



Digitrax DT602 Super Throttle review

By Jared Seliger

Disclaimer: This is not a paid endorsement of this product. The opinions are those of the author.

In January 2019 Digitrax (<https://www.digitrax.com>) released the Zephyr Express (DCS52), a brand-new starter digital command control (DCC) command station. The release of this new command station provided a heavily revised user interface which was a departure from previous Digitrax products. The DCS52 featured larger, backlit buttons and a backlit LCD information screen (**Image 2**). Several model railroaders provided their opinions of the new Digitrax design on various Internet message boards. Many modelers commented that one of the main advantages of using Digitrax products was if you began using their products with their Zephyr Extra (DCS51) and got used to using the interface, upgrading to a more robust command station with the 400 and 500 series hand throttle, you didn't have

to relearn the features. Now, modelers who use the DCS52 would have to adapt to a different interface if they ever upgraded because the Digitrax hand throttles did not incorporate the upgrades that the DCS52 had.

This all changed in July 2020 when Digitrax released their DT602 Super Throttle (**Lead Photo**). The throttle can be purchased with either infrared (tethered) or Duplex (radio equipped for wireless operation) variations. I purchased the infrared version because it is compatible with the existing Digitrax infrastructure on my layout. The Duplex version requires a Duplex receiver to be connected to the command station via Loconet (visit the Digitrax website for more information on the Duplex version). The new DT602 incorporates all of the design upgrades found on the DCS52, as well as some additional upgrades of the 400 and 500 series hand throttles.

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View from the Cab ***President Jay Manning***

As we push from the rear with the COVID issue and the various interpretations and/or locally issued regulations and guidance, there are days when I certainly feel that this is not going to end in the near future. I believe that the model railroading hobby is losing more than can be easily measured. Are we not all feeling detachment from the hobby and our fellow model railroaders? The lack of public opportunities to present the hobby not only loses public interest, but also hobbyist interest as well. After 5 weeks of working by myself on model railroad projects, I suddenly lost interest in building things and improving my trackwork. Another symptom of detachment was my loss of interest in shopping for model railroad things to purchase on the internet. Another round of cancelled shows and the unknown of going into the prime show season in the late fall and winter season impacts not only organization interests and vendor opportunities, but also individual opportunities to learn and grow personal modeling skills, as well as the loss of the comradery that is always present between show participants.

There are an individual opportunities to grow skills as a result of where we are. I would characterize it as the opportunity **to grow one's imagination**. Between the NMRA web site with the convention clinic presentations and the numerous web sites there seems to be an overwhelming abundance of information available for you to take advantage of when working nearly every aspect of your model railroad. For example, I recently came across a reference on You Tube site titled "The Weathering Lady." When I opened it up I found she presents numerous clinics on how to add realism to your operating equipment, some of which are very lengthy presentations. I know from experience that there are more and more discussions of weathering techniques available on the internet, most of which will never be published in a magazine. Weathering materials do not have to be an expensive addition to your tool box. I will point out that when I started down this aspect of the hobby, one of the first lessons learned, and probably the most important, is: "This is art work; once you are satisfied with your work do you really care what critics may say?" It is however amazing how you feel when a visitor looks at your work and says to you: "I used to work for the C&NW, they never washed their engines, and yours looks like the ones I used to drive."

There are always ways to improve your scenery- look at pictures from all sorts of reference materials with an eye to "what do I need to do to add realism?" Once again, your imagination may have been satisfied when you finished a scene, but when you go back a year later, what do you see when you compare it with the references you have gathered. A member showed me how to use hemp rope to create dried grass and weeds along the side of a road, a simple inexpensive addition that adds realism. Another member added sparkling miniature led lights in the weeds along a river bank, fire flies. I used to tell folks that I never paid much attention to the colors in mountain

scenery when I was driving on the highways in Virginia until I started building mountain scenery—when is the last time you paid attention to the colors and objects along the roads in the Region? Your imagination will couple the scenery you have seen with the scenery on your railroad. I am still occasionally making changes to scenery I built 20 years ago---be willing not to be satisfied once a scene is "finished."

The key to realism in model railroading is the development of an active imagination, be it from the equipment you use, the scenery you build, or the realistic operations you are trying to portray. You **MUST** look for opportunities to expand your imagination to grow in the hobby. I know that there is a myriad of opportunities to do this on the internet---it is not a crime to see something somebody else built and copy it; and with the price of gasoline so low, chasing trains will also open up new aspects of realism for you as long as you respect the law while taking advantage of 1 to 1 railroading. For example, a recent development in our area is the storage of strings of tank cars—the ethanol business has slowed down. If you have a string of tank cars in the racks, why not add them as storage on an unused siding.

Other Notes:

The DSED traveling layout was displayed at the Granite Iowa Threshing Bee last month. We were set up in a building with large doors on the West and East ends of the building with a breeze blowing through. Lots of members and helpers showed up to set it up and take it down—indication that interest was not lost. While the crowds on the grounds were not as large as the previous year, the layout once again was a hit at the show—and the trains ran fine even though the layout had not been used since the Christmas shows. There was a hard to describe individual satisfaction to be running trains again in public. The biggest problem we had was the sponsoring group moving the pie a la mode shop out of the building and down the street to spread the crowd out.

It is also time to start thinking about a date for the Fall 2020 Board Meeting. As with the past several Board meetings we will do it electronically. For the TLR and Division Leadership, it is time to think of individuals to nominate for the Bob Dew and Stafford Swain Awards. We will take nominations at the fall Board meeting.

An open letter to Fred Headon, MMR, in lieu of a congratulatory speech at the annual convention, on receiving the TLR President's Award.

August 11, 2020

Mr. Fred Headon
34 Ashern Road
Winnipeg MB Canada R2Y 1H2

Dear Fred,

I have started this letter at least 5 times and have yet to get it to say what I am trying to communicate. I so wanted to personally hand you the President's Award plaque at the annual convention where I could talk about how much you have meant to me over the past years, and your contributions to the Thousand Lakes Region through wise counsel; and occasionally raising a red flag to me in both of my roles as Contest Director and as President of the Region. When I originally started on these paths I knew next to nobody other than a few folks in the Dakota Southeastern Division. Over time, I think both the Region and I became more comfortable with each other through our friendship and our roles in leadership.

Sometimes this was not an easy road for me, but you never let me get too discouraged. My previous experiences with the National Model Railroad Association when I was a member of the Mid-East Region soured both Marion and I on the entire organization, and we quit. Alan Saatkamp convinced the two of us to give it another chance and we did. The door was cracked open a little, and you seemed to recognize that and started to quietly build on it. There have been lots of things that I did not understand, but at least I either asked; or you recognized a quandary and stepped in. Some of my questions may have not "been the brightest," but you never discouraged me; either talking me through the issue, or providing me examples for me with easily understood guidance.

As we come out of this years "opportunity" to excel, I think the TLR is moving forward. I still have deep concerns from a leadership perspective, but do not have the ability to simply issue "orders." I believe we are on a road to taking advantage of the electronic world of leadership but there are still several high hills of potential to go over. Converting Board meetings to electronic meetings was the first step. Going electronic with THE FUSSEE is a major improvement. Getting into the use of the various web sites like FACEBOOK and others will help in publicizing the TLR and its activities. Fortunately we have "electronic wizards" who are running with the opportunity. I believe there are lots of alternatives yet to be found.

I still have two major concerns, the lack of youth which creates an image that this is an older man's hobby and the feeling that the NMRA is made up of cliques and sub-cliques and as long as they are happy there is no real vision for how grow in the future. I recognize that both of these concerns are the same as many organizations are experiencing today. Modeling railroading today is not entirely made up of individuals with a common root. We have to take advantage of the dynamic new electronic potential of the hobby. I am convinced that the only way to grow is to go public with a quality product and enthusiastic individuals presenting the hobby.

Congratulations on the award you received from the President of the National Model Railroad Association.

As I conclude my "remarks" I have one overarching thought.

I view this as we made up a good team with common goals and thinking and together we made the Thousand Lakes Region stronger. I chose you to receive my award for your contributions to my leadership and the organization.

Sincerely

Jay P. Manning
President
Thousand Lakes Region



Image 2: Digitrax DCS 52 Command Station.

The initial impressions out of the package is the DT602 is a little heavier than the older throttles. The design is a little more ergonomically friendly with a slightly curved case which is a little thicker compared to the standard lines on the DT402 (Image 3). The larger design would seem to be beneficial for any modelers who suffer from arthritis or neuropathy. As with any DCC product, a quick review of



Image 3: New DT602 on left, previous DT 402 o right

the instruction manual provided enough information to test the basic functions of the throttle.

Before the test could commence, the throttle needed a small amount of setup. A design departure from the 400 and 500 series throttles includes a removable Loconet throttle cable. This is a very favorable design addition because you have the ability to remove the cable for storage (or for a true wireless experience, you can remove it with the Duplex option). You can also swap an old cable for a new cable if the cable ever wears out. The other setup feature is the addition of 3 AA batteries. This was one of the most exiting design changes for the DT602. On the 400 and 500 series throttles, they used a 9-volt battery that needed to be removed after each use (or it would continuously drain). The battery cover on the 400 and 500 series throttles is a little finicky and care must be used to prevent damage to the battery cover. Removing and replacing the

battery on the 400 and 500 series throttle is probably the most tedious features of those throttles. The new DT602 does not require the batteries to be removed after each use, you can power the throttle off and the batteries do not drain. The throttle is also comparable with NiMH rechargeable batteries or standard alkaline batteries. I invested in some rechargeable batteries and as of the writing of this review, I am still on the original charge with over 2 months of use with the throttle! (note: Digitrax now offers a NiMH rechargeable battery pack for purchase on their website which is compatible with the DT602).

As previously mentioned, the DT602 connected seamlessly to my existing layout which utilized a Digitrax Super Chief 5-amp DCC system. I have two universal panels (UP5s) which are connected to the command station via a Loconet connection. The DT602 connects quickly with the RJ12 connector jack on the UP5 panel and the throttle immediately activates (if the power to the command station is on). Since most modelers want to see how the throttle will control a locomotive, the first step is to select the DCC address of the train you want to operate. On the DT602, there is a "loco" button that is actually shaped like a steam locomotive (Image 4, button directly below the "A" but



Image 4: Pushing the locomotive shaped button beneath button A allows you to enter your Loco address. Below button B is the turnout button ("S"), below button C is the Menu button, and you exit menus by pushing the X (stop sign) button in the lower right.

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ton). Pressing the loco button once, will highlight the address and allow the user to enter the desired address. Once entered, the loco button needs to be pressed again to activate the addressed entered.

Once the address is set, the train is ready to be operated. All of the functions of the decoder can be activated by selecting a number 0 – 9 on the keypad (**Image 4**). Most sound decoder have 20 or more programmed functions and the extended (10s and 20s) are accessed by pressing the “A” button once to get to function 10 – 19; twice to get to 20-29; or three times to get back to 0 – 9.

The throttle knobs on the DT602 are considerably larger than on the previous versions which, in my opinion, actually makes the control of the train a little more precise because there is less likelihood of accidental turning the knob too quickly because of the smaller size on the older versions. As with the earlier versions, the DT602 has two throttle knobs which allows for operation of two locomotives with different DCC addresses. To switch the LCD screen between the left and right throttle knob, simply press the “B” button directly below the screen (**Image 4**).

The DT602 also has the ability to control stationary DCC decoders (e.g., switch machines connected to the command station via a stationary decoder such as the DS64). To access the accessory decoders, press the “turnout” key which is directly to the right of the “loco” key (**Image 4**). You can enter the accessory decoder menu while trains are running; however, pressing numbers will only enter the address of the stationary decoder you wish to activate. For example, if you want to switch a turnout which is connected via a stationary decoder, enter the address into the throttle and press either key “A” to throw the turnout or “B” to close the turnout. It is important to remember to exit the stationary decoder menu by pressing the exit (stop sign) button, which is the button the bottom, right button on the throttle (**Image 4**).

Another improvement over the previous throttles is the amount of information that is provided on the throttle’s LCD screen when programming decoders. To enter the programming feature, press the “menu” button which is directly below the “C” button (**Image 4**). Once in the programming menu, you can choose from either a quick decoder setup or the CV read/write menu (**Image 5**). The quick decoder setup allows for an efficient process to change the default, two-digit DCC address and other features found in CV 29 (e.g., turning the speed table on or off). To enter the CV programming menu, from the home programming menu, pressing the “B” button allows for the configuration of any CV. Once in the CV programming menu, the user can select whether programming will occur on the mainline or the programming track. Once the type of programming is selected, the programming is straightforward by entering the CV to be programming followed by the value the CV needs to be set at. More details may be found in the user manual either on the Digitrax website or included with the product.

While this review only covers the basic features of the DT602, it does have several advanced features that are beyond the scope of this review. These features include multiple unit (MU) operation, the options editor and the route editor. Please consult the manual or Digitrax website for additional information.

As an experienced Digitrax user, these are my opinions of the advantages and disadvantages of the new

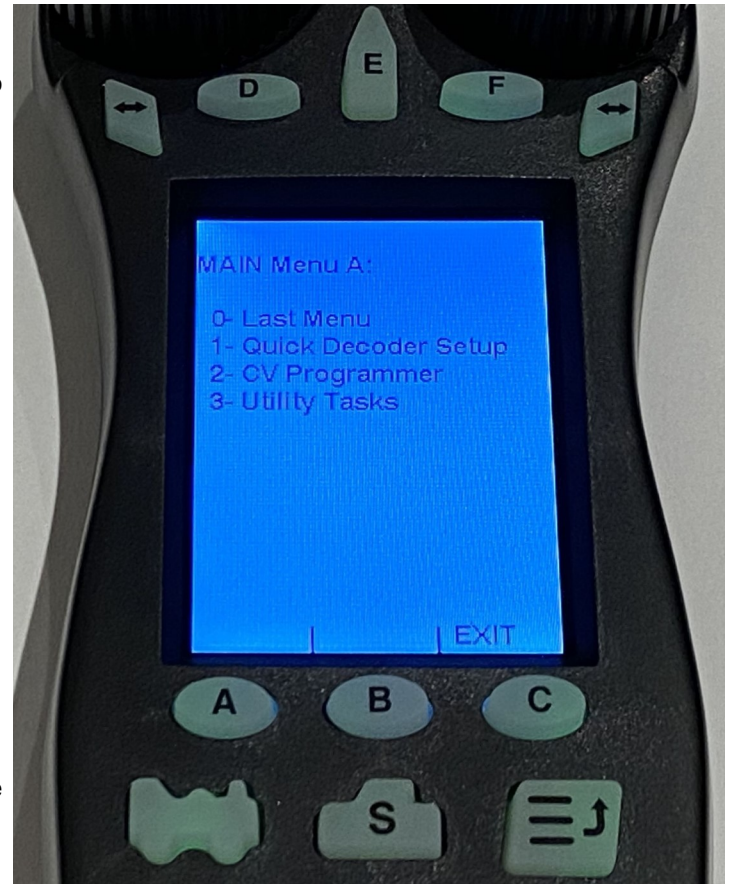


Image 5: The Quick Decoder Setup screen is accessed by pushing the button with 3 lines and arrow, lower right in photo.

DT602. First, let’s review the pros of this new throttle. The design and feel of the new throttle are remarkably improved over the previous version. The buttons are larger, easier to see and operate. The 2.5-inch LCD screen is a fantastic upgrade because more information is displayed compared to the previous versions. The throttle knobs are larger and a little easier to use. It is much easier and more straightforward to program CVs and stationary decoders with the DT602. The migration from using one 9-volt battery to three AA batteries is a very welcome upgrade, especially since the throttle can be powered off which does not require removing the batteries after use to prevent battery drain while idle. Also, the inclusion of a throttle cable which can be removed is a welcomed enhancement.

Even though the DT602 has significant improvements over Digitrax’s previous throttles, there are some challenges making the conversion to the new throttle. The biggest complaint I have about the new throttle is there are only 10 function buttons (0 – 9) that you can access before needing to enter the extended function address. On my DT402, there are a total of 13 function buttons (0 – 12) that you can access without extended the function menu. Spe-

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-cifically, the braking function is set at F10 for the majority of my decoders which I could access with the “F10” button on the DT402 but requires me to enter the extended menu on the DT602. This requires many more button pushes and has caused some challenges because I would enter the extended menu to activate F10 and forget to return to the original menu to access F1, F2, etc. so I would really be activating F11 instead of F1. A potential workaround would

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be to reprogram all of my decoders to have the braking be assigned to F9, but that would be a time intensive process.

The second feature of the DT602 that is a source of frustration is the size of the throttle is larger than the throttle pockets that fit the 400 and 500 series throttles. At the time of the publication of this article, it does not appear that there are any manufactures who have produced a throttle pocket which will fit the DT602. A work around for this would be to scratch build a throttle pocket which will fit the DT602.

The final quirk about the DT602 that I have not gotten accustomed to yet is the throttle has a "timeout" functionality where the throttle will go to sleep after the throttle

sits idle for a period of time. When it goes to sleep mode, there are three audible beeps that occur. While this is not a major detractor, I have not been able to figure out how to disable the beep when the throttle goes to sleep.

Even with the aforementioned design limitations of the DT602, the engineering upgrades from previous versions are well worth purchasing the DT602. In August 2020 Digitrax announced that the DT602 will be included as the throttle with the purchase of any new Digitrax Evolution Express DCC systems. Purchasing the infrared throttle has a manufacturer suggested retail price (MSRP) of \$195.00 while the Duplex version has an MSRP of \$260.00. I would recommend purchasing this product and I am pleased with the performance on my layout!

Thoughts from the Pickle Barrel

Kevin Dill, Editor

Unprecedented, "new normal", social isolation, public distancing. These are words that have new meaning for all of us and I would be very happy to not hear any of them again. Jay Manning used the word "detached" in his editorial and he nailed it on the head for me when he described all the things he has experienced. That tells me that we are all feeling this way even if we don't express it. I haven't touched a model since April and spent only a few minutes in the train room since then. Now the bonus was that my check book is a little heavier than it would have been, but I need to see people and interact with them, face to face, to feel "normal". That keeps me interested in modeling and gives me goals to work toward. Sadly, the list of train events that are cancelled continues, and the Spud Valley Show in October is my beacon of hope right now since they have decided on going forward with it. How are you dealing with it? One of the DSED members simply reached out to his fellow modelers with an email and told everyone to call or email to stay in touch. Something so simple but easily overlooked.

The combat this, the NMRA introduced NMRAx, an online series of 62 videos (to date) through their Facebook page. They are a mix of layout tours and clinics from all over the world. They range from about 30 minutes to an hour and can be watched in any order. Go to NMRA.org and click on the banner when NMRAx shows up. You will be directed to the Facebook page and can watch all the videos in order, or select the menu of videos and choose. Try it and enjoy!

Stay healthy, stay in touch and keep on modeling!

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Publishing Deadlines

<u>Publishing Date</u>	<u>Submission Deadline</u>
March 1 Edition	February 1
July 1 Edition	June 1
September 1 Edition	August 1
December 1 Edition	November 1

Congratulations to :

Fred Headon, MMR

Given the NMRA Presidents Award by NMRA President Pete Magoun, MMR. Fred was awarded this due to his Service to the NMRA and for his role as a Lead Director and Canadian Director.

Thomas Gasior, MMR

Given a Meritorious Service Award by NMRA President Pete Magoun, MMR. He was given this award in recognition of running the NMRA's social media Twitter account.

Scott Nesbit

Scott was awarded the Service to the Division Award by NMRA President Pete Magoun, MMR.

Jim Krekelberg

Jim (left) receives his **Bob Dew Sr, Memorial Award** (For 5 years of service as a board member or 2 years as Fusee editor) from TLR President Jay Manning (right) in lieu of the convention.



Lester Breuer, MMR

Les (left) receives his **Stafford Swain Memorial Lifetime Achievement Award** (For 10 years or more of service to the region) from Art Suel (right) in lieu of the convention. They are sporting the now fashionable face mask and elbow bump!



The 2021 TLR Convention Celebration Room

Kennedy Gauger, TLR Contest Director

Hi everyone. I want to share some information about the Celebration Room for the 2021 TLR convention in Bismarck, ND. I know Tom Gay and his team are working hard to make this a wonderful convention with lots to see and do. In the past I have shared various messages and content. This is the first information that I am sharing for 2021.

I know many of you have spent more time inside with your model railroad hobby during the past six to eight months so I am optimistic that many of you have items to bring to Celebration Room that you worked on during 2019 and 2020. Many of you have also been working on items during the 2020 to 2021 period, so we may have more entries than usual.

I have received several questions during the summer related to the Celebration Room.

How much space is available for entering models, displays/modules, non-rail items, and photographs?

I have been told that the Celebration Room will occupy as a space of 28' by 24'. The room will be locked when not occupied. It is on the second floor, above the reception desk and separated from the clinic rooms but otherwise close to other convention areas.

Will there be a special category for the People's Choice entries?

Many people who planned on entering items in the special People's Choice category last year were not able to do so and yet had put considerable effort into their entries. To address this, the Special People's Choice category will be the same as last year.

Specifically, the entry should feature some type of technology. It can be any display/module, structure or other revenue or non-revenue railroad model that a modeler has built, which features things such as lighting, sound, animation or other implementation of recent technology. This can include commercial devices such as grade crossings, billboards, lights going on/off in sequence, lightning/thunder storms, animated loading facilities, ice skaters, vehicles moving, etc., as well as decoders controlling special effects or micro-controllers (e.g., Arduino, Raspberry Pi, other micro-controller, etc.) controlling a sequence of special effects, motion activated scenes, etc. This may involve solely incorporating electronic components as well as programming (e.g., software code, configuration variables, etc.) to activate the lighting/sound/animation effects.

Examples might be a marquee on a sign or lights randomly turning on and off within a building. Another example might be a model Christmas Train with various colored cars and music such as is seen with Canadian Pacific's Christmas Train. Remember, this is a People's

Choice category and will be selected by vote of Celebration Room attendees.

Several Questions have been asked in reference to the NMRA Achievement Program (AP). The questions and answers follow.

"I want to enter two structures, each on its own base. One base would be about 20"x 20" and the other would be 24"x 24".

From the NMRA: "Note: Many contests require that structures NOT be mounted on any kind of scened base, or they will be considered "Displays". However, for separate Merit Judging, they can be part of your layout".

So the question is does mounting these make them a display? The modeler's goal is to have these be evaluated in the Structures AP Category.

Answer:

- 1) Displays/dioramas are not subject to receive Merit awards; and,
- 2) Structures on a display/diorama can be judged for Merit Awards.

Remember that the essence of this question is a desire to have the structure evaluated for the Achievement Program. Because displays/dioramas are not an AP Category they are not judged as such; however, structures that are part of a display or diorama can be judged as the Structures AP Category.

A similar question came up during the La Crosse convention. A rail car with a load consists of two separate elements: 1) the car and 2) the load. The car is evaluated as a car and the load is evaluated as a structure. Thus, an entrant submitting a car with a load should request that two items be evaluated in separate AP categories.

"I have had a question regarding the number of entries for contest categories."

The NMRA specifies a maximum of 5 entries in a given category up to a maximum of 25 entries (<https://www.nmra.org/celebration-contests-1>). "Will that number will be higher (e.g. 10/category) at the 2021 convention since the 2020 convention was cancelled?"

This question was forwarded to the TLR AP Chair (John Hotvet) and the NMRA Contest Manager (Bill Brown). The 5/25 rule stands. Those making multiple entries per category choose what they believe to be their best models without exceeding the maximum numbers. As

Contest Director, my view is that increasing these numbers adds an excessive burden on the judges, who are time-constrained already. If they are running out of time because of too many models in a category submitted by a single individual it precludes them from fairly evaluating all of the entries in the category. If the 5/25 rule is not adhered to by those making entries, I will instruct the judges to evaluate only the first 5 in each category.

What are the 2021 TLR Celebration Room Contest Categories?

The following categories will be available at the 2021 TLR convention held in Bismarck.

For models in this section, submit NMRA Forms 901, 902 and supplemental information.

Steam Locomotives
Diesel and other locomotives
Traction
Passenger Cars
Freight Cars
Caboose
Non-Revenue Cars
Structures
 On-line
 Off-line
Display
 On-line
 Off-line

(Note that scenery guidelines apply: <https://www.nmra.org/sites/default/files/education/achievement/pdf/2019-scen-eval.pdf>)

Individual Module for evaluation (treated as display)

Note: Any model (excluding displays/dioramas) in Section 1, above, earning 87½ points during the model contest judging will automatically be awarded the appropriate AP credit.

Railroad Pass Form 901, ranking by judges

Photography (Form 901, special photography guidelines apply : <https://nmra.org/national-photo-contest-judging-guidelines>)

Model B&W Print
Model Color Print
Prototype B&W Print
Prototype Color Print

Popular Vote (People's Choice) Categories by Convention Attendees (Form 901 required for all – Judged items, #1, above)

Rail Related
 Favorite Train
 Locomotives (all types)
 Rolling Stock (all types)
 Caboose
 Structures
 Display
 Module
 Thumbs (Humorous)
 Photo Match Model

A special TLR popular vote category involves incorporation of technology such as special effects and animation described above, earlier in this document.

Non-Rail Related (need not be prepared now for this Celebration event. Items made earlier than the 2019-2021 period remain eligible).

General
 Needlework
 Railroadiana
Photographs
 Model Print
 Color Print

There will be Best of Show selected from the following categories:

Merit Award-Evaluated entries;
Judged Photography Entries;
Popular Vote Rail Entries;
Arts and Crafts (i.e., Non-Rail) Entries;

First place winners in the categories will be awarded plaques. Second and Third Place winners in the categories will receive certificates. Novices (i.e., people who are participating the Celebration Room for the first time), will be acknowledged at the scheduled Banquet.

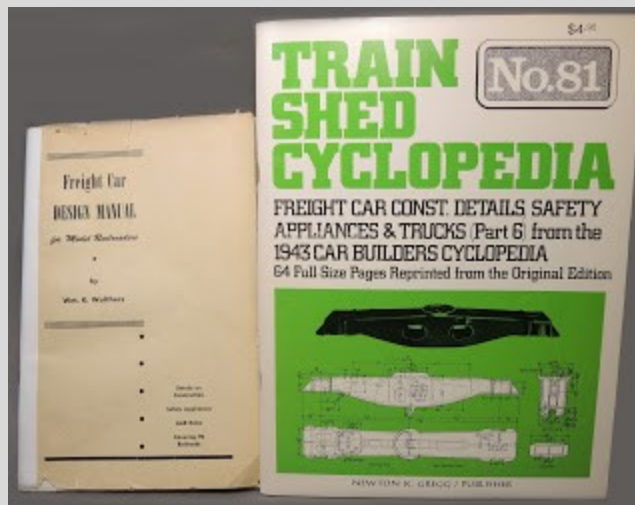
One aspect of the 2021 convention that we are seeking is greater participation in the Arts and Crafts categories. These categories may be railroad or train related; however, this is not required. Also, if one has an item that they have prepared in the past and would like to include it in the popular vote at the 2021 convention in Bismarck, this is encouraged. This category serves to encourage participation by the non-railroader parts of the family – spouses and children are encouraged to submit entries.

Grab Irons - Bending Your Own Custom Grab Irons

Lester Breuer, MMR

All freight car types we build have grab irons (also called handholds). I wanted to bend my own custom grab irons so I thought I would gather some basic data as to size and application. My research began by looking up grab irons in the Dictionary of Car Terms, section one, in the 1949-1951, 18th edition, *Car Builders' Cyclopedia*, published by Simmons-Boardman. It states to see "handhold". When I looked up the term "handhold" I found, see "Safety Appliances" which it defines as devices required by the Interstate Commerce Commission to assure safety in operation of cars. I turned to the Safety Appliances, section 13, to find additional information. Here, I read: "the "Safety Appliance Act," established by act of Congress, was approved April, 14, 1910. In 1911 the United States Safety Appliance Standards, as contained in the order of the Interstate Commerce Commission, dated March 13, 1911, were adopted as a standard." These rules have been added to and changed from time to time. One change adopted in 1932 for box and other house cars added the second grab iron on the sides.

The standards identify the type of appliance to be used (in my case box car grab irons), the number required on each car, their location, manner of application and the minimum or maximum (or both) dimensions. While standards have been established for each type of freight car those pertaining to box and other house cars embrace all the rules. I found data for side handholds, horizontal end handholds, vertical end handholds and roof handholds. From the data provided for each type, I found each type to have the following: dimensions -minimum diameter, five eights (5/8) of an inch, wrought iron or steel, ,minimum clear length, sixteen (16) inches, preferably twenty-four (24) inches, and minimum clearance , two (2), preferably two and one-half (2 1/2) inches. All types have other specifics and exceptions. One such exception, end handholds fourteen (14) inches in length may be used where it is impossible to use sixteen (16) inches in length. I will not cover the specifics listed for each type here. If you wish read all specifics of each type as well as those of other freight car types you can find them in one of the Car Builders' Cyclopedias. Two other out of print sources that contain the safety appliance standards data are *Train Shed Cyclopedia No. 81, Freight Car Const. Details, Safety Appliances & Trucks from the 1943 Car Builders' Cyclopedia* published by Newton K. Greg or *Freight Car Design Manual*, published by Wm. K. Walthers in 1946.



Out of print publications with Safety Appliances

Armed with my research data, I was able to bend custom straight, drop type or roof (corner) right-angle grab irons (handholds). Using my research data I first had to choose a wire size for the grab irons I was going to bend. The standards specified five eights 5/8 of an inch which translates to .008" diameter in HO scale which, in my opinion, is too fragile on a HO scale freight car running on an operating railroad. Additional research in the hobby press found majority of modelers use .010, .012 or .0125" wire for grab irons. I am comfortable using any of these sizes; however, my preferred size is .0125" diameter. Brass wire sizes except for .0125" are available from Details Associates and Tichy Train Group has them available in phosphor bronze wire except for .012" diameter.



Note hair pin used to hold package closed

To bend a grab iron using the wire size chosen I need some tools: pliers, wire cutters and a bending jig. The jig is made from .040" x sheet styrene with holes drilled from the right edge to bend grab irons of various length. The holes were added when a certain size grab iron was needed.

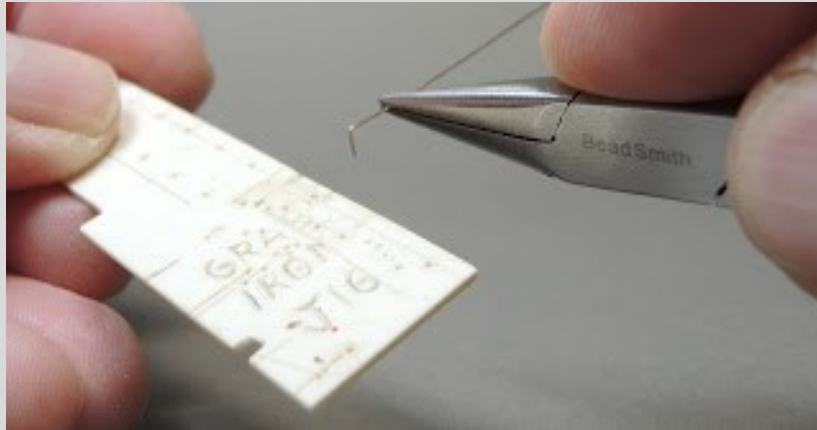


To make the jig I used a piece of .040" sheet styrene cut to 3/4" x 2 1/2." A hole, using a #80 or #79 drill, was drilled in the jig for each grab iron size when needed. A caliper was used to obtain the length measurement of a grab iron needed and transferred to the jig by holding the caliper so one bar edge touches the edge of the jig and a mark is placed at the point of the other bar on the jig. The mark is used to drill a #80 or #79 hole. If you do not have a caliper, a divider, or a piece of paper with marks showing the grab iron length can be used to transfer the grab iron length measurement to the jig.

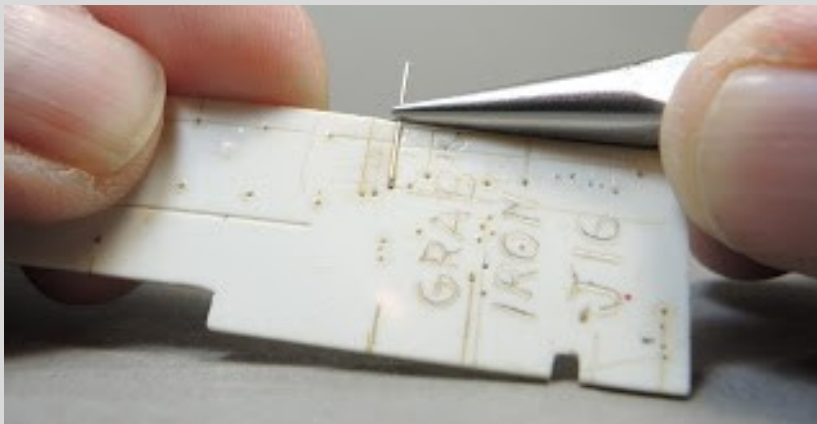


Caliper used to mark hole for drilling

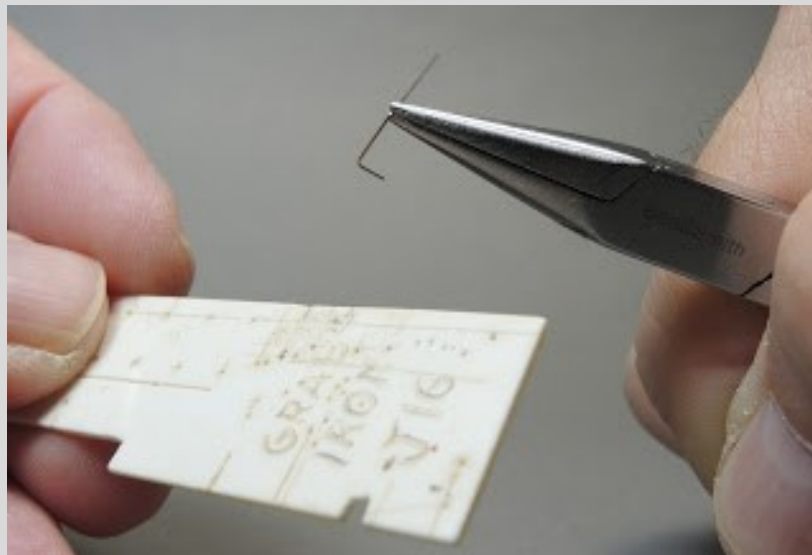
I bend a straight grab iron by first making a right angle bend in a chosen wire size creating the first leg. The leg is inserted in the hole of the jig with remaining wire extending over the side of the jig. Using a plier, you grab the wire at the edge of the jig with the plier held in a horizontal position to the jig. With plier closed on the wire, I lift the wire out of the jig and bend down making a second right angle bend, creating the second leg of the grab iron parallel to the first leg. I now have bent a straight grab iron (U shape) with the length of grab iron needed. Now the second leg is cut off , equal in length to the first leg, from the starting wire with the wire cutters.



Right-angle bend in wire



Pliers held horizontal to jig

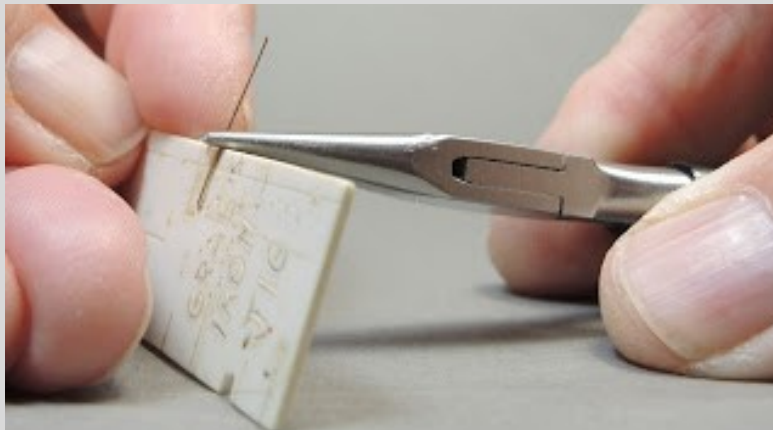


Wire lifted off jig



Finished straight grab iron

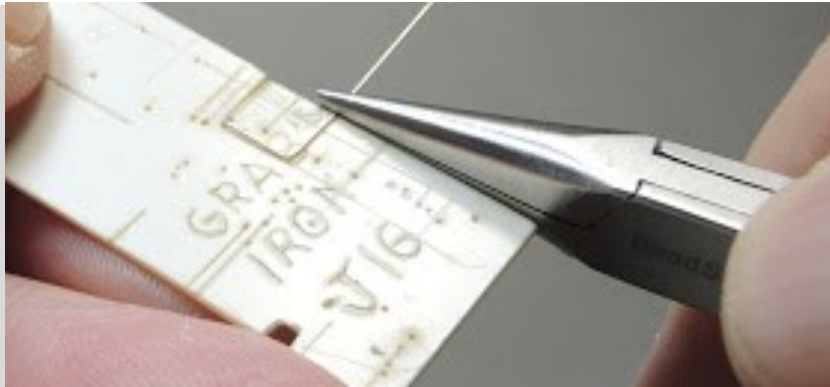
I can also use my jig to bend a roof (corner) right-angle grab iron. I make the first right-angle bend in the wire to create the first leg and insert it in the jig. I take pliers and hold them in a vertical position when I close on the wire at the edge of the jig. With pliers closed on wire, I lift the wire out of the jig and bend the wire sideways to create a right angle with the pliers to form the right-angle corner grab without the second leg. The grab iron is now put back into the jig with the formed right-angle corner on the jig. I now take the pliers and grab the wire at the edge of the jig with the pliers held in the horizontal position to the jig. I take the grab iron out of the jig and bend downward to create the second leg of the corner grab iron. Again use the wire cutters to cut the second ledge to equal that of the first. I now have bent a right-angle corner grab iron that per safety standards is to have extra (third) leg which is securely fastened to car at the point of the angle. I use an eyebolt, commercial or one I bend, to make this third leg.



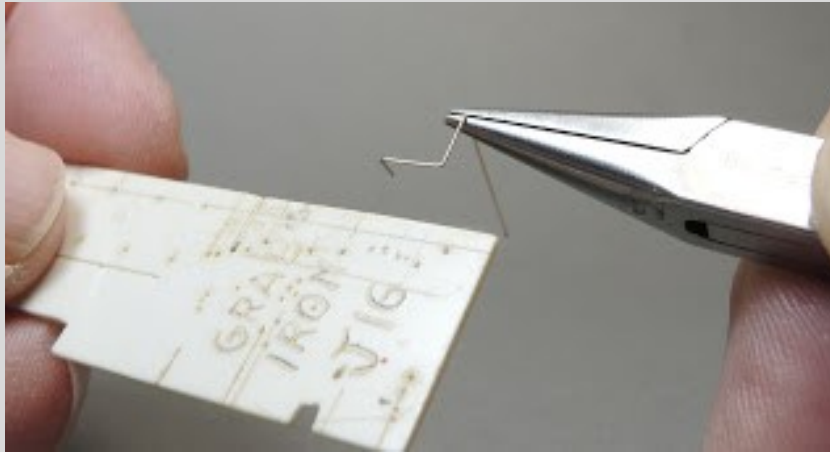
Pliers held vertical to jig



Bend wire sideways to create right-angle



Right angle placed back on jig



Finished roof (corner) right angle-grab iron



Roof (corner) right-angle grab with eyebolt for third leg

To bend a drop grab iron I first bend a straight grab iron and insert the completed grab iron into a square jaw pliers to the depth, marked with a marker or tape on the plier jaw, I want the drop grab iron portion to be. I close the plier jaw to hold the grab iron and bend the exposed two legs down. I have bent a drop grab iron. I find this method much faster than using a simple styrene jig I have made and used in the past.

The jig was cut from sheet styrene, the thickness matching the portion of the drop grab iron, and had two holes drilled in line into which a straight grab iron could be inserted (see the top portion of the jig photo). Once the straight grab was inserted the legs on the back side were bent flat against the jig. Again, a drop grab iron is formed.



inserted into square jaw plier



Finished drop grab iron

Straight grab iron

Of course, you can buy manufactured grab irons from several model manufactures; however, they are available only in certain sizes. If you choose to use the manufactured grab irons you still can use the methods I have shown you here to bend the custom sizes when needed.

When grab irons are installed the safety appliances standards state they need to have a minimum clearance , two (2), preferably two and one-half (2 1/2) inches from the surface of the car. I made a clearance jig from .022" styrene to help me get the clearance correct when I install the grab irons I have made.

If you have not made grab irons (handholds) before reading my blog I hope my methods I have described here will help you to do so.

Thank You for taking time to read my blog. Please share the blog link with other model railroaders-
<http://mnrailroadcab100.blogspot.com/search/label/grab%20irons>

Lester Breuer
<http://mnrailroadcab100.blogspot.com/>

**Seeking Clinicians for the
2021 TLR Convention
(May 20-23) in Bismarck,
ND:**

We are looking for clinicians for our 2021 convention for a range of topics, including for general arts and crafts for the non-rail participants. Please contact Kevin Dill, Clinic Coordinator, at Dillkev@aol.com if you have clinic you'd be willing to present.

**42nd Annual
Spud Valley Hobby Show**

Sunday, October 18, 2020

9:00 am to 3:00 pm

(under 12 free with paid adult)

- ◆ Large and small operating model Railroads

Delta by Marriott

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- ◆ Vendors selling farm toys, plastic models, model railroad items, die cast vehicles, old toys, railroad collectibles and more

- ◆ Door prizes
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**9th Annual
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Cancelled

Sunday, October 25, 2020
9:00 a.m. – 3:00 p.m.

Franklin County Convention Center,
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Admission \$5.00 (Ages 10 & under Free with Paid Adult.
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Lester Breuer, MMR

2021 TLR Convention Update

Bismarck, ND May 20-23

The 2021 TLR Convention will be hosted in Bismarck, North Dakota next year, May 20 to 23, at the Ramada Inn, just off Interstate 94 in Bismarck, ND. The room rates are \$89 per night for a double Queen room, and \$99 per night for a single King room.

Bismarck is the state capital and is located in central ND, 2 ½ hours west of Fargo. It is situated on the Missouri River and was the launching point for the Lewis and Clark Expedition, as well as the westward push of the Northern Pacific Railroad. The North Dakota Heritage Center and State Museum is a great place to visit, and is located near the state Capital building, which is one of a very few Art Deco style capital buildings. There is also the Dakota Zoo, Lewis and Clark Interpretive Cen-



Camp Hancock with the NP Q-3 #2164.



View of the Northern Pacific Railroad bridge crossing the Missouri

ter, Fort Mandan, and Chief Looking's Village Historic Site. Fort Hancock Historic Site is downtown, and located along the BNSF/NP mainline. This is the location of the Fort charged with protecting the NP work crews as they advanced across North Dakota. It contains NP Q-3, 4-6-2 Steam Locomotive #2164.

Current convention plans will have registration starting Thursday, May 20th with an open house at the State Railroad Museum. Unfortunately, our Open-pit Coal Mine tour and Drag-line tour have been cancelled. The bus operator will no longer go there due to road conditions. We are looking into alternatives! There will be clinics Friday and Saturday, scheduled around any tours, with the banquet and Chinese Auction Sat-

urday evening. Sunday will have the General Meeting followed by layout tours. There will be two operating sessions, one Friday evening and one Sunday morning. Space will be limited to 10 people per session. There are currently 4 layouts to tour.

There are a lot of things to do in the area so plan some extra time to see all the sites, as well as the convention!



Fort Mandan

Region Round-up

South Red River Valley Division Mathew Lentz, Supt.

In the South Red River Valley Division we are looking forward to the Spud Valley Train Show in October where we plan to have the T-Trak layout operating. Deputy Superintendent Ben Tretter has been working all summer to the modules ready to run at the show. We hope to see a number of you at the show on October 18th at 9am at the Delta by Marriot Hotel ballroom. Thanks to an anonymous donor, we have a small collection of structures and rolling stock now to start bring the layout to life. Shadow Reddington did some nice work on a couple of the buildings. We're still looking for donations of excess N scale equipment that anyone wishes to send to a good home. See you at the show!

Region Roundup—model railroad-related events in and around the TLR

2020

Sept 19	Twin Cities Model Railroad Club	Cancelled
Oct 10-11	West Wisconsin Railroad Club Annual Show,	Cancelled
Oct 17	Newport Train Club Train Show, Woodbury	Cancelled
Oct 18	42nd Annual Spud Valley Hobby Show,	Delta by Marriott Hotel, Fargo, ND 9-3
Oct 25	North Central Iowa Model Railroad Club Show	Cancelled
Nov 20	Granite City Train Show, River's Edge Conv. Center	10 4th Ave S, St. Cloud, MN, 9-3
Nov 14-15	TrainFest, WI State Fair Park, Milwaukee,	Cancelled
Nov 21	Greater Upper Midwest Train Show	Century College, 3401 Century Ave N White Bear Lake, MN.

2021

<u>May 20-23</u>	<u>TLR Convention, Bismarck, ND</u>
<u>July 4-11</u>	<u>NMRA National Convention, Santa Clara, CA</u>

Fallen Flag

Paul Ullrich

Photos by author

Roger Kiendl, 1934 - 2020

Long time TLR member Roger Kiendl passed away earlier this year.

Roger was born and raised in Brooklyn, New York. He had a long career in electronics and worked for companies such as Bulova, Gulf and Western, Curtis Wright and the Westinghouse Corporation. He was the designer and Project Engineer for the nuclear reactor rod control system installed on the aircraft carrier U.S.S. Enterprise.

He met his wife Beverley, a Canadian nursing student from Manitoba, while she was working at Mount Sinai Hospital in Manhattan. They were married in 1963 and moved Winnipeg in 1971. He worked as the sales manager of Video Systems for Servo Electronic Systems of Winnipeg, providing television systems for Manitoba and North-western Ontario until he retired in 1999.

Roger was a member of the TLR's No. 1 Northern Division and the Winnipeg Model Railroad Club for close to 40 years. He attended the NMRA national convention in Winnipeg in 1983 and TLR conventions in 1996, 2003, 2006, 2008 and 2010. When the No. 1 Northern Division was in danger of being delisted in 2008 he was a driving force in helping the group's reorganization.



Roger (far right) is seen with Ron Einarson, Paul Ullrich, Dennis Rietze and Sid Greenstone in front of the Prairie Dog Central's #3 locomotive during the 2010 TLR convention in Winnipeg.

this convention, assisting in securing the venue, the rental of the Prairie Dog Central railway, choosing the restaurant for the banquet, renting the bus for the rail fan trip to Portage La Prairie and the rental of the banquet tables for the Friday night barbecue.

Roger was also a member of the Winnipeg Rotary Club, the Winnipeg Chamber of Commerce, the Winnipeg Executives Association, the Manitoba Protective Officers Association, the Society of Motion Picture and Television Engineers, and was a Board member for St. Amant.

Roger continued to be active in the No. 1 Northern Division and the Winnipeg Model Railroad Club until Beverley's passing in 2014. He and former TLR President Dennis Rietze designed the modules for the group's Free-Mo modular layout. He moved to Regina, Saskatchewan in 2015 to be closer to his son, Anthony. He died peacefully in Regina at age 85.



Roger is seen taking a photo of a layout during the TLR convention in Duluth, Minnesota in 2008.

Roger saved the lives of three of his fellow TLR members Arnie Walker (MMR), Norm Leathers and Paul Ullrich in 2003 when they were travelling to the TLR convention in Thunder Bay. When it was his turn driving, a moose suddenly walked onto the Trans Canada Highway east of Dryden. He expertly swerved, braked, and honked, scaring the moose out of the way.

Roger was on the No. 1 Northern Division's organizing committee for the 2010 TLR convention in Winnipeg. He came up with the name of the convention, "Steam on the Prairies". He was a tireless and dedicated volunteer for

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