Trackside Industry Ideas

3-rail O-scale toy trains are fun. But how do we get these king sized trains into our typically plebeian spaces? One effective method is to model urban scenes, as these are relatively compact, due to the prototype facing the same limited space issues as us. An excellent inspiration would be a rust belt urban city, such as Cleveland's industrialized shoreline. Toy trains are more conducive to a fantasy world where older businesses continue to thrive, and where small businesses prefer being serviced by trains. From a scenery standpoint then, the era will tend to have a somewhat post 50's feel to it; yet the cars and locomotives servicing the businesses will often be pristine unaltered examples from earlier eras.

Recently, a series of books describing various modelable industries were published, entitled "The Model Railroader's Guide to Industries Along the Tracks". Each chapter described a different industry, with details about how trains interface. The books tend to focus more on the manufacturing side however, rather than distribution side, or the middle businesses that convert their products into something else (such as a bakery). Although the manufacturing side of some of these industries have sometimes been located in rust belt urban areas (for example brick making, salt mining, rock quarrying, and coal gas were all greater Cleveland area businesses at one time), many would more commonly be found in areas outside of town. Also, although small by prototype standards, the manufacturing side of these industries often use a lot of real estate, and are really only practical to model in N scale, or possibly HO scale. The distribution end of these industries however are often found in urban areas, and can sometimes be extremely compact, as is described in the books. This is good, because in O scale, efficiently making use of available space is a priority.

From each volumes chapters I have taken a subjects description, even if the subject was only noted in passing, and imagined a tiny representative urban toy train scene of this subject for just a few cars (so that multiple industries could be shoehorned onto the same layout). I have also tried to design the scenes so they can accept different styles of cars, because toy train enthusiasts often have cars from widely different eras in the same train (for example, both milk can reefers and tank car milk cars, or both double door boxcars and end-loading autorack cars). Although sometimes the same type of buildings and their track layouts can be used for two different industries, I have for each industry tried to make the buildings and tracks in each of these scenes somewhat different from each other, in order to provide both variety and stronger visual distinction between industry types.

Here now are my selected industry scenes, and their descriptions. Note that for some industries I offer more than one scene, if they supply distinctly diverse urban products:

Volume 1 Chapter 1 - GRAIN

Lakeside rail-to-ship corn collection elevator. - (destination)

Inbound cars (*choice* - each performs same corn transport job) =
- boxcar fitted with grain doors
- special plugdoor grain boxcar
- 3-bay PS-2 covered grain hopper with trough-shaped roof hatch

Outbound cars =
occasional flatcar to remove the stacks of grain doors

Scene elements =
waiting area for grain cars awaiting unloading
concrete holding silos (false-fronts with unseen warfside barge loading spouts)
covered unloading area on visible silo side
sweepout area for grain cars that have been unloaded
stacks of wooden grain doors awaiting returns
office for customs paperwork

Corn elevator should be built as a building flat against a wall behind, and paralleling, the main line. On the wall is a background painting of the lake, with a side view of a docked great-lakes barge bow and stern. Hiding the barge middle is a false front of the corn silos and office. A long single spur runs in front of the corn silos, passing through an enclosed unloading shed. Stacks of removed grain doors will be piled on the sheds sweepout side for eventual recycling. Strings of full cars are spotted with first car shoved inside the unloading shed (shed need only be one car long). The spur must support unloading at least TWO cars, which in this case means that there must be space for 1 filled car on the waiting side of a single car unloading shed; and also space for *both* emptied cars to be pushed through to the opposite side of the shed, where emptied car sweepout is performed.

Internal combustion engine fuel dealer. - (destination)

Inbound cars =
- tank cars with various grades of gasoline
- tank car with diesel
- tank car with ethanol
- occasional boxcar with boxed cans or loose drums of motor or lube oil

Outbound cars =
- occasional boxcar for drums of recyclable used motor oil

Scene elements =
- at least three older-built horizontal storage tanks
- one newer-built ethanol storage tank
- pump shed
- tank car unloading pipe stand
- tanker truck loading pipe stand
- motor/lube oil storage building
- attendants office shack

Spur with room for ONE tank car (but no more than three), will have a tank car unloading pipe stand beside it. Connected near the unloading pipe are a pump shed and at least three large horizontal fuel storage tanks (diesel fuel, standard octane gasoline, and high octane gasoline). A new tank of a different design (for visual interest) will also have been added to the group, which holds ethanol. Note that the ethanol is splash blended with gasoline only when the fuel is loaded into a gas station delivery truck. Connected near to the tanks is also a truck loading pipe stand for loading gas station tanker trucks. A small office shack will be nearby. Some driveway space must be available beside this spur as well (which for space saving reasons could be on the side opposite the tank car unloading pipe stand), so a forklift can load/unload a boxcar, and move the loads to/from an oil/lube can/drum storage building. Don't forget you will also need a place for moving some cans/drums of oil/lube between arriving "oil changer" business shuttle vehicles and the storage building.

Heating oil dealer. - (destination)

Inbound cars =
tank cars with heating oil
occasional boxcar with furnace parts

Outbound cars =
N/A

Scene elements =
storage tank for holding heating oil
pump shed
tank car unloading pipe stand
tanker truck loading pipe stand
furnace business warehousing/retail building with boxcar dock

Furnace business in an old 20's era mixed-use zoned neighborhood operates a retail parts store, and delivers winter heating oil to its customers. Aged wooden building has a small public storefront, with a backroom warehouse. A spur passes behind the building (on the side that faces the layout front) and also a small open lot adjoining the side of the building. Spur may continue onwards to service other rail customers. Width of building and open lot properties, where they touch the spur, will both be at least ONE car length wide. An old, vertical heating oil warehousing tank and a small pump shed stand in the open lot. A dividing driveway in the open lot parallels against the side of the building, coming from the street that parallels the unseen front side of the building and the open lot (the side that faces the layout rear), and extends all the way to the spur. This driveway is where vehicles park for loading furnace parts and tanker trucks load fuel oil (customer cars park on the street). Tanker truck loading pipe stand is located on the open lot side of the driveway, paralleling the driveway. The part of the spur that passes behind the open lot is where the tank car unloading pipe stand, paralleling the spur, is located. Spur side of building has a wide delivery door that opens onto a raised dock (paralleling the spur) for unloading a boxcar of furnace parts. The end of the dock on the lot side ramps down to the driveways end, so warehoused furnace parts can be carted over to vehicles. Hint: Try not to, but if space is at a premium, the furnace store (with boxcar dock) could be eliminated.

Volume 1 Chapter 3 - COAL MINING

N/A. - (origin)

Volume 1 Chapter 4 - AUTOMOTIVE

Transloading facility that unloads and holds autos for dealer pickup. - (destination)

Inbound cars (*choice* - each performs same auto transport job) =
- double door automobile boxcar
- automobile flatcar
- autorack car (double-deck or tripple-deck, with or without sides)

Outbound cars =
N/A

Scene elements =
roofed platform, with ramp at one end emptying into a holding lot
mobile unloading ramp stationed in the parking lot for end-unloading autorack cars
a new or restored-vintage automobile for dealer pickup

This industry is ideal for placement near the front edge of a layout. A short spur angles away from the main line. A covered platform long enough for TWO double-door automobile boxcars, which is open along its side to accept autos driven sideways off automobile boxcars (or optionally automobile flatcars sideways-unloaded), sits in the "crotch" of the spur (spur will be on layout front edge side of platform), wedged in as close to the main line as practical. Optionally a second spur could be added to the other side of the platform. A fixed exit ramp on the end of the platform empties into an inferred secure automobile holding lot, which either just reaches the end of the ramp, or may continue on as far as to the end of the platform (meaning some/all of the fixed ramp will actually be in the holding lot tarmac). As the spur end can be very close to the layout edge, only a very tiny slice of the holding lot needs to be modeled, and even the platforms exit ramp can be diagonally chopped off by the layouts front edge (we are assuming in this example that the layout edge is paralleling the main line). The spur terminates at the holding lot edge so that a mobile unloading ramp (which optionally can be unmodeled, and just assumed to be parked nearby) can be butted up against the end of the spur for end-unloading autorack cars (or optionally automobile flatcars endways-unloaded). For scene-setting purposes, an auto is parked askew on the platform, as if it had just recently been sideways-unloaded.

Injection molding autopart manufacturing plant. - (origin)
[decide on product... anything from as small as a side mirror to as large as a bed liner]

Inbound cars =
plastic pellet covered hopper (*these cars have pneumatic pipes on bottom outlets*)

Outbound cars (*choice* - each performs same parts transport job) =
- boxcar
- hi-cube boxcar

Scene elements =
manufacturing building with molding machines, assembly area, and storage racks
sheetmetal gravity-feed holding silo for storing plastic pellets
finished product boxcar loading tarmac, with space for a forklift to maneuver
supply truck unloading area on one of the buildings non-railroad sides

Building is of the modern quickly built cement and I-beam design. An extension from the main building forms a "L" shape. Inside the "crotch" of the "L" , is a paved tarmac for loading the finished product onto a boxcar with a forklift. Tarmac must be at least ONE car length long, but does not have to be longer than two cars. A rollup door in the building extension faces the tarmac, and this is where the forklift brings out the finished product. Main building can be painted on the wall as a background, with just the finished product loading tarmac and building extension modeled; or it can be a fully stand-alone building. A sheetmetal gravity-feed plastic pellet holding silo is located against the main building on the end of the tarmac opposite the extension. It is suggested that this silo be at the main buildings corner. A spur passes in front of both the silo and tarmac (and if you desire to continue the spur, also the building extension; as the spur can come from, and/or continue to, another industry). Normally plastic pellets are unloaded from the spur, but if you don't have a pneumatic covered hopper, the pellets could instead be offloaded from a truck that pulls up beside the silo, on the side opposite the tarmac. Trucks will regularly come to the building to unload small parts for product manufacturing (for this industry we will not be using rail delivery), but the truck unloading area can be at an unseen part of the building. Clearances must allow for a hi-cube boxcar, but regular boxcars can be used if you do not have a hi-cube car. Regular boxcars arrive empty from anywhere; but hi-cube boxcars arrive back from the autoplant with empty racks that the forklift swaps out with full racks.

Volume 1 Chapter 5 - PRODUCE

Produce broker. - (destination)

Inbound cars =
produce reefers of all types from everywhere

Outbound cars =
N/A

Scene elements =
wide trackside unloading tarmacs, so food trucks can back up to the reefer car doors
building for broker to display samples from the reefers, and process resale paperwork
truck access way that connects all the paved unloading areas and the broker building
a small food truck getting ready to leave

Here are two suggested ways to model the industry, either near and paralleling the front edge or near and paralleling the rear edge of the layout. At least TWO paralleling stub tracks must be modeled, with each one holding at least THREE reefers. In the foreground design, it is implied that several more parallel stub tracks lie beyond the front edge of the layout. The two modeled paralleling stub tracks should be close to each other, with a wide paved unloading tarmac on the rear side of the rearmost track, and just a slice of a wide paved unloading tarmac on the front side of the front most track (the rest of this paved area will be chopped off by the front edge of the layout). A truck access way will cross the ends of the stub tracks, connecting the unloading tarmacs. On the opposite side of the truck access way will be an exotic architecture broker building, paralleling the access way (that is to say, "T"-ing long ways across the ends of the stub tracks). If built near the side of the layout, this building (and possibly the truck access way) could just be a side wall background painting. In the background design, there will also be at least TWO paralleling stub tracks holding at least THREE reefers. However, these two tracks will be separated from each other by a wide paved unloading tarmac. The rearmost track will lie close to the background wall, where a third paralleling track will be painted on the background wall so it appears to lie close to the rearmost track. On the rearmost side of this painted track will be painted a wide paved unloading tarmac. Additional paralleling tracks can continue to be painted on the background wall if desired, so that they appear in a two tracks together, separated by a paved tarmac, then two more tracks together again pattern. Like with the foreground design, there will be a truck access way long ways across the ends of the stub tracks connecting the paved unloading tarmacs. The exotic architecture broker building however will instead be painted on the background wall, paralleling the track farthest in the distance. For scene-setting purposes on either of the models; on the paved tarmac a stake-truck with produce will be parked as if it had just recently unloaded a reefer.

Cold-storage meat warehouse. - (destination)

Inbound cars =
reefers with meat rails

Outbound cars =
N/A

Scene elements =
building equipped with refrigeration equipment for temporary meat storage
side-unloading rail car platform for unloading dressed/canned meat to refrigeration
end-loading truck dock for loading meat from refrigeration onto butcher trucks

Refrigerated building can be modeled as a building flat along a wall, or as a stand-alone building. A spur passes in front of the building, and could continue onwards to/from other industries. Building side facing the spur has a rail car unloading platform at least ONE car length long (but not more than two car lengths long) along its wall. A swinging french door entrance, behind which are hanging plastic strips to keep the cool in and bugs out, allows building access from the platform. Platform is at reefer floor level, and if possible should have an overhanging roof. The truck dock does not have to be shown, but dock is just a door (can be up to three doors) in the building wall, which is at truck bed floor height. For scene-setting purposes, you can back a butcher truck rear up against a loading dock door.

Trackside livestock water sprayer. - (passthrough)

Passing cars =
stock cars with animals (particularly bi-level hog loads)

Scene elements =
water sprayer beside main line to cool slowly passing livestock

To prevent cruelty to animals, all livestock must be regularly cooled and eventually rested. Built at intervals along the main line where stock cars pass (including in cities) are livestock cooling water sprayers. These are just high and low nozzles on a water pipe (like the water nozzles used on fire trucks), that spray water through the slats of slowly passing stock cars.

Powerhouse. - (destination)

Inbound cars =
hopper of power plant coal

Outbound cars =
occasional covered hopper for ash

Scene elements =
spur entering side of masonry building housing boilers and electrical generators

Older style rectangular three level masonry building with tall smokestack. Track will enter an opening built into the long side of building near the end, and building will be wide enough to accommodate a single coal hopper at first-floor level. Hopper will dump coal into basement-level where it is stored prior to being fed into boilers. Ash residue will be augured to second-floor level, where it is stored prior to being poured into top of covered hopper (spotted in same location as replaced coal hopper). Powerhouse will supply electricity, and optionally steam, to either the local area (i.e., municipal power plant), or a single customer (i.e., brewery, college campus, train station, etc.). Animated hoppers can be used to really dump coal while the train waits. However, hopper deliveries could also be staged so that an empty hopper is already there waiting to be removed when the full hopper arrives, and this full car would then remain there for the rest of the operating session. Alternatively, if the powerhouse was against a backdrop, and the back side of the backdrop accessible; a full hopper could be delivered, manually pulled through from behind the backdrop, dumped, then replaced empty and ready to be taken away by another train coming by later.

Heating coal dealer. - (destination)

Inbound cars (*choice* - each performs same coal transport job) =
- gondola of heating coal
- side-dump gondola of heating coal

Outbound cars =
N/A

Scene elements =
two Lionel-type bins for Lionel-type artificial coal
clamshell crane
space where coal is transloaded from crane (bins) to dump trucks
field office
makeshift dump truck parking spots

Spur with two coal storing bins located beside each other, and butting up against the layout front side of track, receive coal from up to TWO animated side-dump gondolas (magnets are located in track to activate the dumping mechanism). For space saving purposes, the dealership can be placed on the lead of a spur that services some other industry. The dealership has a clamshell crane for unloading regular gondolas, although this crane can be non-functional scenery and the gondolas instead just be picked up off the track and hand dumped into the bins by the layout operator. Crane can by any type imaginable, from a burro crane that rides on the spur, to a caterpillar tread crane, to a giant fixed crane. There must also be a road-accessible space (not necessarily paved, or even abutting the bins) where the crane can load delivery dump trucks with bin coal. Nearby will be a small field office, and makeshift parking spots for the businesses dump trucks to park when not in use.

Offline creamery milk transloading platform. - (destination)

Inbound cars (*choice* - each performs same milk transport job) =
- milk can reefers with cool, full milk cans
- milk tank cars with cool milk

Outbound cars =
cars with empty milk cans

Scene elements =
platform for holding milk cans transloading between milk can reefers and trucks
area for milk tanker trucks to pump out milk tank cars

Spur, located near passenger depot, must be long enough to hold TWO true O-scale animated milk can reefers of full milk cans. The cans will unload onto two (optionally only one) Lionel-type uncovered milk can holding platforms, placed in a line on the layout front side of the spur. Activating magnets will be in the track to operate animated milk cars. Once full cans are unloaded, empty cans waiting on the platform will be loaded into the milk can reefers for the return trip. The non-spur side of the holding platform will be paved, so that creamery trucks can transload cans to/from the platform. The opposite side of the spur will also have a paved area where milk tanker trucks can pump out milk tank cars spotted beside the platforms. Optionally pumping can be performed on the platform side of the spur if the spur is long enough (or one platform eliminated) to have the paved pumping area located beyond the end of the platform. For scene-setting purposes, a milk tanker truck can be waiting at the spur, and empty milk cans can be stationed on the transloading platform.

Volume 2 Chapter 3 - BREWERIES

Historic bottling plant. - (origin)

Inbound cars =

beer reefers of full, cold, microbrewed beer barrels/kegs from rotating breweries
boxcar of empty no-return bottles from glassmaker
boxcar of printed cardboard shipping cartons and labeling materials from papermill

Outbound cars =

cars with empty microbrewed beer barrels
insulated boxcar (optionally reefer) of packaged microbrewed beer in bottles

Scene elements =

1900's rectangular building, with bottling machine and temporary holding areas

Vintage building started as a brewery bottling plant, was converted to soft drink bottler during prohibition when nearby brewery was demolished, nearly closed when soft drink bottling regionalized, but gained new life when it returned to its roots and started bottling micro-brewed beer. Building contains a bottling machine, and holding areas for supplies and product. Long spur runs alongside the long front wall of the rectangular building, and is covered by a building length overhang. Other side of spur parallels an alley street. Building wall length is at least THREE boxcars long. One boxcar floor level door will be found penetrating this wall near each end of the wall. The door located closest to the head of the bottling machine will handle the cars of barrels and empty bottles, and the door at the other end of the wall will handle the packaged bottle cars. Modelers choice as to which of these doors the cars of packaging material are unloaded, as will be the placement of probable additional doors for beer truck use (such as a street level regular door, through which a person can push a keg, or bottle case, on a handtruck) . Track is embedded in pavement, so that beer trucks can be smoothly backed over the rails from the street to a truck door (when a train car is not there), to load beer for local delivery. This includes any beer in kegs being transloaded through the bottling plant. A typical work day would have inbound train cars of microbrewed beer barrels/kegs from one of several rotating micro breweries, empty no-return bottles, and cardboard shipping cartons and labeling materials, arriving in the morning (a truck with metal bottle caps made locally will also make a delivery). The same reefers that bring full barrels will typically be loaded with empty returns. Mid-day the beer would be bottled, labeled and cased. Local beer delivery trucks arrive and are loaded in the afternoon. Empty train cars for bottled beer leaving town arrive towards evening.

Volume 2 Chapter 4 - PAPER

City newspaper. - (destination)

Inbound cars =
captured duty boxcars with rolls of printing press paper coming from papermill
boxcar with drums full of printing ink

Outbound cars =
captured duty boxcars with recycled newspapers going back to papermill
boxcar with empty drums of printing ink

Scene elements =
multi-story office building housing printing press machinery on ground floor

Spur for at least ONE car passes beside the rear of a multi-storied newspaper building. Ground floor holds printing press machinery, and has a cathedral ceiling with only small rectangular windows near ceiling level. There will be at least two floors above this ground floor where the journalists and typesetters work, which will have a normal ceiling height and large windows. Wide dock door for forklift use penetrates building by spur at the height of boxcar floor (metal flipdown lip allows forklift to enter boxcar). Above this door is a fancy suspended overhang to protect opening from rain. This is where rolls of newspaper are delivered and recycled papers removed. It is also where printing ink is delivered and empty drums removed. The side of the building at the tail-end of the printing press faces an alley street, and has loading docks for newspaper delivery trucks. Note that some newspapers are then driven to the express depot, where they are forwarded to other cities by rail.

Volume 2 Chapter 5 - IRON ORE

Steel plant orecar overflow holding track. - (destination)

Inbound cars =
orecars with iron ore

Outbound cars =
N/A

Scene elements =
spur with one end attaching to eastbound, and other end to westbound, mainline
block signals on mainlines in case line is occupied by a protruding sidelined train

Track must be long enough to hold at least THREE boxcar length cars. Normally this track is used as a head-in passing sideline for either the eastbound or westbound mainlines as required (note that long trains might need to protrude onto the opposite mainline track). In situations where the inferred nearby, but off-layout, steel plants yard is too full to accept more filled orecars, the orecar overflow is temporarily stored on this track.

Express depot. - (origin)

Inbound cars =
high-speed baggage/express cars with parcels

Outbound cars =
refilled high-speed baggage/express cars

Scene elements =
building for express package sorting and temporary holding, with a public counter
parcel delivery van loading area
passenger train baggage-express car loading area

Building, located near a passenger terminal, will have a public counter and a "backroom" for sorting and holding fast-delivery express parcels that customers have paid a premium to travel on passenger train schedules. When baggage-express cars arrive from a passenger train, their contents are quickly transferred to the building for rapid sorting, then placed onto delivery vans. Outgoing parcels waiting in the building from either customer drop-off, or from offline customers serviced by the delivery vans. are then quickly loaded onto the baggage-express cars, so that these cars can be placed into the next passenger train heading in the appropriate direction. One side of the buildings backroom will have delivery van docks, and the opposite side of the buildings backroom will service a railroad spur long enough for THREE passenger train sized baggage-express cars. A single spur can parallel the building, but ideally, the building should have three one car saw tooth "bays" for the baggage-express cars to be diagonally switched into. Even though bays use more switches, it is preferred, because cars being loaded are not affected by other cars being moved.

Flower wholesaler. - (destination)

Inbound cars =
high-speed express reefer with chilled flowers

Outbound cars =
N/A

Scene elements =
chilled warehouse for temporarily holding flowers
parking for local florist shop pickup vans

Chilled temporary holding warehouse is typically located near an express depot. Building has parking for local florist pickup vans, and is serviced by a spur capable of holding ONE car. Wholesaler will receive at least one high-speed express reefer of flowers every day (more during special events such as weddings and funerals). Nondescript warehouse can be either by itself or part of a building complex, and is suitable to model as just a building flat.

Freight house. - (origin)

Inbound cars =
40' boxcars with LCL freight

Outbound cars =
refilled 40' boxcars

Scene elements =
closely spaced parallel tracks for boxcar pass-through loading
large building for freight sorting and temporary holding, with a public counter
freight delivery truck loading area

Large warehouse building with public counter is used for sorting less-than-carload (LCL) freight received/delivered from both boxcars and trucks (or even hand carried to the building, because as a common carrier, railroads are required to haul LCL freight from anyone). Mail order houses are big customers, as are department stores. One side of the building has multiple back-in docks for delivery panel-trucks and big-rig truck trailers. The other side of the building is paralleled by THREE very closely spaced spurs, each capable of holding at least TWO 40' boxcars, so pass-through loading can take place through unseen boxcar spaced doors in the buildings wall. Cuts of boxcars are all spotted in the early morning, stand open all day, then are all taken away in the early evening. Since parked boxcars are obscured by each other due to the close track spacing, we might as well create a very different model scene. We will locate the buildings truck docks on the side facing the layouts front, and place the boxcar tracks on the buildings back side. We will keep the building height low enough though, so that the boxcar roofs can always be seen by the layout operator. Each of the spur leads will be equipped with an uncoupler magnet, so a cut of cars can be left without having to reach past the building to manually uncouple them.

Mail transfer station. - (origin)

Inbound cars =
RPO with sorted mail that was sorted in transit
high-speed car with pre-sorted mail compartment

Outbound cars =
RPO with unsorted mail that will be sorted in transit
refilled high-speed car with pre-sorted mail compartment

Scene elements =
passenger terminal with mail holding room and RPO crew lounge
carts for transporting bagged mail
mail transfer truck loading and unloading area outside the terminal

Large, secure, postal room in a passenger terminal is a temporarily holding area for bagged mail that transfers between trucks coming from local post offices and the high-speed cars carrying mail (mail can be carried in anything from just a secure compartment in a normal passenger car, to a car dedicated entirely to carrying mail bags). Mail carrying cars, and railway-post-office (RPO) cars, will arrive on a station platform like any other passenger car, and will typically be attached to a train transporting passengers. Note that there are animated mail cars where a postal worker tosses out a bag of mail; so if you intend to use such as car, make sure you include an activating magnet in the station track. Carts, both powered or manual, are used to move mail bags to and from the holding area and the platform with the mail car. The same carts will also move mail to and from a mail truck loading area located outside the terminal (note that the carts probably will have to travel some distance to reach both the mail holding room and the postal truck loading area, so these places can just be implied by signage and accessways, and do not have to be modeled). A lounge for the mail sorting RPO crews will also be provided in the terminal (this lounge can also just be implied). For scene-setting purposes, it is important that carts for the bagged mail be prominently displayed, and perhaps even animated.

Volume 3 Chapter 1 - ETHANOL

Internal combustion engine fuel dealer. - (destination)

{*see: Volume 1 Chapter 2 - PETROLEUM*}

Volume 3 Chapter 2 - CEMENT

Concrete ready-mix plant. - (destination)

Inbound cars =
- covered 2-bin cement hopper
- side-dump gondola of aggregate from a quarry or slag from a steel mill
- LCL boxcar of large cement bags
- LCL boxcar of large aggregate bags
- LCL flatcar of palleted aggregate bags
- gondola with empty cement canisters

Outbound cars =
- gondola with filled cement canisters

Scene elements =
- spur entering grounds for unloading both aggregate and cement
- large storage silo to hold cement powder
- covered area beside storage silo for transfering cement powder
- mixer building
- conveyer that moves aggregate to top of mixer building
- holding bin of aggregate near the conveyer
- concrete ready-mix delivery truck loading area
- small warehouse, with an office appendix, for bagged product

Business normally serves local builders with ready-mix concrete in delivery trucks, but also sells bagged aggregate, and bagged or bulk cement. All buildings and holding areas are of inexpensive concrete and metal design. A spur servicing the business enters the plant grounds and terminates under a ONE car covered area beside a storage silo, where cement powder can be unloaded from a cement hopper and raised into the storage silo. Next to this silo is a concrete mixing building. When concrete is ready to be made, cement is introduced into the mixer from the silo. Beside the spur, just before this covered area, is where a side-dump gondola will unload stone aggregate and/or steel mill slag into a ONE car holding bin (place a Lionel-type unloading bin beside the track section where an activating magnet has been situated). When concrete is ready to be made, aggregate is conveyed from the holding bin up to the mixer. On the side of the mixing building is a spot for loading ready-mix delivery trucks. A small shed-like warehouse with an office appendix is adjacent to the mixer building, for storing bags of both cement and aggregate for customers wanting to mix their own concrete. Cement bags arriving in boxcars, and aggregate bags arriving in either boxcars or flatcars, are spotted somewhere on the spur, where the bags are then fork lifted to the warehouse. Plant also sells cement in bulk canisters. A gondola with empty canisters is spotted inside the covered area beside the cement silo, where a moveable overhead pipe will fill the canisters with cement from the silo. For scene-setting purposes, you can park a distinctive ready-mix delivery truck somewhere on the plant grounds.

Wharfside gantry crane. - (origin/destination)

Transloading cars (*choice* - each performs same goods transport job) =
- pedestal flatcars of containers requiring a crane to load/unload
- well cars of containers requiring a crane to load/unload
- gondolas of goods requiring a crane to load/unload
- flatcars of goods requiring a crane to load/unload
- bulkhead flatcars of goods requiring a crane to load/unload
- depressed-center flatcars of goods requiring a crane to load/unload

Scene elements =
- mobile gantry crane that rides on a track of wheel rails
- spur bounded by the gantry crane track
- wharf paralleling one side of gantry crane track
- road paralleling opposite side of gantry crane track

Lionel makes a gantry crane, and GarGraves makes a 3' long track for this crane. One side of gantry crane track closely parallels the edge of a lakeside warf where a ship can dock. The other side of gantry crane track is paralleled by a paved road for trucks, which can also be used as a place to temporarily set down goods or containers. A train spur runs under the gantry crane, also paralleling the gantry crane track. Gantry crane is able to propel itself on its rails, so it can line up with the holds in a ship. This gantry crane can load or unload a ship, a rail car, or a truck bed, in order to transload goods between them all as desired.

Metal recycling. - (origin)

Outbound cars =
- gondolas of ferrous scrap metal, which were transloaded by a magnetic crane

Scene elements =
- magnetic crane located beside a loading spur
- low boundary fence on scrap yard loading side, which the crane can reach over
- higher boundary fences on non-loading scrap yard sides
- scrap metal dumped in the yard by trucks for transloading

Lionel makes a working magnetic crane. The crane resides within the scrap yard, but the arm can be swung out over a low fence to above the loading spur. The loading spur establishes one side of the scrap yard, but the other sides can be of any shape. The crane picks up metal for recycling within the scrap yard, then drops it into a waiting gondola.

Volume 3 Chapter 4 - SUGAR BEETS

N/A. - (origin)

Volume 3 Chapter 5 - SEASONAL CANNING FACTORIES

Can factory. - (origin)

Inbound cars =
occasional gondola with coil-cover protected sheet metal coils

Outbound cars =
boxcars with newly manufactured empty cans

Scene elements =
Compact two-story high open room factory building with train car entrance

Factory contains stamping, forming and welding machinery that turns rolls of sheet metal into empty cans. Building is an open room two-story high structure, which has a concrete floor, and a long traveling crane mounted high inside. A single spur enters into the building through a large entrance, and there is enough track inside the building to hold TWO freight cars. A gondola loaded with covered sheet metal coils is spotted in the building, where the traveling crane will remove the coil covers and then lift the sheet metal rolls over to the stamping machine. Covers are replaced, and the gondola can then be removed. All this activity is unseen and can therefore just be inferred; so from a modeling standpoint all that has to be done is to spot the gondola in the building and then later retrieve it. When the factory starts making cans, empty boxcars are spotted in the building using the same spur, and unseen (so again inferred) they are hand-loaded with the newly manufactured empty cans. When filled, the boxcars are removed, and then replaced with empty boxcars.

Volume 3 Chapter 6 - TRAILERS AND CONTAINERS

Intermodal track. - (origin)

Inbound cars =
incoming 28 foot (one or two) and/or 45 foot (one) trailers on piggyback flatcars

Outbound cars =
outgoing 28 foot (one or two) and/or 45 foot (one) trailers on piggyback flatcars

Scene elements =
long spur with paralleling wide paved area for truck trailers
truck trailer side loader vehicle (i.e., a "piggy packer")

A long spur, capable of holding at least FOUR piggyback flatcars, parallels the front edge of the layout. Between the track and the front edge is a chopped-off paved area just big enough for the layout operator to manually maneuver a "piggy packer" to load/unload a truck trailer to/from a piggyback flatcar. The paved area which is assumed to extend beyond the layouts front edge includes a truck waiting area and office. It is preferred that you acquire a toy piggy packer which can really lift trailers on/off a piggyback flatcar, but this side loader can just be a piece of scenery, and you instead lift the trailer loads with your hand. A typical workday begins when a string of trailers on piggyback flatcars are dropped off in the morning by a passing priority through freight. The piggy packer unloads them, and big-rig tractors then haul them away. Late in the evening outgoing trailers are trucked in, and are then quickly loaded onto the empty piggyback flatcars. The entire string of full flatcars are then picked up by a passing priority through freight train (the flatcars are sorted for their proper destinations when the through freight arrives at the next interchange yard).

Volume 4 Chapter 1 - COAL GAS PLANTS

N/A. - (destination)

Volume 4 Chapter 2 - SALT MINING

N/A. - (origin)

Volume 4 Chapter 3 - CLASSIC BRICKYARDS

Lumber yard. - (destination)

{*see: Volume 4 Chapter 5 - LUMBER*}

Dimensional stone wholesaler. - (destination)

Inbound cars =
flatcars of palletized deorative dimensional stone
occasional gondola of dimensional stone
occasional flatcar of dimensional stone

Outbound cars =
N/A

Scene elements =
short spur with a fixed boom crane beside it
small building for storing decorative stone (counter tops, flooring tiles, etc.)
outdoor area for storing large dimensional stones (artist stone, grave markers, etc.)
jumbo forklift with chains
unpaved flatbed truck loading areas

Spur need only hold ONE car, and for space saving purposes (business gets infrequent deliveries), the wholesalers' track should be the lead of a spur that services some other industry. A jumbo forklift unloads flatcars and moves material around the grounds. A boom crane alongside spur allows unloading of gondolas, including transloading onto flatbed trucks. The grounds can be just compacted dirt. Large stones/boulders are stored outdoors. Decorative stone (usually palletized) is stored indoors in a garage-like building, which has a large portal that can pass a jumbo forklift (office is just a desk in the corner).

Volume 4 Chapter 5 - LUMBER

Lumber yard. - (destination)

Inbound cars =
boxcars of untreated lumber
staked flatcars of treated lumber
center-beam flatcars of wrapped lumber
boxcar of bricks
occasional boxcar of assorted contractor/homeowner lumber associated hardware

Outbound cars =
N/A

Scene elements =
spur through paved area where a forklift can balance-unload center-beam flatcars
lumber forklift
open-sided covered wooden lumber stacking building facing spur
outdoor brick storing area
contractor truck loading area
aging public storefront building with covered outside sawing space appendix

Decades old local lumber yard is still supplying homeowners, cabinetmakers, and contractors with lumber and lumber associated hardware (garage door hardware, nails, etc.). Lumber yard also sells bricks, which are a popular fascia for wood garages and homes. Spur in front of a lumber stacking building is surrounded by blacktop pavement, and is long enough to hold ONE true O-scale center-beam flatcar. Lumber loads removed from train cars are stored in an open-sided covered wooden stacking building that faces the spur. The unloading forklift can be just a stationary model, and lumber loads can be unloaded manually with your hand. However, a working manual toy lumber forklift that really unloads lumber loads is preferred. Hardware loads are stored in a public storefront building, and bricks are stored in a designated space outdoors. A covered outdoor trimming saw space will be beside the storefront building, and an access way will be provided for contractor trucks to drive into the storage area to load lumber and bricks.

Custom furniture maker. - (origin)

Inbound cars =
Occasional boxcar with furniture making lumber

Outbound cars =
Occasional boxcar with finished furniture

Scene elements =
repurposed building beside a spur, with sufficient open floor space for woodworking

Building with rail service (for at least ONE boxcar) was built for something else, but is now being rented to a custom furniture making business. A boxcar brings in lumber when needed, while delivery panel-trucks bring in other items such as cushions and varnish. When enough furniture is ready, an empty boxcar will be spotted on the spur for loading.

Wharfside gantry crane. - (origin/destination)

{*see: Volume 3 Chapter 3 - TEAM TRACKS AND TRANSLOADING*}

Navy pier. - (destination)

Inbound cars =
any kind of rollingstock for the military (including loads of missiles, mini-subs, etc.)
boxcars of ship parts
flatcars of ship parts

Outbound cars =
N/A

Scene elements =
pier completely covered by non-perishable warehouse building
spur that enters through front end of building

A wide pier meets the rear of the layout at the same angle as a turnout. A warehouse would cover the entire pier (San Francisco style) with a spur track entering the building at its front end. Only the building front and the entrance which the spur enters would be modeled, with the rest of pier being only a backdrop painting (in effect, the track is entering a tunnel through the backdrop). Once track enters building through an open sliding door, it curves unseen behind the backdrop and leads to a hidden "fiddle track". A small unseen yard is assumed to be inside the building, so trains entering the warehouse can leave with different cars, or with cars in different orders. Warehouse is for storing non-perishable military material, either for later transfer to a ship, or just for secure rail car parking purposes. Entrance must be large enough to allow the passing of those fantasy military cars such as missile launchers, mini-sub transports, reconnaissance helicopter launchers, radar cars, etc..