

It's Alive! Converting Thomas to RC Battery and Sound

By Nick Kelsey

After seeing the kids chasing Thomas at Bill Derville's house during the 2009 Summer Tour, I knew I had to get a Bachmann Thomas set when they came out. Eventually Thomas arrived and I had to decide how to power him and give him some sound. I decided to stay with battery, but wanted a long run time, which eliminated putting batteries in Thomas, because there is limited space inside his body. So two 9.6v RC battery packs went into Annie and Clarabelle, the two coaches. This spread the weight between the coaches. These batteries are wired to provide 19.2v total to a Battery Conversion module in Annie. The module provides screw connectors for hook-up, fuses, on/off switch and charging jack. I can also switch out these batteries quickly for continual running.



Battery Installation



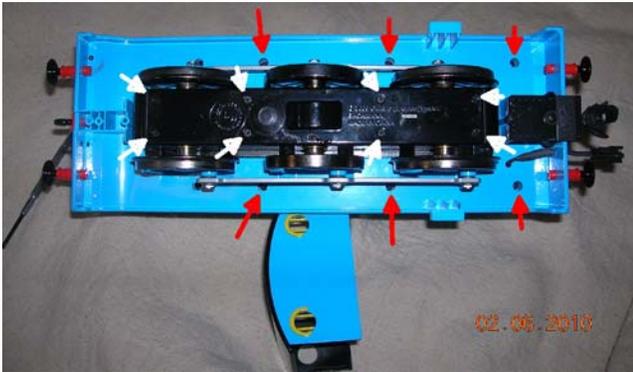
Battery Conversion Module

I had an Aristocraft Revolution Train Engineer receiver on the shelf, and ordered a MyLocoSound sound card. These boards come with "British" steam sound and single chime whistles so I thought this would be more appropriate for my Limey engine. A bonus was that the boards are only \$69, and are polyphonic, (you can have two sounds at once) unlike Small Scale Sound and Dallee, which are monophonic (one sound at a time). Add to this a 1.1-inch speaker from Mike Greenwood and we are ready to operate. A bonus of using Revolution is the ability to quickly set a maximum speed when being used by smaller guest engineers.

Turn over Thomas and you will see the gearbox cover is held by 8 screws (white arrows in picture). Open the gearbox and remove the two track pickups, cutting the black and red wires. **For you track power folks, Thomas is wired backwards and will go in the opposite direction to every other loco you have!** While you are in there, lubricate!

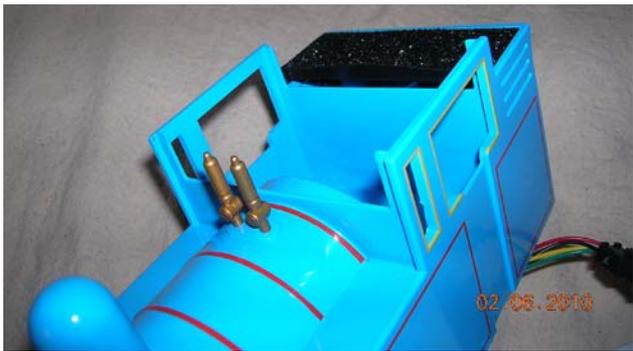
Replace the gearbox cover, and remove the six rear screws holding on the body. (Red arrows in the pic-

ture). You do not need to remove the front screws that hold on his face and smokebox, Turn Thomas right side up, remove the cab roof (slides up) and lift off the body. Where the boiler slots onto the smokebox might be a little stiff, it's a tight fit.



Editor's Caution: Do not disassemble nor remove the smokebox if you can avoid it. The tabs that move the "eyes" appear to be rather delicate and can not be realigned with the drive mechanism without removing the front of the smoke box. This task is not difficult but requires a delicate touch.

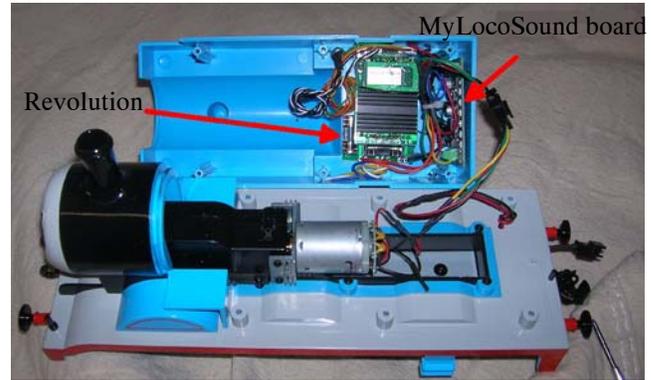
Looking at the motor, trace the wires that go to the pickups and pull them up into the body area. You will use two of these for providing power to the motor from the RC board. You do not need to remove the PC board attached to the back of the motor. I attached my Revolution board under the floor of the cab, with the "link" button on the floor of the cab.



Look at the body shell; under the coal bunker there are two screws that hold the "coal" in place. Remove the coal load and cut off the two sides from the coal molding, so that the slots in the side of the coal bunker will be opened to allow sound out. Fasten a speaker to the floor of the bunker; drill a small

hole to feed the speaker wires to the sound card. Replace the "coal" and with the cab in place, you have a baffled speaker enclosure.

I connected the sound card, but did not mount it until I had adjusted the board to produce the sounds I wanted, and matched the chuff to the motor. I then attached the sound card with Velcro to the back of the coal bunker. Now, when I work on stuff, "smoke test" is often the actual result... charged up the batteries, connected the plugs, and flipped the switch. It has power! Linked the TE Tx and it obeys! And, it has sound! Thomas is a simply constructed engine, robust and easy to work on, a great first time project if you want to get into Battery/Radio Control.



Materials:

- Thomas The Tank Engine \$184.00
www.ridgeroadstation.com
- 2 9.6v 4500mh RC Battery packs \$92.00
www.batteryspace.com
- pn AS-HSC8I2TM4500 Battery Conversion module \$27.00
www.Gscalegraphics.net
- MyLocoSound steam card \$69.00
www.mylocosound.com
- Aristocraft Revoution Rx \$73.08
www.ridgeroadstation.com

Pn 57002 (The Rx and Tx set is part number 57000 and is \$189)

A short aside about great customer service. When I installed the MyLocoSound board, I was hearing

a high pitch tone when the loco was running, rather annoying. I contacted Peter Lucas, the owner (who is in Australia) and he promptly sent me a replacement board, which had the same tone. I gave Peter all of the specs, described how my Thomas was laid out and he tried to replicate the problem without success. Until his teenaged daughter came into his workshop and complained about the high pitched squeal coming from the speaker. Apparently my ears are the only parts of me that are not getting old! He put the board on an oscilloscope and found a high tone being generated. He reprogrammed a board and had it right out to me and Thomas sounds pretty good!

Battery R/C + Sound for Thomas **by Tony Walsham,** **Remote Control Systems**

Early today Thomas arrived for the treatment. I must admit I was quite excited to see whether or not Bachmann has got it right. I gave it a quick backwards and forwards on the test track and was most impressed with how smooth it ran.

But Hey!!! The gear ratio is all wrong again. **On 12 volts it is a Rocket Ship.** Actually, that is not going to matter much as 9.2 volts of batteries will fit a lot more easily than 14.4 does. The higher voltage takes up a lot of space. 8 Cells is going to work out just fine.

Resistance was useless. After I had finished my Saturday AM chores and rather pleasant lunch of Portuguese sardines, I simply had to pull him apart and see what was possible.



The first step is to remove the 6 screws that hold the body to the chassis. Lift the blue body of the boiler straight up and away from the chassis.

Once apart it was possible to study the situation at length. I have figured out how to fit everything inside the loco shell.

8 x “AA” ENELOOP 2000 mah Hybrid cells, RCS-BELTROL R/C, a 2.4 GHz 5 channel RX and a MyLocosound with speakers. Plus an installation kit to make wiring simpler.

The MyLocosound system has a very nice chuff and a very British whistle. Just right for Thomas.

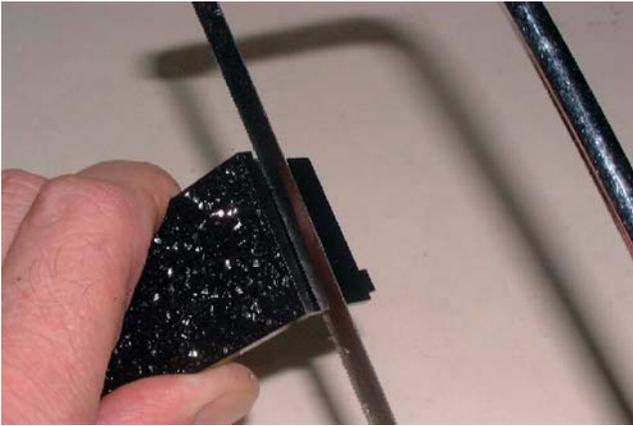
The bonus will be the charge jack which will be situated on the rear buffer beam. This will allow a trail car set of batteries to plug in and replace the loco batteries for an extended running time.

Once apart I played around placing components.

The first thing I decided to do was locate the speaker for the MyLocosound. I had the option of a few examples but decided on a small oval speaker that Phoenix and Dallee both sell.

Editor’s Note: This particular speaker is also available on special order from Norvak Electronics in Beaverton, OR.

The process for installation of MyLocosound for Thomas to operate on track power is quite simple. The most difficult decision is whether a battery backup is wanted that will permit the “steam hiss” when the track power is off.



I could not mount it facing up as I needed the space below the bottom of the coal load area for one of the battery packs. So I decided to mount it under the actual coal load facing down. The first thing to do was cut the ends off the fake coal to let the sound out the sides.



Once they were removed I glued the speaker to the underneath of the coal load.



Then I built up a baffle box out of thinnish styrene. I hope it works but as yet I cannot try it out.

Anyway, it will not be hard to play around to get the best sound I can. Once I had the speaker set up fin-

ished I drilled a small hole for the speaker wires and remounted the coal load into the body shell.

The other two wires coming from the rear of the body shell are connected to a 3mm green LED I placed in the dummy lantern. I simply drilled out the lantern to accept the LED and then carefully filed down the base of the LED so it would poke through the lantern from the back. There is a 470 ohm resistor in series to enable the LED to work on 5 volts. I did the same to the front dummy lantern. Although not essential, having working front and rear lights makes operation much simpler. This loco is for children so the colour of the LED's does not matter. I would use warm white LED's for regular scale model locos.



Next up was selecting the location for the sound system and which of the RX's I wanted to use. Here is the MyLocosound which fits neatly between support pillars on the LH side.



Being slight behind the front pillar means that inserting the wires in the screw terminals before finally locating the sound card would be a good idea.

The regular RCS metal cased RX will fit easily on the RH side.

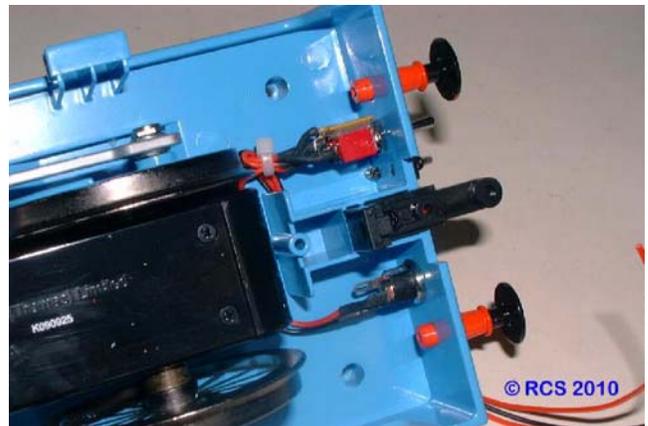


What really makes this a simple installation is the BASIC-3 (aka EVO-B3 & BTL AL-3R). This is long, thin and low profile, so it mounts easily above the motor block under the top of the boiler.

Here is the Planet Twister RX.



Then the E-Sky.

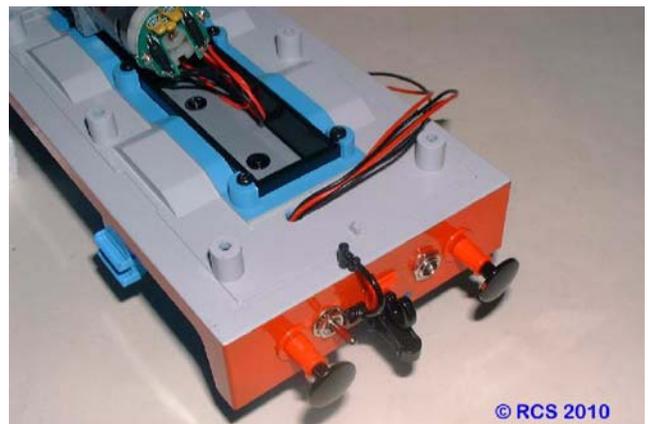


I mounted the ON-OFF switch and charge jack in the rear buffer beam. I made the assembly from parts that are easily available in most local electronic stores or from RCS.

The Hobby King.



No picture of the SPEKTRUM AR-500 but it fits as well in the same place.



I drilled a hole through the floor so the wires could go up to the top of the chassis. There is a convenient space behind the motor into which the excess wiring can be tucked out of the way once the connections have been made.

Next up will be installing the two 4.8 volt rechargeable battery packs and completing the wiring.

The final phase is complete, and THOMAS is up and running.

As Thomas is such a race horse on 12 volts I determined to use 9.6 volts. The RCS-BELTROL ESC I used can work down to 7.2 volts. So 8 cells is ideal. I opted for two 4.8 volt packs AA size packs of rechargeable cells which are available over the counter from most hobby shops in the two different shapes needed.

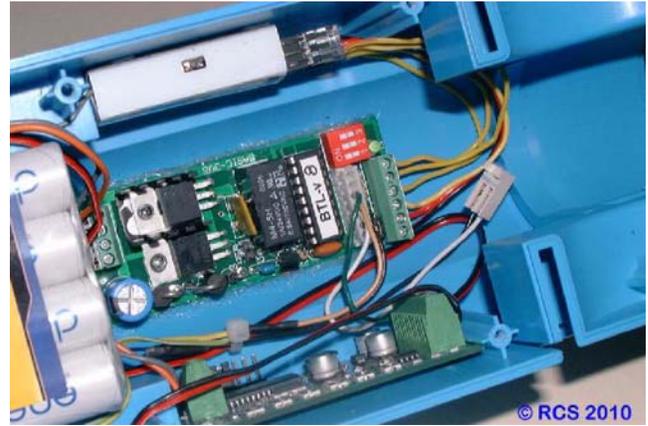


My battery supplier has them with ENELOOP AA size NiMh-Alkaline hybrid batteries in the two shapes I need for them to fit in Thomas.



The two packs fit like this in the body. The brick shape fits in the bottom of the coal bunker at the back. The flat pack fits under the cab floor. The packs came with regular JR servo type connectors so I fabricated a cable set to put them in series from a couple of servo extension leads.

Normally I would just wire up the two wires that are fitted to the regular batter packs I get made. Be careful not to mount the flat pack too far forwards. If you do it will foul the rear of the motor.



The wiring was finished off thus.

I put plugs and sockets on all the wiring that goes between the body shell and the chassis. It is not really necessary to do that and in fact does increase the odds of a failure at some stage. I do it mainly because it allows me to more easily take photos as I progress.

I charged up the batteries and then bound the PLANET RX to the TX and calibrated the system as per the regular BELTROL instructions. Everything fits in easily but be vary careful assembling the body to the chassis not get any wires under the screw holes and make sure they are clear of any fittings that would prevent the body sitting down snugly on the chassis.

I do advise removing the face from the front of the body shell. Doing so makes relocating the little plastic "sticks" behind the eyes much easier. Once the body is back on the chassis and Thomas has been tested, hold the face in two hands with the eyes held in place by your thumbs. Locate the two little pegs on each side of the slider on the motor block front and gently push the face back into the boiler until it clicks home. **Note:** If you did not remove the smoke box section, you don't have to reinstall the "eyes".

My Thomas performs well except for a small bind in the mechanism that I expect will disappear with usage.

Open House at the Home of Donald & Jeanine Golgert

On a cool rainy day on February 18th, members met for a potluck meal and to discuss the annual 2010 budget. A budget was adopted with some minor changes from the budget first proposed at the annual meeting in January.



Host Don Golgert

Jeanine and a daughter were helpful hostesses in organizing the meal and creating a place for a short meeting.

Don has been without a railroad for the last few years, but there is a new raised bed layout being assembled in the back yard.. The framing is nearly complete and the track is ready to be laid.



Kathryn Warrior cuts her birthday cake as Odell Lee looks on.



C.P.R. ENGINE 374

Canadian Pacific began to design its own locomotives in July 1883 with the hiring of F.R.F. Brown as the company's second locomotive Superintendent. Canadian Pacific opened new shops in Montreal, and the first locomotives were built in 1883.

Between May and July, 1886, a group of eight passenger locomotives, of 4-4-0 type and having 69 inch driving wheels were constructed and numbered 371-378. These were sent to the Pacific division to operate on the Cascade section between North Bend and Port Moody, and two of them figured in historical events.

The last spike for the CPR was completed on November 7, 1885 at Craigellachie.

No. 371, hauled the first Pacific Express into Port Moody on July 4, 1886. This was the first scheduled train to cross Canada from sea to sea.

No. 374, hauled the first passenger train, carrying 150 passengers, to go beyond Port Moody over the 12 mile extension to Vancouver on May 23rd, 1887, thus finally joining Canada from East to West.

While No 371, still essentially in its original form, was scrapped in October, 1915, Engine No. 374 had a different fate. In September, 1914, it was selected for a complete rebuilding; it was an almost completely new locomotive, built upon the main frame of the original 1886 locomotive. No. 374 was given an additional thirty year lease on life and remained in revenue service until July, 1945, when it was retired.

After its 1945 retirement, the locomotive was donated to the City of Vancouver as a memento of the original 374. Prior to delivery to the city, Canadian Pacific gave it a cosmetic treatment to make it look "old". The necessity to remove some modern technology to achieve this goal rendered the locomotive permanently inoperative.

After delivery to Vancouver, No. 374 was made the responsibility of the Park Board for care and custody and was placed on a section of track at Kitsilano Beach. The next 38 years were perhaps the saddest chapter in the life of this engine. It remained in the

park largely forgotten and ignored, the victim of rust and vandalism. Although a few volunteers attempted to maintain her, a lack of money, interest and proper shelter took their toll of the engine. In 1963, a vain attempt was made to move into the former aircraft hangar where the Community Music School is now located in Vanier Park.

Then in 1981, the WEST COAST RAILWAY ASSOCIATION and the CANADIAN RAILROAD HISTORICAL ASSOCIATION began to promote the saving and restoration of the No. 374, and by 1983 had raised funds for a badly needed cosmetic restoration. The locomotive was removed from Kitsilano and placed in a warehouse on Granville Island, where teams of dedicated volunteers worked on her for two years. In 1985, the engine was transported to North Vancouver's Versatile Shipyards for final restoration. Addition funds to accomplish this were partially raised through the Heritage Brick Program sponsored by Imperial Oil Limited.

On February 13, 1986, No. 374 was transported to the Expo 86 Roundhouse Site. There, restored to its former glory, it was a fitting tribute to Vancouver's historic transition from "Milltown to Metropolis". In May, 1988, volunteers were allowed access by Concord Pacific Developments to examine, clean and polish No. 374, to weed between the Heritage Bricks and set up arrangements for a public opening. During 1988-1990, the public was invited to the Roundhouse Courtyard to view the engine and the Heritage Bricks.

Canada's most historic steam locomotive, Engine 374, faced an uncertain future. Except for a few shining moments at Expo 86, it's been out of steam ever since. As part of its development, Concord Pacific has converted the Roundhouse into a Community Centre, giving both the building and surrounding area park land to the Parks Board. The Park Board proposed a new building (the 374 Station Pavilion) adjacent to the Roundhouse. This became a reality in the 1990's, and No. 374 now has a permanent home for Canadians and visitors alike to visit Engine No. 374.

February 20th Film Night

Eighteen people enjoyed pizza and the 1976 version of the movie “The Silver Streak.” Member Jan Zweerts sponsored this test program as an RCGRS activity in lieu of an outdoor activity during the winter months. Jan had noticed that there was significant interest in older RR movies that have been shown during member’s open houses.

The next scheduled “Film Night” March 28, 2010. See the announcement below in the “Schedules & Timetables.” Please RSVP so Jan can give a head count to the Fanno Creek Brew Pub.

— Jan Zweerts aka Locoyan.

Schedules & Timetables

Make sure you check the calendar on our Website at <http://www.rcgrs.com/> for the most up-to-date schedules and timetables.

It is our Society’s policy to attempt to have an event or open house on every second Saturday of the month. Other and additional dates during a month are also available and encouraged.

Editor’s Note: The deadline for the April 2010 newsletter is March 25, 2010.

March 13, 2010, Saturday: Once again I will host a clinic at Constructavision on March 13–14, 2010. This year I will produce a craftsman style kit of a backwoods square water tank using the superb model my father built as a guide. Also a round conventional tank like the tanks I use on my B&GR will be offered. I’m trying to see a show of hands as to who would be interested and what style, scale etc. Cost is yet to be determined. A limited quantity (12?) will be produced so if you want one let me know ASAP. — Happy Rails, Gary Lee.

March 19, 2010, Friday, Noon until 7:00 p.m.: The Great Train Expo at the Metro Convention Center. RCGRS members needed to set up a large modular display. Contact Greg Martin at 503-848-9091, or granet@verizon.net

Hint: Use the MAX Yellow Line to save the hassle and expense of parking.

March 20, 21, 2010, Saturday & Sunday, 10 a.m. until 4 p.m.: The Great Train Expo at the Metro Convention Center. RCGRS members will run trains. **Hint:** Use the MAX Yellow Line to save the hassle and expense of parking.

March 21, 2010, Sunday, 4 p.m. until 7 p.m.: The Great Train Expo at the Metro Convention Center. RCGRS members are needed to disassemble the modular layout and store the components in the trailer.

March 27, 2010, Saturday, All Day?: OP SIG meeting at General Tool Co. in Portland. Rex Ploederer will hold a short clinic on installing body mount Kadee Couplers, and then we will convert all of Bill Derville’s rolling stock to body mounts.

March 28, 2010, Sunday 6 p.m. to 7 p.m.: Lobby for your favorite movie to be shown. This movie night is the second test run to see if we want to plan additional screenings.

The Fanno Creek Pub has good food & drink at reasonable prices and will put in a dedicated server for groups bigger than 10 and with of course no outside food or drink. This location is on the south end of Main St. Tigard just off 99W and should be easy to find for most club members.

Please RSVP so I can give a head count to the Fanno Creek Brew Pub. — Jan Zweerts aka Locoyan

April 11, 2010, Sunday, Noon to 5:00 p.m.: Open house and quarterly business meeting at Dave and Margaret Kookan. 7542 Carolina Lane Vancouver WA 98664. 360-695-0389-0389, dmkookan@pacifier.com

April 16, 2010, Friday, 4 p.m. until 8 p.m.: Operations Session at Worthington and Randolph RR. 1369 SE 12th Loop, Canby, OR 97013
Phone: 503-266-1110

May 8, 2010, Saturday, Noon to 5:00 pm: Open house at Dennis & Carolyn Rose’s home. 18325 SW Jaylee St., Beaverton, OR . Potluck: Host will provide beverages and dessert. A–K–main dish; L–Z side dish.

Members can run their trains. Minimum track radius is 4-ft. Track power or RC is OK. NO live steam please.

May 14, 2010, Friday, 4 p.m. until 8 p.m.: OP SIG meeting at Bill Derville's Colorado & Southern RR.

May 28, 2010, Friday, 4 p.m. until 8 p.m.: OP SIG meeting at Gary and Jonette Lee's Baker and Grande Ronde RR.

Jun 12, 2010, Saturday,
Open house at Odell and Hazel Lee's home. 619 NE 160th Portland OR 97230, 503-253-3447

June 19, 2010, Saturday: Railroads In The Garden Summer Tour 2010. Bill Derville, Chairman

July 10, 2010, Saturday: Open House and quarterly business meeting at Gary and Jonette Lee's home

July 29 - August 11, 2010:
2010 NGRConvention.in Tacoma, WA. Website and registration information is available at http://www.psgrs.org/2010_NGRC_Schedule.html

Pre-convention Tour: July 20-31 Oregon & SW Washington. Volunteers will be needed to assist the layouts that will be open for the tour.

Convention & tours: August 1-8 Greater Puget Sound area.

Post-convention tours: August 9-11, British Columbia.

Aug 14, 2010, Saturday: Open house and annual auction at Ron and Merlene Bacon's house.

September 12, 2010, Sunday, Noon to 5:00 p.m.: Open house at Jeff and Dianne Lange's home at 5220 N.W. Cherry Street; Vancouver, WA 98663.

September 25, 2010, Saturday: Open Houses in Bend, OR. Bob & Colleen Melton 61261 Ladera Rd Bend OR 97702-4001 541-382-8881 melton.r@bendbroadband.com Harvey & Arlyn Becker 2497 NW Todds Crest Dr. Bend OR 97701 541-383-1864 bharvey@bendbroadband.com

Halloween Trains October: Location and Host?

November 13, 2010: Annual RCGRS Luncheon

December 2010: Jan and Rae Zweerts open house and viewing of the Christmas ships.

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