

RIDING RAILWAYS NEWSLETTER



Grand Scales
Quarterly

SEPTEMBER 2007

Hello again! Time is quickly flying by. . . the **Miniature Train Convention** is now over. And what an event it was. Again, thank you to John & Judy Woods and your crew for a tremendous job. There are still plenty of events taking place this year, including the Reedley Railfest in near Fresno October 13 and 14, 2007. Elsewhere I have a list of events that are happening this month. Be sure to check them out.

Regards,

A handwritten signature in blue ink, appearing to read 'Austin', is written below the word 'Regards,'.

BUILDING CAR AND LOCOMOTIVE STANDS

By Rick White

How do you work on your ride-on railroad cars and locomotives at home? I used to use hydraulic lifts from Harbor Freight, but the cars outgrew the size of the lift. Most live steamers build car and locomotive stands. Most stands that I have seen are built of steel, but I have one of wood plus some steel ones. Each has its advantages.

WOOD CAR STAND

Wood is lighter weight and, for wood workers, easy to build. But, I cannot get to the bottom of the car



or locomotive on the wood car stand because I built the top from plywood. I have to tip the car over on my wood stand to work on the bottom, but that is an advantage once the car is over on its side because I am working standing up.

HOW TO BUILD A WOOD CAR STAND

Start with a design first. I have no drawings, only photos. The top is plywood, so no photo of the top.

I wanted a particular height, length (I have 8 foot long cars, and the car above is 90 inches long), and width (I have 20 inch wide cars). The height was set to match the steel car stands, and that was set to match the pickup truck after my

loco is loaded. The loco is always loaded first and unloaded last, so the height of the empty pickup is not the deciding factor for a car stand. The width was set by the car width and my desire to have the car stand hold a car tipped on its side. The car above had air brakes added while on this table. Later I used it just as a car stand. With the 30 inch width there is also room for tools on the work surface when the car is tipped over.

Frame for the plywood is like a stud wall. Two by four studs eight feet long with cross pieces every 16 inches. I used three inch long decking screws, but you can use nails to hold this stud wall frame together. I used 1 and 5/8 inch long deck screws to hold the plywood to the stud wall frame.

The legs are two by six lumber because the bottom piece that holds the casters needs to be a two by six and not a two by four. If you choose smaller casters, you could use two by four legs. My grinding



table uses two by four legs with a two by four cross piece that hold three inch casters well. But this table will hold my 300 pound cars, so I used six inch casters. I could have used steel casters that are five inch diameter and two inches wide on the concrete of my barn floor.

The length of the legs MUST be all the same. This is the only key to making a flat and level table. The legs are screwed to the stud wall and butt against the plywood. The bottom cross piece is a two by six and has holes drilled in it to hold the casters. The bottom cross piece sticks out each side by 1 inch to have room for the bolts.

The angled braces are two by four lumber and are only on one side. The other side is not as stiff but is good enough. If you use smaller casters that do not roll as well, you can add angled braces on both sides to prevent flexing of the joints, which can break the joints. All joints are screwed together with three inch deck screws. The casters are held on with 2.5 inch long 3/8 inch bolts. There are washers and lock washers on the wood side of the bolts. I buy bolts in bulk, by the weight, at Tractor Supply.

Along the top of the plywood is a piece of plywood 6.8 inch wide by 8 ft long that holds the car by going between the flanges on the trucks. I screwed a piece of rail across one end of the car stand to act as a truck stop. After the car is loaded, I put another piece of rail across the car stand on the other



side of the truck. That keeps my flat car in place when I push the car stand around the shop.

When I roll a flat car onto the car stand I use a steel plate. I screw the steel plate to the car stand so it will not slip off. I need a better system than this, but this one works. On my steel car stands, I do have a better system.

Note one design element. The weight of the car is on the plywood. The plywood is on top of the legs. The legs are on top of the cross pieces. The cross pieces are on top of the casters. The weight of the car on top is held by the wood, not by the screws. I use this design element in my steel car stands, where the weight is not held by a weld anywhere.

Another design element. I do not glue anything. With the screws in place, I can take apart the wood car stand anytime. I did glue together my grinder table, only to have to pull the bottom part apart to shorten the legs when I added casters. Wood has this advantage over steel, easy to build so it can be taken apart later.

STEEL CAR STANDS

I choose a ten foot car stand. Steel comes in twenty foot pieces, so cutting one piece in half uses the material well. Of course, my wood stand was only eight feet long because the plywood and studs were only eight feet long. My longest car is 100 inches and fits between the legs so I can look up at the bottom



of the car from end to end when it sits on the steel 10 foot long stand.

Design, well no drawings, so lets look at some photos. The car stand is in the foreground and my locomotive stand is behind it with a flat car on it. These photos are from January, 2005

Now (in the photo below) why is this a car stand and the one in the rear a locomotive stand? Because I built the locomotive stand with a base 39 inches wide to



give it better support side to side. A locomotive weighs more than a car, so I felt that it should be wider to be more stable. My loco weighs 1405 pounds, so I am happy to have the wider stand. My flat cars weigh 300 pounds and the 27 inch wide cross pieces are rock solid with this weight or even with one on top and one below.

Why 27 and 39 inches? Because you can cut one 20 foot length of 4 inch channel into six 27 inch pieces and two 39 inch pieces and have enough cross pieces for both a car stand and a locomotive stand. With 27 inch long cross pieces a 21 inch wide flat car will fit on the bottom so that one car stand can hold two cars. For standard gauge cars, you might think of building a narrower car stand, perhaps 23 inch long cross pieces.

I tried 3 inch heavy channel for the top and legs. Do you need that? For my locomotive, yes. For my cars, no. The bottom "rails" are 2 inch channel and a 300 pound car does not sag the 2 inch channel. However, I still am using 3 inch channel for my new car and loco stand on the top. When using three inch channel for legs, the cross pieces need to be four inch channel if you want to have the legs fit inside the cross pieces so that a weld is not holding the weight.

If you use 2 inch channel legs for 100 or 200 pound cars, you can use 3 inch channel cross pieces. Cutting the legs to the same length is critical, I try to match these within 1/32 inch. Grind out any differences if you want a level car stand.

I hand hold a square to the legs and weld the leg to the cross piece. Once a 1 inch long weld is in place, you can put down the square and continue welding. I tied a six

inch overhang of the 3 inch channel past the legs so that the ends can reach over the end of my trailer. Too much overhang and the stand might tip when loading or unloading. You do not have to have an overhang.

My welding is "farm basic" and not close to a good hobby welder. I use a stick welder, but a wire feed welder is easier to use. Because of my lack of skill in welding, I feel that I have to weld everywhere two pieces of steel meet. That is part of the reason for my design, a weld never holds the weight. This design does not lend itself to bolting together! My casters are welded to the bottom of the bottom cross piece. Much faster and easier than drilling 16 holes and adding 16 bolts, which I have done on my wood car stand, wood grinder table, wood track panel jig, and wood chop saw table.

The car stand shown has six inch wheels that are polyurethane. These take a set under weight, making it hard to start moving the car stand after it sits for a month. The car and loco stands built in December 2006, have five inch steel wheels that are two inches wide. I use casters that swivel on both ends. That is best for aligning the car stand with the pickup to transfer the car. These car stands are used on concrete. If you want to use on other surfaces, consider using pneumatic tires that can roll over uneven surfaces.

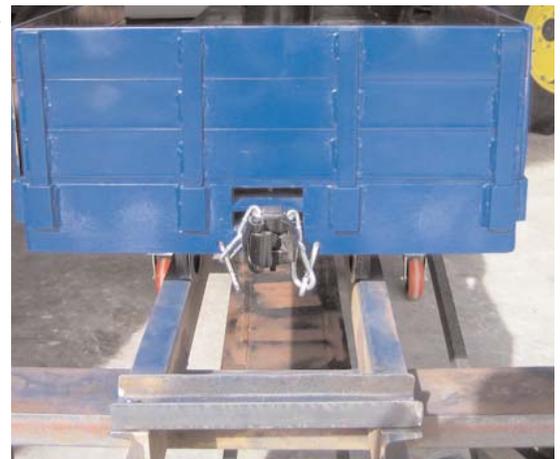
The diagonal brace is 2 inch channel that will take both tension and compression. You can use two steel straps, for example 1/8 inch by 1 inch. These will only take tension, hence the use of two to

form an x brace. That would be cheaper, but I just like the two inch channel diagonal brace. I left one side open so I can get to the bottom of the top car. In fact, placing a flat car on the bottom gives me a good place to lay down on the job.

Make sure the channel that holds the cars is in gauge. I made these to 7 and 9/16 inch gauge. If you make a 1/16 inch mistake with this, the gauge will still be ok. I find that the 3 inch channel needs one gauge piece in the center to hold the gauge. The two inch channel needs two gauge pieces to hold the gauge. I use 2 inch angle iron for these gauge pieces. The flange of the wheel extends down about 1/8 inch, so I put the gauge pieces down 1/4 inch from the top of the channel iron rails.

Why not use square or rectangular tubing? Because I cannot weld well. I have welded 11 gauge two inch square tubing and I have not done well, burning through in places. I weld better on channel iron and angel iron, as long as it is heavy wall material. And because I do not weld well, the design does not transfer weight through a weld. The welds keep the steel pieces square to each other.

I added a car stop, as shown below, using 2 inch channel iron and two bolts.





The bolts are ¼ inch diameter and about 2 inches long. There are no nuts. The car stop lifts off when needed. This is not a great system since the car rolls back and forth from end to end. I now use a clamp on the channel iron, clamped right against the wheel as shown below.

TRANSFER OF CAR FROM CAR STAND TO TRUCK

I have a ¼ inch steel plate 12 inches wide and four feet long that I got from Vance Nickerson. It was not stiff enough for my locomotive. I added steel rail on one side for stiffness and to match the steel rail in my truck. But, how to match the car or locomotive stand.

At one end the four foot plate is attached to the rails in the truck like any rail on a track, with fish plates and bolts. On the other



end the four foot plate sits on a piece of channel iron welded to the end of the 3 inch channel iron that



holds the car (or locomotive). There is a hole in both where a bolt is placed, and nut tightened. Now the car (or locomotive) can ride smoothly from truck to car stand and the four foot plate cannot move and does not flex badly under my locomotive, and not at all under my flat cars.

The steel car stand shown above was made for my 1999 F350 and is 2 inches lower than the wood stand shown above, that was made to match the height of my 2005 F350. To make the transfer easy, I use a floor jack and raise the steel car stand to match heights.

The 4 inch channel iron cross piece is strong enough to do this for the two 300 pound cars and



for my locomotive stand with 1405 pound locomotive and 300 pound flat car. This is one advantage of overbuilding the car stand. © 2007

*This article first appeared in **Stack Talk**, the newsletter of the **Houston Area Live Steamers**. We would like to thank Rick, HALS and their editor, Carolyn Balkum, for the information.*

Reedley Railfest

Oct. 13 and 14, 2007
Hillcrest & Wahtoke RR,

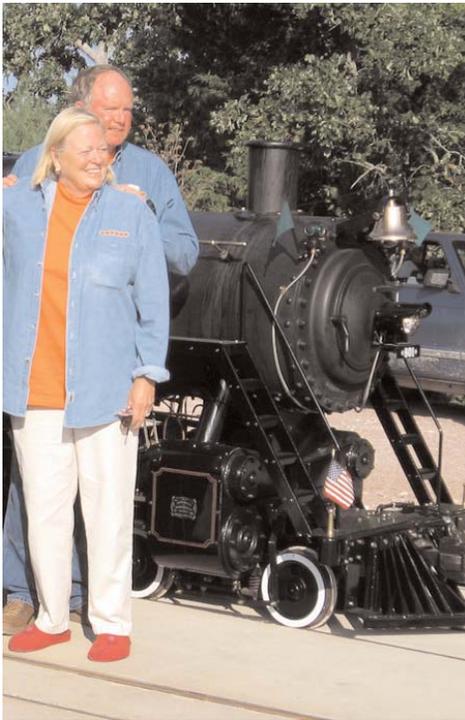
Come join the fun at the Reedley Railfest! Along with our usual locomotives, we will have visiting engines from Redwood Valley Rwy, Joshua Tree & Southern, Glenwood, Southpark & Pacific, the California State Railroad Museum and the Clayton and Baypoint Railway. A county HO club will be setting up their modular display and you can rent a 15" gauge engine. Pumpkin Patch for the kids.

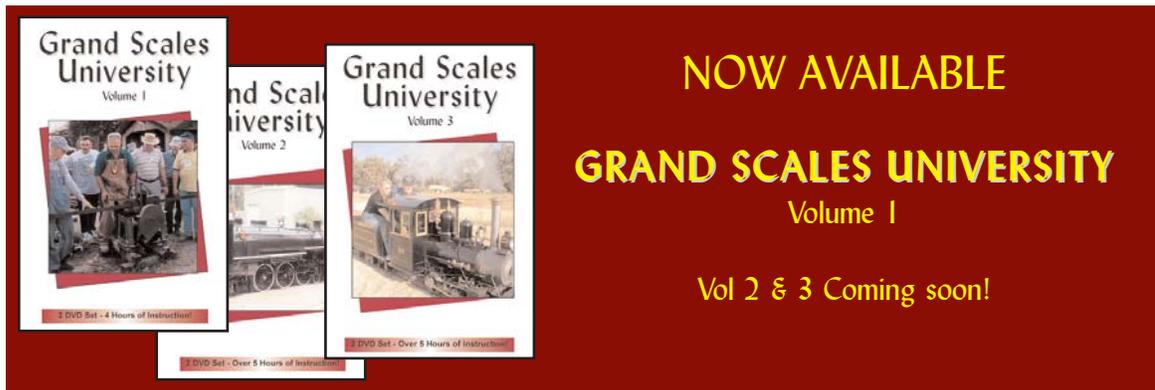
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ENGINES STOLEN

On Tuesday, September 11th, two Sandley engines were taken. The building they were in is being torn down in Quincy, IL, and the equipment was outside. Engine # 127 is a 15" gauge 4-4-2 Atlantic. The tender was not taken. The other was a Sandley diesel locomotive. The owner has filed a police report. Both engines are in bad shape. The crew at the Riverside & Great Northern RR is helping to find the missing equipment. If you have any information regarding this equipment, please forward it to mainline@sunset.net and we will send it to the R&GN crew.

DISCOVER LIVE STEAM 2007 PHOTO CONTEST

The **Discover Live Steam Photo Contest** is happening now! Submit your favorite photos by visiting http://www.discoverlivesteam.com/photocontest/Photo_contest_rules.htm. Categories include:

Realistic Jim enjoys photos of trains that are hard to tell from the actual prototype.

People enjoying Live steam Jim has always liked photos of people (little kids and us bigger kids) enjoying the hobby.

Kids in the Live Steam Hobby "Kids (up to 12 years of age) actively pursuing the Live Steam/Diesel hobby".

Special Category 2007 "Evening/Night/Early Morning" Jim wants photos that show live steam railroading in the lower light levels of the evening and early morning hours.

OCTOBER RAILROAD EVENTS

Oct 5-8	Train Mountain	Operations Meet	Chiloquin, Oregon
Oct 6	Chippewa Northwestern Railway	Fall Steam Rush Meet	Goehner, NE
Oct 6-8	Quebec Model RR Soc.	Annual open house	Quebec City, Canada
Oct 6-8	Riverside & Great Northern Railway	55th Anniversary	Wisconsin Dells, WI
Oct 13-14	Scottsdale Live Steamers	Fall Meet and Railfest	Scottsdale, Arizona
Oct 13-14	Reedley Railfest	Hillcrest & Wahtoke RR	Reedley, California
Oct 18-21	Maricopa Live Steamers	Fall Meet	Phoenix, Arizona
Oct 18-21	Locomotive Operators of Central Oklahoma	First annual train meet	McLoud, OK
Oct 20-21	Sacramento Valley Live Steamers Railroad Museum		Rancho Cordova, California
Oct 26-28	Big Boots & Western Railroad	Card Order & Party Meet	Bellevue, Florida
Oct 26-28	Riverside Live Steamers	Fall Meet	Riverside California
Oct 26-28	Ridge Live Steamers Fall Meet		Dundee, Florida

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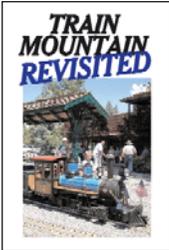
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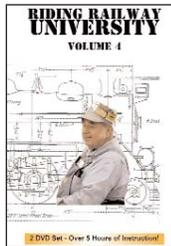
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ABC's of Tender Building –Don Orr
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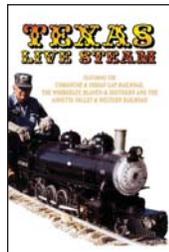
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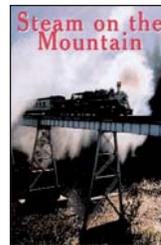


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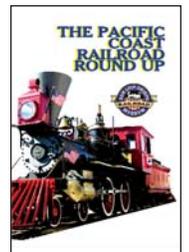
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