



# Tucson Garden Railway Society's

## Time Table

Society web site: <http://tgrs.homestead.com>

Editor e-mail: [dizen@aol.com](mailto:dizen@aol.com)

May, 2005

### May Meeting

This month's meeting will be on May 21<sup>st</sup> at 10:00 AM at the home of:

June & Buzz Weaver  
1913 Placito de Agosto  
Green Valley, AZ 85614

Telephone: 399-0761

### Driving Directions

Here are the directions to our house from I 19. Take Exit 63 (Continental Road). Turn right on Continental and proceed 0.7 of a mile to Camino Del Sol. Turn left on Camino Del Sol and proceed 3.6 miles to Nuevo Leon. You will see the entrance to San Ignacio Ridge Estates.



Green Valley area map

Turn right and go up the hill to the 2nd street. Placita de Agosto. Turn left and 1913 is the 2nd house on the left. No houses on the right side of the street. There are a few parking spaces to the right as you reach Agosto.

There is parking at the end of our street but that is a bit of a hike back up hill to our house. Carpooling would be good.



Detail of streets near the Weaver's home

It will be sunny on our patio with some shade available. Bring chairs.

### The Railroad

Our railroad is the Cactus Flats and Las Cruces. There is a Cactus Flats between Deming and Las Cruces, NM. Since our layout is indeed flat and we have cactus on it the name is a natural. The time is 1900 + or - a few years. We began laying track in the spring of '04 and have about 150' of track. We have two independent loops powered by trackside Train Engineer. We also run Bachmann 2-8-0 Consolidation on batteries. We have a long way to go but that is a virtue of model railroading in that there is always something else to be done and the layout is never finished.

### Build a Box Car – Part 2

By Dick Izen

Last month, in part 1, we covered building a box and applying the side and end sills. This month we begin with the underside of the car.

#### Underbody

Though principally a wood car, the underbody was made of steel center beams and cross beams. Nick was getting ahead of Bill and I and had already gotten this nearly completed on his

large model. This gave Bill and I something to look at as we worked on our smaller cars.



**Nick's car with center and cross beams in place.**

The first task was to locate the center beams. These were "I" beams that provided the principal strength of the prototype. With 14 inch plastic strips and a roughly 18 inch long box car we could have done this with one long and one short piece. Nick found drawings, however, that indicated the prototype had two short beams spliced to one long beam with the joints at the curved cross beams that formed the truck bolsters.



**The six center beam pieces prior to gluing.**

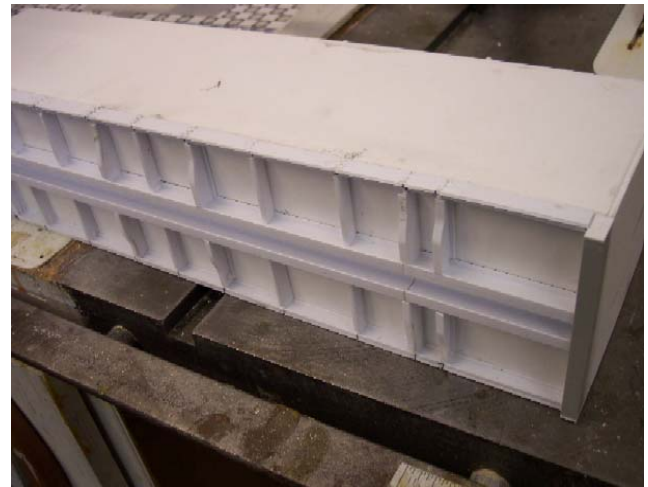
Since I mount my couplers on the body of the car (more about that later) I wanted to be certain that there would be something solid enough to provide support for the draft gear. To do this we moved the center beams slightly closer so that the draft gear box would be fully supported. Of course you can ignore that if, as is the case for Bill's car, the couplers are truck mounted.

The cross beams on the prototype were two kinds, straight and curved. There were twelve curved ones that were the full height of the center beams in the center of the car but curved down to match the side sill height. To fabricate

these we used a "C" channel the height of the center beam. We carefully cut part of one flange free, then cut the curve into the web. We then forced the loose part of the flange down to follow the curve and glued it in place. Then we notched each piece to fit the flanges of the center beam and the side sill and glued it in place.



**Center beams now in place on my car**



**Completed underbody**

The picture above has my car on its side so that the shadows help to distinguish the all white pieces. Note the curved and straight cross beams. Not yet shown in the photo, each cross beam is riveted to the side sill with three rivets. We will talk about all of the rivets later in this article.

There were also ten straight cross beams on the prototype. These were simply cut from "C" channel the same size as the side sills, notched to fit the flanges on the center beam and side sills and glued in place.

## Truck Mounts

With the underbody detail done we turned to how to mount the trucks. Real railroads just have a kingpin between the center beams which slips into a hole in the truck's bolster beam. They depend on the car's weight to keep it on the trucks. That won't work well for us as our cars are proportionately lighter so we fasten the trucks to the car with a screw. That way the trucks stay attached when you lift the car off the rails.

For our model Nick found some one inch long tubular metal nuts. They had a flange at one end to provide stability and were threaded inside the tube to allow the use of machine screws. We epoxied these to the floor of the car between the bolsters.



**Nut being epoxied to car floor.**

Note that we left the screw in place to ensure that no epoxy could accidentally get into the tube and fill the threads. We also built a box between the center beams so that we could fill the area with more epoxy and ensure that the threaded nut was held on all sides.



**Kingpin and bearing block epoxied in place.**

As the picture shows the screw is narrow and would allow the truck to move around on the screw shaft. We solved this by using a styrene rod as the kingpin. We inserted this before adding the epoxy so the kingpin became part of the structure supporting the threaded tube. We also placed a bearing block over the outside of the kingpin. This served two purposes. It gave the truck a flat surface to ride on and minimized the car's rocking from side to side on uneven track. It also lifted the car body to approximately the correct height required for the couplers.

At this point the kingpin was a bit too long so we used the trucks to measure the correct length.



**Kingpin shortened and truck in place.**

## Truck Mounted Couplers

Bill uses couplers mounted on the trucks, as most G gauge modelers do. Because we spaced the kingpins at the correct scale distance from the ends Bill found that his couplers were partly under the end sills and rubbed on the end of the car.

This was solved by using scrap styrene to lengthen the tang that runs from the truck bolster out to the coupler. Once lengthened the couplers were just beyond the ends of the car and allowed the trucks to swivel freely without friction with the end sills.

## Body Mounted Couplers

I body mount Kadee couplers on my rolling stock. To do this I measured my car for correct coupler height with a coupler gauge. This required a bit of filing of the end beam. Of course if you intend to use truck mounted couplers, you can skip the next few steps. I tested the height with the coupler gauge.



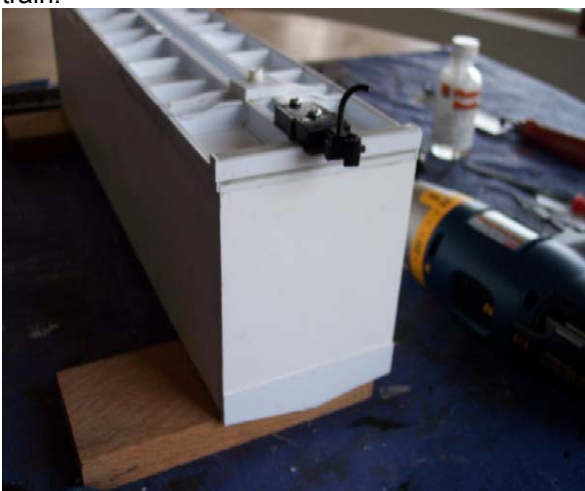
**Coupler gauge slips into place after filing the end beam.**

I turned the car over and removed the trucks to make it easier to attach the couplers.



**Draft gear box in place ready to be installed.**

I used sheet metal screws to attach the gear box to the car floor. These are strong enough to hold the coupler securely, even in a long heavy train.



**Here the coupler is mounted ready for service.**

Even for blacksmith level modelers such as I am, the final step, one of making certain that the coupler is at the correct height and will mate with your other cars, is vital. If it was too low you could either file the bottom of the car slightly or insert a washer between the truck and the bearing block. The first method is preferable as you don't run the risk of having the car rock due to lack of bearing surface.

If the coupler is too high you can back out the screws, insert a thin shim between the draft gear box and the car to lower the draft gear box and re-attach the coupler with the screws. In my case the pre-measuring paid off and I didn't need to make any adjustments.



**Coupler mates to the gauge.**

### **Wood Siding and Braces**

First we applied the corner braces which, on this car were made of "Z" shaped metal. They run from end sill to the edge of the roof and, rather conveniently, hide the lines and any gap where the side and ends meet.

The next step was to apply the scribed siding to the car. This was simply a matter of cutting the scribed styrene siding, roughing the surface to create 'wood grain', and gluing the pieces in place.

To rough the surface Nick had a special tool which had three 'teeth' to drag along the smooth surface of the scribed styrene. I actually used a razor saw blade pulled across the styrene to create my wood grain. The key here is not to pull whatever tool you use directly along the scribed 'wood joints' in the styrene. You want the grain to angle across the styrene. I have had good luck in pulling the razor saw across the styrene in an arc.



**“Wood” Siding in place on the car.**

It was at this point that all of the work began to come together and, with trucks and couplers in place and the grained ‘wood’ siding in place, the box took on the look and feel of a railroad car. There was plenty of work left to do but from this point on, it ‘felt’ like a railroad car.

**‘Metal’ Bracing**

The next step was to apply the side bracing to the car. This was essentially a matter of carefully measuring the position of the vertical braces including those on either side of what would become the simulated door opening. Styrene strips shaped like a “Z” were used for this and the main diagonal braces. Once the vertical braces were cemented in place diagonal braces were placed for the two panels nearest the door opening. The end panels of the car have shorter flat ‘steel’ strips running from the middle of the corner braces to the first vertical braces.



**Bill Dillon measuring for the vertical side braces.**



**Bill applying the side bracing.**



**Here is the car with the vertical and diagonal bracing applied.**

Note the empty center section where the door will be placed and the contrast between the grained ‘wood’ and smooth ‘metal’ parts of the styrene sides.

**Four Million Rivets**

It wasn’t really that many rivets. It just seemed that way. They weren’t even all rivets. Where metal to metal parts joined, such as the braces to the upper and lower sills, the parts were riveted. Where metal parts were fastened to wood such as where the braces were fastened to the wood sides, bolts were used on the prototype. Since we made these all in the same way, I am going to refer to them all as rivets.

Every brace had had three rivets on the top sill and two on the bottom sill. The vertical braces had a rivet through every board and the diagonal ones through every other board. Then there were rivets along the top side sill, through triangular braces in the car corners, through the vertical end beams, through... Well, you get the idea.

We began using both .035" and .040" styrene rod to make the rivet and bolt heads. These scale out at 1.015" and 1.16" respectively. After breaking a number of .035" drill bits I got to the .040" work and was amazed at how much easier it was. You wouldn't think .005" would make that much difference but if I was doing this over I would stick with the .040" rod. After all that is a bolt or rivet head well under 1.25 inches.

We used blow ups of Nick's photos of the D&RGW cars and the line drawings from the on line Car Builders Cyclopedia to count the rivets and stay faithful to the prototype. Each rivet required drilling a hole, inserting a styrene rod and then clipping it off so that just the rivet head remained. Nick suggested just drilling part way into the sides but since our doors don't open Bill and I decided to drill all the way through the "Z" brace, the scribed siding and the underlying box. That way when we dropped the solvent glue over the rivet it really acted like a real rivet would and welded all of the parts together.

If you had x-ray vision the inside of my car would probably look like an inside out porcupine but since the doors don't open I don't care. Had this been an open car, say a gondola or a hopper, I would have done the same thing for the strength but would have cut the excess rod off flush with the inside so it would have become invisible when painted.



**Detail of rivets on one corner of my car.**

The other thing I did was to leave the rivet heads slightly too high for true scale rivets. I tried scale height but they became pretty much invisible and, after all the work creating them, I wanted them visible, even after the car was painted.

Both Bill and I decided that the cars would never be completed if we only worked on rivets on Thursday evening so we took our cars home and got the riveting done over the next week.



**Another view of the many rivets.**

Next month, part 3 will cover the final steps including the roof and roof walk, ladders and grab irons, the doors and painting and weathering the car.

## **TGRS Projects List**

By Nick Buchholz

The "Rails in the Garden Tour" has been a success for two years in a row. Assuming that the TGRS decided to continue to hold this event, we will probably continue to have a yearly source of income with which to undertake projects to improve our operations and expand our ability to educate the public about railroads in general and large scale garden railroading in particular. In order to approach this in a reasonable manner, the Board, at it's April 5 meeting, decided to create a prioritized list of projects the TGRS could embark on to improve our society.

To this end we are asking every member of the TGRS to submit ideas for improvement projects. These ideas will be collated into a single list and we will then decide on the priority of projects and how the income from the Rails in the Garden should be spent. Attached is a list of ideas submitted by board members in the last few days in no particular order. Several of these projects were considered by the board to be important enough that we should begin on them at once. (Numbers 1, 8 and 15 are either complete or in the process of being completed.)

The board has made no decision on the other items except to begin the design phase on those items which are so marked. This is not an indication that the item will be selected, only that more information will be needed before a final description and cost estimate can be made.

Think about what you would like to see done to improve the TGRS, the modules or our

education programs. Then submit those ideas to the President. Your ideas should be described in enough detail that everyone can decide the merits of the project and can assign a priority to it. You should also try to make an estimate of the cost of the project. Once the new board takes office, they will begin to consult with the members to determine the final priorities of projects and which projects should be started.

### **TGRS Project Priorities**

1. Cable extensions for the 'tower of power' \$80 – Complete
2. Scenery module racks (4) to protect scenery \$500-700 - In Design
3. Rolling Stock/Building racks (3) \$400-550 - In Design
4. Curved Module rack (1) \$250-300 - In Design
5. Additional corner modules to allow more complex layouts (plus 1 rack) \$500
6. Complete town siding controls \$80-100 – need new controllers
- 6a. Add controls for industrial sidings \$100
7. Transition module cross overs \$450 – In Design
8. Improved tie downs for older trailer \$400 – Complete
9. Sturdy rolling storage for legs, "C" clamps, rope and electrical cords. \$350 – In Design
10. Revised electrical control system for modules. \$500-1200
11. Raise height of modules by either 6" or 12" \$400
- 11a. Raise height of modules 18" \$1,000
12. Point to point layout in addition to the current modules \$600
13. Backdrops/ Scenery for around inside of modules \$500
14. Alternative small layout for schools \$1000
15. Workbench with tool storage \$450 – In Process
16. Large tools \$200
17. Add industrial siding tie in for mine modules \$300
18. Replace/Rebuild canyon module \$150
19. Add scenery to lift bridge canyon module \$100
20. Donation to a charity or a cause.

## **Proposed By-Laws Revision**

Respectfully submitted by Norman Ulmer,  
Vice President

As it now stands, the TGRS By-Laws, Article VII, paragraph 3, call for a list of nominees to be submitted to the general members during the April general meeting. Because we are so

heavily involved in our modular display at the Pima County Fair during the second and third weeks in April, we have not been holding a general meeting during April. Thus, this clause of the By-Laws has become obsolete.

In an effort to rectify this problem and bring our By-Laws into conformance with current practices, your Board of Directors recommends the following revision:

Change Article VII, paragraph 3 to read "A list of nominees shall be submitted to the general members in April. Nominations from the floor will be accepted during April, ---", thus eliminating the words "during the April general meeting." and "--at that time,"

To clarify the revision and state the paragraph in it's complete form, it will read " A list of nominees shall be submitted to the general members in April. Nominations from the floor will be accepted during April, and thereafter the nominations shall be closed."

Article VII, paragraph 4, which states " A newsletter listing of all nominated candidates shall be distributed prior to the May general meeting." shall remain untagged.

## **Nominees Announced**

The slate of officer candidates was announced at the meeting and later changed by the addition of Chuck Cook:

President:	Nick Buchholz and Norm Ulmer
Vice President:	Chuck Cook
Secretary:	Ellen Stoesser
Treasurer :	Willis Fagg
Editor:	Jim Miller
Board of Directors Members at Large (vote for 3):	Lew Sleeper Jim Cook Rick Gast Joe Stoesser

(Note the fourth Member at Large position is offered to the past President. If Nick is not re-elected to the presidency the position will be offered to him. Should he win, or should he refuse the position, it will go to the fourth candidate listed above.)

As discussed at the March meeting nominations from the floor will be accepted and the vote will take place at the May meeting. New officers will take their offices after the June meeting.

## **Minutes of the April 5 BOD Meeting**

Respectfully submitted by Ellen Stoesser

April 5, 2005-7:00 P.M. at the home of Norm & Ibbby Ulmer.

All Board Members except one were present.

February minutes were approved, with 2 corrections being made to the regular March meeting minutes. Corrections - the date of the 2008 Convention-Meeting is May 14<sup>th</sup> and it is D&D Materials.

**Treasury Report:** Willis Fagg reported:

1. A current account balance of \$5,303.88
2. Revenues to date for fiscal year 2004-2005 are \$8,563.26 and expenses \$4,708.24 for a net increase to date of \$3,855.02.
3. Rails-in-the-Garden tour revenues were \$5,820.00. Expenses were \$941.89 for a net gain of \$4,878.11.
4. Total membership to date 95.
5. Treasury Report was approved.

**Events:**

1. **Pima County Fair** Norm Ulmer would like more people to sign up to work and make the show successful. Norm and Glen Mitchell will pull the trailers. Almost all of our new members are signed up to work. Bob Dirksen will check to see if the phone we used for our tour can be reactivated to use at the fair.
2. **Toy Train Show** will be held on June 4th at Rodeway Inn. We will set up Children's Layout.
2. **American Home Show** will be held on June, 10-12th.
4. **Queen Mary** dates---June 10-12<sup>th</sup>.
5. The **Phoenix bus trip** came in under budget. ABTO send us a \$100.00 check for expenses, this was returned to them .
6. At the June meeting, which will be held at Nick's home, there will be 2 clinics after the meeting. There will be a very brief questions and answer session. The meeting will start at **9:30 A.M.**

**Membership:** Ibbby Ulmer reported we have 96 members

**Rails in the Garden:** Bob Dirksen reported that tour was a huge success and that having more sites in the northwest helped attendance there. Publicity was great and selling tickets at BBQ and Ace was a big plus. Thank you notes will be sent with a Certificate of Appreciation being sent to Joey at Ace Hardware. A motion was

passed to have a plaque made for George at BBQ , the price not to exceed \$100.00. Joe Stoesser will do this. There were suggestions that tickets be made bigger, or maybe stubbed.. Should we have 10 sites, this would require more staff, maybe limit tickets? The door prize will be retained as this is considered good PR. Framed pictures will be presented to all the hosts.

**Insurance:** Willis has been checking into renewing our insurance. He is getting quotes from our present carrier (Nova) and State Farm. Nova--for liability (\$1M) and property damage (\$30,000) plus they would need an inventory list; it would be around \$1000.00. For the same coverage State Farm would be around \$860.00 with no inventory list. It was suggested those who tow the trailers need to modify their insurance coverage.

**Members Handbook:** Dick would like to have 30-50 books and 60 -70 slip sheets printed after the elections. We would need a new officers and a roster sheet for everyone. The cover sheet and the color picture cost \$1.00 each. Dick would revise the handbook as he has the files; the books are mailed by Ibbby to each new member.

**Proposed By-laws Revision:** In our by-laws it states that a list of nominees will be submitted to the general membership at the April meeting, since we usually do not hold an April meeting, Norm is working on a revision to rectify the problem.

**Spending the RITG money:** The BOD would like to impede a long range capital expenditure plan using the proceeds from the RITG tour. The BOD is looking for input from the members on what is important to them. The list would be prioritized and the board would go from there. Some suggestions so far: 1. scenery module racks 2. corner module racks 3. control boxes 4. point to point layout 5. insurance 6. money for next years RITG 7. containers for clamps and legs.

**Workstation:** A motion was proposed and passed to get 2 rolling carts with drawers and a top and a variety of tools with a budget not to exceed \$750.00. These carts would be on 4in casters, it would have a light, power strips and a chair. Nick would make the top if necessary.

**Other Business:** Nick showed the BOD new 3 track, 4' modules he had made of foam and plywood. These can be used to increase the size of the layout. Norm will check with a CPA to see if our Non-profit C3 Organization is



exempt from paying taxes on “ non dues revenue”.

No date was set for the next board meeting.

## Pima County Fair

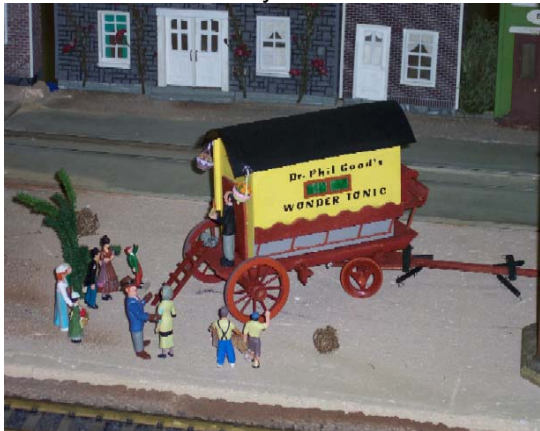
We assembled a very large layout in Old Pueblo Hall at the Pima County Fair on the 11<sup>th</sup> and 12<sup>th</sup> and ran trains through Sunday the 24<sup>th</sup>.



**Gary Martin's new scratch built "Blackwell's Brewery" and his Nogales Station. That's the TGRS Mogul passing in front.**

George Fitzner and I also have breweries on our layouts. A reflection of Arizona heat or a TGRS trend?

Among the scenes along our layout was a medicine show by Phyllis Dirksen and a new mission and cantina by Janet Mitchell.



**Phyllis Dirksen built "Dr. Phil Good's" medicine show scene.**

This year's raffle of an LGB starter set was very successful with Treasurer Willis Fagg reporting revenues of \$1,416.39 (No, I don't understand how the 39 cents got in there!) The was much better than last year's \$896 and about on a par with 2003's record setting \$1,470. The net after buying the train set and some more raffle tickets was \$1,184 added to the club's coffers.



**Janet Mitchell scratch built this small mission and the cantina across the square.**

It looks as though the good friar doesn't approve of the dancing girl on the cantina's front walk.



**A corner in the main town on the layout.**

That's the "Mad Cow Steakhouse" next to the Bakery.

## CLINICS

By Janet Mitchell

Yes, finally we are going to have some of the clinics you have been asking for! In June we will be meeting at Nick and Mary's home, and Nick has suggested we do a couple of clinics then (they have a lovely covered patio). Nick will probably do something technical and we will have something else for those of us who aren't into the technical end of things. We will have more details at the May meeting. In October, the monthly meeting will be at our house; and we will have a day of clinics and information. Let me know if you have something you want to learn about, or if you have something to share. One idea I had is for those spouses who aren't interested in working on their layout—scrapbooks.

We all seem to have some kind of photo album or scrapbook about the progress of our layout. Would any of you be interested in creating some

really neat scrapbooks (useful at our tours and for the '08 convention)? Let me know if you either are interested in this, or if you are a scrapbooker and could lead this project.

## New Members

The TGRS welcomes new members Angel & Jamie Martinez and Charles Weesner.

## Electronic News Letter

With so many new members, I want to remind you that you can have the news letter delivered by e-mail. The club saves printing and postage costs but more importantly you get the news letter faster and can view the photos in color.

**Remember elections of officers and approval of the proposed change in the bylaws will be decided at the May meeting! Be certain to attend and cast your vote.**

The Tucson Garden Railway Society is a non-profit corporation incorporated in Pima County, Arizona. Society members are interested in all areas of garden and modular large scale railroading. We welcome new members and hope you will consider joining. Members help each other build layouts and learn about railroading and modeling.

The TGRS dues are \$30.00 per year and are due on June 30<sup>th</sup> of each year. For new members dues are pro-rated at \$2.50 per month remaining in the year until June 30<sup>th</sup> plus a \$ 15.00 initiation fee, the first year. Additional name badges cost \$1.00 for each badge after the first.

If you are interested in the TGRS please contact one of the officers at the phone number listed below. If you wish to join immediately, send a check and your name, address and telephone number and the names for any additional badges to:

Ibby Ulmer  
4935 N. Craycroft Road  
Tucson, AZ 85718

### Calendar of Events

May 21	Meeting at June & Buzz Weaver's home – 10:00 AM
June 4	Toy Train Operators Swap Meet at Rodeway Center – Times at May Meeting
June 10-12	American Home Show at Tucson Convention Center – Times at May meeting
June 18	Meetings at Mary Kerr & Nick Buchholz's home – 10:00 AM
July 27-31	National Garden Railway Convention, Saint Charles (Chicago), Illinois
August	No meeting
September	Meeting Open

### TGRS Officers and Board of Directors

**President:**.....Nick Buchholz.... 520-744-4932  
**V-President:**..... Norm Ulmer.....520-299-9401  
**Secretary:**.....Ellen Stoesser.....520-577-1210  
**Treasurer:**.....Willis Fagg.....520-760-0147  
**Editor:**.....Dick Izen..... 520-498-4634

**At Large Board Members**  
 Chuck Cook.....520-888-3264  
 Bob Dirksen.....520-742-9503  
 Bob Hoffman.....520-825-6967  
 Joe Stoesser.....520-577-1210

**Tucson Garden Railway Society**  
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**Oro Valley, AZ 85737**