



News from Houston N'Crowd



May/June 2019

# THE ORDERBOARD



Building control panels



Congratulations!



Photo by Hugh Boyd

## Tracking the Transcon with Hugh Boyd: Part 2

# "GREEN EYE" - CLEAR BLOCK

by Tom Marsh, President

## Staying interested and active in the hobby

I think one of the reasons I have been an N'Crowd member for 10 these many years is that membership gives me the opportunity to stay interested and active in the hobby even though I don't have my own layout. To help you stay interested and active, we organize a variety of "extracurricular" activities throughout the year. Our most recent such activities were the April 28 swap meet hosted by Gordon Bliss and the May 1 Test & Tune session at Papa Ben's.

Swap meet attendance was a little lighter than in previous years, but deals were made for cash and trade and we had fun running trains in an informal fashion on Gordon's Santa Fe All The Way layout.

The Test & Tune session attracted more people than expected, given that the layout was down with another of the mysterious maladies that seem to afflict it on occasion. However, it turned out that the malady was not as mysterious as we thought. Gordon noted a loose power wire and hooked it back up, while Ray Byer contributed to the layout resuscitation effort by lending us a Digitrax component to replace a balky unit that has been giving problems for months. With these fixes, we were highballing again.

Activities in June include a June 2 operating session and our June 9 Railfan Houston Carpool, where we will set out for the day looking for inspiration from the local prototype railroad scene. See the next page for a preview, and watch your email for details.

As always, let us know if you have any questions, comments or suggestions. Happy Railroading!

Tom



Our April 28 swap meet included more than just wheeling and dealing. Hosts Gordon and Tina Bliss cooked up burgers and dogs, and everyone was invited to run their own or one of Gordon's trains on the Santa Fe All The Way. Photo above by Allan Melton, below by Tom Marsh



### Silent Auction at May 15 Meeting

Former N'Crowd member Renny Goyert, who now lives in Nevada, Iowa, has donated 10 N'Crowd special run cars which we will sell via a silent auction at the May membership meeting. Starting bid for each car will be \$10. Included are six boxcars (two are the same), three tank cars and a fine example of the infamous Con-Cor blue convention observation car. Cash, check or PayPal payments will be accepted. Items not sold will be placed on consignment in the store.



### N'Crowd Wednesday Membership Meetings:

May 15 / June 19 / July 17 / August 21 / September 18

Meetings start at 7 p.m. at Papa Ben's Train Place, 4007-E Bellaire Blvd. and are open to all.

**N'Crowd Test & Tune Sessions:** First Wednesday of odd-numbered months. 6 p.m. to 8 p.m. at Papa Ben's.

**N'Crowd Operating Sessions:** First Sunday of even-numbered months. Watch your email for information.



## Preview: N'Crowd Railfan Houston Car Pool

We've set Sunday, June 9, as the day for our Railfan Houston Car Pool. Plans are being finalized and we'll be sending out an email with more details closer to the date. While we can't promise specific sightings, these photos give a feel for what a railfan might see on any given day in the Houston area.





# Building control panels

by Hugh Boyd

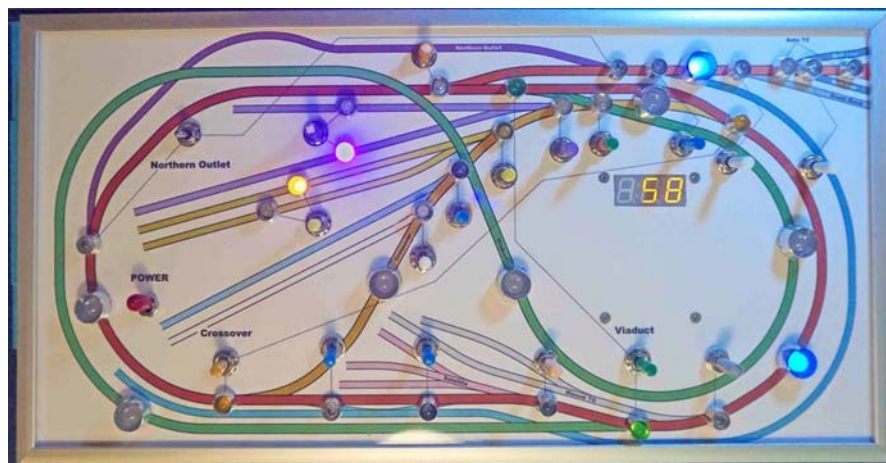


*Above and right, the control panel Hugh built for his current layout. He used the same techniques for the panel he built for the club's Bayou City & Gulf Railroad.*

As they say, there's lots of ways to skin a cat. So it is with model railroad control panels: There's lots of methods. This is the way I build mine.

In my railroad planning I use the AnyRail model railroad design application ([www.anyrail.com](http://www.anyrail.com)). I also use AnyRail to create the graphics for my control panels. From the AnyRail library I select a rail type that will produce a broad colored line to represent track. In my panel graphics I try to replicate what I've already done for my track alignment. So my panel graphics are more than a schematic; the graphics, at a smaller scale, generally replicate what I've done on my layout.

My standard panel size is 7 inches by 14 inches. I've made panels at other sizes, but it's important for me to be able to print the panel graphics on my personal



color printer, which can handle up to an 8 1/2 x 14 legal size page. I've built larger panels in the past (including the one on the N'Crowd's Bayou City & Gulf Railroad; see the cover photo) but I had a 13-inch photo printer in those days.

My N-scale layout is in my one-bedroom apartment, so I have to consider economy of space. I've

placed all of my layout power, control and status display on a separate wheeled trolley that I can park out of the way when not in use. My panel is bolted directly to the top of the trolley and the power transformers and DCC equipment are on lower shelves.

For the panel frame I use a pair of readily-available aluminum picture frames bolted together along one side with a piano hinge. When selecting a frame type, it's important to allow lots of depth so that the resulting vault has sufficient space to accommodate all the wiring and related paraphernalia. I most recently used Nielsen Profile 22 frames in "Frosted Silver", but next time I'll get something with more depth. You ain't seen spaghetti until you see the innards of my panel!

When I'm satisfied with the panel graphics, I print it out on matte photo paper. I cut an 11 x 17 photo paper sheet to 8-1/2 inches wide so it will fit in my printer yet cover the 7 x 14 graphics size. I use the printer's maximum resolution so the printing process takes several minutes.

Next, I use an aerosol photo adhesive to affix my graphics printout to a 12 x 24 x 0.080 inch sheet of white styrene. I do this outdoors early in the morning when the wind is usually calmest. I make sure the adhesion is good by pressing the two sheets together with a new, clean paint roller.

Next comes the most crucial point in the entire panel construction process: drilling the holes to receive the toggle switches and LEDs used to control and display turnout alignment settings and to indicate the passage of trains.

First, I cut a sheet of clear 2 mm acrylic such as Lucite or polycarbonate such as Lexan on my 2-inch hobby table saw to 7 x 14. Then I lay this sheet over my graphics and clamp the three-ply media together. I drill four of the toggle switch holes and insert 1/4-inch nylon bolts to hold everything firmly together so there is no movement while I drill the remaining holes. Then I use a sharp utility knife to cut the photo paper and styrene layers to the final 7 x 14 panel size. I use a pointed probe to make a marker hole at the precise

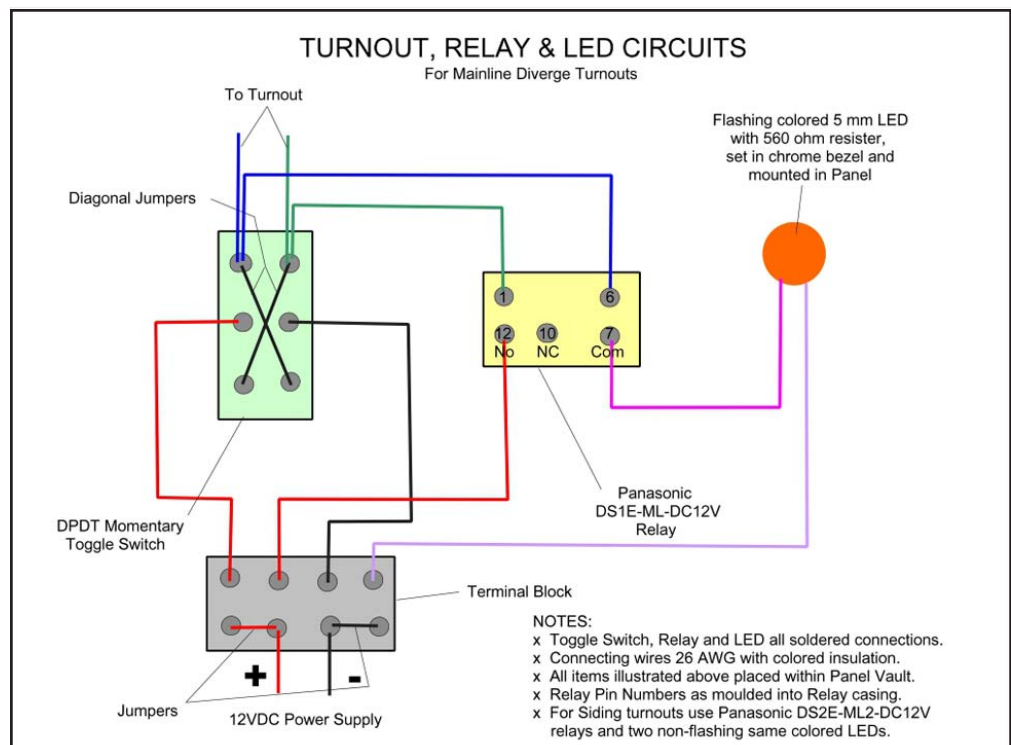
location of the item to be inserted into the panel. Then I use two clamps to hold short laths under and over the proposed drilling site. The upper lath has a larger hole drilled through it that I center over the marker hole. I place the clamps as close to the drill site as possible and tighten them to the max.

I find this clamping operation to be essential so as to avoid edge tearing of the photo paper as the drill bit penetrates. I start with a small pilot hole then use increasing larger bits to ream out material until I reach the desired hole diameter. It is very important to use very slow rotation of the drill so as not exacerbate the tearing of the photo paper. The acrylic drill bits that I use are more sharply pointed than regular drill bits.

My current control panel has a total of 52 toggle switches and LEDs, plus a rectangular slot for the fitting of the readout for my TrainSpeed PCB that is set to display train speed in scale miles per hour.

With the three-ply graphics successfully completed, it is time to move to the fitting of the toggle switches, LEDs, PCBs and any other items to be used before the insertion of the assembly in the panel frame. The toggle switches and bezels that I use hold the three-ply media firmly together and allow the removal of the nylon bolts used in the initial assembly.

I hold the three-ply media in place within the upper picture frame with the crescent shaped springs that come with the frame. I alternate the springs up and down so that I am able to maximize the number of



*This diagram illustrates the basic wiring for controlling both a turnout and a panel indicator light with a DPDT momentary switch.*



springs and so enhance the holding power.

For the toggle switches I use Miniaturics double-pole, double throw (DPDT) momentary miniature switches. Momentary switches are required for use with reversible pulse turnouts such as Atlas, Kato, Peco Tomix, Fleischmann and others (see the PANEL NOTES). The switch has three positions: (ON) OFF (ON), where the parenthesis indicate the momentary position where switching power flows only as long as the switch activator is held in one of the (ON) positions. Upon release, the switch returns to the center OFF position. Pulse type turnouts require polarity reversal to move the turnout's points from mainline to diverge and back to mainline. The chosen toggle switch has six pins. I wire the incoming and outgoing power to the center two pins. I connect the diagonally opposite pairs of pins with jumpers so as to achieve the polarity reversal requirement. The jumper output wires I extend to the turnout incoming power, and I also connect these output wires in parallel to a miniature relay.

The Kato turnouts I use (and other reversible pulse turnouts) require a 12V DC momentary power pulse for activation but the alignment indicating LEDs require an ongoing 12V DC power supply, hence the relay. For my layout where a mainline turnout diverges to a siding I have a flashing colored LED. Where a siding diverges to another siding track, I have a pair of solid colored LEDs, one for each track. The type of relay differs for each situation.

First off, the relay must be of the latching type, i.e. it retains the latest setting after the power pulse ceases. For the flashing LEDs I use Panasonic DS1E-ML-DC12V relays. These have five pins; on top the pulse incoming and outgoing

power pair; at the bottom COM, NC and NO pins. COM is the incoming LED activation power. The NC is the Normally Closed circuit and the NO is the Normally Open circuit. Since I want the LED to flash only to indicate the diverging alignment, I use the NO circuit. Thus, I wire the LED in series: incoming through the COM pin and outgoing through the NO pin. For the pair of sidings alignment indication, I use Panasonic DS2E-ML2-DC12V relays. These have six pins with circuits to alternately drive the two separate non-flashing LEDs.

I mount my LEDs in chrome plated brass bezels. These come with a nylon insert that holds the LED in position and a retaining nut to lock the bezel after I have inserted it through the three-ply media. I get these at boeschbuilt.com. Plastic LED holders are also available, but I think the chrome variety produces a more professional looking result.

For my turnout alignment status, I use 5 mm flashing and solid color LEDs. Flashing red, green and amber LEDs are readily available, but other colors, including blue, white and orange can be found online. If a flashing LED of my desired color is not available, I use a Miniaturics rear end warning flasher to make a solid color LED flash. By this method I managed to get otherwise unavailable flashing pink and flashing violet LEDs. I have also used bi-color (not bi-polar) LEDs that cycle through green and amber and through red and blue. For my block occupancy indication LEDs I use 8 mm solid blue LEDs, again, mounted in chromed brass bezels.

In my selection of track colors for my panel graphics, I try to stay with colors where I can obtain matching color LEDs. Sometimes non-availability of an LED color restricts my color selection. My

current panel has nine colors, and that's about the end of my color options.

Over the years I've probably built 25 panels with these methods and over those years my designs have evolved. My current panel represents my eighth iteration. The need to update my panel usually arose because of modification to the layout track geometry.

Hopefully, I'm finally there!

## PANEL NOTES

I cannot over-emphasize the importance of tightly clamping the graphics three-ply media together and using slow drill rotation as the bit penetrates the photo paper layer.

The discussion on the panel electrical components pertains to layouts utilizing turnouts with pulse type reversible power actuation. Panels built for layouts with Tortoise type stall turnout motors require non-momentary six pin DPDT toggle switches. However, the relay is not required.

Peco turnouts are a popular choice for modelers. Caution: The turnout alignment actuators for these require 18V AC for remote operation. Thus, the turnout power supply, switches and relays need to be able to accommodate a dual power system and these items tend to be more complex and much more expensive than the single 12V DC power system.

For more information on the equipment selection for Tortoise equipped and Peco layouts, get in touch with me via the N'Crowd website contact page: [www.houstonncrowd.org/contact.html](http://www.houstonncrowd.org/contact.html)

# Congratulations!

Our congratulations go out to N'Crowd member Michael Cianciolo, who recently completed his Eagle Scout Project. Michael writes:

"I am looking forward to getting involved with the N'Crowd once again! Happy to report I have completed my Eagle Scout Project. There are a few more small things I have left, but the majority of the project is completed.

"I'd like to sincerely thank all my N'Crowd friends for their support. There were so many good wishes and donations and each and every one of them meant a lot to me and gave me the encouragement to get the job done. Here you can see a photo of my completed project. It is located on the church grounds of Mary Queen Catholic Church in Friendswood. We added the entire paver path to get to the flagpole and the beds and plants around it. If you are ever driving down FM518, the church is one block behind Perry & Son's Market and Grill. You are welcome to check it out!

"Thank you all once again and I look forward to the next available ops session."



## Make plaster cleanup easier

*Here's a tip on handling plaster from Darrell Cowles, a lifetime member of the Texas Western Model Railroad Club in the Fort Worth area.*

"Many of you have seen the half yellow rubber ball and bowl that I use when mixing plaster. We needed more of these so I found this rubber ball at Walmart for \$4.86. Obviously it was inflated and round before I cut it in half.

"I also found this bowl that it will fit into perfectly. I

think it was about \$2.99, also at Walmart. By the way, buy two of these, you have two half balls.

"When you put them together, you have a very handy plaster mixing pot. Once you finish applying a batch of plaster, you will wait for a few minutes for the plaster to finish hardening in the ball, and then simply crumple up the rubber ball over a trash can to get the old plaster out. You are now ready for another batch.

"Hope this tip helps with your modeling."





# Tracking the Transcon *Part 2*

*by Hugh Boyd*

Heading east from Abo Canyon, US-60 leads to Mountainair. At about 6,200 feet elevation, this is the highest point on the Belen Cutoff, the segment of the Transcon built by Santa Fe in 1908 to bypass the more mountainous line over Raton Pass.

On US-60 before reaching Mountainair, a long sweeping curve presents good photo opportunities from a bank on the west side of the road. From this perch I can see the oncoming westbound trains that are a couple of miles away as they head out of Mountainair and begin their descent to the Rio Grande valley.

Mountainair's former Santa Fe Mission Revival-style station is fenced off and inaccessible. The town has several buildings with architectural details inspired by Native American culture and also a pervasive air of the early Spanish missionary presence.

The next stop on my eastbound journey on US-60 is near Willard. Here, the Transcon makes a near 90 degree turn from northeast to south-east. A mile or so before reaching Willard, I stop at the crest of the hill

and park on the roadside. Then I scramble up the bank to the fence line. This location is considerably higher than the track below.

With my spyglass it is possible to see Willard itself with its church spire and it's also possible to look ahead for a couple of miles to see the oncoming westbound trains. I wait until the train rounds the curve, where from above, the locomotives and the following train are all visible.

I was here on Oct. 24, 2015 when the BNSF westbound trains were experiencing substantial delays. I saw seven waiting trains, including one at this location. I took multiple telephoto pictures and later merged them into one panoramic picture of the entire train.

Just across the tracks looking south there is a large irrigated disk and further up the hill dozens of spinning blades mark a wind farm.



*Above, DPUs on the rear end of an eastbound BNSF stack train work uphill towards the Belen Cutoff's highest point at Mountainair, N.M., in 2006. Below, in 2011, a westbound at the same location descends to the Rio Grande valley.*







My next stop is a little past Encino, where US-60 and US-285 share the same right-of-way. The combined highway crosses the tracks from the north side to the south. Parking is possible on the southeast side of the bridge, but care needs to be taken not to obstruct BNSF access to the tracks. Here are good views of eastbound trains looking north towards Santa Fe over the horizon. Westbound trains are also visible, but the two-structure highway bridge can make it difficult to hear the trains approaching, so often the trains appear unannounced.

Just a few more miles on is Vaughn. From the early days, the Transcon was a single track as it bridged (“culverted” really) over the Union Pacific Golden State Route below. Recently a second bridge was constructed and the Transcon approach trackage on the west side

*Above, three BNSF “swoosh” locomotives pull a stack train eastbound up the grade towards the Transcon summit at Mountainair in 2012. The train still has about eight more miles to reach the top. Below, also in 2012, a westbound BNSF stack train rounds the big curve west of Willard. Bottom, this Oct. 24, 2015, panoramic view of an entire train on the same curve was stitched together from multiple images made possible because BNSF was experiencing traffic delays on the Transcon, and the train was stopped.*





was realigned, thus double tracking the Transcon to eliminate a former bottleneck. From US-60/285 it is sometimes possible to catch a BNSF train above and a UP train beneath. It happens, but don't hold your breath.

A connecting track links the northbound Golden State Route to the eastbound Transcon. On that infamous October 24 day with all its delays, I witnessed a diverted BNSF train return to home track along this connection.

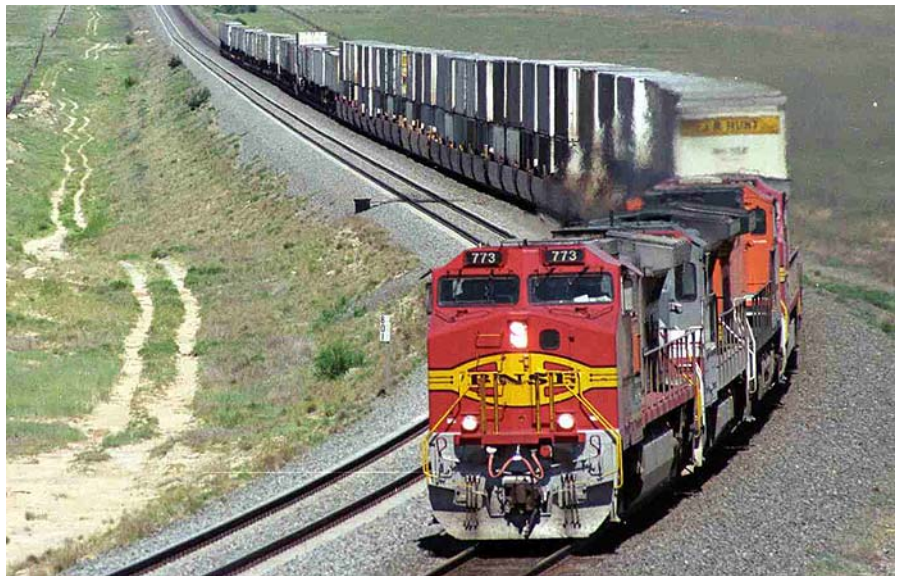
Formerly, a Vaughn city street gave photographers access to the north side of the Transcon after it crossed the Golden State Route, but this is now barricaded. The location is still accessible by a dirt road from the airport area, but I have not checked if access closer to the railroad bridge is available to the railfan. UP trains often wait here before or after passing under the Transcon tracks above.

Vaughn has an interesting former Santa Fe Mission Revival-style depot that is now used as the BNSF local headquarters. Vaughn offers a number of accommodation options, and while there be sure to check out Penny's Diner up the hill on the east side of town. No beer, but otherwise good fare. Be prepared for weather of the season; I was there once when the parking lot had only recently been cleared of a foot of snow.

Three highways leave from Vaughn to the east. Straight ahead is US-285 to the Roswell area, then over the bridge and right our US-60 follows the Transcon northeast towards Clovis and destinations much further afield. Finally, US-54 on the left follows the Golden State Route towards Santa Rosa and northern locations.

Interesting train watching sites can be found not too far south of Vaughn on the Golden State Route as it works its way south to El Paso and eventually the West Coast. There's Duran and then Carona in a mountainous area, a good place for my motto "This Bud's for Hugh".

The journey continues in the next issue of *The Orderboard*.



*The scene at Encino in 2001, above, and in 2015, below.*



*Below, action at the over and under culvert at Vaughn in 2004. Bottom, on Oct. 25, 2015, the day after multiple delays on the Transcon, the BNSF stack train on the right waits on the connection from the Sunset Route to rejoin the Transcon.*





# ‘Up and Over’ at Arcola

N’Crowd Past President Vincent Walker provided this photo of a crossing assembly recently installed in Arcola. Arcola, about 25 miles south of Houston, is where the Gulf, Colorado & Santa Fe Railway crossed the Houston Tap Railroad. There has been a junction at this location since 1878 when the GC&SF built through the area. Today, Union Pacific controls the Tap and BNSF controls the GC&SF.

This is a “flange-bearing” diamond, where trains on the more heavily traveled line (in this case the BNSF)

roll through the diamond on the wheel treads as usual, but trains taking the less traveled route are ramped up to roll across the other line on their flanges. This makes crossing maintenance less expensive and allows higher speeds over the crossing on the more heavily-traveled route.

It seems unlikely we’ll be seeing Kato Unitrack or Atlas True Track N scale versions of flange-bearing crossings anytime soon, but how about from one of you who likes to hand lay track?

*A flange-bearing diamond crossing awaits installation at Arcola. Photo by Vincent Walker*



## Houston N’Crowd 2019 Officers and Volunteers

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# LCL

*Less than Car Load: a few notes from your editor*

**First things first:** Thanks to this month's contributors for the variety of items submitted for this issue of *The Orderboard*. Deadline for the next issue is June 28.

Hugh Boyd's article on making control panels should be of interest to many, as the panel he built for our own BC&G Railroad receives many positive comments and questions about how it was built from club members and visitors alike. We'll keep copies of Hugh's article on hand in the layout room to give to interested visitors.

**How do you do it?** We have a fair number of members who are returning to or are new to model rail-

roading. How-to articles like Hugh's on control panels in this issue are of particular interest to these and many other members as well. Won't you step up and share what works for you?

Members are looking for guidance and tips for basic and advanced model railroading techniques. In recent weeks, members visiting the layout on Saturdays have sought advice on benchwork, layout planning, wiring, trackwork, ballasting and scenery. So next time you tackle a project on your railroad or module, take a few pictures, make a few notes and let's develop a helpful how-to story for *The Orderboard*. No project is too small to share: We look forward to hearing from you!

## HOUSTON N'CROWD 2019 TIME TABLE - SUBJECT TO CHANGE

### May 1

N'Crowd Test & Tune, Papa Ben's Train Place, 6 p.m.

### May 4-5

Austin Area Train Show, Williamson County Expo Center, Taylor

### May 11

NMRA LSR Div 8 Clinic, Bayland Park

### May 15

N'Crowd Membership Meeting at Papa Ben's Train Place, 7 p.m.

### June 2

N'Crowd Operating Session

### June 8

NMRA LSR Div 8 Clinic, Bayland Park

### June 9

N'Crowd Railfan Houston Carpool

### June 19

N'Crowd Membership Meeting at Papa Ben's Train Place, 7 p.m.

### July 3

N'Crowd Test & Tune, Papa Ben's Train Place, 6 p.m.

### July 13

NMRA LSR Div 8 Clinic, Bayland Park

### July 17

N'Crowd Membership Meeting at Papa Ben's Train Place, 7 p.m.

### August 4

N'Crowd Operating Session

### August 10

NMRA LSR Div 8 Clinic, Bayland Park

### August 21

N'Crowd Membership Meeting at Papa Ben's Train Place, 7 p.m.

### August 25

N'Crowd Members' Layout Tour

### September 4

N'Crowd Test & Tune, Papa Ben's Train Place, 6 p.m.

## THE ORDERBOARD *from Houston N'Crowd*

### Tom Marsh, Editor

Published fairly regularly for members and friends of

N'Crowd Model Railroad Society, Inc., Houston, Texas.

Send newsletter contributions to:  
tom@houstonNcrowd.org.

Please note: We reserve the right to edit submissions for clarity and length.

### Visit our Web site:

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