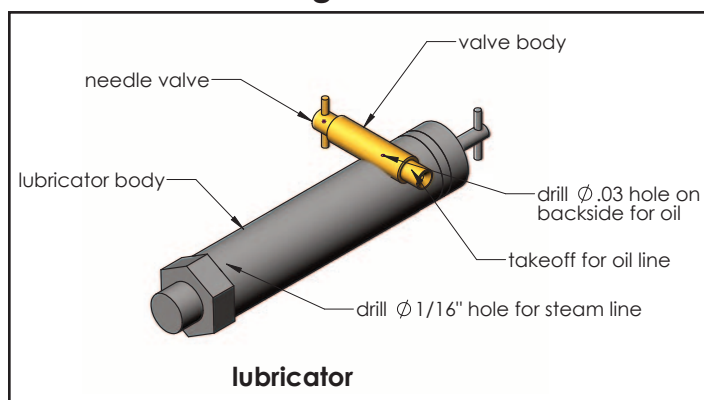


Figure 32

the side to accommodate the mating of the valve body. The location of this is not terribly critical – it just needs to be slightly lower than the bottom of the top end cap of the body. I did not show it except for a note on the assembly drawing: the valve body needs a 0.031 diameter hole through the sidewall for the oil outlet. This, then, needs to be precisely located when soldering the valve body to the main body for obvious reasons.

Once you prepped the parts you need to silver solder the two together. A good method to hold them together is to wire them. (You can do the top cap at the same time.) See **Photo 34**. Now would be a good time to plan out the location of the lubricator and make a three-eighths-inch hole through the cab footplate. It should go on the right side because of the left-hand location of the bypass valve and its tubing. I may have a slight advantage with my engine in that I remade the cab many years ago to match the later profile of the engine. This gave me a bigger cab footplate. Contact me if you want to

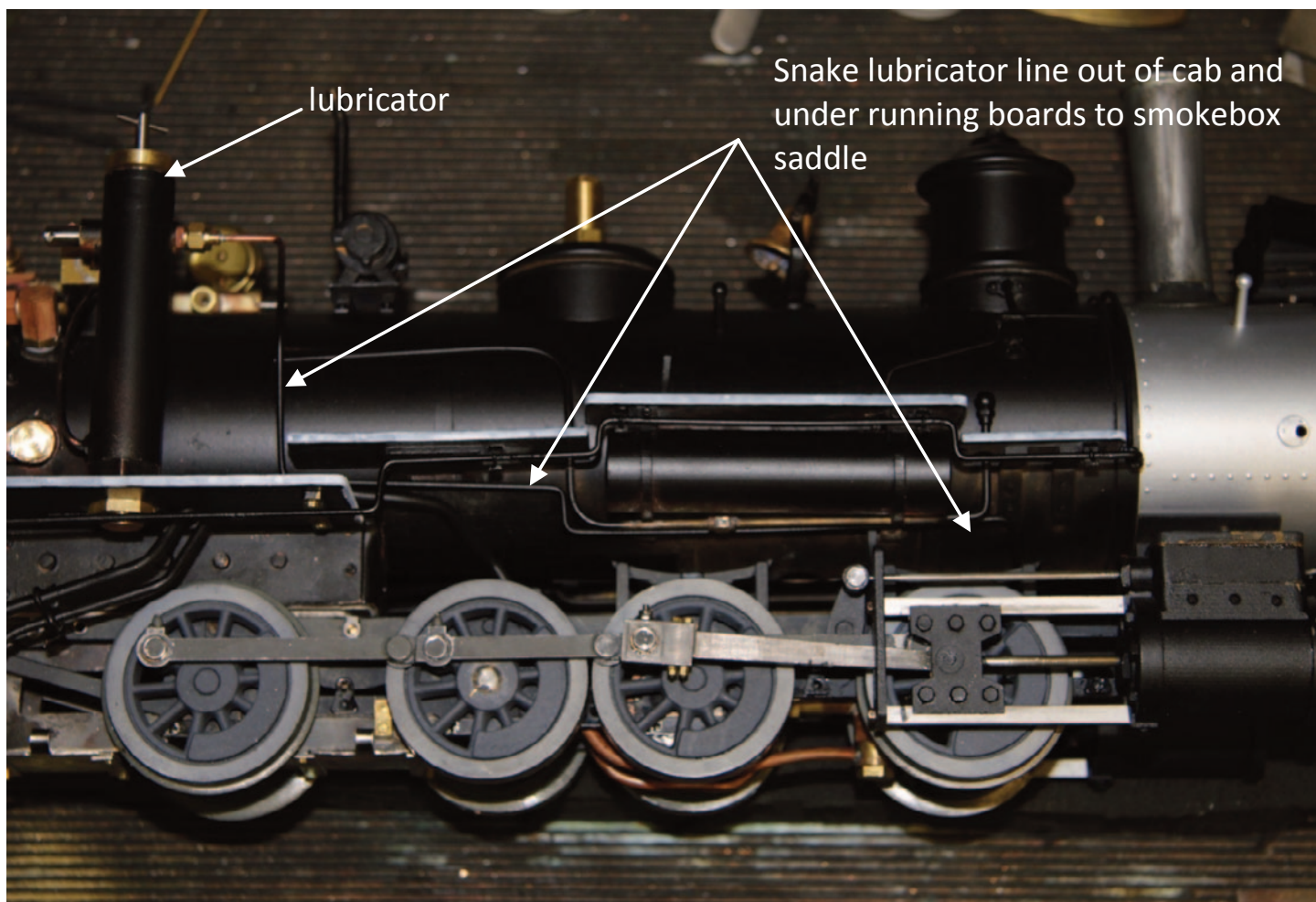


Photo 32



Photo 33



Photo 34

make this same change and I can provide details of the modern cab profile.

Finally, make up the piece of 1/16-inch tubing which you'll thread down under the boiler from the cab and under the running boards to the steam saddle between the cylinders. There should be a fitting there to attach to. But be warned: this will be an M5 fitting so I hope you saved your M5 nut. As to the two ends of the line, the smallest cone for the

3/16-inch threads is really made for 3/32-inch diameter tubing, so you'll need to add a small piece of 3/32-inch tubing over the 1/16-inch line before you solder the cone on. Soft solder is okay for these.

We're almost there. In the next installment, we'll wrap it all up.

International Small Scale Steamup 2017



Text by Paul Haglund, photos by Scott E. McDonald

This was your scribe's fifth pilgrimage to Diamondhead for a few days of live steam camaraderie, lively discussion, and a nice break from the cool and damp days of a Pacific Northwest winter. After a slight change of itinerary due to a late aircraft, Diamondhead was reached a bit behind schedule, but mercifully on the same day as scheduled. As we arrived in the booming metropolis of Diamondhead around 10:30pm, the only option for dinner was Waffle House, which was devoid of any other custom during our meal.

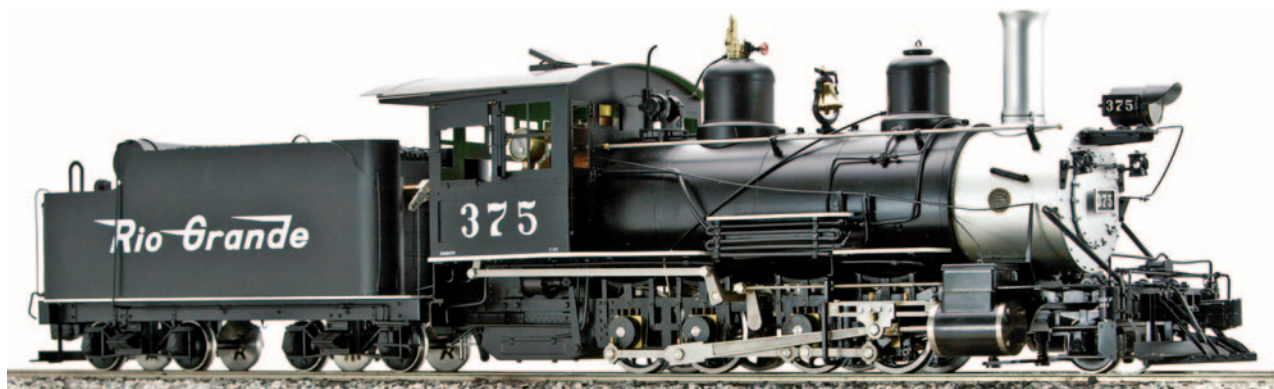
The theme of this year's event was Mamod products and to this end, the Mamod Club of the Americas was formed to bring together enthusiasts and owners of both stock and modified Mamod models. Diamondhead founder Jerry Reshew was the primary driver behind the proceedings, aided and abetted by appointed President Jeff Young. Jerry very generously sponsored a Mamod club lunch at the Red Zone on Tuesday which featured a special Mamodburger as the main course. Fortunately, the 'essence of Esbit' suggested early on as a potential

flavor was removed from the ingredient list, much to the delight of many a palate. Mamod attire in the form of caps and buttons was available for purchase by interested parties and featured in the general group photo as well as the Mamod enthusiasts photo.

Throughout the week, a large Mamod display took pride of place in the atrium with many of the models making working appearances on the track, floor, or ticking over on the table as appropriate. Among the notable vintage models in attendance were a Graham Stowell-built Lagos Steam Tramway inspection car, and a Ken Best 'Kenversions' Ffestiniog Railway George England loco which made its first run in over 15 years. Several more recent modifications made appearances, ranging from mechanically upgraded, kitbashed open cab quarry locos to Kendrick Bissett's Meccano/Mamod Climax/Heisler hybrid. Proceedings were not without the expected show of flame, both from meths and gas fired locos, all heartily ap-

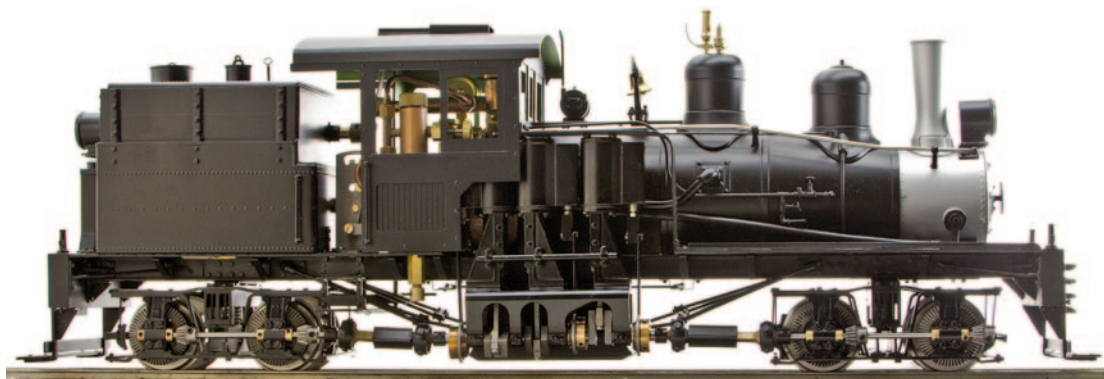
-- Continued page 30

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Attendees filled the Mamod display table with a wide selection of their engines both locomotive and stationary -- Photo by Jeff Young

plauded by the denizens of the peanut gallery. Notable runs of the event were performed by Yves Guilleme, who managed to set off the fire alarm while running his coal fired Aster U1, and by Mike Simpson whose vintage Bing geared locomotive put on a most spectacular display of flame both from the loco and from the spilled meths on the track.

Various interest-specific groups had events both official and unofficial over the course of the week. Both Gauge 1 Model Railway Association and the Association of 16mm Narrow Gauge Modelers had an established presence this year, with both organizations having members from North America and beyond. In the case of the 16mm Association, there was a new, larger banner carried across from last year's National Garden Railway Show. Both groups posed for their annual photo on Friday morning. The 16mm association members joined up with other live steamers of the 32mm gauge persuasion for the traditional 0-Gauge Breakfast hosted in the café at Rouse's Market on Friday morning. The boat enthusiasts also put in a good showing and kept the pool fairly active with various types of watercraft. Some non-steamup guests stayed the night on Friday and had particularly puzzled looks on their faces as they walked through the pool area while several boats made laps.

For those of us who hail from somewhere besides the south, food tends to be a fairly integral part of the whole experience. Visits were paid to Shaggy's at Pass Harbor, the recently revamped Aztecas Mexican Restaurant in Gulfport, and to the ever popular Darwell's Café in Long Beach. Incidentally, Darwell's was named one of the ten best lesser-known eating establishments in the U.S. by Forbes



Size Comparison. Roundhouse Forney on the left next to the Accucraft pre-production model of their 7/8's Forney.

magazine. Correlation may not be causation, but the number of patrons, on one visit in particular, was larger than we've seen in previous years. At the start of the week, we heard that The Blind Tiger in Bay St. Louis was closed for renovation and appeared to be out of the running as an eating venue. By Wednesday afternoon, word was spreading around that the restaurant was to reopen the following day, and this indeed came to pass. The establishment looked smart with its newly poured concrete floor and the food was tasty as ever.

Some new models were on display and running on track to entice buyers. New in U.S. outline models from Accucraft were a first production model of the anticipated Pennsylvania Railroad E6s, as well as a preproduction sample of the new 1:13.7 scale model of Sandy River and Rangeley Lakes #6. Incidentally, the prototype for #6 recently returned to service after an extensive overhaul and runs on the reconstructed tracks of its final owner, the Wiscasset, Waterville, and Farmington Railway as their #9. Bowande Wuhu had a preproduction sample of their new Russian Decapod, a model of a class of some 200 2-10-0s built by Baldwin for service in Russia which were never delivered because of the Revolution in 1917, and instead were



James Barnett's recently complete Ruby kitbash inspired by the George England locos that work the Ffestiniog Railway in North Wales -- Photo by Jeff Young

sold to a number of U.S. railroads. Accucraft also showed prototypes of two models from the other side of the Atlantic with the 1:13.7 scale 3.5 ton Decauville as well as the latest 1:20.3 model of the Isle of Man Railway's 2-4-0T "Mona".

Attendance figures were a bit lower this year than last, owing to regular participants with health concerns and a vicious streak of foul weather that blew through in the days before Diamondhead, leaving a number of would be attendees unable to travel. Additionally, the Cabin Fever Model Expo in Lebanon, PA conflicted with the Diamondhead dates and many of the usual attendees from the northeast visited Cabin Fever instead. Because of this, track time could be had with little time spent waiting at any time of day. Participants managed to keep a fairly steady stream of trains running throughout the day, but nighttime runners were fairly scarce. It should be noted that the Diamondhead organizers have changed the steamup dates to a week later next year to mitigate the conflict and make both events possible for those that wish to attend both. As usual, seminars were put forth by participants on various aspects of the hobby. A Cajun lunch was laid on for Friday at noon in the



Richie Jacobs announces Door Prizes at the Cajun Luncheon assisted by registration volunteer Cindy Smelser.

restaurant space, complete with live music with Richie Jacobs making an appearance with the group. Friday evening was rounded out with a showing of the classic 1956 Disney film, "The Great Locomotive Chase".

This was another successful event thanks to lots of hard work put in by the whole organizing team, and all of the participants who helped with the setup and teardown process and logistics. See you next January on the Gulf Coast.



This year's class photo filling the atrium at the International Small Scale Steamup 2017

Accucraft's Norfolk & Western



Text and photos by Ross Schlabach, Jim Stapleton and Mike Moore

Whether you say '611' or just the 'J', the image that immediately pops into the minds of many modelers and rail fans alike is that of the Norfolk & Western's streamlined steam masterpiece. Not terribly well-known outside of its home stomping grounds during its original incarnation, the J 611 stepped back into the limelight with its restoration for excursion service throughout the Eastern half of the US under the care and supervision of the Claytor brothers in the 1980s. Now it is the latest 1:32 scale live steam offering from Accucraft.

The Model by Jim Stapleton

Accucraft Norfolk & Western #611 Loco Prototype

Scale:	1:32, 45mm gauge.
Length:	41-3/4"
Width:	3-7/8"
Height:	6"
Boiler:	Not specified, supposedly same as Royal Hudson
Fuel:	Alcohol or Butane options
Min. Radius:	10'
Water pumps:	axle pump and tender pumps
Cylinders:	2
Valve gear:	Baker
Fittings:	Peeper Whistle, gauge glass, pressure gauge, blower, regulator, Johnson bar
MSRP:	\$5950

History by Jim Stapleton

The Norfolk and Western J class 4-8-4 is one of the best known North American streamlined passenger locomotives, close behind the Southern Pacific 4-8-4 GS class Daylight. The fourteen members of the class were built at the N&W Roanoke shops in three batches; 600-604 in 1941, 605-610 in 1943, and 611-613 in 1950. The “war baby” Js of 1943 were built without streamlining and lightweight side rods due to wartime restrictions

and classed J1. At the end of the war the six J1s were rebuilt and had streamlining added, and were moved to the J class roster. Although they had small 70 inch drivers, the Js were designed for speeds up to 100 MPH; and in a test while on loan to Pennsylvania Railroad, J 610 pulled 15 cars in excess of 110 MPH. The Js pulled The Powhatan Arrow from Cincinnati to Norfolk, The Pocahontas, and The Cavalier, as well as Southern Railway’s Tennessean, Birmingham Special and The Pelican which used the N&W connection between Lynchburg, Virginia and Bristol, Virginia. Because of their smaller drivers, the Js were also well suited to freight service and were often used when not needed for passenger trains.

J 611 survived the scrappers torch and was used for the 1959 employee steam specials because it had had extensive class repairs in 1956 after a roll-over accident in January of that year. 611 was returned to service in 1958 and was stored serviceable in 1959. After the steam specials, N&W donated the locomotive to the City of Roanoke and it was displayed in Wasena park. Under the Norfolk Southern steam program, 611 was restored to service in the mid 1980s and ran until 1994 when the program was terminated. The locomotive was moved to the Virginia Transportation Museum (VMT) and sat under the trainshed with stablemate Class A 2-6-6-4 #1218. In 2012 the City of Roanoke donated both locomotives to the VMT. In 2014, VMT initiated the “Fire Up 611” program, resulting in the full restoration of the locomotive by the North Carolina Transportation Museum located at the former Southern Railway shops in Spencer, North Carolina. The locomotive was returned to excursion service in 2015. It is currently stored at the VMT in Roanoke, Virginia awaiting excursion service in 2017.



The real “J Class” in full steam on a railfan excursion through The Plains, VA in 1994. Photo by Scott E. McDonald

The Accucraft model is based on the configuration of the locomotive during its excursion service use in the late 1980s. Fortunately during this time, the tall coal board extensions had not been added to the bunker on the tender, so the tender retains its classic lines. It should be noted that the shroud between the bottom of the boiler and the pilot has a particular shape. If the model is compared to a variety of photographs, differences can often be found. It has been determined that at least five and possibly seven different versions of this sheet metal were used over the life of the Js. Also, during the excursion era, overhead photos show almost every

possible combination of shroud covers in place or off on the streamlined cowling on the top of the locomotive. Charlie Schlothabber, who crewed every excursion, informed us that if they had to service the locomotive at night between runs, covers were often left off. So a picture taken on Sunday would not be the same as one taken Saturday the day before.

Each model includes two special extras. The first is a certificate that may be returned for a prepaid (as in free to you) one year membership in the N&W Historical Society. In addition there is a high quality N&W Class J poster compiled from multi-



Photo 1: To convert from shipping crate to carrying case, only a few additions to the crate are required.

ple NWS archives drawings showing the engineers side view of later J's (such as 611) with tender. The drawings include drivers, nose, rod, oiler, Baker value gear, and other detail drawing inserts as drawn by the N&W draftsmen. Poster size is 24" x 36" on heavy glossy paper stock, perfect for framing and display. The drawings reflect "as built" dimensions and details, not the J as modeled by Accucraft, circa 1987.

The model's dimensions closely reflect the prototype; and the striping and lettering is correct for the excursion service era. Of note are the tender trucks with the extremely detailed brake rigging. Be sure that the brackets are bent to be above rail height to clear the closure rails on turnouts and any other between-the-rails obstructions like grade crossings or bridge guard rails. More about this later. The front coupler is properly mounted behind the cover plate on the pilot. Lifting the small hinged plate allows you to rotate the large cover under the pilot and swing the coupler to its operating position.

Accucraft makes a set of companion smooth-sided N&W passenger cars appropriate for this locomotive.

Operation and Observations by Ross Schlabach

My N&W J arrived in a 62 pound box. When I opened the cardboard box, I was greeted by two neat wooden cases and a couple of special goodies. More about those later. This massive Northern im-

presses from the time you first open its wooden shipping containers. It was packed in Accucraft's usual fashion — cocooned in its wrapping of foam and tape and strapped to a separate board bolted within its wooden case **[Photo 1]**. The tender was mounted in similar fashion. (Incidentally, these same boxes can be employed as carrying cases with the addition of handles and some rubber feet).

The model as unpacked had arrived safely. A screw holding the back end of the trailing truck was unattached but was easily refitted with some Loctite. On careful inspection, I noted that the model has a unique new centering mechanism for the pilot truck, but it was not adjusted properly. I was, however, able to quickly remove it, tighten the adjusting nut and reassemble it in a couple of min-

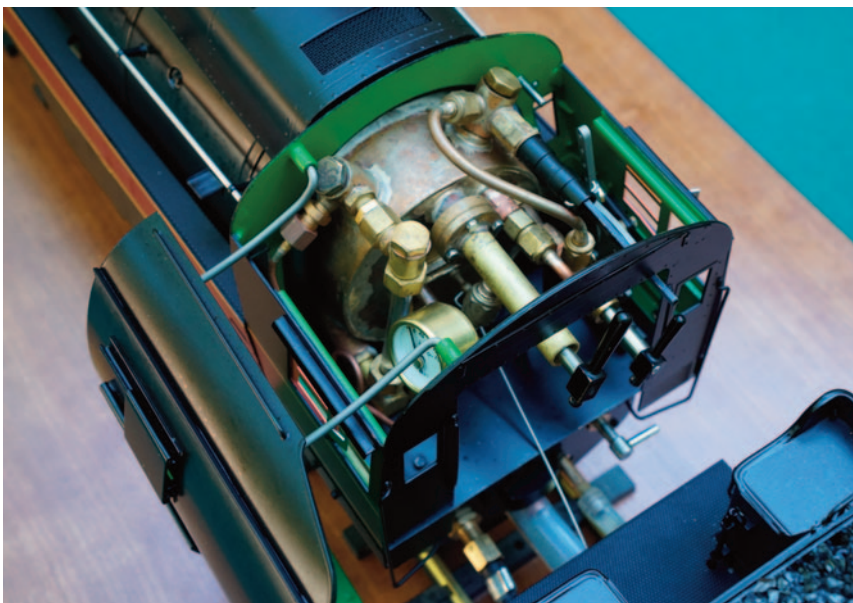


Photo 2: Boiler back head. Cab area is tightly filled. Throttle valve is on left, blower valve on right in this alcohol version.



Photo 3: The model evokes the massive character of the prototype in this closeup photo of the running gear.

utes. While there was still evidence of previous lubrication and an apparent test run, I used this opportunity to oil around in preparation for my first steaming.

An inspection of the cab [Photo2] showed some standard Accucraft features as well as a couple of pleasant surprises.

The J does not have its lubricator in the cab. It is instead located under the left running board with a filling cap recessed into that running board. This is a welcome change since with this configuration steam oil will go directly to the cylinders via a pipe to the smokebox and not have to pass through the superheater pipe with its extremely high temperatures. Throttle regulator and blower are conveniently located so that they can be operated without having to lift the hinged roof.

There is also a whistle valve and, surprisingly, a single chime whistle under the right running board. Admittedly, this is not of the Bangham variety and is therefore a real peeper. But the provision means that motivated engineers can remove the peeper whistle and replace it with a chambered whistle if desired. I doubt that a two chime can be hidden under the running board, but one could be re-positioned between the drive wheels, and DJB Engineering has a couple of whistle options that might be adapted. The positioning of the whistle arm is awkward. When actuated, the whistle valve arm fouls the blower lever—but with some judi-

cious bending of that arm and maybe resetting the position of the blower lever, smooth operation could be obtained. Also it is worth noting that the steam line to the whistle was a piece of large rubber tubing that protruded under the running board and was a bit unsightly. Putting in a fixed copper pipe would have been difficult, but a more elegant solution is warranted on a locomotive of this price and quality.

Still in the cab, there is an operational firebox door with a thin wire pull mechanism which makes for easy lighting and monitoring of the wicks. And while the boiler check valve is still located on the back head, it has copper piping that is routed down below and behind the cab as has been done with many Aster locomotives. This eliminates the need for trying to fit a bulky water hose into the cab as was the normal practice on a number of earlier Accucraft models. This relocation, together with moving the lubricator to the running board, has freed up space in the cab that could allow the placement of one or two servos for RC operation. Unfortunately, the tender is not as well configured to support RC operation, but I'll touch on that shortly. Under the back right side of the cab is the water bypass which is easily accessed during running to maintain boiler water levels. The same footplate where the bypass is mounted has a fitting for at-



Photo 4: Coal load removed to show alcohol filler cap and valve.

taching the water supply from the tender, a barbed fitting on the right for return water, and a center pipe for alcohol. All are fairly readily accessible. I would rather have a knurled fitting to screw on the water supply rather than the supplied gland nut, but that is only a preference. One final note on the cab area is that the first few models were missing the apron between the cab and the tender. Accucraft quickly furnished these to the affected buyers, but this part was not yet installed when the pictures were taken.

The tender is packed and mounted in the same fashion as the locomotive but in its own separate wooden container. Once I was able to undo the screws holding the mounting board and cut away the large amount of shipping tape and foam, the tender made its grand appearance — and like the locomotive it too is massive. Accucraft has chosen to model the engine as it was in its original excursion service, so the ugly appendage recently added to the prototype to expand the coal load is thankfully missing. Accucraft has given us a nice removable coal load with a barely noticeable lifting loop buried among the coal lumps. It is almost too small but I vote for its present size just the same.

The fixed alcohol tank is visible once the coal load is removed **[Photo 4]**. The valve to operate the alcohol tank is tucked as far forward as possible and the overhang from the front of the tender shell blocks easy access to the valve. It can be operated — just with some difficulty. But since the locomotive only requires that it be opened about three-quarters of a turn for normal operation, this is not a major shortcoming. The three hoses that exit the front of the tender to supply water and alcohol are all a bit long. I ended up trimming about three-eighths off the water return line and the alcohol feed,

but left the black rubber water feed alone since it had a crimp fitting and gland nut on its leading end.

What is unfortunate is that the alcohol tank is not removable to allow easy installation and servicing of an RC system. And there are no holes in the front of the tender for servo leads to pass. But I have been told that the tender shell can be removed simply by removing six or so screws on the underbody and sliding it off of the tanks and chassis to allow access to otherwise inaccessible spaces to locate receiver and other RC gear. Some servo pigtails can

be routed through the opening in the tender floor (the same one used by the alcohol tank for its chicken feed system) once the tender shell is off. In my humble opinion, battery positioning is more difficult since there is no easy place to put it where it can be removed for replacement or recharging, except to lay it on top of the alcohol tank — not my idea of a great location for a battery that close to a flammable source. Possibly it can be placed behind the water tank, but that would require a smaller battery and removal of the tender

shell making the battery inaccessible once installed and possibly subject to a periodic dousing of water — something to be avoided with electricity!

Before leaving the discussion of the tender, a couple more comments on the brake rigging. As mentioned earlier, each truck has a combination of brake cylinder and actuating levers which mount on the inner end of the truck, and Accucraft did an exceptionally fine job of re-creating these details. However, this detail sits so low that it may foul turnouts and such. On my tender, the bottom levers of this system were at track level before any water or alcohol were added. With the tender on





the track and fully loaded, the compression of the springs would leave parts of this brake mechanism below the railhead in harm's way. My solution was to remove these details which can be done simply by removing two small screws each. Store these away for display use is my advice. Not all models will be affected, but be sure to inspect this brake gear before your first run and rectify or remove as you see fit.

The only other criticism of the tender is a small one. As assembled, the coupler cut levers at the rear of the tender do not function but are fouled by the steam line, and since these parts are soldered on, they cannot be repositioned. So coupler operation is totally manual.

The tender has an easily accessible and large water tank with a lift-off lid. The tender contains a functional hand pump which, by the way, is the only way to initially fill the boiler. Jumping a bit ahead, I should mention that in operation, one fill of the alcohol tank will provide fire for almost three full tanks of water. The tank also has a copper pipe where bypassed water returns to the tender. On my model, this was bent down so as to be underwater in normal running. I would recommend carefully bending that pipe up level near the top of the tank so that you can verify proper bypass operation.

A couple of day later I was able to take the J 611 to a friend's track for its inaugural run. The manual said that locomotive didn't take long to steam up, so I first busied myself by unpacking my set of seven Accucraft coaches and two custom cars. After filling the lubricator, the alcohol tank and topping off the water, I started pumping to fill the boiler. It

took a while before water appeared in the glass, but once it did I was able to quickly bring the water level up to two-thirds of the glass which is my normal practice. It should be mentioned that there was a minor leak at the check valve due to the gland nut bottoming out before the cone fitting was tight. I did succeed in giving it a bit more of a turn but the best solution will be to remove the gland nut and to file some excess material off its leading edge so that it can more tightly seat the cone fitting inside. I opened the alcohol tank one full turn to charge the system and waited a while for the wicks to get wet, because a peek inside the firebox door will show that there are a lot in there! With the fan in place but off, I lit the wicks, turned on the fan, closed the firebox door, and waited. I didn't have long to wait. The pressure gauge registered 25 psi in less than four minutes when I shut off the fan and turned on the blower, and by five and a half minutes the safeties were lifting at an indicated pressure of about 65 psi. The cylinder cock levers are very stiff and difficult to operate, so I did not test their operation here. I later discovered that the tender pump handle has a cross slot in one end which can be used to open and close the drain cocks without burning one's hands, and this functions pretty well.

After engaging the reverse lever (and experiencing a short spray from the stack since I had not properly cleared the cylinders) the loco started to move. In short order I had her train coupled on, and the J was off. The layout we were using features intentional up and down grades to allow for realistic operation and the use of RC is recom-

mended. But even with manual operation the J was able to manage its train both up and down the one percent grades. On the up grade, the locomotive did slow significantly with the nine passenger car load, but it did not stall. Instead it settled into a steady slow and very uniform beat. This model has Baker valve gear which is new to Accucraft with the J and the Allegheny, but Accucraft did an excellent job of timing this locomotive, and it was a joy to watch and listen to. For those of you who frequent YouTube, check out my video and you'll see what I mean. *[Also available at www.steamup.com under Videos -- Editor]* The axle pump on any locomotive is always an important concern, but the one fitted to the J was up to the task. It would overfill the boiler if you weren't attentive, but it would also refill the boiler if you let the water level get too low. Overfilling is pretty easy to spot since the locomotive will begin to spit some spray out the stack. Changes to the bypass lever need to be small or you may also experience overfilling or a nearly empty water glass. But this is all part of learning a new locomotive. The J ran for about one hour on the full tank of alcohol and as mentioned earlier consumed about three tanks of water. Part of the water consumption was due to a weeping safety — later tightened down — and there was some continued water leakage from the check valve fitting but not more than a drip here and there. I would like to eliminate that leak, but the gland nut fitting is difficult to access and even more difficult to file down once loosened, so I may leave that for some future maintenance period.

Some final observations. The J is a beautiful and powerful model. It steams freely and maintains both steam pressure and water level with ease.



With the new, under running board steam oil lubricating system, it used steam oil sparingly, did not soil itself, and kept the track clean and dry. There was even some steam oil left in the tank after one hour of constant operation. The controls are easy to reach even with the roof in place. As built, view of the pressure gauge is blocked by the roof and upper side wall, but a little careful bending can re-position it for viewing through the cab window. The paint and detail are excellent. It tracked nicely in operation and there were no problems handling the 12 foot radius at this track — or the 10 foot radius at the portable train show track a week later — and it negotiated #6 turnouts effortlessly.

Both my son and I are admittedly fans of this locomotive and it gave us several hours of trouble free operation at the Asheville Train Show; but it is fair to say that, straight out of the box, this is one of the best locomotives to come out of the Accucraft

Further Observations by Mike Moore

Jim and I took the J to a local track for its maiden run. Jim's locomotive had shifted in its wooden sarcophagus during shipping which knocked off the front coupler and door as well as bending the bracket holding everything together. We were able to remove the bracket, restore its shape, and get everything back where it belonged.

Our run was as successful as Ross'. It must have been a bit colder in our more northerly climes because we experienced more condensation than Ross has described. It took a few laps around the track before the cylinders and steam passages had warmed up. In order to get the cylinder cocks fully open controlling levers must be rotated to a position pointing directly down at the track. Like Ross I found the position of the alcohol valve to be challenging for my short pudgy fingers.

We ran the J with a somewhat light consist of six coaches. The J's boiler made more than enough steam to pull its train at much higher than scale speeds on this level layout. Actually, the safety valves were popping off with a rather rude sound almost the entire time. Initially, the locomotive was a bit stiff but after about dozen laps it had loosened up to permit very smooth running at slow speed.

Think Accucraft's 0-4-0 is too small for a receiver and servos?

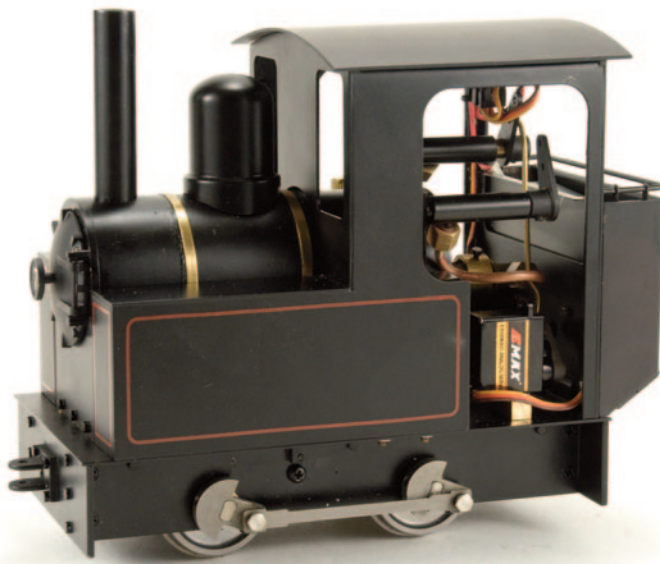
Radio-control 'DORA'

Text, illustrations and photos by Marc Horovitz

I had often wondered if Accucraft's "Dora" could be radio controlled without altering its basic appearance. It is a little engine and space was obviously tight. Using the side tanks didn't seem like a good idea, as access was only through the bottom.

All of my R/C gear was ancient, so I decided it was time to join the 21st century. I went online to Tower Hobbies in Champaign, Ill. (<http://www.towerhobbies.com>) to see what was available in two-channel radios. The choices were pretty bleak — either a pistol-grip type, intended for R/C cars, which I didn't want, or an obsolete AM radio.

What I wanted was a modern 2.4-Ghz unit in a box with two sticks, like I was used to. I also learned that you didn't buy a complete kit any more (i.e., transmitter, receiver, and servos), you just bought the transmitter and receiver. I ended up with a Tower Hobbies 424 four-channel radio (**Photo 1**). In retrospect, I think I would have done better with a Spektrum DX5e, but that's another story.



Electronic steamer: 'Dora' with radio-control

I wanted small servos, so I went to the source of all material things — eBay. There I found EMAX ESO8MAII servos (**Photo 2**). These tiny things, with all-metal gears, cost a whopping \$5 each. I got four of them.

I also decided to use AAA batteries instead of the AA batteries that would fit the battery case that came with the radio. AAAs will work just as well, only not as long. However, they

take up much less space. I ordered a couple of four-place battery boxes for AAA batteries (75-cents each — **Photo 3**), also via eBay.

When these came, I was pleased to find that they had built-in on-off switches, which I felt would come in handy later. For the purpose of this article, I'll have to assume that you have similar gear. If yours varies, you'll have to figure out adjustments.

Beginnings

The radio comes with a separate cord that includes an on/off switch, a plug to the battery box, a recharging plug (for if you're using rechargeable



Photo 1



Photo 2

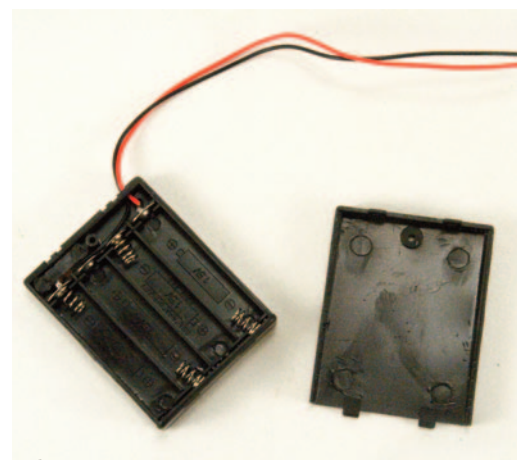


Photo 3

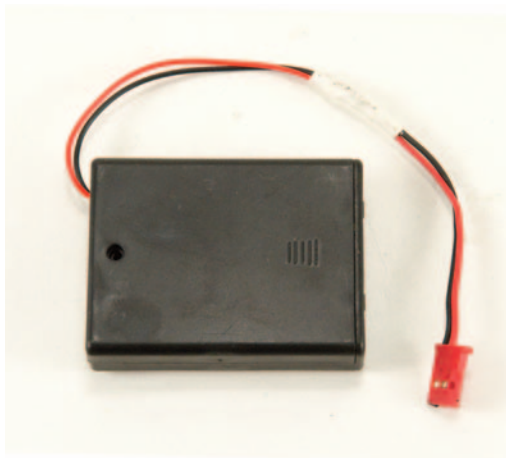


Photo 4

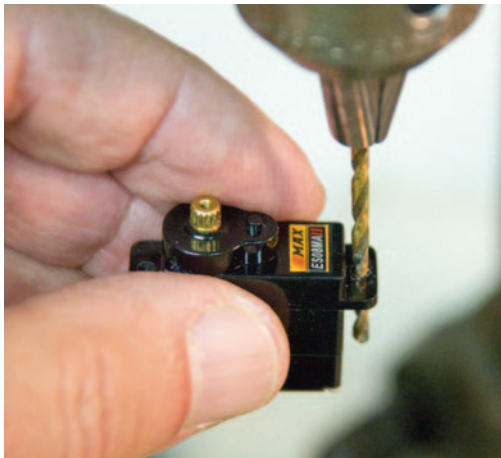


Photo 5



Photo 6

batteries and don't want to take them out), and a plug to the receiver. Since the battery box I ordered has an on/off switch on it, I chose to discard this cord. However, I needed to take the plug from the cord and splice it into the one on the battery box. This is a simple job. The result is in **Photo 4**.

I carefully measured a servo and did a drawing of it from which to work (**Figure 1**). The mounting holes in the servos are a tad too small for a 2-56 screw. The first thing to do, then, is to drill them out with a No. 43 drill (**Photo 5**).

I had originally envisioned some sort of bracket into which both servos could mount, then be screwed to the locomotive as a unit. However, there really isn't enough room in the cab for that. After playing around with the design for a while, I decided to use two one-quarter-inch-square blocks on which to mount the servos (**Figure 2**).

Making the mounts

Two mounting pieces will need to be made, as per **Figure 3**. One of the best ways to cut square stock

to accurate lengths is in the lathe. The work can be held in the four-jaw, but that's tedious and time consuming. By making a simple fixture, the one-quarter-inch-square stock for this project can be easily held in the three-jaw.

Cut off a piece of one-half-inch round stock, about five-eighths-inches long. Chuck it up in your three jaw, center drill it, then drill through with a letter "R" drill (0.339-inches). Take it out and cut through one wall longitudinally with a hacksaw. The finished article should look like **Photo 6**.

Cut two chunks of one-quarter-inch square brass stock, each a little larger than the finished size of the pieces. The actual length isn't critical, except for looks. Slip one into your new collet and put it into the three jaw, making sure that the split in the collet is between two of the corners of the piece and two of the jaws (**Photo 7**). When you tighten the chuck, the square stock will be held firmly in place and will be concentric enough for our purposes.

Skim off one end to square it up, then turn it around and skim off the other. Take it out and measure it, noting how much more needs to come



Photo 7

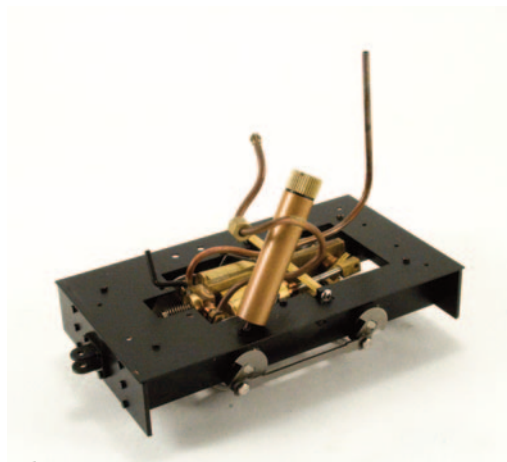


Photo 8

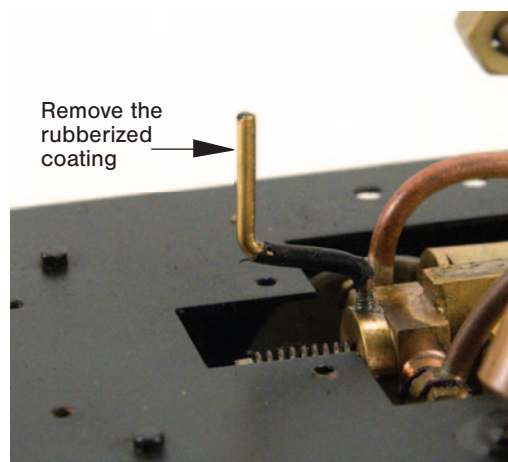


Photo 9



Photo 10



Photo 11



Photo 12

off. Then put it back in the lathe and take that much off. Repeat with the other piece.

On each piece, carefully mark out the holes on the sides, then drill them No. 51 and tap them 2-56. The mounting piece for the reversing-lever servo has a notch taken out of the bottom. This is to clear a screw already on the locomotive. The notch can be made in the milling machine or quite easily with a file. Again, accuracy is not critical — the piece just needs to clear the screw.

Modifying the locomotive

Remove the cab and side tanks by removing four screws from the underside of the engine. Remove the gas tank by removing the two nuts that secure it. The jet should just slip out of the burner tube.

Before going further, the throttle needle valve will have to be shortened, as per “Shortening ‘Dora’s’ throttle valve” (see *Steam in the Garden*, No. 129, September/October 2013).

The lubricator need not be removed entirely but it needs to be rocked forward. Unfasten the nut that attaches the steam line to the throttle. Then

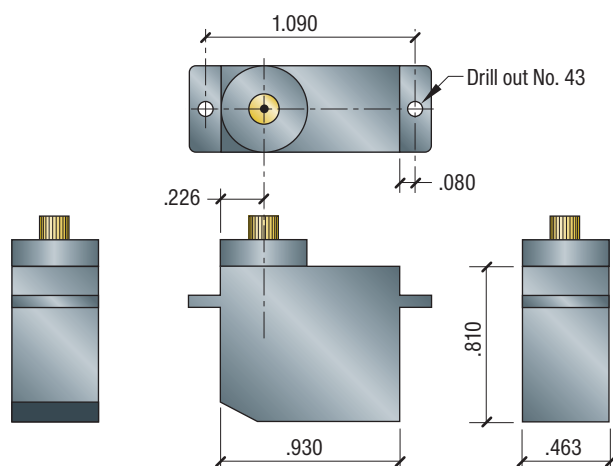


Figure 1

remove the nut securing the lubricator to the floor. Loosen the banjo bolt on the motor (you don't need to remove it) and rock the lubricator forward.

Remove the boiler from the chassis by removing four screws from under the engine, two at the front and two at the back. The engine should now look like **Photo 8**.

Carefully mark out the holes on the footplate according to **Figure 4**. If you're using different size



Photo 13



Photo 14



Photo 15

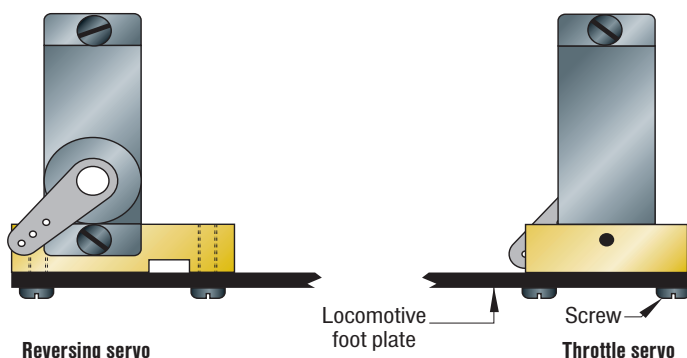


Figure 2 – Servo mounting arrangement
(as seen looking front to rear)

Figure 2

servos, you'll have to come up with your own dimensions. Drill all four holes with a No. 43 drill. If you want to paint or chemically blacken the servo-mounting pieces, now's the time to do it.

Hooking up the reversing servo

The first thing to do before you can attach the servo to the reversing lever is to remove the rubberized coating on the lever arm. I did this with a hobby knife (X-Acto). You only need to remove it down to the first bend (**Photo 9**).

My servos came with a little bag of control arms of various types and sizes. For the reversing lever, we need a lot of throw. Given that, I chose the longest lever, which had two arms 180-degrees out from one another. After making some measurements, I drilled out the third hole from the hub on one of the arms with a No. 51 drill. Then I trimmed off the remainder of that arm and the whole of the opposing arm (**Photo 10**).

It's time to do a quick test of your positioning -- but before your transmitter can "talk" to your re-

ceiver, you'll probably have to do a procedure called "linking" or "binding" (the terminology depends on the manufacturer). The exact steps depend on the hardware involved, but this is necessary to allow your individual transmitter and receiver to work together without interference from any outside signal. You'll find the instructions to do this in your user manual, usually in the 'getting started' section.

Now you can temporarily hook your servo up to the radio receiver and turn everything on. Also, temporarily, place a control arm on the servo (don't screw it on). Using the control stick on the transmitter, move the servo to one extreme end of its throw. Now re-attach the control arm so that it extends around 45-degrees out (**Photo 11**). Move the stick to the other end. The servo arm should point 45-degrees in the opposite direction (**Photo 12**). If it doesn't, reposition it. When all is good you can screw the arm to the servo, then mount the servo to the footplate.

Before going further, you'll need to make a simple part. For this, you'll need a piece of 1/16-inch-diameter brass rod maybe 2½-inches long, and a piece of 1/16-inch-thick brass plate, around one-eighth-inches by one-quarter-inches in size. Solder the plate to one end of the brass rod, then drill a No. 51 hole in the plate. It should look something like **Photo 13**. Set it aside for the moment.

To connect the servo lever to the reversing lever, you'll need a pair of E/Z Connectors, made by DuBro Products Inc. of Wauconda, Ill. (<http://shop.dubro.com>) (**Photo 14**). These are available at any hobby shop that sells model airplane supplies. Each connector comes with four components: the brass connector itself, a 4-40

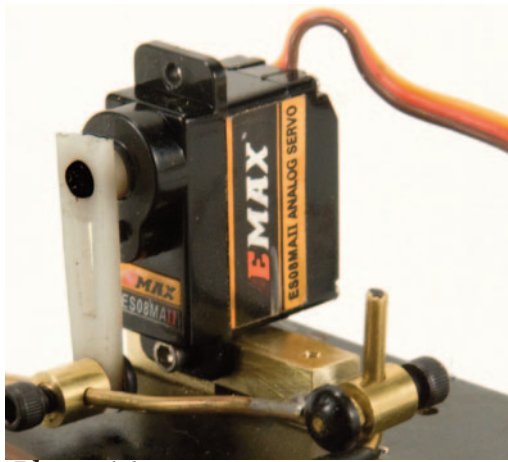


Photo 16

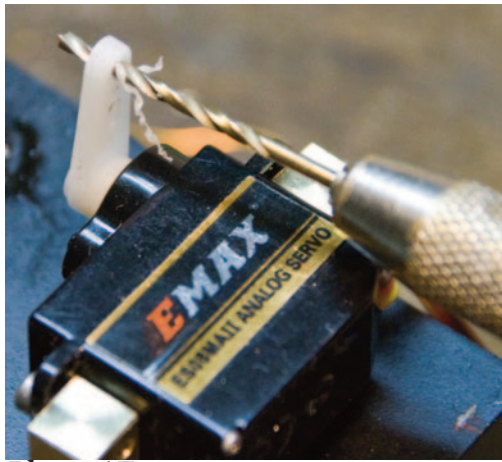


Photo 17

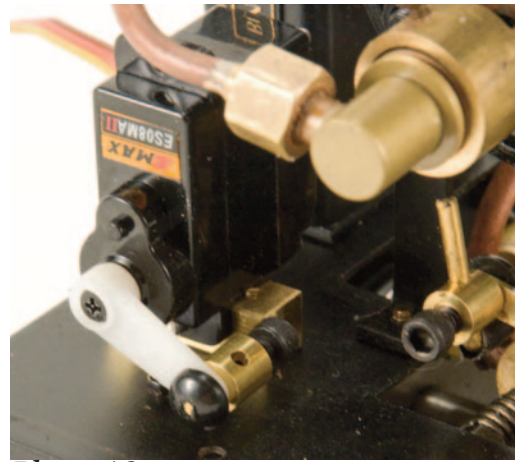


Photo 18

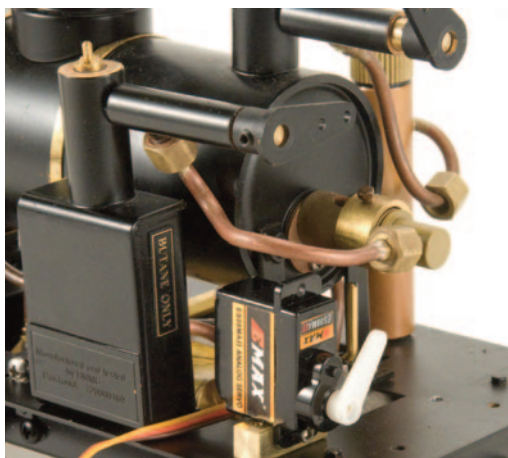


Photo 19

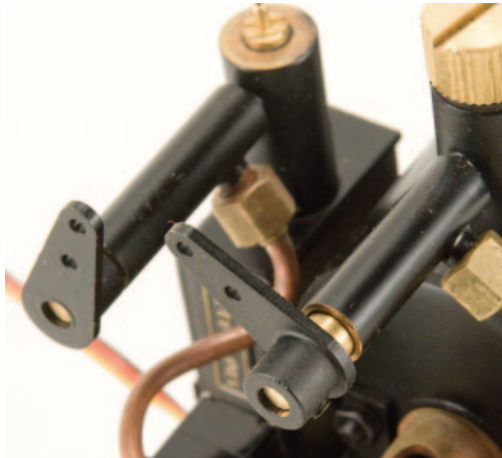


Photo 20



Photo 21

socket-head set screw, a removable plastic retainer and a permanent metal retainer. Set the metal retainer aside, as we won't be needing it.

Put the pin of one connector through the drilled-out hole on the servo arm and retain it by pressing on the plastic retainer from the back (servo) side. Put a set screw in the hole.

The other E/Z Connector attaches to the reversing rod. However, the hole is too small for the reversing lever, so you'll need to drill it out with a No. 45 drill (**Photo 15**). When that's done, install the connector on the reversing lever, sliding it down to the first bend. Insert and tighten the set screw, with the screw head pointing toward the rear and the pin pointing toward the front of the engine.

Slip the end of the 1/16-inch rod through the connector on the servo but don't tighten the set screw. Slip the end with the hole over the pin on the reversing-lever connector and retain it with a plastic retainer. Move the servo lever to a straight-up-and-down position, then do the same with the reversing lever. Now tighten the servo-lever set screw. The installed servo should now look like **Photo 16**.

At this point, you can test your installation on compressed air, if you so desire. I did it by hooking up my air line to the exhaust line of the engine. I switched on the transmitter and receiver and turned on the compressor. It worked a treat. These tiny servos are surprisingly powerful.

I found that I actually had too much throw, which moved the reversing lever past its optimal position. There are two solutions to this problem. You can either move the E/Z Connector higher on the reversing lever, using the trial-and-error method of determining the best position, or you can just mark the transmitter to denote the best position of the control stick. I chose the latter method.

When everything is good and working properly, you can trim off any excess of the 1/16-inch rod that might be sticking out. Also, reinstall the lubricator and tighten up the banjo bolt.

Hooking up the throttle servo

Now we can turn our attention to the second servo. I used a shorter lever arm here. Drill out the last hole in the arm with a No. 51 drill held in a pin

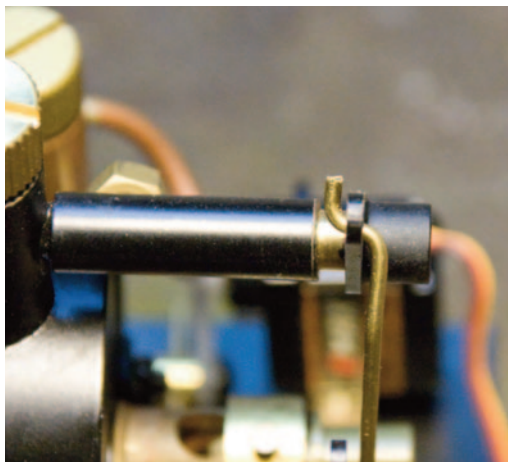


Photo 22

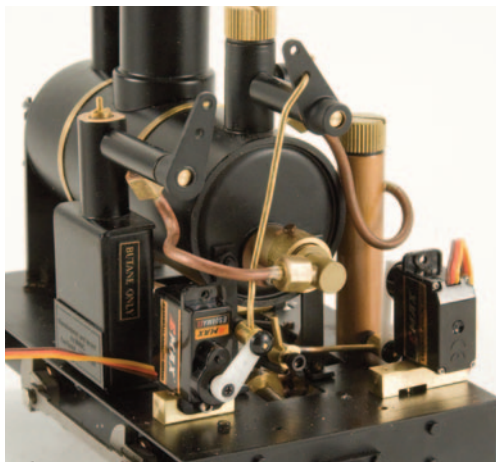


Photo 23

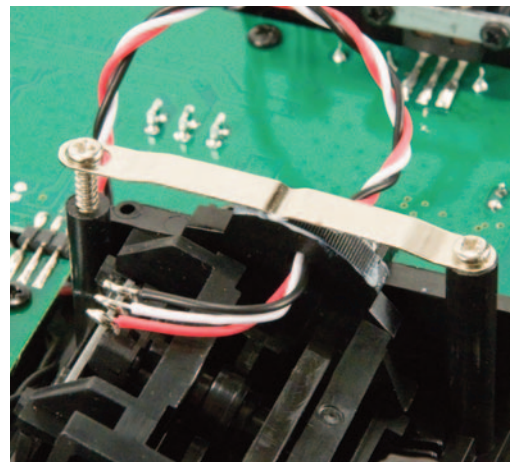


Photo 24

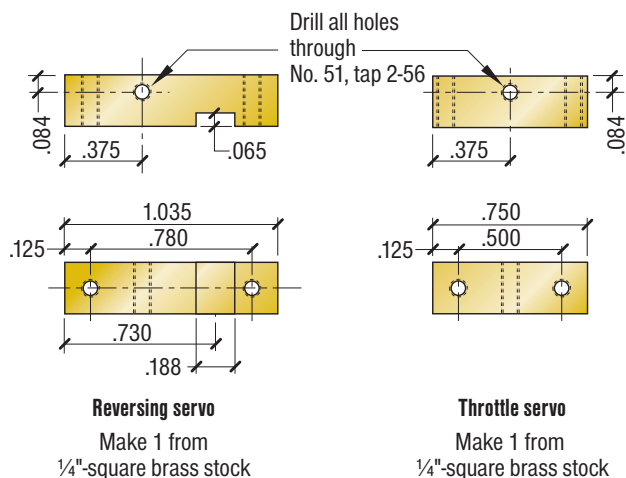


Figure 3 - Mounting pieces

vise (**Photo 17**). Then insert an E/Z Connector in the hole, but put it in backwards, so that the brass connector part is on the same side of the arm as the servo. Secure it with a plastic retainer.

Do the same exercise you did with the other servo to position the servo lever correctly. Looking at the rear of the locomotive, the lever should point between one o'clock and two o'clock in the upper position, and between four o'clock and five o'clock in the lower. When this is right, screw the lever to the servo.

The servo can now be screwed into position on the foot plate, with the side on which the arm is mounted toward the rear of the locomotive (**Photo 18, Figure 2**). Reinstall the boiler, a matter of replacing four screws and reattaching the steam line from the lubricator to the throttle. Also, reinstall the gas tank and burner, connecting them as appropriate.

Note: On my engine, I found the gas line to be in the way of the throttle servo. There was nowhere to put the servo without the pipe interfering so I

carefully bent the pipe up to clear the servo (**Photo 19**).

The throttle lever must be turned around, so that the hub faces the rear (**Photo 20**). This will provide better alignment for the linkage. With the throttle closed, the throttle lever should point to around 11 o'clock.

The linkage will be formed out of a piece of 1/16-inch brass rod. Start with something about 3 1/2-inches long. Make a sharp Z-bend in one end, shown at the left in **Photo 21**. This will engage the throttle lever (**Photo 22**). For maximum throw, use the hole in the throttle lever closest to the spindle.

The other end of the rod is inserted into the E/Z Connector and retained with the set screw. With the body of the engine off, you should be able to get to the set screw with a long hex (Allen) wrench. Before you do that, though, you'll need to ensure that you have a good fit.

This is done by trial and error, bending the rod so that it avoids obstructions like the gas line. The rod in **Photo 21** shows my rod as it was finally bent. In all likelihood, yours may be somewhat different. You'll just have to play around with it until it is right.

When everything seems to be fitting properly and working smoothly, snip off any excess rod at the lower end, right next to the connector. The finished assembly should look something like **Photo 23**.

Before going further, give it a test drive. First, put the engine up on blocks. Then plug the servos into the receiver and turn it on, turn on the transmitter, then move the throttle lever to the closed position and the reversing lever to the center position. Hook the engine up to compressed air (or even steam it up, if you'd like) and see what it does. Move the re-

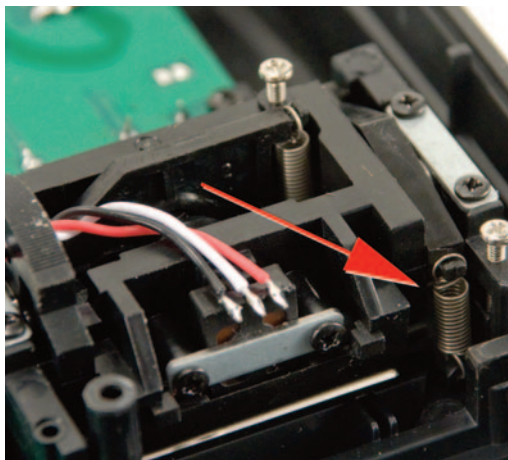


Photo 25

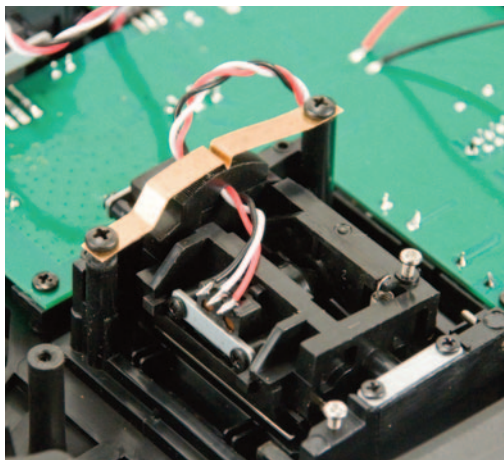


Photo 26

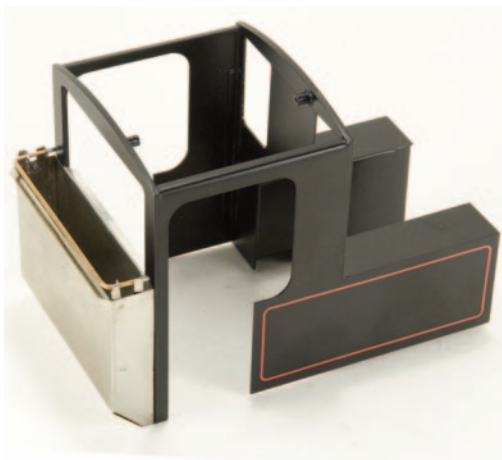


Photo 27



Photo 28

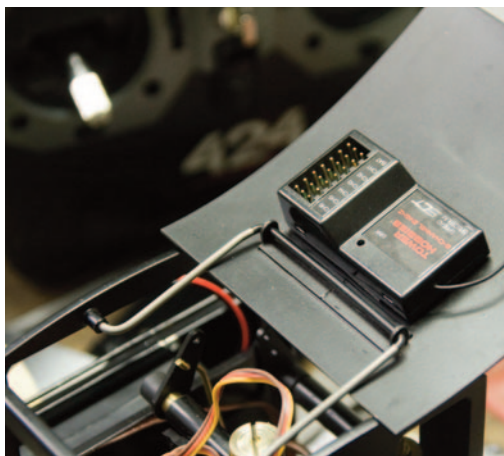


Photo 29

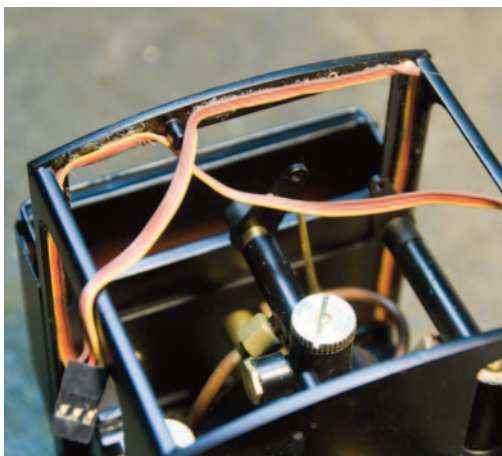


Photo 30

verser one way or the other. Open the throttle fully.

With the throttle wide open, you should be able to note the sweet spots at either end of the reverser travel. Test the throttle for smoothness, slowly closing it, with the engine running in either direction. When all is good, proceed.

A word about the transmitter control sticks

On my transmitter, the left stick was free floating in the up-and-down direction, held in place by what felt like a ratchet. The right stick was spring loaded in the up-and-down direction to the center position. Both sticks were spring loaded to the center position in the side-to-side direction. Since I was only going to be using two channels, the side-to-side direction didn't really matter — in fact, it was probably best the way it was.

The right stick, however, would be problematic. Whether I used it for the throttle or the reverser,

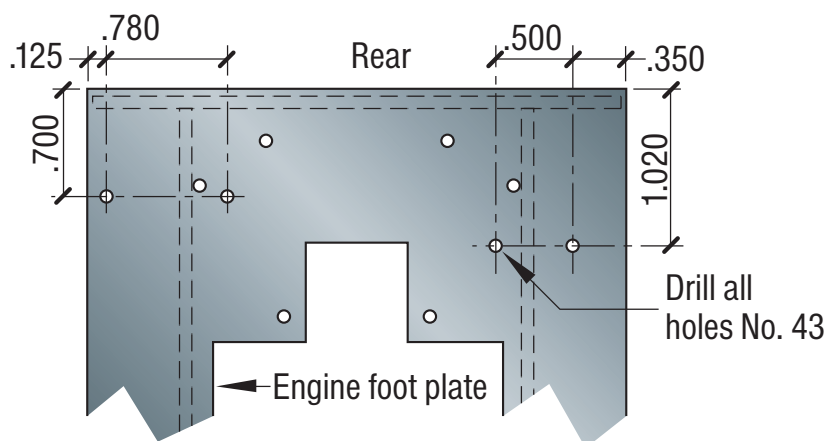


Figure 4 - Mounting holes

the center-optimized action was not what I wanted. I liked the action of the left-hand stick.

I opened the case by removing four screws in the back. It was surprising how little was inside. I could see that the left-hand stick used a piece of springy metal against what amounted to a knurled piece of plastic molded in to hold the stick in any given position (**Photo 24**). The other stick used a mechanism with a single spring to return it to the center position. The red arrow in **Photo 25** points to the



Photo 31

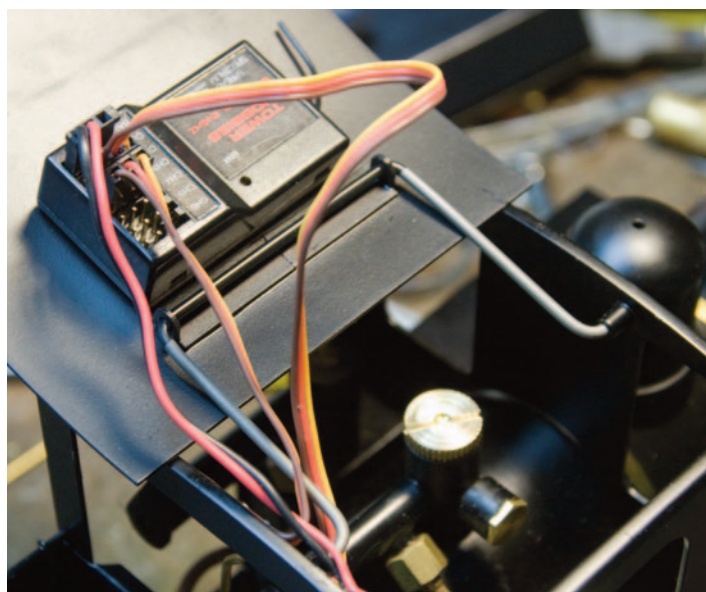


Photo 32



Photo 33

spring. The other spring controlled the other direction.

I was able to easily remove the spring with tweezers. There was already the same knurled plastic piece in place, along with two plastic stand-offs to take the screws, which you can see at the left in **Photo 25**. I tapped the existing holes 4-40 and made a new detent piece out of a springy piece of metal I found in the shop. The result can be seen in **Photo 26**. It works fine.

Facing the facts

As much as I'd hoped to be able to complete this project without significantly modifying the locomotive, I found, after much thought, trial fitting, and consternation, that there was just no way to get everything into the engine as it stood.

As far as I could see, there were two options: carry the batteries in a trailing car or build a new, larger bunker to carry them onboard. The choice is yours. I chose the latter alternative and made a new bunker out of tinplate, which I screwed to the back sheet using the existing holes (**Photo 27**). If you would like to follow a similar course, full-size drawings of the new bunker can be found online at <http://www.steamup.com/dora-battery-bunker>.

Putting it all back together

The cab and side tanks may now be reunited with the chassis, via the four screws earlier removed. I test-fitted the receiver under the roof. It fit there snugly between the arms of the wire clip that holds the roof to the cab. I held it in place with double-sided foam tape (**Photo 28**), acquired from my local air-plane-hobby store.

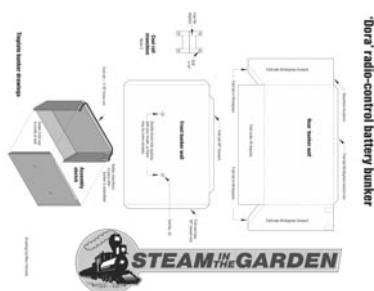
I cut relatively thin strips of tape and stuck them to the edges of the back of the receiver where they would contact the roof. After removing the protective paper, I stuck the receiver in place (**Photo 29**). Because the tape is so sticky, you get one shot at this, so make sure you place it accurately the first time.

The next thing to do is to route the servo wires as unobtrusively as possible up to the roof. First, though, temporarily remove the roof for convenience of access into the cab. I routed my wires up the corner posts, which seemed the obvious way. I held the wires in place (**Photo 30**) with adhesive cement (Amazing Goop or E6000). You can paint the wires black to help them disappear even more. If you decide to do this, it would probably be best to do so after they were glued in place.

Since the battery box was to be carried more or less permanently in the bunker, I decided to glue the battery wire in place as well, in the interests of neatness. I left enough loose in the bunker so the case could be removed to turn the batteries on or off and also to change them when necessary. I glued the battery cable on top of one of the servo cables (**Photo 31**).

Put the roof back in place on the cab and plug everything into the receiver (**Photo 32**). Tie up any of the wires that might be hanging into the cab when the roof is down (**Photo 33**).

Once this has been done to your satisfaction, the job may be considered complete. Go out and enjoy your new radio-controlled locomotive.



Get the Battery Bunker Box drawings at www.steamup.com/dora-battery-bunker

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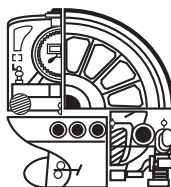
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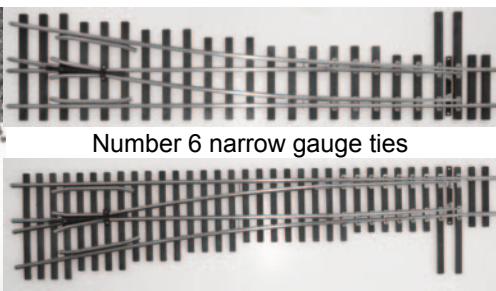
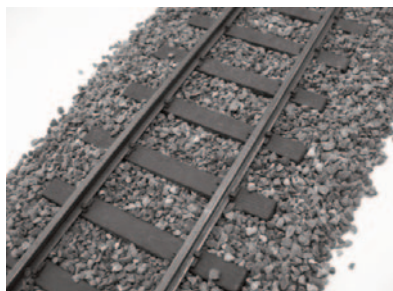
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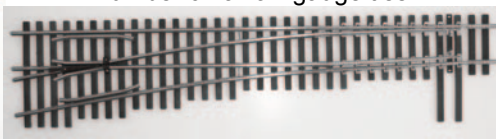
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THE CUPOLA VIEW



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All through 2016 social media was buzzing about how many celebrities the world had lost and the impact on our lives. In that regard it was a rough year made even rougher for those of us who

took on the task of keeping Ron Brown's legacy alive. It took a team of eight of us to do what Ron and Marie did. Now we are seven. For six years Dave Cole was the power behind getting this magazine into your hands and on the web. With his loss the role of Editor and Webmaster have to be reassigned and it will take a team of two editors to make up what Dave was able to do.

Although the moniker of Editor has been bestowed upon me, I am really a technician who knows how to use desktop publishing software with a little graphic arts experience from the 1970's. I

have a lot re-educating to do. With me will be Gary Woolard who, for the past several years, has already been working with Dave as our Associate Editor.

So who am I? For the past six years I have been representing the magazine at steamups, taking photos, writing articles, and shooting a lot of video. I manage the Video section of our website at steamup.com and maintain the print archives for the magazine. Except for the steamups, pretty much my involvement has been very low key.

I fell in love with live steam locomotives at a young age from the many visits to Disneyland as a child. I was born during the time when diesel was replacing steam and the only place to hear the chuff of a locomotive was through amusement parks and tourist railroads. Model trains have always been a part of my life and as a young man in the Navy I was introduced to small scale live steam through a popular magazine.

I was immediately enthralled with the idea that there was a lower cost alternative to ride on steam that could run around my backyard. It would take ten years after that introduction to get to a point

-- Continued on page 52

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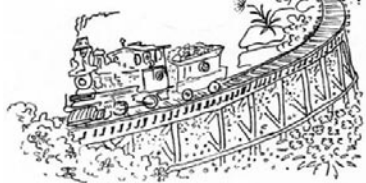
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where I could jump into the hobby when I purchased my first house.

That was 1986. I built my first garden railway in 1987 and bought my first steamer. Hard to believe that is now over thirty years ago.

I'm happy to report that although we are behind schedule a little, we will make it up to you. Our transition was eased by the fact that last year Dave sent me a 64gb flash drive "for the archive". He told me via e-mail that it was copies of the pdf files that we put up on our website and that I should have a copy in case our site crashes. When it arrived I filed it away with the magazines I have in boxes on my shelf. I only just plugged it in to my computer when we had to start building this issue. When I looked at the contents there was more than pdf files. Dave had sent me all of the little electronic tidbits that go into creating the magazine. What a sigh of relief. A gold mine of data that would ease transition.

Dave was very proud of this magazine, and he was always working to make it better. He was keenly aware of the paradox all good editors face. On the one hand, his goal was to present material in the clearest, most transparent way possible. But he

also understood that it was vital to preserve the author's voice, to allow the writer's own words to 'paint the picture' from their own unique point of view.

It always gave him joy to bring a new contributor on board, especially somebody who was working on a new project or idea, but insisted that they "couldn't write."

So if you'd like to do something in memory of Dave Cole, drop us a line! Let us know what you think we're doing right or wrong, or tell us about your idea for an article. Both Dave and I would appreciate it. The only way now to thank Dave for his foresight is to keep his legacy with the magazine going and I hope that we can deliver to our readers with the same quality and vigor that Dave did. Big shoes to fill indeed.

'Cupola view' is written by Editor Scott E. McDonald: you can contact him at sitg@steamup.com or P.O. Box 1539, Lorton, VA 22199.

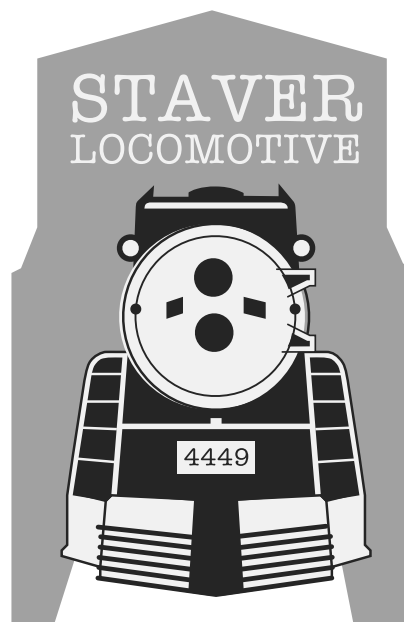


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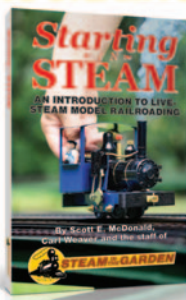
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TIMETABLE

March 25-26, 2017 — East Coast Large Scale Train Show, York Fairgrounds, York, Pa. Aikenback Live Steamers will set up its 54-foot, double-tracked and dual-gauged (32mm and 45mm) layout, with 10-foot curves, at this event. Info: <http://www.eclsts.com> and Mike Moore, mike@aikenback.net.

April 20-23, 2017 — Spring Steamup, Staver Locomotive, Portland, Ore. Info: <http://www.staverlocomotive.com>.

July 10-15, 2017 — National Garden Railway Convention, Tulsa, Okla. Self-guided and motor-coach tours of area garden railroads; clinics, vendor hall. Info: <http://thinktulsa2017.com>.

July 19-23, 2017 — National Summer Steamup, McClellan, Calif. (Note new dates.) Multiple lay-outs, Lions Gate room reservations: (916) 643-6222 (<http://www.lionsgatehotel.com>). Info: <http://www.summersteamup.com> or (408) 776-1133.

July 30-Aug. 6, 2017 — National Model Railway Association Convention, Indianapolis. Clinics, lay-out tours. Info: <http://www.nmra2017.org>.

Regular steamups

Southern California Steamers. Contact Jim Gabelich for dates, places and other pertinent information. (310) 373-3096. jfgabelich@msn.com.

Crescent City High Iron. Steamups as necessary on an elevated backyard layout on Northern California's upper coast. Info: Don Cure, diamonddd1947@msn.com.

On the Brink Live Steamers. Wednesday, and occasional weekend, greater Sacramento, Calif., steamups on elevated live-steam tracks at two locations, as well as special events. Info: Paul Brink, (916) 935-1559, paulbr@aol.com.

Puget Sound Garden Railway Society. Two steamups per month, one at the Johnsons' on the second Saturday and a steamup at a member's track on the fourth Saturday. Info: <http://psgrs.org/> or call Pete Comely at (253) 862-6748.

Michigan Small Scale Live Steamers (MSSLS). Info: <http://www.mssls.info>.

Greater Baton Rouge Model Railroad Club Open House and Gauge One Steamup. Info: Ted Powell, (225) 236-2718 (cell), (225) 654-3615 (home), powell876@hotmail.com.



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Vol. 26, No. 5; Issue 147/148; September/December 2016, Aster & Accucraft, 'Casey Jones' cars, Tasmania, Maine engines, Steam at the 32nd National Garden Railway Convention, Coal conversion: Part III and IV of six, National Summer Steamup, 'Dora' wheelie. Part III of 3, Project 23: scratch building the SR&RL 2-6-2, Stationaries: at National Summer Steamup



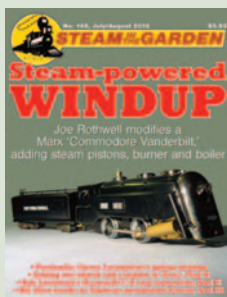
Vol. 26, No. 2; Issue 144; March/April 2016 FEF-3: Locomotive review and workshop project building Aster kit • Resurrection of Bowman steamer • 'Dordlebug': A rail bus out of a 'Dora' and a plastic rail car • Streamlined Garrett: 1:32-scale scratch built steamer. Part I of three • Steam in the scenery • Latest waybill: Flair, Bates obituaries, bearing kits.



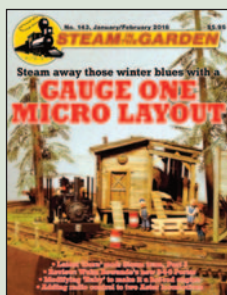
Vol. 25, No. 6; Issue 142; Nov./Dec. 2015 Sacramento stationaries: 2015 National Summer Steamup highlights • Review of Wuhu Bowande G5 • Building an Accucraft 'Ruby' kit • Learning to model in tinplate with a 'Dora' modification, Part II • 7/8ths WWI car • Latest waybill: 1:32-scale U.K. 'Victory'; 1:20.3-scale 8-driver Saxon.



Vol. 26, No. 4; Issue 146; July/August 2016 Steam-powered windup: building a 'Commodore Vanderbilt' 32mm-gauge steamer • Portlandia: a photo essay from Staver Locomotive • Adding two wheels and a bunker to 'Dora,' Part II • Accucraft C-16 coal conversion, Part II • Algerian streamlined Garrett, Part III • Latest waybill: Wuhu, Roundhouse.



Vol. 26, No. 1; Issue 143; Jan./Feb. 2016 Micro layout: Building an indoor Gauge One track • Review of Wuhu Bowande Porter • Hot-rod 'Ruby': Hopping up a 1:20.3-scale engine • Rolex Asters: Adding radio control • Learning to model in tinplate with a 'Dora' modification, Part III • Latest waybill: Llagas Creek Railways sold, U.K. distributors merge.



Vol. 25, No. 4; Issue 140; July/August 2015 Classy Class A Climax — Regner steamer and kit review • Big 'Dora' — Making it a 1:13.7-scale rail bus • Spinning metal • Cabin Fever • Speedometer • Latest waybill: Garratt from Roundhouse; in memoriam — Peter Jobusch; Accucraft UK goes with an African steamer; Mamod saddle-tank loco.



Vol. 26, No. 3; Issue 145; May/June 2016 Coal conversion: Changing an Accucraft C-16 from butane to solid fuel • 'Dora' wheelie • Streamlined Garrett: 1:32-scale scratch built steamer. Part II of three • Pleasing Pullmans • Locomotive diversity: International Small Scale Steamup in Diamondhead. • Latest waybill: Aster, Accucraft, Regner.



Vol. 25, No. 5; Issue 141; Sept./Oct. 2015 Mamod's latest: 'Brunel' • Learning to model in tinplate with a 'Dora' modification, Part I • Live-steam group makes sixth appearance at Maker Faire • Adding mesh to Accucraft burner • Salute to Tom King • New products: Aster 0-4-0, Wuhu Bowande German 2-6-2T, Train Dept. with two 7/8ths-scale.



Vol. 25, No. 3; Issue 139; May/June 2015 Steaming amongst the magnolias: Diamondhead 2015 • Laser Loco: Aspinall 0-6-0 (series Part Two) • Workshop: sample tools and equipment • Wicks: A new material • Open cab 'Dora' • Latest waybill: Swiss, U.S. locomotives on the way; a new version of Saxonian in 1:20.3 scale.



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