12th Street Yard. By Rob Nesbitt

An exhibition layout by the ACT Model Railway Society

Origins.

12SY *was built primarily as a learning aid to improve the modeling standards of the ACTMRS members*

12SY is the first of 4 prototype front sections that will be constructed by the ACTMRS to fit a common fiddleyard. The original concept was sold to the club by John Prattis around 1996, as a way to overcome the perceived lack of flexibility with the ACTMRS module system (see note 1)

The idea for a USA urban layout came from me. After seeing firsthand in the USA:- abandoned tracks in the streets, switching operations, and the constant colourful parade of long mainline trains; I felt this would be a suitable concept for a layout. I wrote small article in the ACTMRS newsletter (The Shunter) in 1998. One of the ACTMRS members (Al Harris – now an NMRA member based in Adelaide), organized a meeting of interested members, and after persuading me to conduct a slide night of suitable prototype pictures, got the ball rolling. And the results are what you see before you. I wrote a full article on the layout construction, and this appeared in the July 2005 issue of Continental Modeller. (see note 2)

As for the name, we thrashed around a number of options, some incorporating the name "Beltline", but after "12th Street Yard" was suggested by Jess Brisbane, 12SY was immediately adopted, as it fitted the concept of a generic urban setting superbly.

The layout.

The front 4 layout sections have a combined dimension of 7.2 metres, by 600 mm. In addition, but not on show, is the fiddleyard (also 7.2metres x 600mm), and the 2 joining sections (1.5mtr x 600). This forms a moderately sized layout, with an operating pit in the middle. Each section is boxed for transportation, and this protects the layout during transportation, as well as to prevent dust, spiders, and other unwanted guests from accessing the interior. Drawbacks are that it takes us longer to set-up, and pull down. Fortunately, a large crew makes this fairly painless.

The frames are pine, with a plywood top. Roadways are MDF sheets. Some polystyrene foam is used in the scenery, and very little plaster. Track is laid on either 3 mm, or 5 mm cork.

The layout is lit with 3 florescent tubes. This lighting system is designed to work with all the ACTMRS layouts, and does a moderately good job.

Trackwork is code 100 peco – many points were second/hand donated, and I would not advocate this approach. The main problem was the use of the 3 way points, as the one in the inner-yard affected the entire look of the area. The other problem is one of track failures: one doesn't know if the points have had abuse in a previous life (see note 3). The track joins between sections were installed on printed circuit board ties. The entire track in the street is also on printed circuit board, and filled in with air-dried clay (this clay shrinks on drying, and has left the rail slightly proud of the rail surface – made cleaning, and running easy). Unfortunately, Peco doubleslips are too course for NMRA wheelsets, and the doubleslips are the 2nd worst cause of derailments on the layout (the worst cause is operator error)

Track cleaning is NOT WITH A RUBBER. Please, lock up your Peco, Fleischmann and Bright Boys in a metal case, and only ever bring them out when corrosion is evident. 12SY rails are cleaned at the start, and end of an exhibition with nothing more than a lint free cloth, sometimes dipped in kero, or metho. Wahl oil is also used sparingly, and the layout performs well for 3 days straight, with no additional rail cleaning maintenance..

The electrics are in a word, robust, and very simple to use. And this has been shown with 18 successful exhibitions, with very few electrical gremlins. Too often I have struggled with wiring that is too small to handle the current, too many single points of failure, rely on electronic features for basic train running, and has complex control panels. 12SY has 4 controller positions – 2 mainline cabs, and 2 switching cabs. Whilst I have used common-return wiring, each cab is electrically isolated from its peers. The only real trick is in the use of the 2 rotary switches on the main panel – the 4 positions identify the 4 different ways the trains can enter the "inner yard" tracks, and change the "inner yard" yard tracks to the appropriate controller. This allows either of the main-lines, OR the outer yard switcher to enter the inner-yard tracks. As a bonus, the rotary switch also has a circuit from the Capacitor discharge, into a diode-matrix circuit, that throws the double switches correctly with a single push of the button. In practice, the doubleslip switches are not 100% reliable, and occassionly need a second "pulse" from the CDU.

The controllers are DC – take AC 15V input, and convert it to DC 0-12V. We have adopted the "Cashless and Broke" controllers as they produce smooth DC to the track, and have used really good components.

Buildings on the layout. An urban layout needs lots of structures. Mr. Walthers provided an excellent starting point, and these were supplemented by IHC, DPM, Heljan, and scratchbuilt. (see note 4). With the resources of the club, I was able to get a good variety of structures constructed in a short time – and I was able to use all buildings, irrespective of how they were constructed. (Have

a good look at the upper town, and see a building that really failed quality control). Most of the buildings on the "ramp" were constructed by Al Harris in Adelaide from IHC storefronts. Note how these have been installed, preventing unsightly gaps under them. Also note the use of the removable city block, built on a sheet of 3mm MDF, which doubles as the sidewalk, to allow for future detailing, and repairs.

Miniscenes. Whilst I had more than enough input to these, Fran and Brian Thomas were instrumental in actually blending in most of the scenes into an entire whole. The long wall, under the ramp was a problem solved with Fran's egg carton stone blocks. The miniscenes add depth to the layout, and reward those members of the public who look beyond the trains. (see note 5) We also have forced perspective in the streets, in an attempt to increase the depth of field.

We have had some nice comments on the backscenes. All of them are scanned either from my books, or slides. (see note 6). The backscenes were then enlarged, or reduced on the computer, but printed on an A3 bubble jet. The skyline on the A3 pictures were carefully removed, and the resulting backscene adhered to the backdrop with spray adhesive.

Operation notes

12SY was designed from the start to be an operational layout. This was to keep the operators amused, as well as to provide an alternate source of movement from the mainline trains that dominate many other layouts. But this is only part of the story.

During exhibitions, we need a minimum crew of 8 -> 4 on, and 4 off. A fifth member on any session can act as a session manager, who assists the inner switching position, and authorize and co-ordinate interchange movements, or removal/replacement of rollingstock/locos that misbehave.

One of the early changes we made, was to spit the mainline fiddleyard into 2 separate operating positions, with their own controls – thus preventing accidental throwing of the points on the wrong fiddle yard. This simple change, coupled with the fitting of microswitches to all fiddleyard tracks, has improved operation immensely.

ALL TRAINS MUST BE CERTIFIED TO RUN. Nothing destroys the realism effect quicker than intervention from the big sky-crane from the heavens to poke a loco, or re-rail a train. Certification is the key to proper operation. Trains must run around the layout successfully 3 times before the exhibition opens to be certified. Otherwise they are not allowed on. We treat the "fiddleyard" as a staging yard during exhibitions, and changes are made infrequently, if at all. The switching operation requires even more rigor – all kadee couplers need to work in delayed uncoupling mode for instance, and the switching locos must be exceptionally reliable. Fortunately, the modern USA outline locos from the main manufacturers are up to the task.

12SY has a number of sidings, and a small yard. Interchange adds a degree of complexity to the operation, and this has rewarded us when we have tried it. Basically, a short train (loco, 6 wagons + caboose) is run from the staging yard, into the inner yard. The wagons are then exchanged with other wagons in the yard, and a new train is made up. This new train then departs for the staging yard. The switching locos are then used to relocate the newly arrived wagons to the industrial sidings, and collect other wagons for the next interchange train. We find that having 3 groups of 6 wagons, plus some extras for variety, allows for significant operator interest.

One of the challenges, is that certain switching moves will tie up both main lines, and thus need to be carefully coordinated to prevent mishaps. Unfortunately, I have been unable to convince the ACTMRS members to wear headsets for communication. Radio headsets would prevent the awkward, and often unreliable yelling over crowd noise at an exhibition.

We still have a long way to go. I would like to have destination cards for all the wagons on the interchange, be able to switch long trains from the mainline, and actually operate by fast-clock.

Easy to operate.

One of the realized aims of the layout was that it is easy to operate. This has proven to be the case – possibly too easy (as operators become complacent). The mainline trains are now so reliable, that one can sit behind the layout, select the staging track, and run the train with the expectation that 60-90 seconds later, it will re-appear at the other end. Of course this allows one to talk to other people in the near vincity. The 2 switching positions are very different. The inner switching position has the responsibility of arranging the trains for interchange, as well as having the longer run, and more sidings. The outer switching position gets to talk to the public, watch the front of the layout (and all the trains), and run in a very relaxed fashion. At the recent Adelaide Exhibition, the ACTMRS was down to only 6 members, so with the help of Adelaide based ACTMRS (and NMRA members) Al Harris, and Geoff Chatwin, we recruited a number of NMRA members to assist us. In the end, we had difficulty getting them to hand back their controllers.

Exhibitions and the future of the layout

12SY has been exhibited on 19 occasions in the last 5 years, traveling to Adelaide, Melbourne, Taree, Sydney, Springwood, Thirlmere, Wagga, Morewell, Wollongong, Newcastle, and of course here in Canberra. We have been treated well at most venues, but I feel the ACTMRS membership is looking for a break from exhibiting.

If this is the case, 12SY will go into a recess, so we can work on some changes. I wish to get working signals, as well as inclusion of a sound system. One of my original goals was to have a small commuter station, and I should be able to fit this UNDER the park area, as a subway station. Some backdating improvements are muted for the buildings – the Kentucky chook house might become a 1950's diner, as well as some re-arrangement of the structures on the backscene. Incorporation of lighting in the buildings too

Eventually though, the layout will be retired. The design is such that it can be incorporated into a larger layout. The switching operation is very easily extendable, and the mainline could be re-routed to fit a new orientation. Hopefully, if we have done our job right, the layout will find a new home.

Lessons learnt

Should I have need to build 12SY again,

- I would have built the layout mirror-imaged, as this would have helped the switching operation
- I would have extended the scenery downwards, below track height, and incorporated a bridge or culvert over a water-course or drain
- Not used 3 way points
- Not used second-hand track components
- Used the new Peco 83 line, which has accurate USA tie spacing
- Created an additional siding in the inner-yard
- Fitted the backscene before the buildings were installed
- Had a marginally wider layout baseboard.

And finally

The layout is the culmination of input from around 20 members of the ACTMRS, and without their input, and assistance, this layout would not have been possible.

Notes

1) Most of the ACTMRS owned modules were destroyed in the Canberra January 2003 bushfires
2) I wrote the article for 7/2005 CM in June 2002, and the photographs were taken by Ralph Cooke in Feb 2003, and March 2004.
3) The worst problem was one of the peco point motors on the runaround loop of the "inner yard" dropping its activation pin at the beginning of an exhibition – taking out the entire inner switching operation. The replacement of the peco motor took 2 of us 2 hours during the time the public were in attendance. Fortunately we were able to keep running the mainlines during this time. Other failures have been lifting point blades, and sticking point motors.
4) Cardboard structures construction is covered in my other clinic.
5) Keen viewers will notice the level crossing lights that were entered in an NMRA contest a number of years ago. Yes, the original circuitry is still working fine.
6) Many of the book photos came from Greg McDonald fine picture books from Boston Press, and the streetcar shot on Liberty Avenue is from the Morning Sun "Streetcar Scenes of the 50's" (the picture is actually reversed). If you look carefully, you will also find my picture of the 1991 San Franscisco marathon on Market street, which proves you can get away with anything