



MLS Steam-Class 2004 Build A Live Steam Accucraft Ruby Kit

Chapter 1 - Introduction & Research

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Pretty cool model isn't. It's painstakingly placed on display on a pedestal on correct prototypical code rail. Of course the realist in some of you probably object to the fact she isn't weathered. Notice the great scale model of the man in the background with his hand in his pocket. And how did the photographer create the blur motion affect of the man in the lower right corner walking by? This is the kind of realistic model photo that might win a photography award in a photography contest at MyLargeScale.com or at Garden Railways. But it isn't a model photo. The men underneath the pedestal are real. The photo was taken in Washington DC at the Smithsonian. The engine in the photo is the Olomana, a Baldwin Class '6-8 1/3C16' built in 1883 for the Waimanalo Sugar Company on Oahu Island in Hawaii. She was to spend the next 62 years on the island carrying sugar cane by pulling consists of small four-wheel cars. After being retired by the sugar cane company in 1944, she traveled to California. But I'm getting ahead of myself ...

The Roots of This Class

MasterClass 2001 and 2002:

About two years ago, an Australian by the name of David Fletcher was wrapping up work on [MasterClass 2001](#) at MyLargeScale.com. The series of articles that took somewhere between 15 and 20 modelers through the class spanned 250 pages and was the most comprehensive work on scratch building or kit-bashing a locomotive I had ever seen. His work was inspiring. In the project, David took an Aristocraft C-16 2-8-0 and bashed the drive train to create a 2-6-0 Mogul. Then he took members of the class step by step through bashing the superstructure into a number of different Mogul prototypes. The following photo shows David's class poster child.



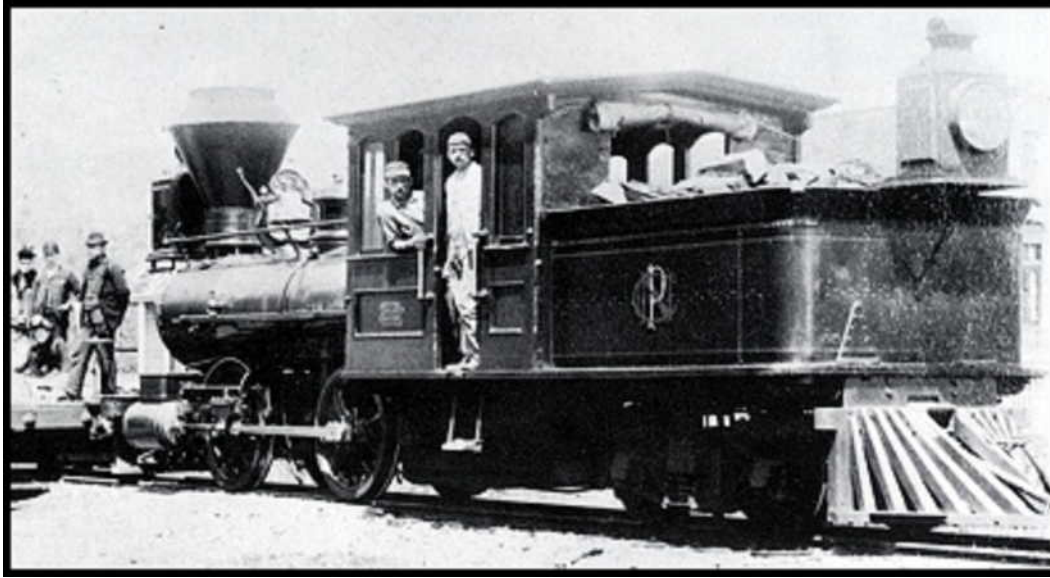
Gorgeous, isn't she! A model railroad work of art.

At the time I became aware of MC 2001, I was a standard gauge guy, modeling mainline steam. So I signed on for [MasterClass 2002](#), a project in which I'd be building a Mason Bogie. After all, Mason made both standard gauge and narrow gauge locomotives. The era of the Mason was a bit early for my pike. But I was willing to stretch things a bit in building a SG Mason. Then I made my standard gauge killer mistake. I signed on to be the archivist for MC 2002, building an archive of photos and specifications for folks to use in building their Mason Bogies. We hoped to find 20 photos. The [Mason Bogie Archive](#) has grown to over 100 photos covering over 1/2 of the Mason Bogies produced.

Along the way I became fascinated by a narrow gauge railroad in the San Francisco area. The North Pacific Coast did everything. It was a passenger railroad hauling tourists to the resorts along the Russian River and also connected with 'The Crookedest Railroad in the World', the Mount Tamalpais and Muir Woods RR. The NPC was a logging railroad hauling redwood lumber out of the redwood forests north of San Francisco. It was a commuter line that ran passengers via steamboats from San Francisco to Sausalito, then by rail to a number of communities north of the bay. And it hauled potatoes and goods.

But what caused me to discover the NPC was the fact that it had purchased two Mason Bogies, the famous Bully Boy, and his homely older sister, the San Rafael. I stumbled across the San Rafael while building the archive. I was fascinated by the older 0-4-4T Bogie that served her railroad for 40 years, one of the longest terms of service for any Mason engine.

Here's how she looked in 1890.



So I was coaxed over to Narrow Gauge. The San Rafael awaits a BBT drive train. But I'll build her and the Bully Boy one day in the not too distant future.

The Lure of Live Steam

Many of you probably find yourself in a position similar to mine. We've always run sparkers, locomotives running off electricity trying to pretend they're steam engines. A fair number of you may have grown up in the late steam era. My great-grandfather, grandfather, and step-grandfather all worked for the Chicago & Northwestern in Green Bay. The first two men were gone to that great railroad in the sky long before I was born. But Step-grandpa Tom used his railroad pass to take his grandkids to Milwaukee and Chicago during summer vacations to visit zoos, museums, and such. Some of my earliest memories were trips on passenger consists pulled by Chicago & Northwestern Heavy Pacific Locomotives.

There's nothing like the sight, sound, and smell of a steam engine. Nothing else even comes close. Over 50 years later I still have vivid memories of those trips. Any time Grandpa Tom volunteered to take us down to the C&NW yards, I was first in the car. Many of us dream of sitting in the engineer's seat and piloting one of those monsters. It would be like we died and went to heaven. But it's a remote dream. A dream most of us are unlikely to accomplish.

You, like I, may wander around the MLS forums. You've probably visited the [Live Steam](#) forum. We are fascinated by discussions in the forum. We lurk. We follow the threads. But we are busy. Busy with building models. Busy with life. "Maybe after I retire, I'll get involved with live steam models."

Then for me and a number of others the situation changed early January 2004. Christmas money was jingling in our pockets. We became aware in one of the MLS forums that the [Carolwood Pacific Historical Society](#) was offering model of a [Fort Wilderness Railroad](#) engine that ran at Disney World in the early days. The model is built on an [Accucraft Ruby](#). It is powered by that glorious, enchanting, prototypical, smelly, hot, live steam.



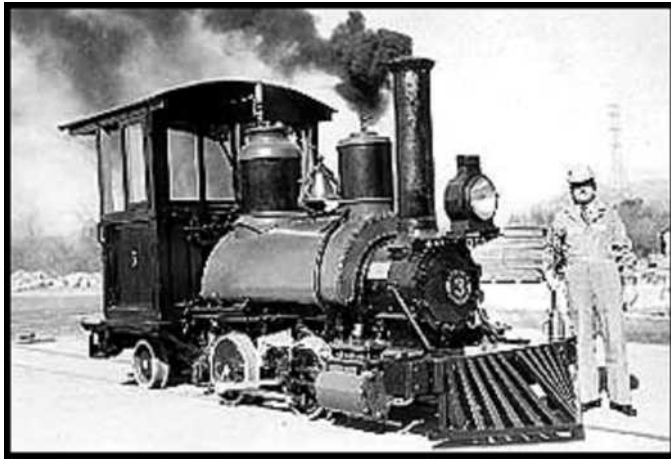
Accucraft's Fort Wilderness R.R.: At \$480, it is no more expensive than some of the Accucraft Ruby variants. But it is modeled after a real prototype, the four Disney Fort Wilderness engines. These engines, built in 1972, pulled passenger cars in the Fort Wilderness area of Disney World.



At Disney World, the expansion of the park, the use of inexperienced kid operators, and lack of a proper roadbed laid over a swamp caused the engines to be retired, well before their time. They sat rusting away for years under tarps in a Disney World back lot. Fortunately, they were rescued by steam fans and are now in the process of being restored.

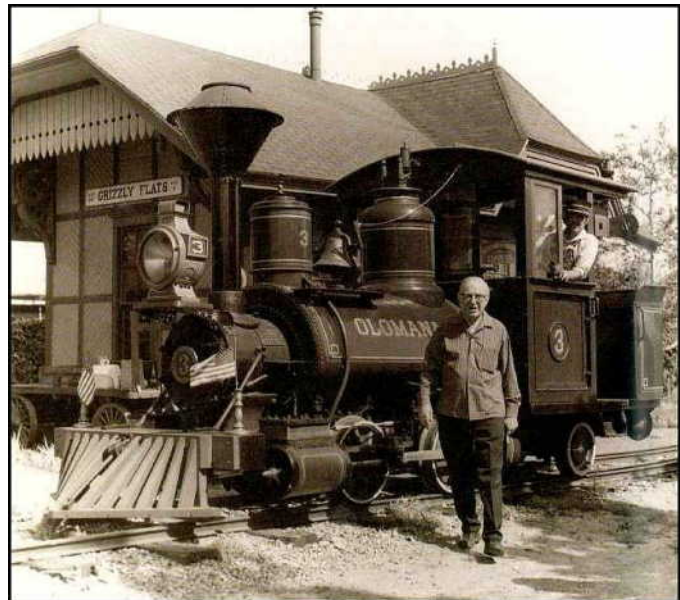
In doing the research into these engines, I discovered they were 4/5 scale models of an original Baldwin prototype, the '*Olomana*', whose photo and story begin this chapter. As the old Chicago radio personality Paul Harvey would put it, "Now it's time to hear the rest of her story."

After being retired from the sugar plantation and following the end of World War II, the Olomana was purchased by a railroad buff and historian named Gerald M. Best, of Beverly Hills, California, who decided to realize a boyhood dream. He would buy his own steam locomotive - and run it! Oh how the rest of us envy that man - owning and operating his own prototype steam engine.



The Olomana under steam. Note that she had a straight stack, an 0-4-2T wheel arrangement and no bunker.

After storage for a few years, in 1951, Jerry moved the Olomana to the property of Ward Kimball, the legendary Disney animator. Ward had a full railroad in his back yard. In 1952-53 Jerry and Ward spent over \$10,000 on restoration, bringing her to the condition shown below.



Jerry Best standing proudly in front of his Olomana following restoration. Note the bunker that was added at the rear and the stack changed to a diamond stack.

Walt Disney visited Kimball's home many times and from time to time operated the 'Olomana.' He remarked that this was a perfect engine for Mickey Mouse. In 1977, Best donated her to the Smithsonian, where she resided in the NMAH's Railroad Hall. The photo at the beginning of the chapter, taken by David Fletcher, shows her on exhibit in the Railroad Hall. In 1999, as documented in ["The Great Locomotive Switch"](#), she was moved to the Smithsonian's Arts & Industries Building where she became a central part of a display about the history of Hawaii. Today she is on loan to the [Railroad Museum of Pennsylvania](#) in Strasburg, PA.

But before her trip to the Smithsonian, Walt used her as a model to build the Fort Wilderness engines. Along the way, Disney's artistic liberty caused the Fort Wilderness engines to pick up a two wheel front truck, a backdated oil headlight, and a square saddle tank.

I toyed with the idea of bashing my Fort Wilderness model into the Olomana. Then it hit me. Why not leave the Fort Wilderness Ruby intact but use another Ruby Chassis to model the Fort Wilderness Engines' prototype. I'd have a model of a prototype (the Olomana). And I'd have a model of its model (the Fort Wilderness engine). What a neat pair that would be to show and talk about with my fellow model railroaders. Both would be live steam engines. Folks, it doesn't get a whole lot better than that - without going to the extreme of owning and operating your own 1:1 scale live steam engine.

Enter the Live Steam Forum

I posted my ideas in the Model Making Forum at MLS. In jest, I kidded David Fletcher about starting a Live Steam MasterClass. Fletch indicated he had a number of commitments that prevent him from running this project, but he encouraged me to take it on. He also offered to supply prototype information and contribute to the class by writing a piece. A number of other modelers that frequent the Model Making forum expressed interest in the class. But almost nobody had any experience in live steam.

So I took the discussion over to the Live Steam Forum. Even more interest surfaced, and a number of experienced live steamers offered to lend a hand with research and writing. Some are listed as members of the team for this class. Others are still considering whether to contribute. I also discovered that Accucraft is introducing an Accucraft Ruby kit this spring and a number of Live Steam Forum members were already discussing a group purchase. I suggested we work together on the purchase. Requests for price quotes went out to a number of Accucraft dealers. The momentum for a Live Steam MasterClass was building. So we decided to go forward with the class.

So What's Somebody With No Live Steam Experience Doing Coordinating this Project?

I knew the question was on your mind. Your class coordinator didn't own a live steam engine until a few weeks ago when my [Accucraft Ida](#) (a Ruby variant) showed up. He has never run a live steam engine or even attended a steam-up. In many ways this Steam-Class is like the project to build the [Mason Bogie Archive](#). At the beginning, I had never heard of a Mason Bogie. The single best source of Mason Bogie photos in print or on the Web had about 10 photos. But amazing things happen on the Web at a site like MLS where people come together with a common interest. You ask for help. People step up. It wasn't long till I had so much Mason Bogie information coming my way; I had a hard time keeping up with it. The job evolved into coordinating the efforts of many talented and knowledgeable people. I provided the Web framework at my site to build the archive. What came out of the effort is by far the largest collection of Mason Bogie photos on the Web or in print. And I learned a tremendous amount along the way.

This project will work much like the Mason Bogie Archive product. We'll pull together some extremely knowledgeable people. We'll coordinate our efforts. And we'll have a great class. There's another reason to have someone with no live steam experience coordinate this project. Like many folks at MLS, I have some modeling experience. I'm not bad, but not great either. What I'm saying is that if I can do it, you can too. I plan to build two engines as part of this project. One will be the '*Olomana*,' bashed from the Ruby Ida variant. The '*Olomana*' will be the poster child for this series of articles. Fortunately, it is sort of a 'no-brainer' bash. The '*Olomana*' bash will be part of this series. You'll get an update with each chapter to back up my statement, "If I can do it you can too". I'll lay out the modeling plan and the rest of the prototype research for the Olomana bash a little later in this chapter.

The second engine will be built from the Ruby kit. I'll steal some parts from the kit that I need to do the '*Olomana*.' That will free up some Ida parts and a base Ruby for the second project. I'm not sure what I'm going to build with the second drive train and components. But like you, I'll find an engine to build. It could be one of the Glovers in my book on the subject. Or it may be an even earlier Hawaiian 0-4-2 that also ran in Kimball's back yard. Some 7/8" fans are trying to convince me to build a 7/8" scale (1:13.7) 24" NG engine. Or it may be another engine entirely. The second bash is likely to be significantly more complicated than the bash of the '*Olomana*.' So I'll build it with the rest of you as the class moves along. I'll struggle like the rest of you, in selecting an appropriate prototype, locating the appropriate detail parts, then putting it together as an interesting representative of the prototype. And I'll document my discoveries, problems and mistakes in a builders log like I encourage you to do. So let's move on to what we can collectively accomplish in this class by helping each other out.

The Steam-Class 2004 Project Objectives:

Every project should have a set of objectives. Let me share with you what I think we should try to accomplish in this class. Class objectives are to:

1. Motivate, cajole, and possibly drag a number of new faces into the live steam segment of the hobby. Like me, many of you have been waiting for the chance. But you, like I, felt you needed some help getting there. Maybe you are one of a fair number of folks at the MLS site with significant modeling experience but very little exposure to live steam. We hope you'll share their modeling knowledge with other members of the class while participating in the class.
2. Motivate some live steam fans to take on their first scratch build or kit-bash project. You may run live steam. But you may never have modeled a prototype engine. We want you to share your expertise on steam, hopefully while having fun participating in the class.
3. Involve folks that would enjoy participating in the class but want to bash a live steam engine other than the Accucraft Ruby. There will not be direct support for your projects in the series of chapters. It would make writing the chapters too complex. So if you are working on another engine, you will need to read between the lines of the chapters that are published. We will use the threaded discussion area in the MasterClass & Articles forum to provide for collaboration between folks with knowledge of the model and prototype. And I'd be happy to post photos of relevant prototype engines in the archive.
4. Keep the cost as low as possible. Say you discover that the fiddling and singed fingers that accompany live steam isn't your kettle of tea. If your bash is well done, you will have a shelf model to share with friends while saying, "Now that's a live steam model I built". If we keep the cost down, you can't lose.
5. Give those of us who want to run live steam lots of support from experts in construction, tuning, and operation to increase the chances of a favorable, successful and rewarding experience.
6. Attract a number of experts in tuning the Accucraft Ruby. From what I'm told, she's short of perfect out of the box. But her performance can be significantly enhanced with some modifications. We'll incorporate step-by-step instructions for those modifications in the chapters.
7. Attract manufacturers of accessory parts for the Ruby. Have them share their knowledge in exchange for having their products highlighted in the class. If you look at the team members listed a little later in this chapter, you'll see who has already signed on.
8. At the end of the class, showcase the engines built by participants in the class so we can share our collective accomplishments and receive a pat on the back from other class participants.

Have a great time learning from each other.

Class Components and Support:

To pull this off, we need to make a commitment to building a support network for SteamClass 2004 modelers similar to what Fletch developed for MasterClass 2001 and 2002. Here are the services we plan to build or use as part of this class.

1. We are building an archive of prototype photos of Baldwin, Porter, Glover, Vulcan, European locomotives, and any other manufacturers and locomotives that are candidates for bashing from the Accucraft Ruby Kit or its variants. We will also post photos of relevant prototype engines for those of you adventuresome enough to build on something other than the Ruby. At the time this article went to press, the archive already had over 100 photos. Another 100 are in my hands and will be added as time permits.
2. We will publish a series of chapters that take us through building, modifying, and upgrading a Ruby drive train, bashing the superstructure, detailing the model, handling electronics, and operating and maintaining a live steamer. In an approach taken by David Fletcher in MC 2001 and 2002, each chapter will have a prototype section and a model section. I expect the prototype portion will highlight manufacturers or lines making extensive use of small 0-4-0T and similar engines. Our lineup of prototype chapters and authors is nearly complete. See the Steam-Class 2004 Team discussion later in this chapter for details.
3. We will go all the way through bashing an Accucraft Ruby into a prototype as part of the series. Our poster child will be my bash of a Ruby into the Olomana. If you want to build her along with me, follow along. But this class will be most rewarding to you if you take your own path by choosing your own engine to model.
4. We will provide a discounted price for purchasing a Ruby or Ruby variant. Also, we will include a list of 3rd party providers who might supply add-on, modification, or upgrade parts for the Ruby.
5. We'll use the [MasterClass and Articles](#) forum as a place to answer questions, provide technical support, share our builder's logs, and operate as a good community in providing moral support to our members. A quick visit to that forum will provide give you a sense for the kind of support that has been supplied in the past to back up the articles.
6. We will lean on much of the material already at the MLS site as a resource for those building models. We'll rely heavily on specific parts of the MC 2001 and 2002 chapters to deliver prototype information and modeling techniques that are already covered in those classes. My own article series on the Modeling Process will also be referenced by these chapters.

Chapter Outlines:

This is the sequence we plan to follow in navigating through this class.

- **Chapter 1** - Introduction: This is the chapter you are reading. It has the following components.
 - How the class got started with a brief history of the Disney Fort Wilderness engine and its prototype the Olomana.
 - Objectives, components and support services, a chapter outline, and a listing of team members involved in delivering the class.
 - An overview of how to use the SteamClass 2004 Archive in deciding on the engine you wish to build. The archive was used in modeling the Olomana. I'll show you how I used the research information in the Archive and the instructions in my first two modeling articles to make decisions in coming up with a model plan for the Olomana.
 - What's in the Ruby Kit and how does the kit compare to the Ruby Variants?

- Resources, order forms, supplier listings and sources of scratch-build supplies needed to complete the project.
- An overview showing how a specific prototype, the Olomana, will be modeled.
- **Chapter 2** - Building and modifying your drive train.
 - A builder or road's story - Baldwin x-4-x Class Locomotives by Vance Bass.
 - How to build a Ruby drive train from the kit.
 - How to tear down an Accucraft Ruby.
 - How to modify a Ruby drive train to enhance its performance.
 - Upgrading the Ruby's pistons.
 - Changing Ruby valves from outside to inside admission.
 - Fabrication of a front pilot or rear truck.
 - How to test your Ruby's operation.
 - A progress report on the Olomana including fabrication of the trailing truck and upgrades made to the drive train to improve performance.
- **Chapter 3** - Bashing the Ruby's superstructure.
 - A builder or road's story - Small Industrial Engines in Australia - David Fletcher.
 - Superstructure parts available from Accucraft.
 - Parts available from third parties.
 - Collaborative efforts by class members to supply and manufacture parts and supplies.
 - Building/bashing superstructure components. This will include adding bunkers or tenders.
 - A progress report on the Olomana - Superstructure upgrades including cab, dome, tender, and pilots.
- **Chapter 4** - Detailing your engine.
 - A builder or road's story - Vulcan Foundry Locomotives - Tom Farin.
 - How the prototype worked.
 - How prototype operation was implemented in the Ruby.
 - Missing components and how to add them to your Ruby.
 - Sources of detail components.
 - Scratch bashing your own components.
 - A progress report on the Olomana - Super-detailing a Hawaiian sugar cane engine.
- **Chapter 5** - Installing/upgrading electronics.
 - A builder or road's story - Porter Steam Locomotives - Author to be named later.
 - Installing lighting circuits and battery power.
 - Installing radio control.
 - A progress report on the Olomana - installation of LED lighting and radio control.
- **Chapter 6** - Running and maintaining your Ruby.
 - A builder's story - Glover Machine - author to be named later.
 - A completed project engine.
 - Supplies you need to have on hand.
 - Tutorial on live steam engine operation.
 - Designing your pike with steam operation in mind.

- Hosting a steam-up.
- Periodic maintenance on a Ruby.
- Common mechanical problems and their solution.
- A progress report on the Olomana - her first outdoor experience and participation in a steam-up.

Steam-Class 2004 Archive Overview and Use:

The purpose of the [Steam-Class 2004 Archive](#) is to provide prototype photos, information, and specifications to assist modelers in doing prototype research. While the archive is specifically aimed at Steam-Class 2004 participants, it should be useful to anyone performing prototype research on x-4-x locomotives.

Because the Ruby could be bashed into either narrow gauge or standard gauge prototypes, the Archive's home page contains a table with Ruby dimensions and scale conversions in the most commonly used large scale scales - 1:20.3, 1:22.5, 1:24, 1:29, and 1:32. It also includes conversions to 1:13.7 for those of you that are 7/8" scale fans.

The archive will contain information on both SG and NG prototypes. MyLargeScale.com has a significant number of International members. So as long as someone is willing to supply prototype photos and information, we'll post information on non-US locomotives on the site.

We will be posting photos and, where available, specifications. Where available, we'll also post builder erection drawings and drawings from other sources. Scale fanatics will probably need more dimensions than those supplied. If you have that particular disease, I suggest you read my second chapter in the [Introduction to the Model Building Process](#) series in the Articles submenu of the Articles menu at Mylargescale.com. In the first part of chapter two of the modeling series, you are stepped through how to take off dimensions from photos using perspective takeoff techniques. You may also want to read chapter one which discusses how to do prototype research. You'll see an example of the use of the Archive and the modeling chapters in the section on '*Olomana*' research later in the chapter.

The material in the Steam-Class 2004 Archive is organized by builder. Links from the home page of the article will take you to a home page for the manufacturer. For example, you may wish to visit the [Baldwin Home Page](#). On the manufacturer page, engines will be listed by builder class if a sufficient number of photos are in the archive to support this breakdown. On the Baldwin Home Page there is a long list of classes in the left-hand column. A link will take you to a class page where you may find builders photos, specifications, and photos of specific prototype engines that belong in that class. For example, you may want to visit the class pages for Baldwin's [Narrow Gauge 4-C Saddle or Side Tank Page](#). Where we have a set of photos of a particular locomotive, a link from the class page will take you to an engine-specific page with additional photos and information on that engine. A good example is the page for the [Kiso](#), a Baldwin Narrow Gauge 0-4-2 engine of its 6 1/3 C Rear Tank class.

This is not the first archive we've built to support a MasterClass project. The [Mason Bogie Archive](#) is the single largest collection of Mason Bogie photos (over 100) either on the Web or in print. When I look at how big the archive has become, I'm amazed. I knew absolutely nothing about Mason Bogies when I took on the project. The reason it was so successful is that I had help from at least 25 MLS members who went through their materials and fed me photos and information.

We expect that the number of photos in the SteamClass 2004 archive will eventually number in the hundreds of photos. If you have information on an interesting prototype or builder, please let me know. If we are to be successful in meeting our goals for the archive, I'll need your help. You can contact me off line at tfarin@farin.com.

The Steam-Class 2004 Team:

We've assembled a talented team of folks. Some have expertise in live steam. Others have experience in scratch building and kit-bashing. There are specialized skills represented like graphics design, making custom decals, manufacturing add-on parts, performing mechanical modifications, performing electrical upgrades, etc. There are a number with strong research skills and libraries containing prototype information. And there are those with significant experience in maintaining, modifying, and operating steam locomotives. Here is a list of team members who have already assumed positions making specific commitments in delivering this series. There are even more that have volunteered. They have not been included in this initial team member list as their role hasn't been adequately defined. We will update this list in the subsequent chapters.

Vance Bass: Technical editor for Chapters 2 and 6, author of Baldwin prototype article in Chapter 2, major contributor to the archive.

Tom Farin: Steam-Class 2004 Coordinator, author of Chapter 1, author of the Vulcan prototype article in Chapter 4, content editor, developer of the SteamClass 2004 Archive.

David Fletcher: MasterClass advisor, author of Australian Locomotives article in Chapter 3, major contributor to the archive.

Dave Hottmann: Author of "Scratch building upgraded Ruby Cylinders" and "Modifying Valve Timing from Outside to Inside Admission" in Chapter 2.

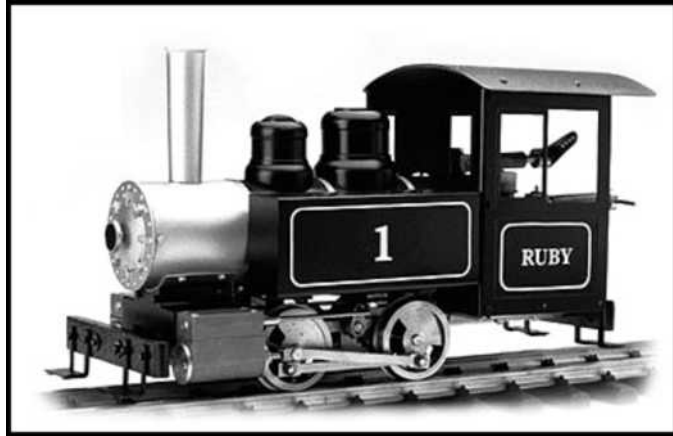
Scott Lawrence: Paint archive manager. Scott is willing to do color workups of your prototype engines.

Landon Solomon: Known to most of us as TrotFox, Landon will be contributing an article in Chapter 2 on building a front or rear pilot for the Ruby.

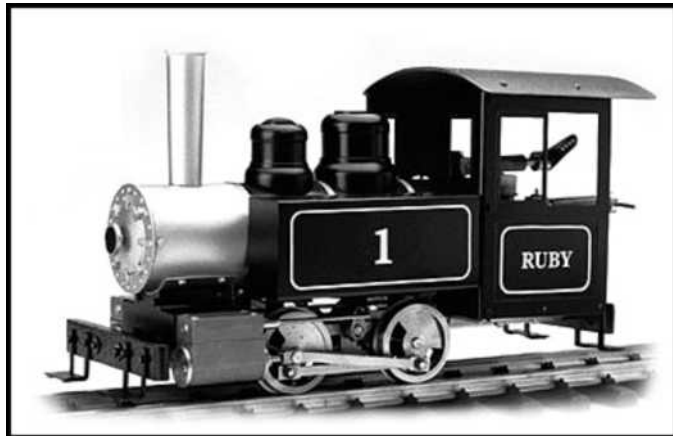
Tony Walsham: Author of an article in Chapter 5 on installing radio control for the Accucraft Ruby. I wonder whose radio control system Tony plans to install?

What's in the Ruby Kit and What Are Ruby Variants?

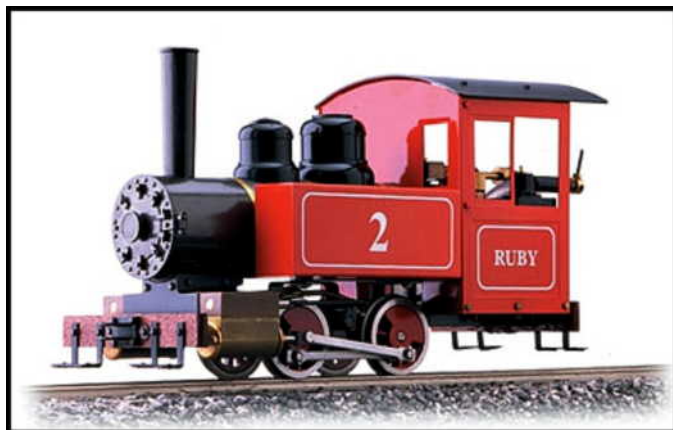
This class involves bashing an Accucraft Ruby kit or one of the Accucraft Ruby variants into a prototype locomotive or into a freelance locomotive based on a prototype. Because some may not wish to assemble a Ruby from a kit, or may not be willing to wait for the kit, we are arranging group pricing on the entire Ruby line, not just the kit. Here is the Ruby lineup.



Accucraft Ruby Kit - at this point we are assuming this is an Accucraft Ruby 1 in disassembled form and at a significant discount to the Ruby 1.



Accucraft Ruby 1 - This is the base engine in the Ruby lineup. It has been sold since the introduction of this line to the market.



Accucraft Ruby 2 or Ruby Deluxe. This variant includes the pressure gauge, a \$60 add-on to a Ruby 1. For those of you wishing to bash a Ruby, the kit is a better deal.

Also note there are variations in the paint job and front tender.



Accucraft Ruby 3 or Ida. This Variant is a Ruby 1 with different domes, stack, and a saddle rather than side tanks. It has a light and bell but does not have a pressure gauge.



Accucraft Ruby 4 or Mimi. This variant is a Ruby 1 with leading and trailing trucks (2-4-2), a separate tender, and a headlight. It does not include a pressure gauge.

Ruby Kit and Variant Costs:

Accucraft is releasing a Ruby Kit this spring. We've arranged with Royce of Quisenberry Station to provide a Ruby kit to class members at a very attractive group price of \$249. We received proposals from four different dealers and his kit price was the lowest of the bunch.

Royce tells me his involvement in live steam goes back 30 years. He's very active in the hobby, recently returning from the big steam-up in Diamond Head. He is a full service dealer who has a great deal of knowledge of the Ruby having run a Ruby since they were introduced. He also is a MLS member who has committed to contributing to the Steam-Class 2004 article series. I suspect he'll be active in this forum sharing his insight and answering questions. He comes with a strong recommendation from Vance Bass and other Live Steam Forum members.

In addition to offering the kit for \$249 he's offering the steam gauge for \$49 and a starter kit (steam oil, machine oil, and starter) for \$8 if the gauge and starter kit is ordered with the kit. So for \$298 you can have a kit and a steam gauge. Compare that to a Ruby 2 (including color paint and the steam gauge), that when discounted will cost you around \$400.

Royce will also offer a special class price on Ruby 1, Ruby 2, Ruby 3, and Ruby 4. If you'd prefer one of those engines, contact him at royce@quisenberrystation.com

Accucraft Ruby Kit	Price
Ruby 1 Kit	\$249
Steam Gauge (if ordered with kit)	\$49
Starter Kit (if ordered with kit)	\$8

The Ruby Kit order form will come up if you click the following link. Because Royce would like either check or money orders, print the form and mail it with the check. Or supply the information requested on the order form in a note.

<http://www.ironhorse129.com/Prototype/SteamClass2004/RubyKitOrder.htm>

Resources, Order Forms & Supplier Listings

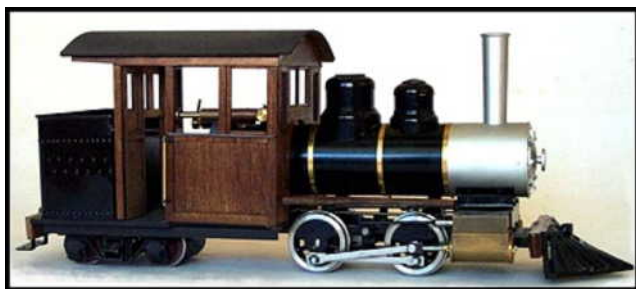
This section contains a partial listing of resources, and suppliers. If you don't find what you are looking for here, click [Ironhorse129 - Resources Page](#). It will take you to my large-scale resource page for my Model Building article series. Suppliers will be updated as the Model Building and Steam-Class 2004 article series evolves.

Laser Cut Wood Components:

[FH&PB Railroad Supply - Vance Bass](#): sells a variety of wood laser cut kits that can be used to upgrade an Accucraft Ruby including cabs, pilots, and even a Forney upgrade kit. You can order these parts on line at the FH&PB Web site.



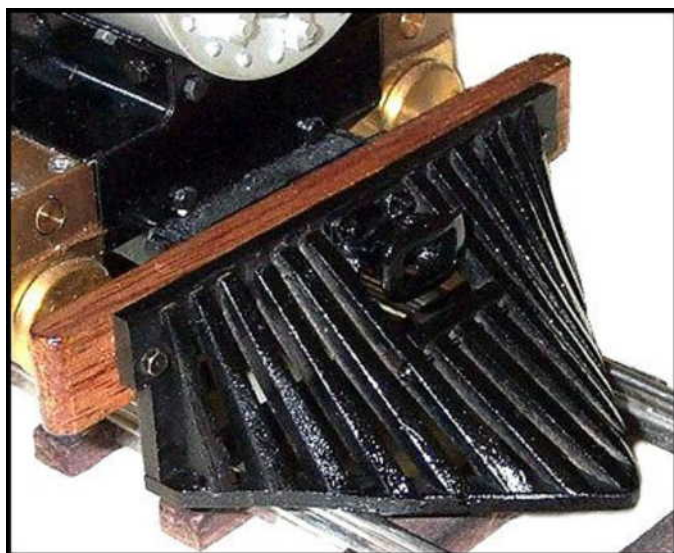
This is a laser cut [wooden cab](#) designed to replace the metal cab on the Accucraft Ruby. Price is \$45.



This is a [Forney conversion](#) kit that includes the four wheel truck and the cab. It also includes the metal deck frame and bolster and a wood former for creating the bunker. Price is \$95.



This is a [wooden front pilot](#) kit for the Ruby. Price is \$20.



This is a [Long wood pilot](#) kit. Price is \$25.

Accucraft Parts:

[Accucraft](#) - maintains an extensive [parts list](#) on individual parts for sale for its various locomotives. We've been told that these parts are not always in stock so call 520-324-3399 for availability.



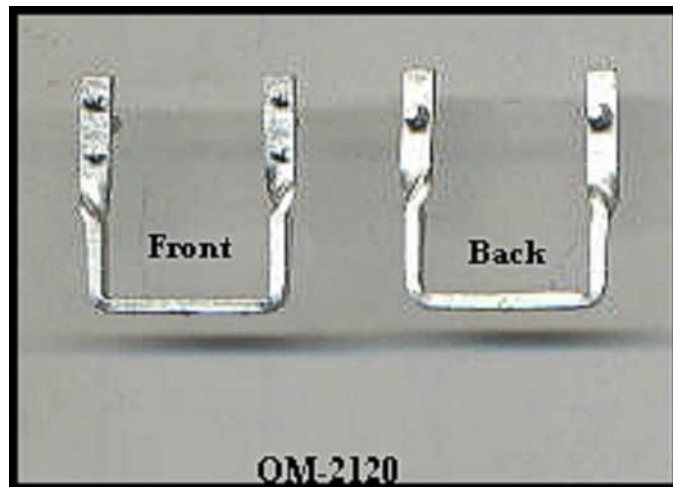
Among the parts available are the stacks for both the Ruby (left) and Ida (right) for \$8.99 and \$9.99 respectively.

The parts lists includes pumps, generators, bells, whistles, pop valves, steam and sand domes, headlights pilots, snow plows, couplers, stacks, draw bars, air tanks, trucks, couplers, motors, and more.

White Metal Detail Parts:

White metal parts are commonly used to super detail locomotives. Super detailing is the subject of Chapter 6. As these parts have a relatively low melting point, they should not be used in direct contact with the hot portions of a live steam engine. While Chapter 5, the super detail chapter, is a long way off, it's not too soon to begin doing research into super detail components. Once you've selected your prototype and have your Ruby in your possession, you may want to begin comparing photos of your prototype to the Ruby. You are likely to identify a number of components on the prototype that do not exist on the rather Spartan Ruby model. The following suppliers deliver white metal detail parts in large-scale dimensions.

Ozark Miniatures: The largest supplier of white metal castings to the large scale hobby. Their Web site contains pricing information and photos of most of their castings.



Ozark Miniatures Strap Step.

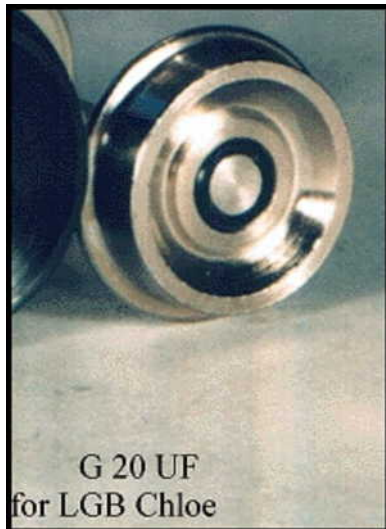
Wheels and Trucks:

One of the challenges in bashing a Ruby into a 2-4-0, 2-4-2, 0-4-2, and 2-4-4 prototype engine is to come up with appropriate leading and trailing trucks. Trucks will be dealt with in Chapter 2. We will provide instructions on how to scratch build leading and trailing two wheel trucks. Note that the Forney Kit supplied by Vance Bass includes a four wheel trailing truck.

Gary Raymond Wheels: - Gary makes a variety of metal wheels for large scale in a variety of finishes. The two with the greatest applicability to this project are his small ore and mining truck wheels and his small pilot and trailing truck wheel-sets. I do not have these wheel sets in my possession. There may be clearance problems with the bottom of the Ruby cab. You might want to hold off ordering these parts until we get to Chapter 2.



Gary Raymond Mining and Ore Car wheels - designed for outside frame applications.



Gary Raymond pilot or trailing truck wheels - designed for inside frame applications.

Brass Detail Parts:

If the super detail part will be in contact with the hot portions of the engine, your best choice is brass. Of course, brass detail parts can be used in other parts of your engine. The following supplier delivers brass castings in large-scale dimensions.

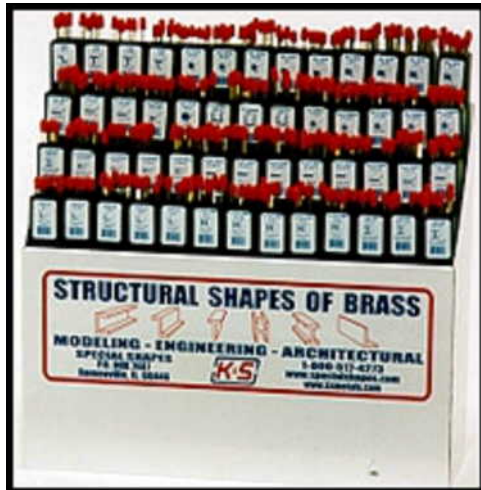
Trackside Details: manufactures brass castings for large-scale engines. They don't have a Web site nor do they communicate by e-mails. But **Electric Model Works** has most of the Trackside Detail parts on their Web site. There has been a recent change of ownership of the brass parts line. You can reach them by phone or mail at Valley Brass & Bronze, 7070 N. Harrison Ave., Pinedale, CA 93650 ph: 559-439-0419



This Trackside Details Steam whistle is a representative sample of the quality of TD parts.

Brass Supplies:

K&S Engineering: - You will find their displays at your hobby store. If you don't have a store near by, visit the K&S web site and nail down the part number of what you need. Then do a search in Yahoo or Google on 'K&S Engineering' to locate dealers who sell their products on line.



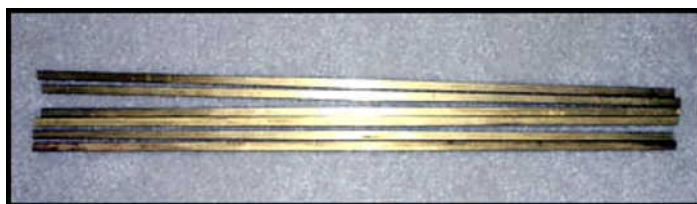
Typical K&S display down at your hobby shop.



Some of the shapes and sizes available.

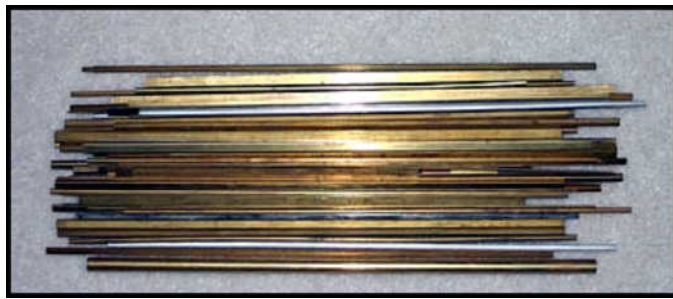
Micro-Mark: They sell much more than tools. Their [metals section](#) offers a variety of brass scratch building supplies.

eBay: Visit their [brass raw materials section](#). There are always brass supplies being auctioned.



I found this 1/8" by 1/4" bar stock on eBay for \$11.00 for six including shipping.

Model train show or swap meet - Your need may be someone else's surplus.



This pile of 50 pieces of K&S brass, copper and aluminum wire, pipe, and angles went for \$2.50 at the Madison NMRA chapter's train show.

Styrene Supplies:

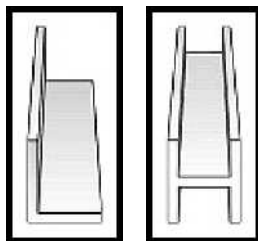
Why list styrene supplies for this project? Certainly you don't want to use styrene where there will be direct contact with hot live steam components. But if you are bashing a tender, you may prefer to work in styrene as opposed to brass. There are no specific styrene requirements for this class but the list of suppliers is here just in case you need it.

Plastruct: Claims to be the worlds' largest supplier of scale model parts to miniature scale model building. Your hobby store probably has a rack. If not, do a search on their name in Yahoo or Google to nail down suppliers who sell on line.



A sampling of Plastruct styrene model building products.

Evergreen: Claims to be the world's largest producer of styrene plastic shapes, strips, and sheet materials in metric and inch sizes. Your hobby store probably has a rack. If not, do a search on their name in Yahoo or Google to nail down suppliers who sell on line.



Evergreen H beam and angle.

Copper or Brass Components:

Hardware or building supply or plumbing store - Need a custom dome? Don't forget the local hardware store. A trip to mine yielded quite a few bash candidates. Also consider lighting supply firms offering brass parts for lighting.



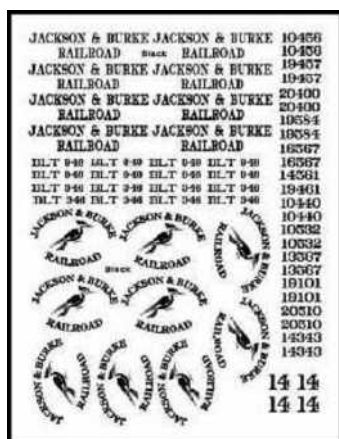
I found these dome candidates at the local building supply store.



Do a search in Yahoo or Google on 'brass light parts'. I found these threaded half brass balls at [Liberty Lighting](#).

Decals:

[Cedarleaf Custom Railroad Decals](#): Stan is willing to design and produce decals to your specifications. Here are two examples of decals he has produced.



Typical sheet including logos, road numbers, and other lettering.



Color logo examples.

Wood Supplies:

Ozark Miniatures: Their new [wood products area](#) offers a variety of scale dimension supplies in Canadian redwood and cedar.



Ozark Miniatures scale 1 x 6 in redwood.

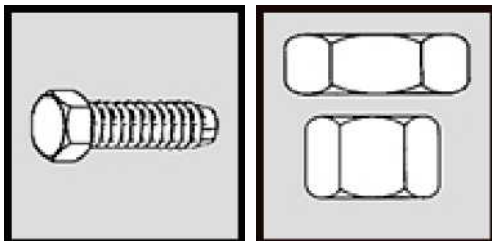
Micro-Mark: Their [wood products](#) area offers dowels, milled shapes, plywood, wood sheets, wood siding and wood strips.

eBay: Do a search on scale wood from their home page. Search results will point you to a number of auctions in various areas of their Web site.

Fasteners:

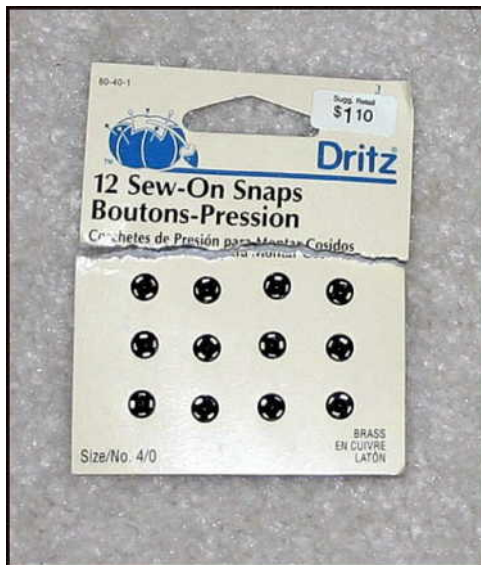
Hobby Store - Your hobby store is likely to have a rack with miniature screws, nuts, washers, taps, and drills for use in model railroad projects. Also check in their radio control airplane section.

Micro Fasteners: Tired of paying high prices for miniature fasteners like screws, nuts, and washers? If you are willing to buy in quantity, you can save a ton by buying from this company. In my experience, their service is always lightening fast. So what are you going to do with all the extra screws, nuts, and washers? One possibility is to get together with three or four friends. Place one order. Share the loot and cost savings. In my case, I often use real screws, nuts, and washers in applications requiring NBW castings for cosmetic purposes. How about the screw end I nip off? If I need to fasten a beam to a sill, I'll often tap the beam and screw the screw end into the beam. Then I'll use a nut and washer to secure the sill to the beam.



Micro Fasteners machine screw and nuts in brass. They are also available in stainless steel where additional strength is needed. Typical price - 100 0-80 x 3/4 inch brass machine screws - \$7.60.

Taylor's or Dritz Press Studs or Snaps - You can find these at your local sewing store. They are extremely useful in fabricating valves on your pipes. Buy the smallest size you can get.



Dritz sew-on snaps. That's 12 valve handles for \$1.10, 24 if you use both the front and back half of the snap.

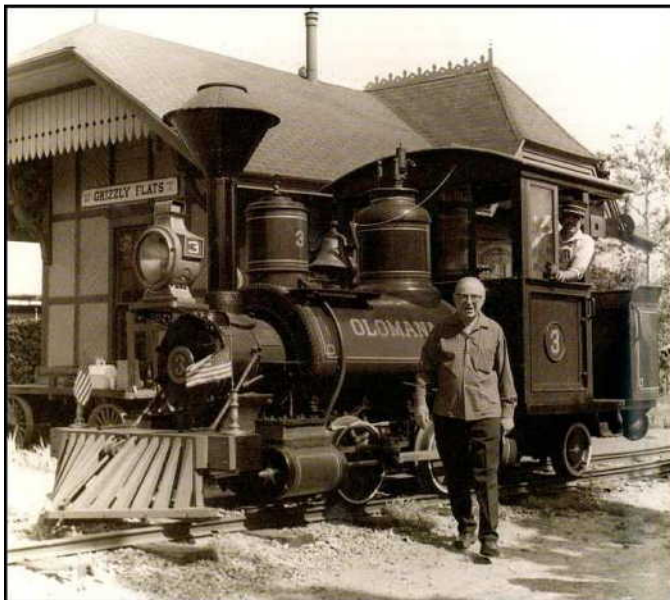
Modeling the '*Olomana*' Base Model and Era:

Her history is discussed earlier in the chapter. She's in the collection of the Smithsonian and currently residing in Strasburg, PA. That's already on paper. The question is, how will I create a live steam model of her? How will she be modeled?

Based on her sugar cane plantation photos? No 3, the '*Olomana*' is on the left. Her sister, the '*Pokaa*' is on the right.



Or after the modifications made by Jerry Best in her restoration after retirement?

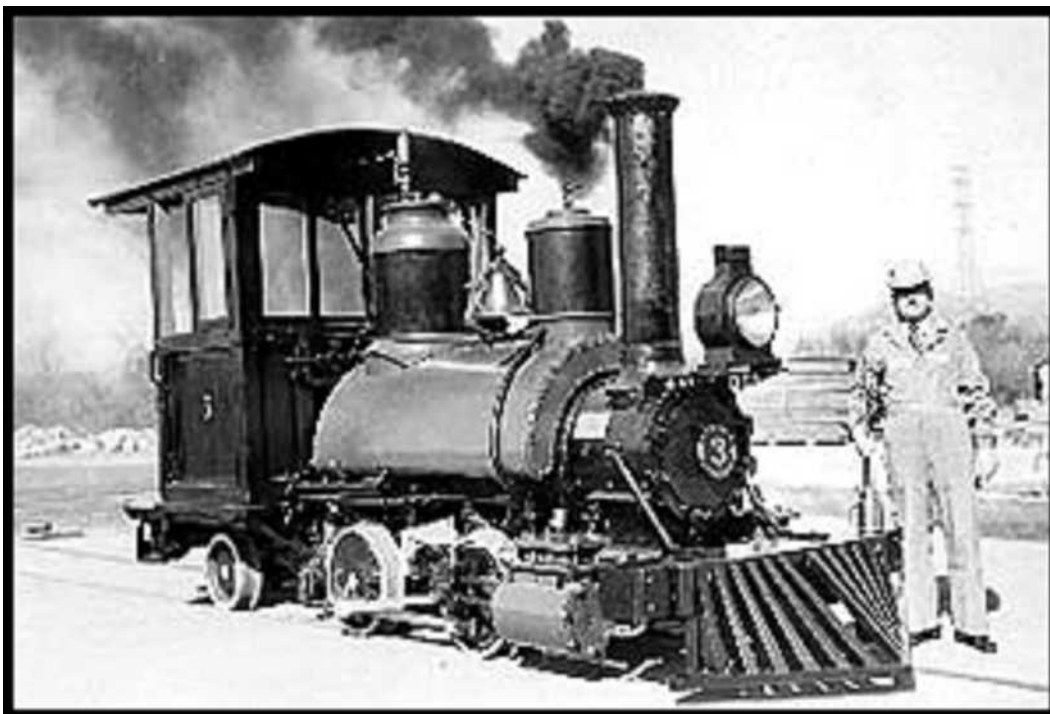


The Best photo is consistent with the equipment she displayed in the Smithsonian as photographed by David Fletcher.



In Chapter two of my series of articles on the modeling process, I raise a number of issues in selecting the era of the engine to be modeled. At this point, the 'era' for the Olomana spans over 100 years, although the last major modifications came when she was rebuilt by Jerry Best and Ward Kimball in 1952-1953. Among the issues raised in the chapter are:

- Parts availability - I'm fortunate here in that the parts are available to model either engine. The base model will be an Accucraft Ruby, my entrant in the SteamClass 2004 sweepstakes. The Ruby comes in four variants. Between the different parts available on the variants, and a Vance Bass cab and pilot, I have most of the parts needed to bash either the early or late Olomana.
- My modeling era - My narrow gauge pike is based on the North Pacific Coast before the turn of the century. So the early version fits better with the pike.
- Esthetics - Do I want a working plantation engine or one with some Disney-influenced upgrades? The Fort Wilderness engine, which I have on order, is a reflection of Disney's hand in creating an engine that would play well in an animated cartoon or in a theme park where it was used. In my model of the Olomana, I want to show just how far the Fort Wilderness engines jumped from their roots. So I'm modeling the sugar cane hauler version. It is my intention for her to look a bit tired and gritty. She'll be in better shape than when Jerry Best found her. But she'll be showing her years of providing years of sugar cane experience.
- Availability of photos, drawings, and other prototype info - Thanks to David Fletcher, I have an image of the original Baldwin erection drawing of the Pokaa, a Baldwin engine of the same class as the Olomana. I also have multiple photos of the Olomana in sugar cane service. I'm sure I'll locate multiple photos of her Baldwin classmates. So having the four legs of the research stool described in Chapter 2 of my modeling series will not be a problem.

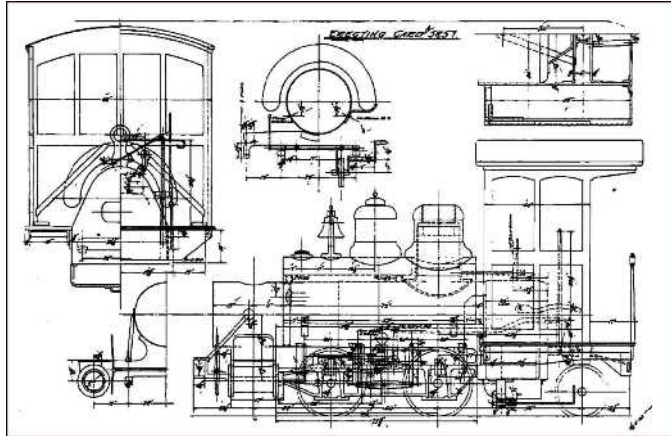


So the die is cast. This is how she'll be modeled.

Olomana Specifications:

Chapters 1 and 2 of my series of articles on the [Modeling Process](#) at MLS takes you through the process of performing prototype research and defining your project. Earlier in this chapter, I discussed her history and supplied some photos of her both on the sugar plantation and after restoration by Jerry Best. A model railroad friend, Gaetan Charette, has a VHS tape of her taken at the Strassburg Museum. Gaetan tells me a copy of the tape is coming my way. I'm also fortunate that my friend, David Fletcher has a copy of the original Baldwin erection drawings of the 'Pokaa', the 'Olomana's' sister engine. This section documents the rest of my research and lays out my project plan for the Olomana.

Here are David's erection drawings.



Baldwin Erection Drawings of the Pokka.
Click [here](#) for a larger version.



Photo of the restored Pokka running on Ward Kimball's property.

I'll assume the Pokka and the Olomana are identical engines. That's an arguable assumption as they were purchased from Baldwin at about the same time. However, the Pokka had different dome placement and a sand dome with a materially different style. Later, at the same time Jerry Best purchased the Olomana, Ward Kimball purchased the Pokaa from the sugar cane plantation. Ward renamed the Pokka the Chloe after his daughter and ran it on his backyard railroad.

Using the dimensions on the drawing and a digital caliper, I was able to produce a table of specifications taken from the Baldwin erection drawing. The left column gives 1:1 measurements of the prototype engine. The second column shows those measurements scaled to 1:20.3. The fourth column is measurements taken off from the Accucraft Ida I ordered for the project. Where dimensions are missing, the Ida lacked the component being measured. I will need to fabricate or purchase the component as part of the project. I'll reveal more about why I selected the Ida a bit later in this chapter.

A comparison of the 1:20.3 prototype dimensions to the Ida takeoffs makes it clear that the Ida is scaled from a larger prototype than the small Baldwin Pokaa/Olomana. For reference purposes, I rescaled the prototype dimensions to 1:17. At 1:17 scale the prototype dimensions are much closer to the Ida dimensions. Why bother to scale to 1:17? I'll address that a bit later too.

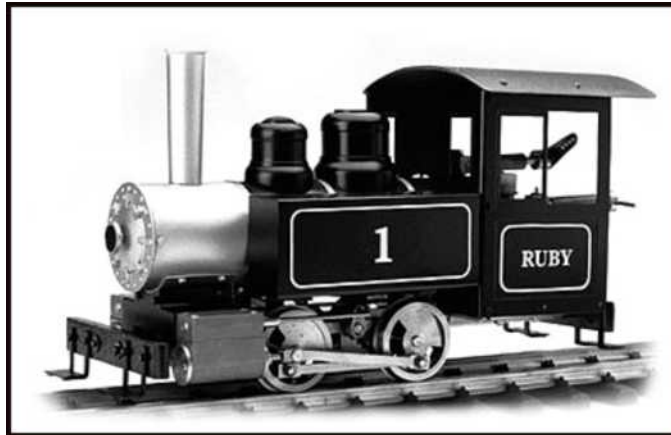
Pokka Measurements (inches)	1:1	1:20.3	1:17	Ida
Boiler Length	74.32	3.661	4.372	3.730
Smokebox Length	28.89	1.423	1.699	1.820
Cab Length	39.59	1.950	2.329	2.689
Driver Diameter	24.08	1.186	1.416	1.400
Pilot Diameter	18.37	0.905	1.081	
Cab Height - Side	65.33	3.218	3.843	3.857
Cab Height - Roof	74.44	3.667	4.379	4.210
Cab Width	68.70	3.384	4.041	4.039
Boiler Diameter	24.54	1.209	1.444	1.770
Wheelbase	39.99	1.970	2.352	2.330
Length	164.17	8.087	9.657	9.700
Steam Dome Height - Boiler	19.67	0.969	1.157	
Sand Dome Height - Boiler	21.88	1.078	1.287	
Steam Dome Width - Top	19.20	0.946	1.130	
Sand Dome Width - Top	16.38	0.807	0.964	
Window Height - Side	28.01	1.380	1.648	1.403
Window Height - Front Middle	30.04	1.480	1.767	1.110
Window Width - Side	16.02	0.789	0.942	0.880
Window Width - Front	14.07	0.693	0.828	0.650
Cab Roof Length	62.93	3.100	3.702	3.778
Rear Deck Length	57.67	2.841	3.392	2.696
Cylinder Length	17.97	0.885	1.057	1.420
Cylinder Diameter	9.91	0.488	0.583	0.676
Saddle Tank Width	42.83	2.110	2.520	2.840
Saddle Tank Height	25.13	1.238	1.478	1.970

If you've read my modeling series chapters, I now have all three legs of the research stool discussed in the second chapter.

- The locomotive's history.
- A number of photos showing various points in its history.
- Scale drawings and dimensions of key components.

Selecting the Base Model:

The original general selection of base model was pretty easy. It had to be an Accucraft Ruby. Once the Ruby selected, I had a model in search of a prototype. The prototype I selected is the Olomana. The Ruby line is made up of four variants plus the Ruby Kit. I quickly narrowed my choice to either a Ruby kit or an Ida variant.



The Accucraft Ruby 1. It is my understanding this engine in disassembled form is the Accucraft Ruby kit.

Inexpensive, especially in kit form, it lacks the saddle tank, headlight, and bell of the prototype.



The Accucraft Ida, or Ruby 3.

The second least expensive of the Ruby variants, it has close to the correct saddle tank, a headlight and a bell.

Because I wanted a Ruby to use as a test engine for the series, the kit was out of the picture due the fact it hadn't been released. I decided to go with the Ida, but that left me with the problem of incorrect domes and stack. The Ruby kit has the correct domes and a straight stack. So one option is to swap the domes and stack between the kit and Ida once the kit arrives. Then use the kit with Ida domes and stack to create a second engine.

I do plan to upgrade the performance of this Ruby bash as I expect to operate the engine. That will probably mean larger bore cylinders and any other tidbits our experts come up with. This engine is to be the poster child for the class. So it will receive as many upgrades as possible.

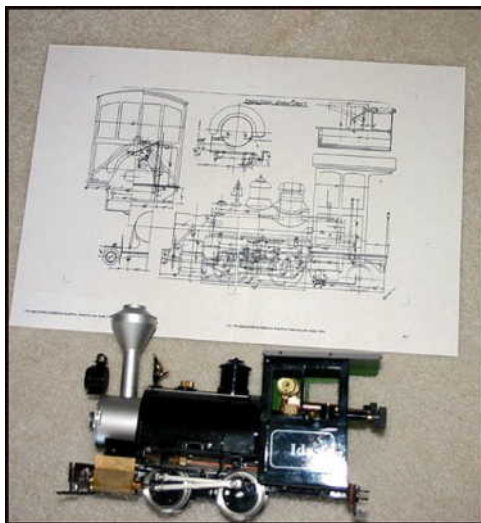
Problems and Challenges:

As I pointed out a bit earlier, at 1:20.3, the Ida is too big an engine in most key dimensions to model the Olomana. Refer to the chart on the previous page and you'll see the major dimension problems include driver diameter, wheelbase, cylinder dimensions, smokebox and boiler length, cab length, height and width ... the list goes on and on.

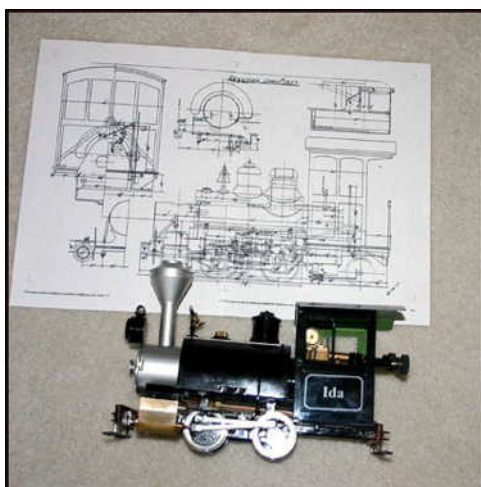
In traditional bashes of an engine, we'd substitute a smaller boiler, possibly switch out driver diameter, swap the cylinders ... But this is a live steam engine and my first bash. I have neither the expertise or inclination to mess with the live steam components.

That's why I rescaled to 1:17. At a 1:17 scale, driver diameter and wheelbase are almost dead on. Cab dimensions are much closer. Boiler diameter is not nearly as out of proportion. Cylinders are still small on the prototype, but closer to the Ida. That takes care of the cab and the major steam components I don't want to touch. The combined smoke box and boiler length of the Ida is a bit short as is overall length.

So I'll model her in 1:17. What I mean by that is any modified parts or swapped parts will target 1:17 dimensions rather than those for 1:20.3. That way the new or bashed parts will be in proportion with the parts on the prototype that scale more properly at 1:17 than at 1:20.3. Yes, my '*Olomana*' be too big relative to her track gauge. But her parts will be in proportion with each other. Most casual observers might notice parts that are out of proportion in comparison to the prototype, but they are less likely to notice the difference in scale. The rivet counters will probably catch the inconsistency in scale with the rest of my engines. The following two photos show the Ida next to a 1:20.3 scale drawing of the Pokaa as compared to a 1:17 drawing.



Accucraft Ida next to the Pokka drawing scaled to 1:20.3. The Ida is clearly much larger than the prototype at this scale.



Accucraft Ida next to the Pokka drawing scaled to 1:17. The Ida is much closer to the prototype at this scale.

Parts that need to be swapped, bashed, or scratch-built will look much better on the Ida if produced in 1:17 rather than 1:20.3.

Major Areas to be Addressed in the Bash:

Here is a list of inconsistencies between the Ida and the Olomana that will need to be addressed in the bash.

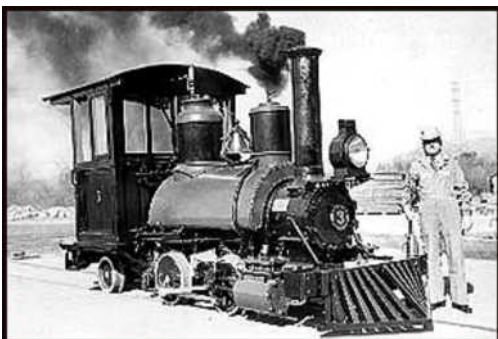
- Smoke stack - The Ida sports a diamond stack, while the Olomana sported a straight stack while in sugar cane work. I'll need to find a different stack.
- Cab - The Olomana's cab was wood. The Ruby/Ida has a metal cab. I plan to replace the metal Ruby/Ida cab with a Vance Bass wooden cab.
- Domes - The Ida has an old-fashioned steam dome. I need to locate appropriate steam and sand domes for the Olomana.
- Trailing Truck - One of the challenges here is to locate a pair of inside bearing wheels that will fit under the Ruby cab. They are likely to need to be smaller than those on the prototype. Once wheels are located, a trailing truck will need to be fabricated. Or I could take the 'wimp's way' out and use a trailing truck from the Ruby Mimi variant with the trailing truck.
- Boiler/smokebox length - It is too short on the Ruby/Ida. Once I have the Ida apart I'll decide to take on attempting to lengthen the boiler/smokebox.
- Pilot - Fortunately Vance Bass has a pilot that is a dead ringer for the pilot on the '*Olomana*.'
- Decals - My buddy Stan Cedarleaf has the decals covered.

Then there are the things I probably won't be able to do anything about. They include:

- Dome placement - Both domes on the Ida contain apparatus important to steam operation. I'm likely to end up with dome placement closer to those on the '*Pokaa*' rather than the '*Olomana*.'
- Cylinders - On the Ruby don't look much like those on the Ida. Another 'live with it' as I have no intention to modify the look of live steam cylinders.
- Backhead detail - Much of the right stuff is there. But it's designed for 1:1 fingers. Besides, servos will need to go back there too. So I won't attempt to detail the backhead area and the inside of the cab.
- Tender - Yes I know she didn't have a tender. I'm not sure where the coal was stored. Inside the cab? Later, they converted her to oil. But I don't see an oil bunker on the plantation photos. But the electronics need to go somewhere. That means either a tender that didn't exist, a non-tender trailing car, or adding a bunker like the one added by Jerry Best.

Third Party Superstructure Components:

The prototype cab was a rounded roof wooden cab. Vance Bass sells a laser cut Ruby cab that is a close replica. It will need to be bashed a bit to make front windows more consistent with those on the prototype. The Olomana's pilot was a wooden 'cow catcher' style road pilot. Vance sells a very close pilot replica. Photos and instructions for the Vance Bass upgrades fitted to the Ida will appear in Chapter 3, the superstructure chapter.



The cab appears to be fully open in the back and has windows all the way across the front.



Note the original cab on the left engine which is No 3, the Olomana. The engine on the right is the Pokaa.



The Vance Bass cab has a slightly different front panel and a more closed back panel. But it also ships with a back panel allowing an open back. With a few simple modifications Vance's cab works in this application.



The Vance Bass wooden pilot, very similar to that on the prototype.

Tender:

As indicated earlier, the archive contains plenty of photos of Baldwin tenders. Here are a couple of Olomana tender candidates.



Here's a builders photo of a 2-4-0T with a short four wheel tender.

Photos courtesy of Vance Bass.



This is a longer 8 wheel tender.

Both tenders would give the option of coal or oil (with the addition of a bunker).

Of course, the other option is to skip the tender and add the bunker to the back of the *'Olomana'* to match the Jerry Best modifications to the engine as it sits in the Pennsylvania Railroad Museum. An oil tank would be mounted inside the bunker. The tank would be hollow, allowing space for the electronics. Which one will I choose? You'll find out when Chapter two is released.

Detailing:

The Ruby as shipped is a pretty Spartan engine as far as engine details is concerned. I certainly plan to detail the exterior of the locomotive to add components on the prototype *'Olomana'* that are not on the model. Due to limitations placed by 1:1 scale fingers operating the controls, controls of a Ruby are much bigger and beefier than the were on the prototype. I plan to equip the *'Olomana'* with radio controls necessitating the addition of servos to operate the controls. So detail modifications will be to the exterior rather than inside the cab.

But planning the exact detailing to be done is still on my 'to do' list. Detailing progress will be reported in the *'Olomana'* update at the end of Chapter 4.

Electronics:

As indicated earlier, the tender will also serve as the battery car. As this engine is not powered by battery power, the battery will provide electricity to the radio control and to constant voltage lighting of a LED.

I plan to install radio control but have not yet picked the supplier. I plan to go with a low-end unit, as I do not need a lot of fancy circuitry to power soundboards, ditch lights, etc. Electronic upgrades will be discussed in Chapter 5.

Operating Session:

I'll photograph the initial operating session of the *'Olomana.'* Hopefully I can shoot both photos and video. Results of the operating session will be posted in the *'Olomana'* update at the end of Chapter 6.

Wish me luck!

Recommendations on Getting Started:

Here are some things you might wish to do in preparing for the class:

- Do the research and select your prototype if you haven't already done so.
 - A good place to start is the page at the Vance Bass Web page titled "[Things to Do With the Accucraft Ruby](#)." He shows a number of general prototype ideas. He also has listed a number of written works with information on prototypes in his Bibliography. The above page is listed in his "[Small Scale Live Steam Resource](#)" - a good spot for other ideas and resources.
 - Read my '[Introduction to Modeling](#)' articles at MLS. The first chapter goes through how to do prototype research. The second gets into defining your project including filling in the holes after you complete prototype research. It discusses taking off dimensions from photos and drawings. It also discusses a variety of issues you should consider in defining your project. The section on the Olomana preceding this page is an example of the results of prototype research and a project definition.
 - Visit the [SteamClass 2004 Archive](#) at my site, www.ironhorse129.com. This archive will build over time with prototype photos and information so you may want to check back from time to time for updates.
- When you're ready, select your prototype. You can build a model of a real prototype. Or you can build a freelance adaptation and letter it for your own railroad. Even if a freelance model, your locomotive will be more realistic if it is based on a prototype engine.
- Review the Ruby kit and the Ruby variants. They are discussed earlier in this chapter. If the kit has the components you want, we'll take you through assembling and disassembling a Ruby drive train in chapter 2. So don't be afraid to start out with the kit. It is certainly the least cost alternative. On the other hand, you may wish to get started sooner and there may be a variant that is a better starting point for your project. In the case of my Olomana, I elected to start out with the Ida because I needed the engine sooner and the Ida had components I needed that would have pushed the kit cost close to the Ida if purchased separately. Select your kit or variant. Use the order form to take advantage of the group purchase price if you are ready. Watch the threads in the MasterClass & Articles forum for information on availability and delivery schedules. If you already have a Ruby, or the option you select doesn't have the parts you need, contact [Accucraft](#) and get your parts on order.
- Review the information on third party parts and supplies. Decide which third party parts fit in with your project. You may want to order superstructure components at the time you order your Ruby. If you will be manufacturing scratch built components you may want to pick up supplies.
- When your Ruby arrives, read the construction manual completely. If you want to get a head start on reading the manual, the [Ruby Manual](#) is online at the Accucraft site.
- Visit the [MasterClass and Articles forum](#). Don't be afraid to ask questions, post opinions and otherwise get involved. Visit often so you keep up to date on what is going on. It is much easier for us to get the word to you via the forums on anything that is happening, so you won't have to wait for the next chapter. You may also want to start a builders log in the MasterClass forum. Let us know what prototype you have selected. Include photos if possible. You are welcome to use photos from the archive in your logs.
- If you want some eye candy to inspire you to move forward, check out [Kevin Strong's bash](#) of an Accucraft Ruby into a 2-4-2 Porter that initially worked for the Carbon Limestone Company. The prototype works today for [Lahaina, Kaanapali & Pacific Railroad](#), and a tourist operation on the island of Maui, Hawaii.



And most of all, have fun.
Tom Farin
Madison, WI
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