Model Railroad Design for the Amarillo Model Railroad Museum, Inc.

Prepared by Byron Henderson. Final revision 9 June 2007

Introduction to Final Version 3.12

It has been a very great pleasure to work on this design. I am pleased with the final result, but it's only been possible through the hard work, knowledge and effort of the Layout Design Committee (LDC) and the club members. Thank you for the opportunity.

Overall Layout Design

Some general discussion about trade-offs in the design may be useful As directed by the LDC, the focus has been on recreating scenes as accurately as possible while offering operating interest and maintaining good access and viewing for members and visitors alike.

The benefit of this approach is that most of the scenes are good representations of the prototype towns, albeit with significant compression to fit the space. The challenge of this approach is that a number of the most interesting industries must be toward the aisle, creating problems of visibility, access, and aisle impingement. The end result is a compromise, since even in the substantial space available to the club, 190 miles of prototype railroad is a lot to fit!

Another compromise has been in the number and size of towns. The original typical design-length train is 20-feet-long. Most towns on the layout offer a place for trains of this length to meet or pass, with some towns capable of routinely handling 25-foot-long trains as well. This will allow the freer movement of trains for operating sessions or for open house running, but does create very long towns, especially when coupled with the club's desired standards for curve radius, easements, and turnout number. Although we have brought down the number of towns originally desired, the resulting layout is still mostly "towns" with little "out in the country" running. I think this is a good compromise, since it leads to more interesting operating opportunities and more recognizable scenes for visitors.

Partly to suit the desires of a variety of club members and partly because of the availability of documentation, the era of the layout is a bit of a blend. I have used 1952 track charts and 1990s CLIC books, along with other materials, to come up with configurations in the towns that offer some interesting operating potential while trying to provide a place for industries of both eras. In the end, the club will make some of these decisions in construction, but it should be noted that the track configurations don’t exactly replicate any era. In particular, many of the grain elevators are likely much larger today (as shown in the current satellite photos I used), so 1950s versions might be much more modelgenic.

A final compromise I would like to at least mention is the lack of turning facilities and engine service areas on the layout with the exception of Amarillo Junior yard. In the 1950s in this area it appears that wyes were used rather than turntables in most locations for engine servicing and turning. Because of the curve radius that has been chosen, a fully operating wye creates access and footprint challenges, so only the wye at Canyon is fully operational. Steam-era wyes at Canadian, Pampa, White Deer (not modeled), Panhandle, and Herford are not included in the design, and no space has been set-aside for engine service except at Amarillo Junior.

This is probably pretty accurate for later diesel-era railroading and it is straightforward to come up with operating plans that do not require additional engine service facilities on the layout. The only exception to this might be simple accommodations for the assigned switchers I am imagining for Pampa and Hereford. If the LDC or the club members desire more engine service, that is certainly possible at the

expense of some industries. Again, as it stands, I think the layout can operate very plausibly without additional turning and service facilities, but I did want to point it out.

I'll discuss each of the areas on the layout in a bit of detail, beginning with the lower deck staging and continuing around the layout to upper staging.

Lower Staging

The lower staging yards are designed to make the best use of space. The majority of the staging tracks are 20' long or longer, with some up to 28'. A variety of staging track lengths means that consists of varying lengths may be stored without "wasting" tracks. A reversing loop below the helix allows for trains to be re-used or for continuous running. A number of crossovers permit trains to move from one main to the other as needed. It's expected that members' storage lockers will be below the benchwork in this area.

Canadian

As the layout enters the room from the upper left of the plan, the tracks cross the scenic bridge area over Red Deer Creek. This scene should be deep enough to permit the historic stage road bridge, highway bridge, and railroad bridge to all be modeled. Canadian is much reduced from its '50s-era size, but the trackage is fairly reflective of later eras. At the LDC's direction, the engine facilities, wyes, turntable, and roundhouse found in the area in the 1950s have not been included to save space.

Industries in Canadian are also reflective of later areas, with the primary industries being Canadian Grain (moved a short distance from its actual location) and a number of drilling MUD loading areas and team track area. The passing siding in Canadian will handle a 20' long train.

Miami

After leaving Canadian, tracks pass through an all-too-short scenic area, crossing a tributary to Red Deer Creek before entering Miami. Miami has a simple layout of elevator and (optionally), the stockyards and depot found in the 1950s. The passing siding in Miami will handle an extra-length train of up to 31'. The latest version of Miami has some slight curves reminiscent of the prototype.

Pampa

After a short ramble through some gentle curves suggesting the area around Codman and Hoover, we enter the industrial center and junction town of Pampa. A major effort was made in Pampa to capture the essence of the prototype location and to provide some engaging operations while compressing some very space-consuming real-life features.

Some of the compromises included: very limited industries on the aisle side, with some dummy tracks to suggest them; Hobart street is a grade crossing (as in the '50s), not an underpass; a number of industries along Foster Street have been moved to the west and that track branches in a different direction; and the cross-overs have been changed substantially to make operations more straightforward in the limited space.

Because of space limitations, the junction with the line to Clinton is not a wye, but a simple branch (the other wye on the aisle side has also been eliminated to save aisle space since Amarillo Junior is just across the aisle). In the area of the Clinton connection, a mix of '50s and more-recent industries is supported, with some of the industries (such as the Craig Warehouse and Gulf/Fina) assumed to be in

the aisle. This fascia flats are an option here. There is a small yard for interchange with the Clinton Line connection.

As the tracks continue through town, they pass over Cuyler Street. The depot, house track (with freight house, if desired), ramp track, and team track are in this area. I imagine a switcher and crew stationed in Pampa and they might park their engine on the house track or team track near the depot. After crossing Hobart Street, the track serving the "Foster Street Industries branches off (as noted, in the "wrong" direction). Some of the industries served on this track in later years included Bethlehem Steel, Houston Lumber, Grant Supply, and the Pampa Daily News.

Across the tracks from the Foster Street lead are a couple of double-ended sidings. These are team tracks, according to the 80s and 90s CLICs, but I am suggesting that they be sued as set-out and pick-up tracks for through trains. I'm seeing a town switcher permanently stationed here, switching industries and making up and breaking down blocks to- and from through trains. Cars will be left in these yard tracks for the local switch crew to deliver to local industries and the outbound cars will be placed in these tracks for pick-up by through trains. A later feature was a TOFC ramp; this is optional but has been drawn along the aisle if desired.

Crossovers have been changed a bit from the prototype both to save space and because of the elimination of the former FW&D connection via the wye near Hobart Street. The crossovers as drawn allow trains from the Clinton Line to reach either Main (westbound) and permit the local crew and through train crews to reach all the industries with convenient run-arounds as needed.

Panhandle begins the double track segment of the layout. There is 30' between the eastern switch and the western-most crossover.

The Clinton Line descends rather sharply, curving around an access space (which may be disguised with a hatch) before ducking under the line coming from Miami. This track then continues along the backdrop behind Panhandle, climbing to rejoin the main at Dumas Junction.

Kingsmill

Continuing westbound from Pampa around the peninsula, we arrive at Kingsmill, continuing to view the layout as if looking compass North from Route 60. Kingsmill is primarily an industrial area. At the railroad east end, there is an optional crossover that is not exactly prototypical, but is recommended. It will be very helpful in providing a run-around when working the town. A dummy lead to the Celanese plant turns toward the aisle, radius decreasing as it moves away from the main. A few feet further on the aisle, a similar track represents the Celanese "Coal" lead.

Against the backdrop, two industries are reached via a custom-laid curved crossing. Cities Service is simplified from the CLIC books, but still provides two tracks at a tank rack and a third serving open spots and a warehouse. This warehouse mentioned in the CLIC book seems to be gone in current aerial photos, but would add to the switching interest. The carbon black (?) plant at Cabot is also simplified, but offers two tracks for door and hopper spots and a third track angled toward the backdrop serving a tank rack. A couple of the large storage tanks that would in actuality be located behind the building (and the backdrop) have been brought forward for visual interest.

Ingersoll-Rand has been re-oriented to branch off in the opposite direction from what is shown in the CLIC books, but this compromise allows us to fit the track along the backdrop. An overhead crane

serves part of this track; the rest is open, as on the prototype. The ends of buildings may be depicted along the backdrop, as they would be seen if re-oriented to match the track location.

Two grain elevators are shown along the aisle, with room to spot 5-7 hoppers at each. Since the elevator at Cuyler is so close, it would also be possible to optionally bring the benchwork edge closer and avoid modeling the elevators. The elevator tracks are significantly shorter than the prototype, but in order not to have the two Celanese dummy leads too close to one another, the compromise was made. Since we have so many elevators elsewhere on the layout, this is probably an OK compromise, although deleting one or both Celanese leads would open the possibility for longer elevator tracks.

A relatively long house track runs behind the depot. This track will be useful as a place to spot cars to be picked up by passing through freights or for through freights to make set-outs. This is important because space limitations have precluded a couple of long sidings on the aisle side that the prototype uses for this purpose.

The crossover at the RR west end of Kingsmill is roughly in the prototypical location. I have tried to leave the west end of town less busy since Cuyler is so (unprototypically) close. The length between the crossovers is about 23'. An additional crossover in the middle of the town might be helpful in switching to avoid very long run-arounds, perhaps between the Cabot tank rack and I-R switches.

Cuyler

This scene has been a high priority for the club from early-on, but I'm a bit concerned that the Kingsmill-Cuyler-Panhandle scenes are too close together. The main tracks curve in a sweeping turnback whose radius increases from 58" to 67" approaching Panhandle. The LDC has opted for straight industry tracks at Cuyler, which I think is a bit more prototypical and a good choice.

Panhandle

One of the challenging trade-offs made in the layout design is that we have emphasized the towns at the expense of running through open country. The built-up areas of Pampa and Kingsmill are close together on the layout, but this is somewhat mitigated by the fact that they are on opposite sides of the peninsula. But the Kingsmill-Cuyler-Panhandle scenes come quite close together without the benefit of a peninsula backdrop to break up the view.

In order to help create some "breathing room", I have chosen to shrink the size of Panhandle a bit compared to the treatment of some towns. This provided three benefits with which I am very happy: a skoche more space between Cuyler and Panhandle; the opportunity to slightly angle Panhandle where the line departs to Borger (as on the prototype); and a little more space before we enter the Dumas Jct. area. The compromise is that Panhandle is a little smaller than some of the other towns, but we have still captured some interesting elements of the real town.

Beginning from RR east, a crossover has been added for operational benefit. As on the prototype maps, there is both a south and a north siding. Along the aisle, the two prominent elevators are included, along with the unusual and characteristic "ballooning out" of the lead to Panhandle Grain. In the '50s, it appears that there were stock yards also in this area; they could be added to the design by compromising some aisle width. Elsie Street and the Hwy 207 underpass are quite close together and one or the other could be omitted if desired.

Leads to the depot (the building and dock are approximately to-scale) and Hughes Grain branch off the north siding. In addition a short spur east of Elsie St. represents either the "Dirt Dock" or "Old House" track. Hughes Grain is shown fairly large here, but the track is short because of the location of Elsie St. and the general size of the town. My recommendation would be to extend this track across the street, assuming that cars a pushed to one end or the other when loaded, clearing the street. Somewhat unrealistic, but a longer track would help justify the size of Hughes.

Further to the west, the track to Borger branches off at a slight curve in the mains behind a pair of crossovers as in real life. Unlike real life, this is only a spur, not a wye due to space limitations. This track descends sharply to duck under the parallel track from Pampa, ultimately connecting back into staging.

In my opinion, this foreshortened Panhandle does a decent job of suggesting the real track layout while still leaving a little buffer space on each end, especially to the east.

Dumas Junction

The double track main continues RR west, reaching the complex junction with the Rock Island and Fort Worth and Denver at Dumas Junction. Industries are significantly compressed in this area, with the East Tower probably being the only industry modeled in full 3-D.

The FW&D tracks descend immediately and sharply from East Tower behind the fascia-flat oil refinery tanks and building to duck under the ATSF track, then curve around a hidden access area before climbing again along the stud wall to reach the RI/FWD staging yard. This will be a challenging scenic problem, but it's necessary to make the FWD loop functional. The area should be mocked up and expected consists tried-out to insure that it will work. My priority was the ATSF tracks, so the FWD has a bit of short shrift.

The RI track headed to the east from the area is a dummy. But both the RI and FWD have small yards suggesting their real-life counterpart and providing interchange to- and from the ATSF.

RI/FWD staging

The RI and FWD yard tracks continue behind the backdrop and the through/around the studwall. A compact yard throat is supported over the lower staging tracks by ¾" vertical boards. The track-to-track spacing in this staging yard is sufficient to allow tortoise machines to be mounted on the RI/FWD staging deck itself.

The arrangement shown can stage six trains total if no run-through is needed or four trains total with run-through (2 on the sidings farthest from the studwall and two others behind the crossovers on the other tracks). Staging track lengths range from 12 feet to over 16 feet.

I've shown a lot of crossovers, but that provides the maximum flexibility. Grade is about 1.3% down to the connection near the lower left-hand corner of the drawing. The optional crossover shown offers the most flexibility for RI/FWD trains passing around the lower loop.

Amarillo Junior Yard

After departing the East Tower area, ATSF tracks curve prototypically to enter the Amarillo area. Space ahs been set aside for a near to-scale station structure, as well as a number of team, freight house, and ramp tracks in the area. Passing over the 10th St. overpass, we arrive at Junior Yard.

Junior Yard is the centerpiece of the layout, but even so it has been significantly compressed. Yard leads at each end and double yard ladders at each end allow at least two switchers to work without interruption by through trains. At the RR east end, the yard lead merges back in just before East Tower. At the RR west end, a crossover allows direct connections out of the classification yard to the main, although the lead continues to provide the most usable length for switching. The pyramid yard has been simplified from the prototype due to its shorter length. Yard tracks range in length from 13' to 33'.

The Shops area is very compressed (essentially only one track). An additional track or two could be added toward the aisle in the shops area, but this would compromise free-flowing aisle width necessary in this high-interest area that will collect a lot of spectators.

The roundhouses is cut off and cut-away toward the aisle to gain aisle width and to provide some interesting scenes through the roundhouse itself. Tracks and trains should probably be protected by a Plexiglas or acrylic shield. The long ready tracks of the prototype have been approximated leading away from the round house.

On the far side of the yard, an aisle space has been left so that a crew member may help out with uncoupling and any mishaps in the yard area. Due to the long reach from the aisle, the current design is impractical without this yard aisle.

Zita

Continuing on from Junior Yard, the area in Zita has been left open for a club member's design of a specific modern industry.

Helix to Upper Deck

After leaving Zita, the double tracks enter the helix for the climb to the upper deck. The helix consists of 4½ turns at approximately a 1.3% grade. When the effect of friction in the curve is taken into consideration, the actual effective grade will likely be over 2.5%. The helix area will be accessible from inside after a duck-under. It's also recommended that a view port or two from the outside be added so that engineers can peer in to check on the progress of their trains.

Canyon

The curved, climbing tracks at the top of the helix are hidden beneath the stands of the football stadium, emerging out of sight behind a tall fascia. The field is only slightly compressed, but the rest of the stadium is shrunken a bit. This should be mocked-up to determine if it looks good in practice. The helix is climbing in a clockwise direction and comes into sight at the back of the scene. The Palo Duro Bridge is an option here as requested by the LDC, although it is relocated from its real orientation to the stadium.

In real life, Highway 60 crosses over the tracks before reaching Canyon and the layout reorients itself in a similar fashion. The viewer is still seeing the layout as if from Highway 60, but the perspective is now looking from compass North. Railroad timetable West is now to the right, reversed from the lower deck, and remains in this orientation for the balance of the upper deck.

Canyon is curved in a fashion similar to the prototype, although not matching exactly owing to reasons of space. The extant ATSF depot and associated house tracks are across the mains and sidings from the

viewer, adjacent to the 11th St. Underpass (shown in the 1952 Track Chart). A large elevator is against the backdrop, and another industry is along the aisle side represented as a fascia flat. In the '50s, a stock pen was found inside the wye and this is shown as an option. The wye is functional, with a radius of 40". The track descends on a 1.9% grade to tie into the upper deck staging yards. The optional crossover just timetable east of the wye allows more flexibility in routing and makes it easier for crews switching Canyon by avoiding very long run-arounds.

Just beyond Canyon is a double cross-over that should be useful for managing the movement of trains between the double-track and single track portions of the layout (the prototype double crossover is at MP 579 in the 1952 Track Charts). Over-length trains of 25 feet fit between the east Canyon switch and this MP 579 and between MP 579 and the single track switch just before Umbarger. The upper deck track in this area is on a very narrow shelf behind the Amarillo Junior yard so as not to intrude on the yard scene (or crews in the yard aisle below).

Umbarger

One of the trade-offs I have made in designing the layout is to have some towns that are less emphasized to mitigate the feeling of wall-to-wall busy scenes. Umbarger hosts minimal industry besides the grain elevators and the passing siding is shorter than the design-length 20-foot-long train. The location of the (now removed) depot is shown and a slightly relocated position is shown for option stock pens. Most trains will pass though Umbarger without stopping and the Dispatcher will not be able to count on it for meets and passes owing to its length. Umbarger is on a narrow shelf set back behind the busy East Tower scene below.

Hereford

Hereford will be the busiest town on the upper deck and I would suggest it be served by a dedicated local switch crews (similar to Pampa). Virgil Young and others with the club have already developed some plans about Hereford, so I have tried to come up with a good configuration that offers flexibility to add or delete industries as desired.

Hereford should be an interesting location for the dispatcher. As on the prototype, the North and South Sidings are set up as "lapped" sidings. It will be possible for three trains to meet or pass at Hereford (if two are 15-feet-long or less) or for two over-length (to 25') trains to meet using the lap sidings to create two long tracks.

Entering the town from the east (from the left as viewed from the aisle), we cross Progressive Rd. The two sidings nearest the aisle are set-out and pick-up tracks for through trains. I wish these could be a little longer, but the realities of the space dictate to us. The next track in is the north passing siding, then the main, a switching lead track, then the "stock track" and "ice lead" tracks. These may be used to serve a variety of industries as discussed below. On the prototype, the "ice lead" was one leg of a wye in the '50s, but we have lost the other leg due to space constraints. The lead (and interchange track) to Frito-Lay have been left off this version, but could be traded for something else. Also due to space constraints, we lose (or must relocate) some industries in roughly the middle of Hereford near MP 599.

Continuing RR west, we enter the main part of downtown with the extant station and beyond it one of the prototype's two team tracks and the Gault warehouse and adjacent lumber yard between Schley and Main Streets. In the next city block, the House Track Industries are along eh aisle and a large elevator along the backdrop. This area has received more focus and more space.

Departing Hereford proper, the main curves away slightly, as on the prototype. Diverging toward the aisle is the lead to Imperial/Holly Sugar and a few other industries. The option chosen by the LDC was to simply leave this as a dummy track ending at the edge of the benchwork. The references I have seen suggest the sugar plant started operation in 1964.

The three industrial areas called out on the diagram had different industries over the years. Club members probably have some ideas of what they would like to see, so there are some options.

"Ice Lead" Industries

In the '50s, I assume that there were icing platforms in this area and produce shippers. The double-track here could serve for loading through open doors on both tracks or as a run-around. The tail track could serve as another industry (Hoffman in the 90s) or simply as a tail track for switching.

"Stock Track" Industries

From comparing track charts, the stock pens were likely in this area in the '50s. I would suggest that members choose two or three industries to string along this track, perhaps including the Butane dealer and Riverside Chemical (these would add variety to the types of cars handled). These should be fairly compact and low to fit between this track and the "Ice lead" track.

"House Track" Industries

It appears this was the site of the freight house in the '50s. By the 1992 CLIC there were a number of different industries here (Hereford grain, North Plains Printing, etc.), so members may choose to suit.

Black

I preferred Black over Summerfield because of the interesting "elevator within the siding" configuration. Like Umbarger, most trains will likely pass through without stopping, unless there's a grain rush. The passing siding is currently long enough for the 20-foot-long design train, but could easily be shortened to eliminate a passing spot and create a greater dispatching challenge (I wouldn't recommend that, but it's possible). Locations for the depot and stockyard of the '50s are shown. I am not clear on whether the depot is still in place or has been moved. I've seen Virgil Young's photos of the depot in place, but have also seen on-line references that it has been moved.

Friona

Continuing west around the turnback curve, we enter Friona. It has been designed to curve a bit more sharply than the prototype, but in a similar configuration. Elevators are the major industries in town. The current structure suggestion replicates the huge modern facility; a period industry might be much smaller. Some scenic variety is offered by the Frio Draw, which runs along behind the town site with what appears to be an earthen dike separating it from the town. Frio Draw appears overgrown with vegetation from the satellite photos, so it might be an interesting scenic element.

After bridging the draw, we enter West Friona. In order to avoid modeling OME (One More Elevator), dummy tracks lead off to the edge of the benchwork. A double-ended beet-loading siding is shown to add some variety and perhaps create loads for Hereford. The pop-up access needed for the tracks on the lower deck will also be helpful here.

Friona siding is built to handle a 20-foot-long train, a 25-foot-long train will just clear on the main.

Bovina

After moving through another all-too-brief relatively quiet area of the layout, we cross Catfish Draw and enter Bovina. In replication of the prototype, tracks are gently curved through most of the town. Unfortunately, most of the industry in Bovina is located on what is the aisle-side of the layout, resulting in the need for more fascia flats. Another alternative would be simply to model the loading shed of the elevator, assuming the rest is "in the aisle". The site of the depot and stock pens are shown, along with the later era grain industry. Bovina might be one location where a few non-railroad served buildings could be used along the backdrop, and a suggestion of the city street grid is shown.

Leaving Bovina, the track today curves back along a large feedlot. I'm not sure when this was developed, but I've shown a simple sketch of how it might be added in the file "bovina_a".

Bovina will handle a 25-foot-long train on main or siding.

Farwell-Texico

Rounding the last visible curve of the layout, we enter Farwell-Texico. The version chosen by the LDC compresses the curve into the wye section to minimize overhang into a critical aisle and to maximize town length, at the cost of a custom turnout with an easement-curved "straight" leg. (But by the time the track gang reaches the upper deck, they should be more-then-experienced-enough to build this switch.)

Due to space and access limitations, the wye is compressed and not operational. As on the prototype, a number of industries are located along and within the wye. Other major industries on the aisle side are represented by fascia flats or partial structures. The prototypical double-cross-over at the RR west end of town will offer substantial flexibility for trains entering or leaving staging. Due to space constraints, the US Hwy 70 crossing is not depicted (it would run through the Texaco warehouse). If the highway element is highly desired by the members, shrinking some of the industries and tracks would create space for the 4-lane highway.

In the curved configuration, the passing siding and main will handle a 20-foot-long design train.

Upper staging

The visible crossovers leaving Texico permit trains to be shifted to either track before entering upper staging, representing Clovis and points west. This is necessary because the yard throats are separate (unlike the lower deck yards which feed into single mainline track).

The upper staging yard has also been designed to offer a variety of track lengths, from 11 feet to over 37 feet. The longer tracks could be divided with crossovers along the diagonal line shown to offer potentially more staging tracks of varying shorter lengths at the cost of some freedom of movement and length of the longest tracks.

At the far end, a return loop is suspended between the studwalls and the outside walls. This will be a nod-under for most crews negotiating the staging area aisle. As noted in the description of Canyon, the track from the wye descends to connect into the upper staging yard, providing an independent continuous-loop path for the upper deck.

Track planning standards

As set out by the LDC, the minimum mainline radius is 48", with 18" easements between straight and curved tracks and at least 18" of straight track between s-curves. WalthersC83 #8 turnouts have been used for all visible mainline routes, with Walthers C83 #6 turnouts for industry sidings, some of which are as tight as 36" radius. Branch line and some staging curves are 40" radius. Track-to-track spacing on the mainline is 2.25". Grades on the mainline are 1.3% (uncompensated), some branchline grades are up to 1.9%. A few wye turnouts were used, noted on the drawing. #4 wyes are equivalent to a # 8 straight switch and #3 wyes to a #6 straight switch

Commercial turnouts were used in the design as directed by the LDC to insure that everything would fit with off-the-shelf trackwork. Two exceptions are the custom curved crossing leading into the Cities/Cabot sidings in Kingsmill and the easement-curved turnout leading into the passing siding at the east end of Farwell. Where desired, hand-laid trackwork could easily be substituted for the commercial components.

A note on signaling

The prototype line was signaled at least as early as the '50s, as indications of signal locations appear in the 1952 Track Chart. From the track chart, it appears track spacings were widened at the ends of some sidings so that a signal could be placed between tracks. In other locations, signal bridges are called for in the 1950s Track Chart. I have not duplicated these in the plan, but they could be added with little problem during track-laying. Signals are not necessary for operations, although they do add atmosphere. I don't know whether the line was CTC in the 1950s or if it was TT&TO with Automatic Block Signaling (ABS).

Phased Construction

A large project such as this layout benefits form interim phases of operation. The LDC and club may already have made some decision in this regard, but here are some suggestions. These examples are found in the files "arm_3_12_ph1" and "arm_3_12_ph2", with detailed views "arm_3_12_ph1_det" and "arm_3_12_ph1_det" (all .pdf files). Temporary tracks for each phase are shown in green in these views.

In Phase 1, the main layout elements are the lower deck staging yards and return loop (below the helix) and the town of Canadian. A simple loop of track at 36" radius (with easements) connects the mainline west out of Canadian with the track that will eventually connect at Panhandle. This provides a continuous loop with reversing connection to keep interest high and give staging and especially the lower return loop a thorough testing.

With this first loop in place, crews can begin to build in two directions, if desired: Miami and the temporary loop connecting to the COW trackage and the Amarillo Junior / East Tower area. The Phase 2 views show temporary loops in place to bring Miami and Amarillo into some operation.

With Phase 2 operating, work could continue on the layout from Pampa through Panhandle.

With the lower deck complete or well underway, Phase 3 (not illustrated) would be construction of the upper deck staging yard and connection to the wye at Canyon. From this point, crews could build in one or more of three directions: Canyon and the helix, Umbarger and West, or Texico and east, putting elements of the upper deck into operation as branches until everything can be tied together.

Operations

This is only a brief description of a few possible operating patterns. I have not extensively studied the operations of the prototype, in any case, there are probably club members who are much more familiar than I could hope to become. In addition, as noted in the layout description above, the conscious decision to forgo engine terminal and turning facilities also constrains the operations somewhat.

In the earlier phases, simple out-and-back operations from staging should work well. The completion of a portion of Junior Yard will allow crews to implement more elements of the operating plan described below. It should be noted that this is just one way of operating the layout, there are many different philosophies and variations … it's perhaps best to view this as a "serving suggestion" only, not a prescription.

Within this concept, the following types of trains can be imagined:
"Town switchers"
Locals
Turns
Pick-up/Sweepers
Through haulers and hotshots
Passenger operations
Seasonal trains
Interchange railroads

Assigned "town switchers"

It is suggested that Pampa and Hereford be assigned town switch crews who would (generally) handle the delivery and pick-up of cars to the industries in that town. Through trains would set-out and pick-up blocks from the yard tracks identified in the discussion above. Diesel switch engines could be used for these jobs without calling too much attention to the fact that there are limited engine facilities in each town.

Junior Yard would also have at least one and likely two assigned switch crews to handle the make up and tear-down of trains, interchange to the FWD and RI, and other yard duties.

Locals

One good method of operating the layout would be to assign long distance locals in each direction to- and from Junior. This would assume that the locals are operating Waynoka-Junior and Junior Waynoka and Junior-Clovis and Clovis-Junior. These locals would handle switching of cars for towns without town switchers or assigned special turns. For example, A train could be made up in Junior yard of cars for Panhandle, Miami, and Canadian (remember that Pampa has its own switcher -- we'll talk about where its cars come from in a minute). This local sets out eastbound from Junior, switching trailing-point industries along the way.

The counterpart train would emerge from staging near Canadian and work westbound, again working trailing point spurs such as the elevator at Cuyler. On some divisions and in some eras, the two trains would be expected to meet midway to swap cars. The Junior-Waynoka train terminates in staging, where it may be re-staged for the next session. The Waynoka-Junior train terminates at the yard, where power is removed and serviced and the cars classified into other trains.

Turns

Some specialized industries and locations are served by a train that works "out and back". With limited turning facilities on the railroad, this will work best with diesel road switchers or double-ended cab units. There are a couple of candidates for out-and-back turns, such as Junior to Kingsmill and return. This might be justified by the similar industries at Kingsmill or there need for special switching service. If a turn is handling a particular town he locals probably would not.

Pick-ups/Sweepers

These go by various names on various prototypes, but basically they are long-distance locals that make a few block swaps in some of the towns on the layout. For example, a sweeper might enter the layout from the east at Canadian, with blocks for Pampa, Junior, and Hereford on the visible layout. In those three locations, the eastbound sweeper would set-out blocks bound for industries and pick up eastbound cars set-out. Double-ended sidings have been set aside in Pampa and Hereford for these through-train pick-ups. Both eastbound and westbound sweeper/pick-up trains will be needed.

Through haulers and hotshots

Some number of freight moves will simply be end-to-end overhead traffic, staging to staging. These might change crews/motive power in Amarillo Junior or, in later eras, would run through. Many of these are low-priority "hauler" type trains, often of empties. In addition, high-priority expedited trains (fruit blocks, cattle trains, grain rush traffic) may also be handled. Usually these would be assigned through the visible layout without stop, except perhaps for a crew/power change and a quick swap of blocks of cars in Amarillo Junior.

Passenger operations

Depending on the era depicted, passenger operations may be only an Amtrak once a day or a number of expedited and local trains. Since there is no coach yard provided on the layout, most passenger trains should probably begin and end their runs in staging.

Seasonal trains

Grain rush was likely the busiest time all year on the prototype. While the elevator tracks in the design are a fraction of the size of the real thing, a decent grain rush could still be staged. Fruit and livestock extras might also be interesting to include.

Interchange railroads and branch connections

The FWD and RI have minimal work to do on the visible layout due to space limitations, although there is plenty of opportunity for interchange. The varied paths from staging to the ATSF junctions on the layouts can also support some variety of trains entering and leaving the visible the layout. In Pampa in particular, the small COW yard might offer some interesting "live" interchange with trains to- and from staging.

Conclusion

The completed design reflects the prototype trackage to a much greater degree than nearly all club layouts and many private layouts. As such, it represents a fitting reference and tribute to railroading in

the Amarillo area. Hopefully this design will serve as the basis for a finished layout that furthers the museum's mission of education to the public while also offering its members opportunities for first-class modeling and engaging operations.