

## Rules and Train Briefs

### Oakland, Milpitas and Niles SubDivisions

**December 11, 2016**

#### Revision History

<b>Author</b>	<b>Date</b>	<b>Content</b>
Seth Neumann	5/30/08	Change blocking order for 54 local to put Pleasanton cars next to engine
Seth Neumann	6/3/08	Misc. changes and fixes after 5/31/08 session
Seth Neumann	6/23/08	Change "Centerville" to "Irvington"
Seth Neumann	6/24/08	Add AOAMIR/AMIOA
Seth Neumann	6/26/08	Change "lumber" to "Richert Lumber"
Seth Neumann	7/7/08	Schedule adjustments
Seth Neumann	10/29/08	Yard Clerk
Seth Neumann	11/05/08	Yard Clerk Updates
Seth Neumann	3/08/09	Dispatcher Train Tips, misc changes
Steve Williams	3/12/09	Added "orienting yourself"
Seth Neumann	3/13/09	Changed "Irvington" Industries to "Niles"
Seth Neumann	3/17/09	Added "Dispatching the locals"
Neumann/Williams	3/18/09	Added plan of layout, various tweaks to locals
Neumann/Williams	3/18/09	more tweaks to locals, initial track assignments, update switch list
Seth Neumann	3/27/09	Change ACE instructions
Seth Neumann	4/9/09	Change NCRY instructions
Seth Neumann	5/25/09	Change MBL instructions, Blue Flag and change cards to switch lists
Seth Neumann	8/29/09	MBL, misc changes
Seth Neumann	4/8/10	Miscellaneous corrections
Seth Neumann	5/12/10	Changes to Auto Trains, Track Warrants
Seth Neumann	5/15/10	More changes to Track Warrants
Seth Neumann	6/11/10	Delete references to flipping cars for Kaiser critter
Neumann/Romerstein	8/25/10	Added Sam's schematic
Seth Neumann	1/27/11	CATS Dispatching, Aspect Chart
Seth Neumann	2/26/11	Changed blocking order for LRV54 local
Seth Neumann	6/2/11	Updated Dispatcher's list of trains to show MOACI

Union Pacific Railroad

Seth Neumann	2/7/11	Moved Track Warrant Procedure to Appendix 1
Seth Neumann	4/10/12	Miscellaneous updates and cleanup prior to ProRail
Seth Neumann	11/27/12	Changes to clerk reflecting RFID readers
Steve Williams	3/27/13	Incorporate “Old Heads Notes” for Dispatcher
Seth Neumann	6/2/2015	Updates on signals, added sure spots
Seth Neumann	12/11/2016	Consolidation of Mission Bay Local into “Crittter” job

## Table of Contents

Rules and Train Briefs .....	1
Oakland, Milpitas and Niles SubDivisions.....	1
December 11, 2016 .....	1
Revision History .....	1
Table of Contents.....	2
1) Notes .....	5
2) Signals.....	5
3) Orienting Yourself on the Layout .....	8
Dispatching .....	12
Addressing Trains: .....	12
No Time Table Authority:.....	13
Using CATS (CTC) (from the CATS users’ manual) .....	13
Setting Signals .....	13
Throwing Turnouts .....	15
Train Detection .....	15
Tracking Trains.....	15
Track Authority .....	16
Out of Service.....	17
Tips on Planning for Trains: .....	17
Tips on Planning for Locals .....	20
Old Heads Notes for the Dispatcher.....	22
General procedure for setting routes for trains .....	22
Letting NUMMI jobs out of the yard .....	22
Letting the NUMMI job back into the yard .....	23
Getting the NCRY Job into the NCRY .....	23
Getting the NCRY job back to Sunol .....	23
Car Forwarding .....	24
Trains and Work:.....	26

## Union Pacific Railroad

Suggested Initial Track Assignments .....	27
4) Local Freight Service .....	29
a) UP LRV54 Local (Pleasanton Turn).....	29
b) Mission Bay Local (part of "Critter" assignment).....	30
c) BNSF Trackage Rights Local.....	31
d) Sure Spots .....	32
5) Industry Jobs .....	33
a) NUMMI (New United Motor Manufacturing Inc.) Job .....	33
b) "Critter Wrangler" .....	34
i. Lehigh Cement.....	34
ii. Kaiser Critter .....	34
iii. NCRY.....	34
6) Commuter Service .....	35
a) Altamont Commuter Express (ACE) .....	35
7) Manifest and Auto Trains which work Milpitas .....	36
a) UP Train Symbols.....	36
b) Manifests .....	37
i) MOAWC – Oakland to West Colton Manifest .....	37
ii) MRVSJ – Roseville to San Jose Manifest (Becomes San Jose to Roseville Manifest - MSJRV) .....	37
c) Auto Trains .....	37
i) AOAMIR (Autos: Oakland Milpitas, empty) and AMIOA (Autos Milpitas Oakland) "O" .....	37
9) Overhead traffic – run occasionally as needed if staging permits.....	39
d) Swift RoadRailer (ZCIPD) .....	39
e) Coast Intermodal (IOALBR).....	39
Appendix 1 .....	40
8) Track Warrants .....	40
Track Warrant Radio Protocol:.....	41
Figure 1 - Mapping Dummy Signals to Repeater .....	5
Figure 2 - Map of the Prototype .....	8
Figure 3 - Plan View of Layout.....	10
Figure 4 - Schematic View of Layout .....	11
Figure 5 - CATS Screen.....	12
Figure 6 - Terminate Train Screen .....	16
Figure 7 - Switch List Form .....	25
Figure 8 - Track Warrant Form .....	40
Table 1- Aspect Chart.....	7
Table 2 - Dispatcher's List of Trains.....	20
Table 3 - Suggested Local Switching Limits .....	22
Table 4- Trains and Work in Yard .....	27
Table 5 - Suggested Initial Track Assignments.....	28
Table 6 - Table of Industries for 54 Local.....	29

Union Pacific Railroad

Table 8 - Table of Industries for Mission Bay Local .....30  
Table 7 - Table of Industries for BNSF Local .....31  
Table 9 - Schedule of Pulls for NUMMI Job .....33  
Table 10 - UP Symbols .....36  
Table 11 - UP Symbol Codes .....36

## 1) Notes

- a) All times assume an 8:00 AM fast clock start of session
- b) Fast time is 2:1

## 2) Signals

We have signals on the layout and repeaters above the backdrop. Use the chart to below map the repeaters to the signals on the layout. The repeaters are especially helpful for signals on hidden track, signals blocked by other operators and for those who are color-weak (repeaters are Type D – upside down traffic lights whereas the signals on the layout are searchlights).

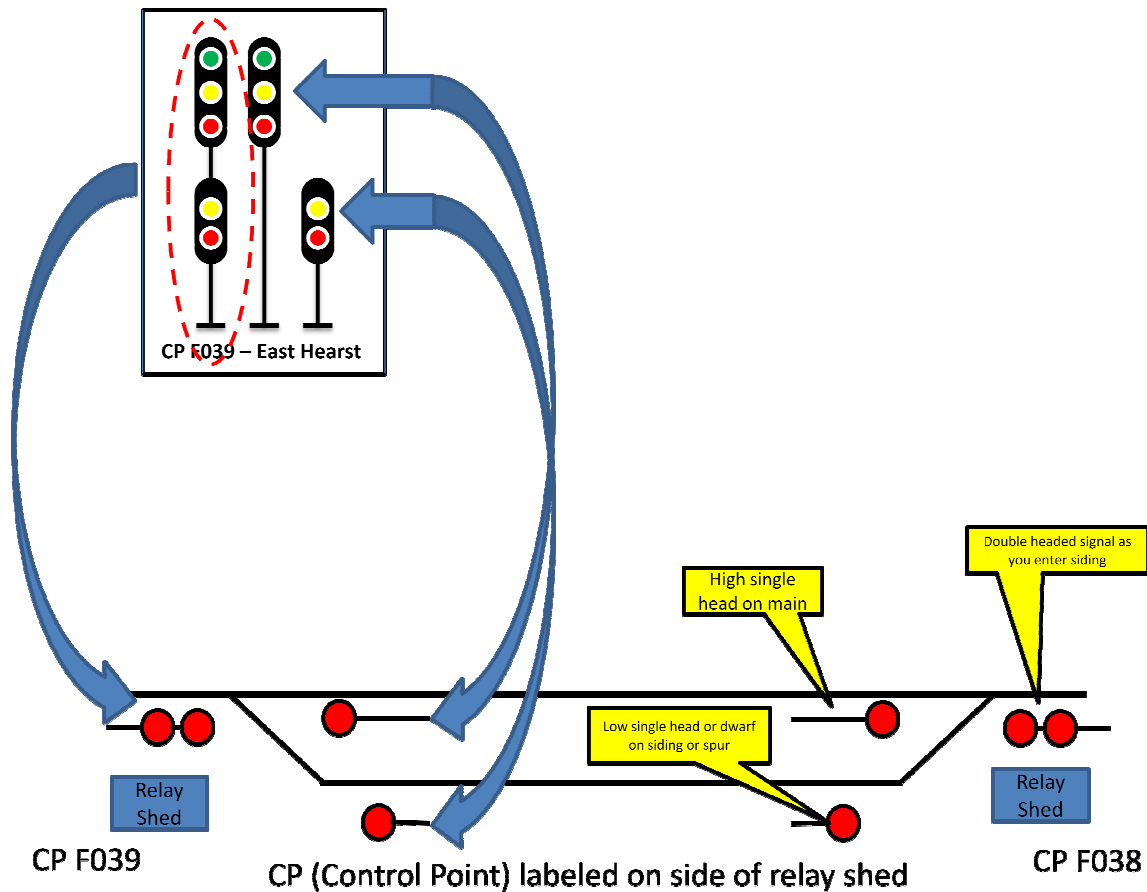
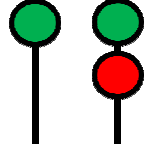
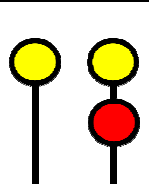
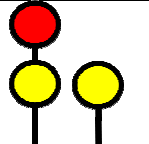
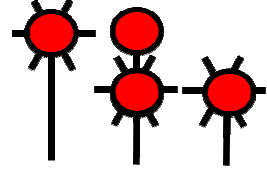
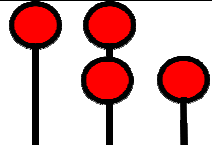


Figure 1 - Mapping Dummy Signals to Repeater

Union Pacific Railroad

We use the following signal aspects on the layout:

Aspect	Name	Indication
	9.1.3 CLEAR	Proceed
	9.1.8 APPROACH	Proceed prepared to stop before any part of train or engine passes the next signal. Trains exceeding 30MPH immediately reduce to that speed. ( <b>NOTE</b> speed is 40MPH for passenger trains)
	9.2.11 DIVERGING APPROACH	Proceed on diverging route at prescribed speed, not exceeding 30MPH through turnout prepared to stop before any part of train or engine passes next the signal
	9.2.13 RESTRICTING	Proceed at restricted speed, that allows stopping within half the range of vision short of: <ul style="list-style-type: none"> <li>• Train</li> <li>• Engine</li> <li>• Railroad car</li> <li>• Men or equipment fouling the track</li> <li>• Stop signal</li> <li>• Derail or switch lined improperly</li> </ul>
	9.2.15 STOP	Stop before any part of train passes signal

**Table 1- Aspect Chart**

Note that signals may be “high” (21’ mast) or “low” (either 14’ mast or dwarf). The shorter signals in the chart refer to low or dwarf signals. Dwarf signals have no mast and are set directly on the ground, typically in yards industrial track or the exits of uncontrolled track

### 3) Orienting Yourself on the Layout

The railroad models three separate subdivisions of the Union Pacific in the San Francisco Bay Area in the year 1999, just after the UP/SP merger. While the merger has happened, there are still many vestiges of the SP, and DRGW not yet repainted into Armour Yellow and Harbor Gray.

The major portion of the visible layout centers on the Milpitas Yard, the NUMMI auto plant in Fremont, and the Niles Canyon out to Pleasanton, Radum, and on to Stockton. There is another subdivision modeled, which represents the line along the East Bay from Oakland to Niles Junction. The modeled portions of the railroad are highlighted on a Google map of the area in the figure below.

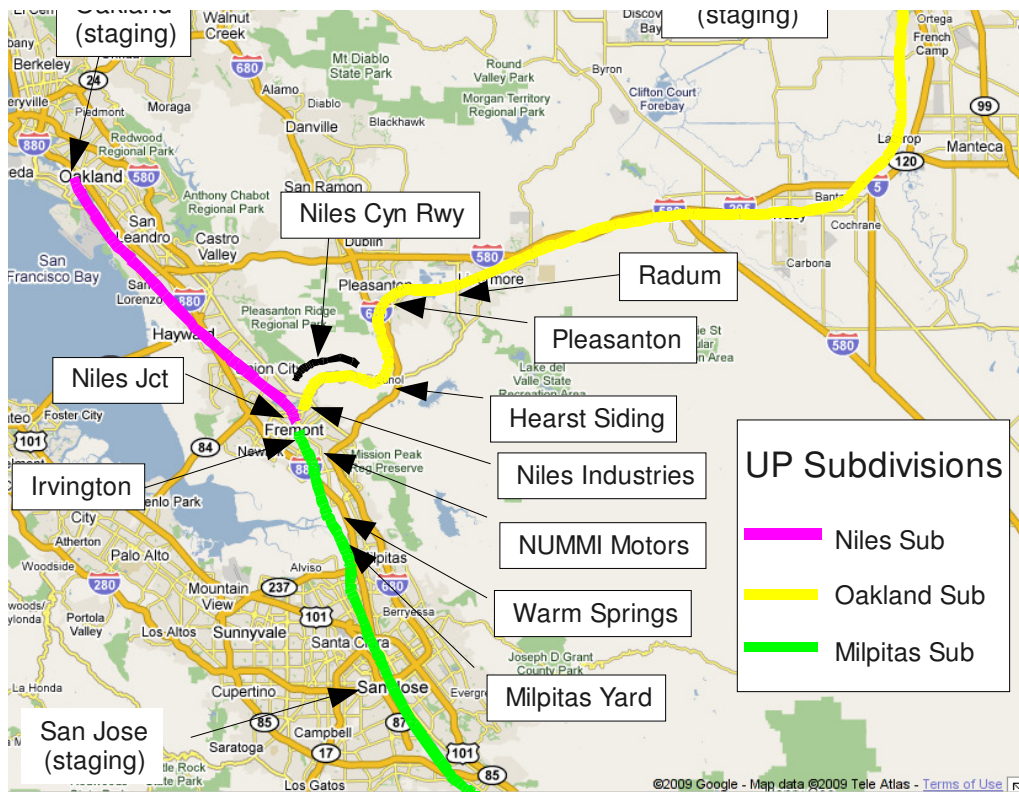


Figure 2 - Map of the Prototype

Historically, the stretch of the modeled railroad from San Jose to Stockton was originally built by the Western Pacific, and covered portions of two subdivisions



## Union Pacific Railroad

on the WP's employee time table. The stretch from San Jose through Milpitas to Niles Junction is called, predictably, the *Milpitas Subdivision*. However for historic (or should that be hysteric?) reasons, the stretch from Niles Junction to Stockton is called the *Oakland Subdivision*, because this segment formed the WP's gateway to Oakland.

To add to the confusion, the line from Oakland to Niles Jct was originally part of the Southern Pacific, and called the *Niles Subdivision*. In the 1999 UP employee timetable covering the modeled area, all of the former WP and SP subdivision names are still in use. This all gets really confusing, so to keep it straight, repeat the following mantra:

Oakland is on the Niles Sub  
Niles is on the Oakland Sub

Clear as mud?

The layout itself, basically models only a small portion of the Niles Sub, and due to constraints of the room itself, the direction of that modeled portion is unfortunately not quite what one would expect from looking at the above map, however it does present most of the scenes from the railfan viewpoint (how the trackside fan sees them from public access). Additionally, the locations of Oakland, Roseville, Stockton, San Jose, and West Colton which figure prominently in the UP's symbols for the trains that work these lines are all represented by a 4-track staging yard. Coupled with the Niles/Oakland subdivision/station naming confusion means that the dispatcher really needs a good mental picture of where things are in the room. See the plan (provided by Steve Williams) below:

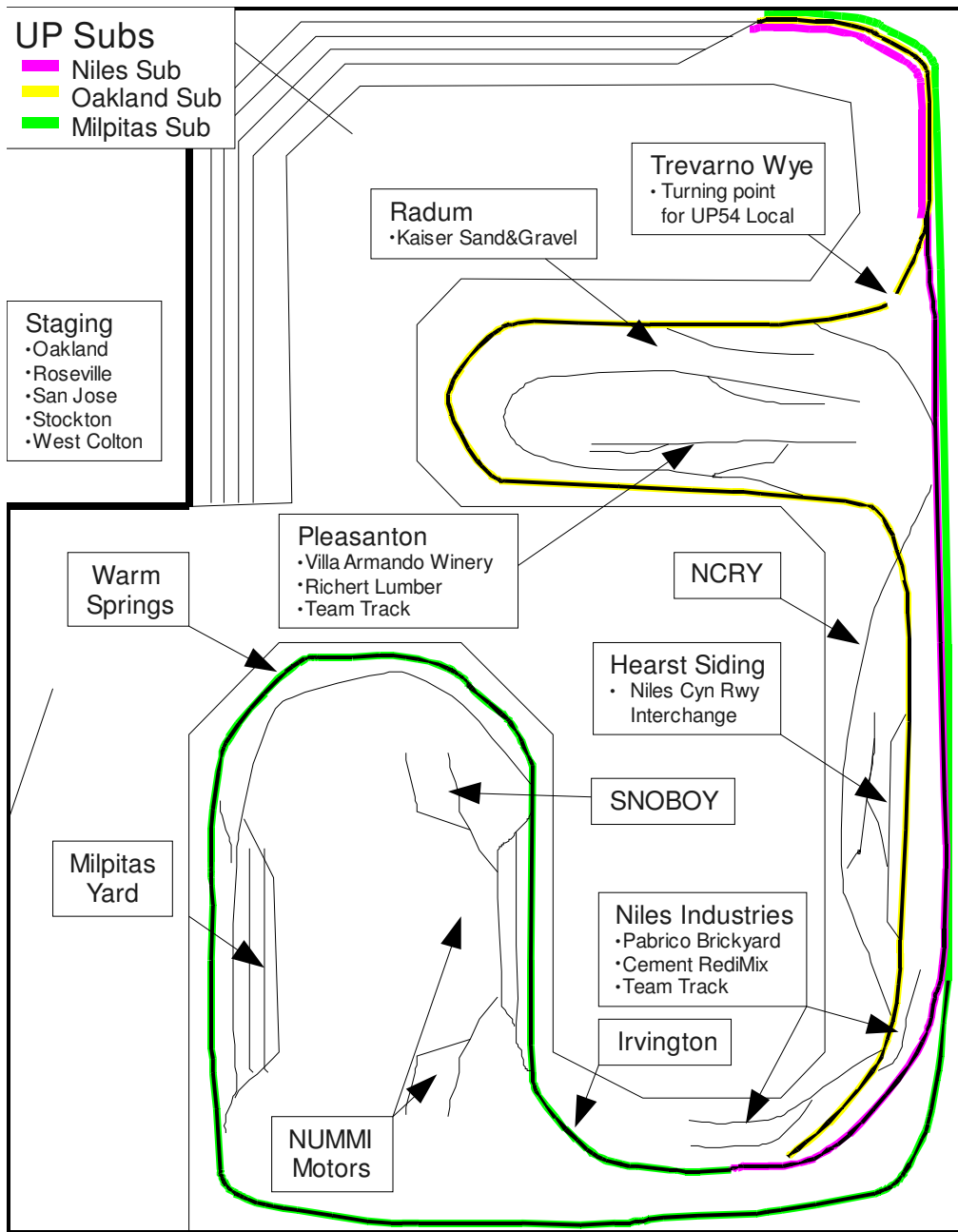


Figure 3 - Plan View of Layout

# Union Pacific Railroad

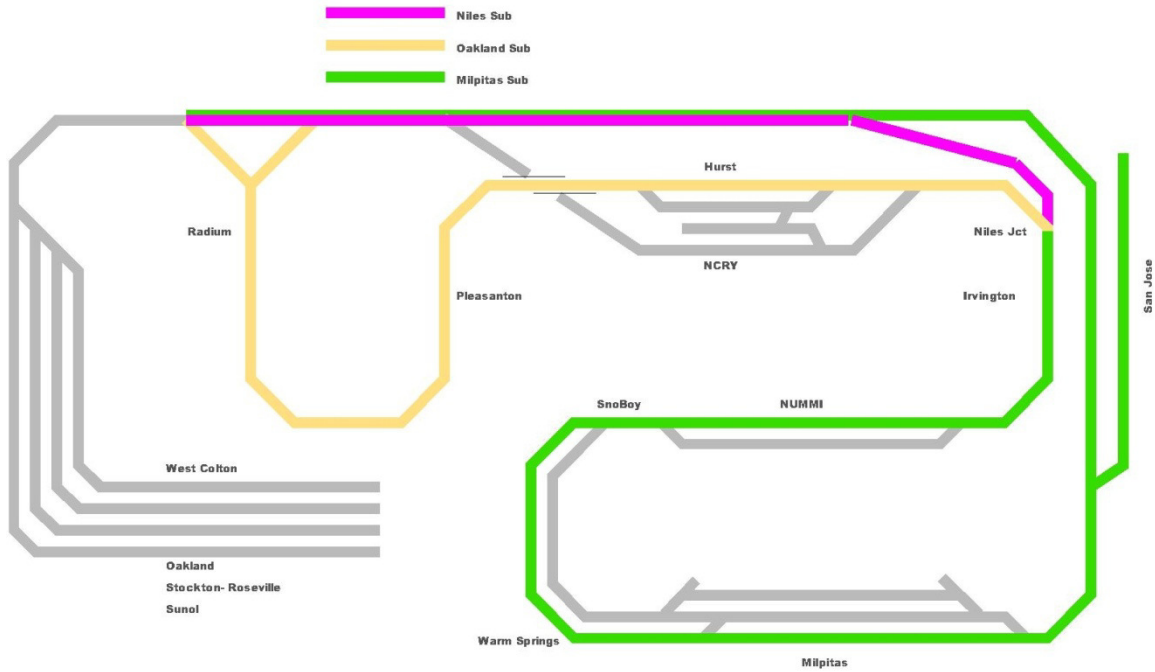


Figure 4 - Schematic View of Layout

## Dispatching

We are using CATS, a JMRI application which simulates the Digicon system used by SP until the 1996 Merger. UP actually uses a system called CAD but it is very character oriented and difficult to learn. We've settled on CATS because it has a prototype look and feel while keeping a short learning curve.

CATS manuals are available at the CATS home page, <http://home.comcast.net/~kb0oys/>. The would-be dispatcher should be familiar with the CATS users' manual which is included in the zip file.

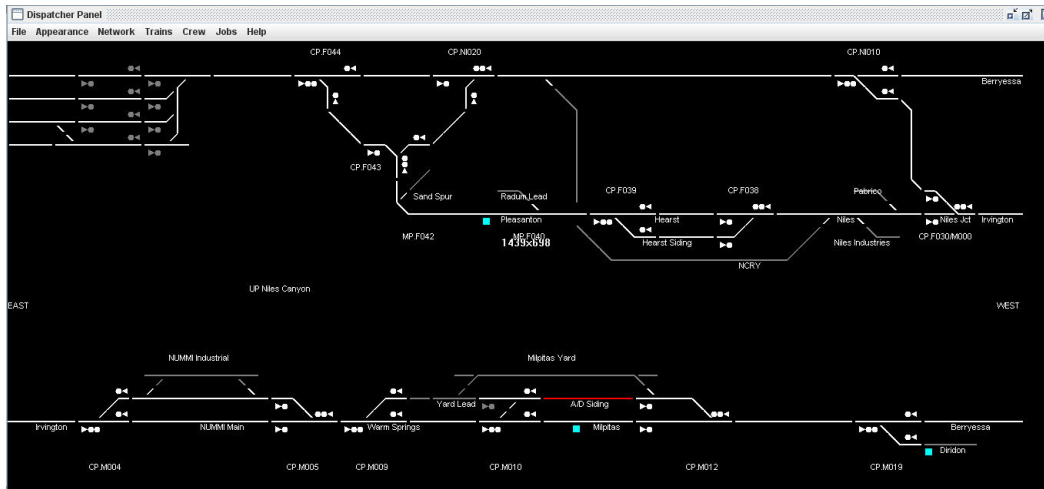


Figure 5 - CATS Screen

The dispatcher's screen shows a model of the layout. Turnouts can be thrown by clicking on them when track is not occupied and the route is not reserved. Once a route has been aligned, the dispatcher may reserve track by clicking on the signal icons. Reserved track shows as green and occupied track is red. If a train is working and needs local control, authority may be granted by right clicking the track section and selecting "grant track authority" which causes the local signals to display a flashing red aspect (Restricting) and the track to show blue on the display. Track may be taken back via the same procedure and selecting "remove track authority." There are many nice bells and whistles but this should get you started.

### **Addressing Trains:**

Trains are addressed by engine number (e.g. "UP1548" or "DRGW 3015") rather than symbol (e.g. "54 local" or "MRVSJ"). If the crew of a train needs to run around their train to return (BNSF local, auto trains AOAMIR/AMIOA,

## Union Pacific Railroad

AOAMIR/AMINP, MRVSJ/MSJRV) then the dispatcher must be informed and henceforth the train will be addressed as the new leading engine.

### ***No Time Table Authority:***

We provide a nominal timetable (transportation plan) and string chart for the dispatcher's use, but because the railroad is set in 1999 and governed by GCOR there is no formal timetable and the timetable does **NOT** grant authority to occupy track. We have two commuter trains per session and management is keenly aware of its liability for penalties, as well as bad press, if the ACE trains do not keep their advertised schedules. In addition, the auto traffic is high value and subject to service guarantees, so the Dispatcher needs to keep things moving. This is facilitated by sidings at Hearst, NUMMI and Milpitas. In addition the locals can clear up in the industry tracks at Pleasanton and NUMMI.

## **Using CATS (CTC) (from the CATS users' manual)**

This section discusses running the program as a CTC machine.

### ***Setting Signals***

Under CTC, signals are in their most restrictive aspect (Stop), until the dispatcher reserves a route from the signal to its successor, in the direction of travel. When the dispatcher reserves a route, all signals in one direction of travel may show "movement allowed" indications. All signals facing the opposing direction of travel remain in their most restrictive aspect. Thus, a train is given permission to go from only point A to point B. Movement from point B to point A is prohibited by signals.

Reserving a route also locks the route. This means that until the existing reservation is cleared, a reservation cannot be made in the opposing direction or a turnout on the route cannot be changed by the dispatcher. The computer will not allow the dispatcher to set an unsafe route. An unsafe route is one which conflicts with an existing route, one in which the dispatcher has granted local switching to a block, one in which the dispatcher has taken a block out of service, one which has one or more turnouts aligned to a different route, or one in which a block is shown as occupied.

The local crew may still move turnouts when granted Track Authority.

The signals for the reserved route will obey the "Signal Aspects and Indications" of the employee handbook (see "Signal Aspects" above). The

## Union Pacific Railroad

symbols representing the signals on the dispatcher panel will be “empty” (white or grey) if not involved in a reserved route; red, if in the opposing direction; yellow, if the next signal is red; or green, if the next signal is not red. Thus, the symbols mirror the signals the engineer sees, to the extent that can be done with five colors. The colors of the signal icons are only loosely connected to the actual layout aspects. It is possible to define an aspect to show yellow (e.g. normal approach medium) and the icon to be green (because the next signal is non red).

The way the dispatcher reserves a route is to click the left mouse button when the mouse is positioned over an “empty” or “off” signal symbol. If the reservation is accepted, then the signal symbol changes color and the tracks composing the reserved route turn green with an arrow head pointing to the exit<sup>1</sup> of each block. A subtle distinction exists between white “empty” icons and “grey” empty icons. White ones have a physical signal associated with them on the layout. Grey ones do not; thus, the color difference is a reminder to the dispatcher that the train engineer does not see a signal that the dispatcher does.

Tip: you will get more reliable response by clicking on the signal icon “head” (not the mast) because of the way **CATS** looks for “hot zones”.

There are two ways to clear a reservation. The dispatcher can cancel a reservation by clicking the left mouse button when positioned over a signal icon that is green or yellow. Alternatively, when a block within the reserved route is occupied, the reservation is cleared, but the block still shows occupied. This means that the signals again show their most restrictive aspect.

A Control Point (CP) is a signal (icon) on the dispatcher panel. A route request propagates from the CP where the request is made, down the tracks, to the next CP. If there is an opposing reservation anywhere on any block, the request will be rejected. When the obstruction clears, the reservation will continue to propagate. If there is an obstruction between the request origination signal and any signal, the request will be denied. Similar rules hold for clearing a route.

Routes can be “fleeted” by using the right mouse button when positioned over a signal symbol. Fleeting is best used when one or more trains are taking the same route, in the same direction without opposing or crossing traffic. Fleeting means that after a block in a reserved route is occupied, then emptied, the reservation is renewed automatically. Fleeting is cleared by using the right mouse button and selecting the menu item or clicking the left mouse button when positioned over a signal symbol.

---

<sup>1</sup> The arrow head will be painted only if **Appearance->Direction Arrow** is checked.

### ***Throwing Turnouts***

If a section of track contains a turnout, that turnout is under dispatcher control, and the block is not occupied, reserved, or given to local control, then the dispatcher can move the turnout by clicking the left mouse button when not over any signal symbols or train labels while the mouse cursor is near the switch points (preferably in the “vee” between the routes).

The “hot zone” for detecting a mouse click is the rectangular tile enclosing the turnout. So, the mouse cursor does not have to be on the track line to register as a request to throw a turnout. A tile could have switch points on multiple edges. In that case, **CATS** cycles through the edges, flipping each, every time a click is detected.

### ***Train Detection***

The tracks on the dispatcher panel will change to “occupied” (red) in response to detection messages from the layout. An occupied block in a reserved route will turn red, but the exit arrow will remain, showing the expected direction of travel of the train. When the detection clears, the reservation will be removed (unless fleeting is in effect for the block).

Blocks can manually be marked as occupied or cleared by using the right mouse button when positioned over the desired track.

Tracks which do not have detectors associated with them are painted in a grey color, to distinguish them from detected tracks. This is a reminder to the dispatcher that reservations on those tracks will not clear automatically. However, positioning a train label on undetected track will tell **CATS** that the track is occupied and **CATS** will color the track accordingly.

### ***Tracking Trains***

Train labels can be placed on sections of tracks to record where trains are. Trains move, so the labels need to move.

The simplest way to move a train label is to place the mouse cursor over the label and “drag” the label to another block by moving the mouse while holding down the left mouse button. The cursor changes from its default symbol to a cross inside a circle when the program recognizes the left button has been pushed when over a train label.

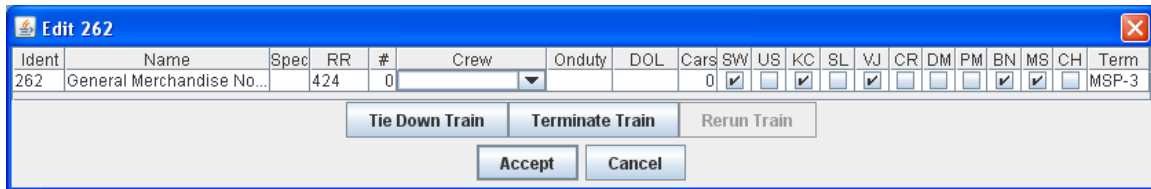
The other way of moving a train is to use the four arrow keys on the keyboard. The problem is knowing which train will move. The normal life cycle of a train is something like the following: it is created; it is positioned on the layout; crew is assigned to it; it does its work; it is tied down; it may be removed. The color of the train’s label indicates which state it is in. Trains in

the first and last state have no labels on the dispatcher panel; thus, have no color. A train that is positioned without a crew is “empty” (default light grey). A train with a crew is almond or blue. A train that has completed its chores is a rose color. Only one train will be colored blue – the one that has the focus and will be moved by the arrow keys. This train is one of the ones that is positioned on the layout and has a crew assigned to it. The “Page Up”, “Page Down”, and tab keys are used to cycle through this set of trains (many computers do not tell **CATS** when the tab key is pressed, so do not be surprised if it doesn’t work). So, to move a train on the dispatcher panel it must have a crew assigned to it (coloring it almond or blue). If it is almond, it is selected by repeatedly pushing the “Page Up” or “Page Down” or “Tab” buttons until it turns blue. Then the arrow keys move it. The train will move in the direction of the arrow key, if the track goes in that direction. So, pushing the up arrow when a train label is located on horizontal track does nothing.

If recording is turned on, every time a train is moved, the movement is given a timestamp and recorded for further analysis.

If the right mouse button is clicked while the cursor is positioned over a train label, the following screen pops up:

**Figure 6 - Terminate Train Screen**



This can be used to edit the information about the train under the cursor and is very similar to the train edit screen, except only the information on one train is shown. Any changes take affect when the Accept button is pushed. Note the 3 buttons in the middle:

- “Tie Down Train” releases the crew and changes the color of the train’s label, leaving it on the panel.
- “Terminate Train” releases the crew and removes the train’s label from the panel.
- “Rerun Train” is an option on “tied down” trains, initializing one so that it can work some more.

**Track Authority**

Track Authority is granted to a train to perform local switching. This means the turnouts in the block are unlocked and the signals protecting the block are set to their most restrictive aspect, protecting the block from other trains.

Track Authority is placed on a block by positioning the mouse cursor over a block, clicking the right mouse button, selecting “Track Authority”, and pushing the “Accept” button. Track Authority is removed by a similar



## Union Pacific Railroad

operation. When Track Authority is placed on a block, the block is painted blue.

On the UP in Niles Canyon, giving Track Authority on a block is reflected on the layout by presenting a “Restricting” (flashing red) aspect on signals protecting the block.

Tip: It requires fine motor skills and a responsive mouse to position the cursor over a single track in an area of congested tracks. So, for using track authority, forcing occupancy, and using out of service, select a track in the desired detection block that does not have other nearby tracks.

### ***Out of Service***

If a block is having maintenance performed on it, then the dispatcher should place Out Of Service on the block. This is accomplished like “Track Authority” – placing the mouse cursor over the track, clicking the right mouse button, and selecting “Out of Service”. OOS is removed by the same process.

No special signal aspects are used on the layout to designate OOS, but the protecting signal drops to “Stop”.

### ***Tips on Planning for Trains:***

<b>Train</b>	<b>Comment</b>
NUMMI -1	The first train that should be moving on the layout is the first NUMMI “pull” which will start within NUMMI. Note that NUMMI has no internal lead for working the westward side (Steel and Parts tracks, other than body parts) so he will need authority to use the main from time to time.
Mission Bay Local	Leaves staging at Newhall Yard in San Jose and is staged on the Joint Powers Board (JPB) track and then backs into the yard. MBL will initially pull out any LRV54 cars (usually MT hoppers for Kaiser Sand & Gravel) and then pull back onto the JPB track until LRV54 has departed. At that point MBL re-enter the yard and will do any Milpitas work as needed, pick up its outbound consist and depart to the South/West (right) into the JPB track (behind Milpitas Yard).
ACE 5	This train will leave staging (Stockton) and proceed over the visible (Oakland and Milpitas Subs) layout. It has a station stop at Pleasanton, where he holds the main. He then proceeds to Milpitas, where he again has a station stop on the main. ACE-5 then proceeds West/South (to the right of the yard) and proceeds South to “Diridon Station”
LRV54 local	The 54 comes on duty at 8:00 AM but must block its train before it can depart. 54 will depart via the yard lead to the

Union Pacific Railroad

	<p>East. DO NOT let the 54 out until the ACE 5 has arrived at Warm Springs as there probably won't be anywhere to set up the meet. You may be able to set the meet at NUMMI but then risk interfering with the NUMMI job, since NUMMI is very close to the East yard lead, it's usually not worth the trouble.</p> <p>See the notes below on locals and work limits</p> <p>54 returns after working out to Pleasanton and back usually arriving before the MRVSJ and after the return of NUMMI-2</p>
NUMMI-1 returns, NUMMI-2 leaves	<p>The first NUMMI pull returns with auto parts and steel cars again needing the main to enter the yard lead.</p> <p>NUMMI-2 leaves for NUMMI with Auto racks, crossing the main</p>
MOAWC, MOACI	<p>The Merchandise, Oakland to West Colton leaves staging from "Oakland" via the Niles Sub, crossing over on the Niles Sub at the back switch and entering the visible layout at Niles Jct, between Niles and Irvington. The 54 must be clear of Niles Jct for MOAWC to cross over, so either hold MOAWC short of Niles Jct or have 54 clear up in the industry tracks at Niles.</p> <p>MOAWC departs to the West/South bound for West Colton (Los Angeles) but in reality returns to staging via hidden track, continuing onto the Niles sub at "Niles Back Switch".</p> <p>MOACI is a late-session version of MOAWC</p>
NUMMI-2 returns, NUMMI-3 leaves	<p>The second NUMMI pull returns with loaded autoracks again needing the main to enter the yard lead.</p> <p>NUMMI-3 leaves for Snoboy with chemicals, crossing the main</p>
1 <sup>st</sup> Auto Rack Train	<p>We run one or two auto trains a day but we mix the symbols up to create some variety. Trains may be:</p> <ol style="list-style-type: none"> <li>1. AOAMIR-1/ AMIOA1 (Oakland – Milpitas -Oakland)</li> <li>2. AOASP (Oakland – Spring, TX via West Colton)</li> <li>3. AOAMIR-1/ AMINP (Oakland – Milpitas – North Platte via Roseville) You need to check today's line up</li> </ol>
AOAMIR1 / AMIOA1	<p>The <b>A</b>utomobiles, <b>O</b>akland to <b>M</b>ilpitas, <b>R</b>eposition (empties) leaves staging from "Oakland" via the Niles Sub, crossing over on the Niles Sub at the back switch and entering the visible layout at Niles Jct, between Niles and Irvington. It should pick up the outbound loads that NUMMI-2 just brought in as well as any other Oakland cars in the yard.</p> <p>The power runs around the train and it departs as AMIOA (<b>A</b>utos <b>M</b>ilpitas to <b>O</b>akland) to the East/North (left) and crosses over to the Niles Sub at Nile Jct.</p>

Union Pacific Railroad

AOASP	<p>The <b>Automobiles, Oakland to Spring, TX</b> leaves staging from “Oakland” via the Niles Sub, crossing over on the Niles Sub at the back switch and entering the visible layout at Niles Jct, between Niles and Irvington. It should pick up the outbound loads that NUMMI-2 or NUMMI-5 just brought in.</p> <p>The Train can depart via the Valley Route (over Altamont Pass) in which case the power runs around the train and it departs to the East/North (left) and runs over the visible layout (Oakland Sub) OR with the Superintendent’s approval, it can run down the coast, departing to South (right). This can avoid congestion if one of the locals is working in Pleasanton.</p>
AOAMIR-1/ AMINP	<p>The <b>Automobiles, Milpitas to North Platte, NE</b> will arrive as an Oakland empties (AOAMIR) but its power runs around the train and it departs to the East/North (left) and runs over the visible layout (Oakland Sub) enroute to Roseville and over Donner to North Platte.</p>
NUMMI-3 returns, NUMMI-4 leaves	<p>The Third NUMMI pull returns with chemical cars from Snoboy again needing the main to enter the yard lead.</p> <p>Note that NUMMI may need to use the main in Irvington as a lead and will call you for authority out of East NUMMI to Niles Jct.</p> <p>NUMMI-4 leaves for NUMMI with Auto parts, crossing the main</p>
MRVSJ/ MSJRV	<p>The <b>Manifest, Roseville to San Jose</b>, leaves staging at “Roseville” and enters the visible layout on the Oakland Sub working across the layout to Milpitas. Once it has completed its yard work the power runs around the train and it departs as MSJRV (<b>Manifest San Jose to Roseville</b>) to East/North (left) and crosses the entire visible layout. It will need to meet returning 54 local (probably at NUMMI) and perhaps the BNSF local.</p> <p>See “Tips on Planning for the Locals” about the Wye and Richert for suggestions on working MRVSJ around the locals.</p>
54 local	<p>Returns, probably via the yard lead – the clerk may keep the 54 crew on duty to clean the yard up and may use it to run Oakland cars up to Oakland if there are excessive Oakland cars in the yard</p>
2 <sup>nd</sup> Auto Rack Train	<p>See notes on 1<sup>st</sup> Auto Rack Train</p>
MOACI	<p>Manifest, Oakland to City of Industry (LA). Essentially a rerun of MOAWC, see above.</p>
BNSF Local	<p>This is a trackage rights train that generally follows the returning 54 into Milpitas, where it runs around it’s train and</p>

Union Pacific Railroad

	returns to the East/North. The BNSF local works Snoboy and may need to use the main in Irvington as a lead and will call you for authority out of East NUMMI to Niles Jct.  See notes on locals
ACE-4	Eastbound counterpart of ACE 5. Leaves staging at Diridon and comes to Milpitas arriving from the South/West. Makes a station stop on the Main in Milpitas and continues East and North over the visible layout, making a station stop at Pleasanton. Returns to staging via the North leg of the Wye.
NUMMI 4 returns, NUMMI 5 leaves	The fourth NUMMI pull returns with auto parts and steel cars again needing the main to enter the yard lead.  NUMMI-5 leaves for NUMMI with Auto racks, crossing the main

**Table 2 - Dispatcher's List of Trains**

***Tips on Planning for Locals***

The LRV (**L**ocal **R**oseville **A**rea) 54 local leaves Milpitas via the lead and runs to Niles for its first work. Be sure that you have worked out a way to get him by ACE 5, usually by letting ACE 5 by first or setting up a meet at NUMMI. Note that 54 may be non-clearing so ask before letting him out. Once 54 is clear of Niles Jct, be sure that he can clear the Jct switch so you can bring MOAWC in. Note that all industries are served trailing point, so the same instructions apply to the 54 and BNSF (except that BNSF starts at Stockton and moves South across the visible layout and then returns across the visible layout).

The BNSF trackage rights local basically creates the same headaches in the afternoon that the UP54 did all morning, but starts at Stockton instead of Milpitas. As the afternoon progresses, you will have to coordinate the progress of the BNSF local with the afternoon rush-hour departure of the east-bound ACE 4. Often this can happen while BNSF is in the NUMMI industrial area switching SNOBOY.

<b>Industries</b>	<b>Notes</b>
Snoboy (BNSF and NUMMI-3 only)	Will need to use the East end of the siding and Irvington as a switching lead, probably will not need Niles Jct.
Niles: Lehigh, Read-Mix, Team	You want the local clear of Niles Jct, but can grant them Niles and Hearst. They may want Hearst siding to sort things out.

Union Pacific Railroad

	Frequently, the AOAMIR-1 needs to come down the back staging access track from Oakland and cut across on the Niles Subdivision through Niles Jct and then onto the Milpitas Sub to get to Milpitas, while the 54 is working Niles. To coordinate this move, you may sometimes have to ask AOAMIR-1 to hold at Niles Jct, or you may be able to cajole the 54 local crew to pull their cabooses into the clear.
Villa Armando (54 only)	Villa Armando is served off the Radum lead (in the Pleasanton block) but the tail of the train will likely be in Hearst. Again they may want to sort things out using Hearst Siding.
Using the Wye (54 local only)	Once the 54 local finishes their eastbound work, they need to turn on the Radum/Trevarno wye. This should be done by having them pull forward into an empty staging track first to Livermore and then back down the back track to Trevarno and then pull forward to re-enter the Oakland Sub main at Radum. This is often a good time to sneak the MRVJSJ train by UP54. But if UP54 is early, you also arrange the pass by having UP54 pull their entire train into the clear on the Radum industrial lead.  Grant local control of the wye with limits of Livermore to the East and Trevarno to the South.
Richert and Pleasanton Team	Will need Pleasanton, and possibly Hearst (East Switch). They may be able to clear up in the Radum industrial lead. This will involve splitting and rebuilding its consist so it will take some time.  The Radum/Pleasanton switching track is long enough that you can sometimes have UP54 back their entire train into the clear if MRVJSJ isn't already by them.
NCRY/UP MOW at Hearst (54 only)	Will need Hearst Main and Siding and Niles but not Niles Jct.
PaBriCo (brickyard)	Will need Niles, possibly Niles Jct and Irvington
Return to yard	Can use either lead or crossover – you can stash a train at Warm Springs while bringing a

	local into the lead at the East Lead Switch
--	---

**Table 3 - Suggested Local Switching Limits**

***Old Heads Notes for the Dispatcher***

While the CATS dispatcher panel provides a fairly comfortable point and click interface for routing trains and setting signals, there are a couple of tricks that the regular dispatcher uses which you may find helpful

**General procedure for setting routes for trains**

I recommend moving along the line setting the switches from where the train is now to where you want it to go, and then, as a double check, set the signals in the reverse order. That way, the last signal you set is the one the train is waiting to proceed. That way, if you make a mistake and get a turnout thrown the wrong way, the crew should still be sitting still, and you won't accidentally route them to the wrong place.

**Letting NUMMI jobs out of the yard**

The best way to clear the NUMMI job out of Milpitas Yard is:

1. Throw the turnout at CP.M009 for the yard lead
2. Throw the turnout at CP.M005 for the NUMMI siding
3. Grant local authority for the NUMMI siding (right-click on the track segment and select "Grant Track Authority". This will automatically set the double-headed signal at CP.M005.AB to a "Restricting" (red over flashing red) indication, even though the panel will continue to show "white" for that signal.
4. Do not click on the double-headed signal at CP.M005
5. Finally, click on the signal MP009.B (the one next to the yard lead end of CP.M009). This will give the crew a flashing red to leave the yard.

The reason for this advice is that the crew of the NUMMI job often doesn't really know how they want to tackle their first move at NUMMI until they get there, and we haven't been able to figure out how to make the signals show "Restricting" any other way in the current version of our CATS dispatching software.

As they work, the crew will sometimes need to ask for local control of the mainline switches at CP.M004 and CP.M005 in order to run around their train. Keep in mind that there is really no track between CP.M009 and CP.M005, and the crew will have to foul CP.M009 if they need to run around. I usually grant the crew local control of all three control points, but tell them that they should use the Warm Springs Main rather than the Yard Lead so that they don't un into any yard switching.

***Letting the NUMMI job back into the yard***

Normally, the yard clerk will want the NUMMI job to come back by way of the yard lead, but not always, so I always ask first. Then, follow the following procedure to give them the signal to come home:

1. Tell the crew to sit tight behind the signal on the siding.
2. Remove local control from all of CP.M004, M005, and M009 to restore dispatcher/CTC control.
3. Set the turnout at CP.M005 for the siding.
4. Set the turnout at CP.M009 for the yard lead.
5. Set the signal at CP.M009.AB for entry to the yard lead.
6. If the crew is in the NUMMI industrial area, grant them local authority for the siding itself so that they can properly line the switches.
7. Remind the crew to line and lock the industry switches to the NUMMI siding when they leave.
8. Set the signal at CP.M005.B for exit from the siding.

***Getting the NCRY Job into the NCRY***

The electrically locked switch for the NCRY that is just beyond CP.NI020 is also a tricky spot. The dispatcher cannot throw this turnout from the CATS panel – the crew must be given local track authority. However, once you give them that local authority, CATS will not let you set the signal at CP.NI020.A to let them proceed, but you don't need to worry – that signal will be showing the “Restricting” aspect of flashing red.

So here is my preferred sequence to clear the NCRY job from Sunol (staging) to NCRY territory:

1. Set CP.F044 to route the train from Sunol (staging) to CP.NI020.
2. Set CP.NI020 to route the train onto the long hidden back track
3. Grant Local Authority for the NCRY switch. This sets CP.NI020.A to flashing red.
4. Call the crew on the radio to remind them to report clear when they are inside the NCRY property and have restored the switch to normal.
5. Set signal CP.F044.AB

When the crew calls that they are in the clear, take away the local authority for the NCRY switch.

***Getting the NCRY job back to Sunol***

No real tricks here, but this is how I do it:

1. Set the switch at CP.NI020 to go through to F.044
2. Set the switch at CP.F044 to go from NI.020 to Sunol (staging)
3. Set the single-headed signal at CP.F044.A
4. Set the double-headed signal at CP.NI020.AB
5. Grant local authority to the NCRY switch

## Union Pacific Railroad

6. Call the crew on the radio and tell them that they have local control of the switch, and can proceed to CP.NI020 and then follow the signals.
7. Remind them to close the NCRY switch and report clear so you can remove the local authority.

### **Car Forwarding**

Trains on the layout only see switch lists which are generated by the Clerk, but the underlying car forwarding uses the Car Card and 4 cycle waybill system (micro-mark cards). Enough has been written about Car Cards and Waybills in the press that we do not need to lay it out in detail here, however there are a couple of extensions to the system that bear discussion:

- The UP “54 Local” and the BNSF “Trackage Rights Local” work some of the same industries. Since BNSF is the tenant road, waybills that are to be routed over the BNSF are marked with an orange stripe at the top to reduce confusion.
- Since there are several routes to the east beyond the modeled layout, the VIA line is used to indicate the intermediate yard (e.g. Oakland, Roseville, West Colton, etc.) for forwarding. These destinations are listed on the yard map to assist the Clerk in preparing switch lists.
- The prototype does not have a permanent switch job in Milpitas, only a Yard Clerk. The Clerk prepares switch lists for each train that works the Yard, indicating the blocking order of the cars for each train, which does its own switching. Since the locals don’t have the cards, they mark their switchlists with any off-spot cars and return the switchlists to the Clerk. The cards are kept in the sorting rack in clerk’s office.



Union Pacific Railroad

**Union Pacific Switch list**

Station: \_\_\_\_\_ Date: \_\_\_\_\_ 1999  
Train \_\_\_\_\_ Eng. No: \_\_\_\_\_

<i>Initials</i>	<i>Car No.</i>	<i>Type</i>	<i>From</i>	<i>To</i>
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

**Figure 7 - Switch List Form**

**Milpitas Yard Clerk**

The Clerk is a paperwork-only position because the prototype yard does not have a permanent switcher. The Clerk is responsible for tracking the status of all cars in Milpitas and at the NUMMI plant. He generally knows which trains are bring cars in because:

1. he has the clipboards for all the trains and has the waybills
2. Copies are provided of all incoming switch lists
3. He has the Yard Call Spread Sheet which shows how many cars for each destination are arriving on each train
4. The cards are kept in the sorting rack in clerk's office.

All Trains are made up with switch lists at the beginning of the session, in fact the lists and road names and numbers are generated automatically via RFID readers under the staging and Milpitas yard throats and RFID tags on the trucks of each car with the destinations completed manually. The locals (UP LRV54, NUMMI-1 and 2 and BNSF) all have one or more switch lists showing their set outs and pickups (may use both sides). The road trains have switch lists showing where the cars are ultimately going (that is the NEXT destination). The road trains DO NOT have switch lists showing their pickups, the Clerk needs to prepare these. You can use the copier on your right to make copies for your use.

You are responsible for preparing the following switch lists:

Union Pacific Railroad

**Trains and Work:**

Train	Comment
NUMMI -2	Autoracks out (usually in storage 3) and pulls loaded racks in the rack tracks. <b>THIS IS MADE UP AND CLIPPED TO YOUR PAPERWORK</b>
Mission Bay Local (MBL)	<b>THIS IS MADE UP AND CLIPPED TO YOUR PAPERWORK</b> but you modify it. Arrives from the JPB track (behind the yard) with cars from industries along the peninsula. Assembles and blocks his train, usually the cars are in class 2 or 3 unless you've moved them. MBL also works the Smurfit-Stone spur off the JPB track. MB backs out of the yard and departs back into the JPB track. You need to make the outbound switch list.
MOAWC (Manifest: Oakland to West Colton)	This train shouldn't arrive until after the return of NUMMI-1. MOAWC will set our most or all of its cars and pull all cars going to the Coast Line and West Colton destinations (see the Milpitas Yard chart). The waybills will be marked with a □ symbol. There are WC cars coming back with NUMMI-1 and some in the yard, probably on Storage 2. MOAWC departs to the SOUTH (right) as it is heading down the Coast.
NUMMI-3	Snoboy cars out (probably in Storage 1) and pulls outbound (no orange stripes) hoppers and tanks on Snoboy 1-6. Snoboy 7 is off-spots and those cars should be moved to an appropriate track (Tanks: 1,2, or 6; Hoppers 3,4, Chlorine tanks on 5; Acid Tanks and overflow hoppers on 6). You need to make both outbound and inbound* switch lists.
1 <sup>st</sup> Auto Rack Train	This train arrives after the return of NUMMI-2. IT brings MT Autoracks and leaves with loaded racks. There are three possible rack trains: <ol style="list-style-type: none"> <li>4. AOAMIR-1/ AMIOA1 (Oakland – Milpitas -Oakland) “O”</li> <li>5. AOASP (Oakland – Spring, TX via West Colton) “□”</li> <li>6. AOAMIR-1/ AMINP (Oakland – Milpitas – North Platte via Roseville) “Δ”</li> </ol> <p>You need to check today's line up to see which are running. In any shift the plant will only be shipping to one destination so you won't have a lot of racks clogging the yard.</p> <p>Note that the engine will be on your left for AMIOA and AMINP trains. The AOASP may either run over Altamont Pass (engine on left) or down the coast (engine on right). Check with the Dispatcher on AOASP.</p> <p>You will need to flip the way bills for the racks after NUMMI-2, check today's line up for the destination of the second racks.</p>

Union Pacific Railroad

	You need to make the inbound and outbound switch list.
	Lunch Break – flip all boxes and racks at NUMMI, put a scrap load(s) in the steel gon(s)
NUMMI-4	Leaves with inbound auto parts and returns* with empties and outbound stampings (basically a repeat of NUMMI-1). You need to make both outbound and inbound switch lists.
MRVSJ (Manifest: Roseville- San Jose)	Arrives with mixed freight for NUMMI, tomorrow's 54 local and the Mission Bay Local (MBL) and returns as MSJRV with anything heading North over the Shasta Line or East over the Donner or Feather River routes (symbol Δ). MSJRV departs to the North (left).
54 Local returns	You will need to make a switch list* to tell 54 where to put its returning cars. Use the RFID reader to print a list of returning cars. There will be cars for the MSJRV and MBL which are coming up soon, the WC cars are for MOACI and are less urgent: (if you are done with Waukesha for the day, you can store the WCs and RVs into the Waukesha lead). 54 can do any yard work you need done and then put its power and cabooses on the engine track.
2 <sup>nd</sup> auto racks - if run	More or less a repeat of 1 <sup>st</sup> rack train except that you can fill an AMIOA with any Oakland (symbol O) cars.  You need to make the inbound and outbound switch list.
MOACI	Manifest, Oakland to City of Industry (LA). Essentially a rerun of MOAWC
BNSF Local	Arrives at yard with (Perhaps) some interchange and pulls outbound interchange. He usually has an outbound transformer from Waukesha, a Smurf or two and some outbound empty steel cars from NUMMI, but you can have his cars ready for him to get him out of your way. BNSF is NOT available to do work for you.
NUMMI-5	Repeat of NUMMI-2

**Table 4- Trains and Work in Yard**

\*When NUMMI and locals return to the yard, you can have them pull down the ladder and use the computer or tablet provided to print a “track list” so all you need to do is fill in the destinations. This will save a lot of time and writing.

***Suggested Initial Track Assignments***

<b>Track</b>	<b>Use</b>
A/D	General A/D use, the 54 local's cars will be on this track (unblocked) at the start of the session
Class 1	West Colton □

## Union Pacific Railroad

Class 2	Oakland, BNSF Transfers
Class 3	Mission Bay Local (MBL)
Storage 0	Open or Roseville Δ
Storage 1	Roseville Δ
Storage 2	Snoboy
Storage 3	Empty Racks for NUMMI (must use this track – won't fit elsewhere)
Storage 4/Waukesha Lead	Waukesha, Water Treatment Plant and anything that can sit for a while

**Table 5 - Suggested Initial Track Assignments**

These are suggestions only and since the tracks are of different lengths (see yard chart for length in cars) you may change assignments during the session to optimize track use. Plastic separators are provided for the card boxes and there is a white board to help you manage track use. The assignments should be on the white board on the clerks card rack.

When the 54 local returns you can keep the crew on duty to sort out the yard and work any in-yard industries (Waukesha, Smurfit).

\*When NUMMI and locals return to the yard, you can have them pull down the ladder and use the computer or tablet provided to print a "track list" so all you need to do is fill in the destinations. This will save a lot of time and writing.

## 4) Local Freight Service

### a) *UP LRV54 Local (Pleasanton Turn)*

The “54” local serves local industries between Milpitas and Radum (East Pleasanton) and return (it is the “Pleasanton Turn”). All spurs are switched on a trailing point basis. The crew reports for duty at Milpitas and receives a switch list from the Yard Clerk. The crew blocks its train before proceeding. This job will start at the beginning of the session and leaves by 9:00 AM.

Before leaving the yard, the 54 crew switches any outbound loads at Waukesha Electric, per the Clerk’s direction.

The 54 local serves the following industries per the blocking chart below:

Industry	Location	Car Types
		Power (2 Geeps)
Richert Lumber	Pleasanton	Boxes, Flats
Team Track	Pleasanton	Any
Villa Armando Winery	Pleasanton	Beer cars
Kaiser Sand & Gravel (KS&G) <b>GRAVEL PIT ONLY, NO SAND!</b>	Radum	Gravel Hoppers
NCRY Interchange	Hearst	Historic eqpt, MOW
PaBrico Brickyard	Niles	Boxes, Gons
Lehigh Cement	Niles	Cement Hoppers
Readi-Mix Concrete	Niles	Gravel Hoppers
Team Track	Niles	Any
		Caboose

**Table 6 - Table of Industries for 54 Local**

Note that after servicing the Winery the train runs to the wye and reverses direction. It is strongly suggested that train head into an empty staging track and back through the wye, then return towards Pleasanton.

The crew will cut off one locomotive (probably the trailing unit) to switch Richert Lumber and the Pleasanton team track. The crew of 54 should use a “dog bone” cab to facilitate breaking and reestablishing the consist. See note on the fascia at Pleasanton for instructions on breaking/making consists.

## Union Pacific Railroad

After returning to the yard, the 54 crew switches Waukesha Electric and does any other work directed by the Yard Clerk and then ties its engines up on the Waukesha lead.

Some of these industries are also switched by the BNSF Trackage Rights Local, so only work cars on your switchlist.

### ***b) Mission Bay Local (part of "Critter" assignment)***

The prototype Mission Bay Local runs over night from South San Francisco on the Joint Powers Board line [you can see the prototype's power tied up from 101 - at Grand Avenue - before around 7:30 PM when it departs. It services the team track in South SF, several paving companies, Cal Train's yard and sometimes covers for the Broadway Local.] In our world it is the first train to arrive in Milpitas.

The crew reports for duty at Milpitas and picks up its train on the JPB track behind Milpitas Yard. The crew checks in with the yard clerk and switches out its train, making pickups of rock brought in by the 54 local and traffic from the manifests to Peninsula consignees.

The MBL will have outbound cars from Joint Powers Board (JPB) line. It will have empty gravel cars for the LRV54 local. Immediately after arrival the MBL will set out any LRV54 cars, then puts its train together and back down the JPB lead so the LRV54 crew can finish blocking its train and leave. The MBL crew will go off duty to become the Critter and ACE crew as required and will return once to complete the MBL's yard work once the Critter work is done.

After making its set outs in Milpitas the MBL switches Smurfit-Stone (off the JPB lead) and pulls any out bounds. MBL also services Waukesha Electric and the Water Plant (off Storage track4), Franklin Distillery and Milpitas Materials. Upon returning to Milpitas MBL pulls all of its cars and ties up on the JPB lead.

A blocking chart for Peninsula consignees follows:

<b>Industry</b>	<b>City</b>	<b>Car Type(s)</b>
		Power
CalTrain Shops	Santa Clara	Box, Flat
Granite Rock	Redwood City	Hopper
Readi-Mix	Millbrae	Covered Hopper
Team Track	South San Francisco	Reefer, Any

**Table 7 - Table of Industries for Mission Bay Local**

**c) BNSF Trackage Rights Local**

BNSF has trackage rights (in our reality) from Mormon Yard in Stockton over Altamont Pass to the lower East Bay; this train serves the industries below (in this blocking order):

Industry	Location	Car Types
		Power
Richert Lumber	Pleasanton	Boxes, Flats
Team Track	Pleasanton	Any
Kaiser Sand & Gravel SAND ONLY, Does not work Plant!	Radum	Gravel Hoppers
Interchange	Milpitas Yard	inbounds for Waukesha, Smurfit- Stone, Steel Coil Cars
Waukesha	Milpitas	Flat, Box
Snoboy	Warm Springs (NUMMI)	Covered Hoppers, Tanks
Lehigh Cement	Niles	Cement Hoppers
Team Track	Niles	Any

**Table 8 - Table of Industries for BNSF Local**

The BNSF local works all trailing point sidings and then runs around its train in the Milpitas Yard and work the facing points as trailing on the return.

Note that Pleasanton is very tight and there is only room for two units and 1 car or 1 unit and two cars, so the crew should break their consist to work Richert Lumber and the Pleasanton Team Track. Any Villa Armando cars may be moved during switching but must be replaced before leaving town.

Many of the industries served by this train are also served by the UP 54 local (BNSF got rights to serve these customers as a condition of the UP/SP merger in order to preserve competition) so care must taken to only take cars billed for the BNSF, consult your switchlist.

At Snoboy the BNSF local may need to use the East Switch of the Siding and the Main at Irvington as a lead because the Auto Rack and Plant spurs are considered to be under Blue Flag protection when not being worked and may NOT be used a leads. The BNSF local must call DS58

## Union Pacific Railroad

and obtain authority to occupy the East Industry Switch, East Siding Switch and the main at Irvington.

Coil Cars and scrap gons bound for NUMMI, Paper Box cars for Smurfit-Stone and cars for Waukesha Electric are interchanged at Milpitas yard.

The BNSF job will be called from staging (representing Stockton) about 10:30 AM and after the 54 local has completed its work in Pleasanton. At the end of the job, the BNSF trackage rights train ties up in staging.

### ***d) Sure Spots***

Several industries (sub industries within NUMMI, The Smurfit-Stone Paper box warehouse and Frank-Lin Distillers) have numbered doors. The waybills for these industries indicate the door at which the car is to be spotted. Switch lists should indicate and crews should endeavor to place cars at the proper doors. If a door is occupied by a car which is not being moved, the crew must place the car "off-spot" and indicate the location when returning the switch list to the clerk. (If you are really behind or overwhelmed you may dispense with the spot and just place the car on the correct track).



## 5) Industry Jobs

### a) NUMMI (New United Motor Manufacturing Inc.) Job

The NUMMI job serves the NUMMI auto plant in Warm Springs and the bulk transfer facility at Snoboy. The plant job must meet strict work schedules at NUMMI. Its schedule is as follows:

<b>Work</b>	<b>Time</b>
Parts (all types) and steel	8:00
Auto racks	9:15
Snoboy	10:30
Parts and steel	12:00
Auto racks	3:55

**Table 9 - Schedule of Pulls for NUMMI Job**

NUMMI receives 2 and 3 level auto racks, 60' and 86' boxes and steel coils. Snoboy receives tanks, chemical and pellet hoppers

There is no run-around within the industry limits at NUMMI so you will need to use the siding and/or the main in order to switch out the plant and return, engine first. You must contact the Dispatcher (DS 58, Omaha) to occupy the main or siding at NUMMI or to operate any of the motor operated switches (look for the switch machine casting on the head blocks).

Note that auto rack loader is protected by Blue Flags except when you are actively working the racks (pulls 2 and 5), otherwise they are off limits and may not be used as a switching lead for Snoboy or parts/steel tracks. The same is true of the various industry spots within the plant: when the NUMMI job is not actively switching those spots, they are under Blue Flag protection. You must contact the Superintendent or the Clerk to move a blue flag.

The initial run of the NUMMI job will be tied down on the yard lead. After the first run is complete, the NUMMI job will return to the yard with its pick ups and confer with the Yard Clerk, who will prepare switch lists for the remaining moves.

BNSF steel coil cars are to be taken to Milpitas yard where they are interchanged with the BNSF local.

**b) “Critter Wrangler”**

The Critter Crew is also responsible for the Mission Bay Local and ACE trains. It will usually start on its critter duties after delivering inbound LRV54 cars from the MBL

**i. Lehigh Cement**

Goes on duty at 8:00 AM. Use the trackmobile (4150) to sort out the loaded cement cars into two tracks, one for UP 54 local pickups (UP, predecessor roads: CNW, DRGW, SP and also PLCX) and the other the BNSF local (BNSF, BN, ATSF).

**ii. Kaiser Critter**

Goes on Duty at 8:30 AM, The Kaiser “Critter” is an in-plant job that spots cars under the tipple and “loads” the incoming empties. Note that there are pre-cast loads in a box and you should drop loads in the cars as you “load”. **The Kaiser engine is addressed as 1006.**

This job goes on duty at 8:00 AM and should have its work done by the time the UP 54 local arrives (9:15). Make sure all out bound loads are in one place (tipple track or one of the storage tracks) and one of the storage tracks is clear for incoming empties.

**iii. NCRY**

Goes on Duty at 8:45 AM. The NCRY will be spotted either on the stub of staging track 1 or on the NCRY main along with any car(s) the NCRY is to interchange. Use the road number of the engine provided. If the NCRY train is in staging, you must obtain authority from DS58 to cross the hidden track (Niles Sub) to get to the NCRY. NCRY may return after MBL work is completed and the LRV54 has service Hearst siding to retrieve any inbound cars to the NCRY.

## 6) Commuter Service

### *a) Altamont Commuter Express (ACE)*

Altamont Commuter Express has service from Manteca to San Jose via the Altamont line. We run the ACE number 5 and 4. In each case the ACE will be called from staging (report in at **Stockton**) and run through in the appropriate direction. In the AM number 5 will run through Pleasanton (making a station stop) and proceeding through Niles, Warm Springs and making a stop at Milpitas and traveling on to San Jose's Diridon Station (behind the backdrop south of Milpitas). The afternoon ACE, number 4, will run from staging through the hidden track and thence to Milpitas, Warm Springs, Pleasanton (Station Stop) and back to staging. Number 4 runs cab car first and engine last. Select the cab car as engine and use the cab car number as your engine number on Number 4. Refer to the Employee Time Table for your schedule. The timetable does NOT grant authority to occupy track, you MUST contact DS58 for a track warrant.

## 7) Manifest and Auto Trains which work Milpitas

### a) *UP Train Symbols*

The Union Pacific Railroad uses 5 or 6 character alpha symbols to designate trains of the form:

**T OR DE C**

Where

Field	Size	Description
T	1	Type of train
OR	2	Origin
DE	2	Destination
C	1	Condition (optional)

**Table 10 - UP Symbols**

We use the following codes:

Type	Code	Description
T	A	Autos/Autoparts
T	I	Intermodal
T	M	Manifest (General Freight)
T	U	Unit
T	Z	Hot Intermodal
OR/DE	CI	City of Industry (LA Area)
OR/DE	KF	Klamath Falls, OR
OR/DE	LB	Port of Long Beach
OR/DE	MI	Milpitas
OR/DE	ML	Mira Loma (LA Area)
OR/DE	NP	North Platte Nebraska
OR/DE	OA	Oakland
OR/DE	PD	Albina Yard, Portland OR
OR/DE	RV	Roseville
OR/DE	SJ	San Jose
OR/DE	SP	Spring, TX
OR/DE	WC	West Colton (LA Area)
C	R	Reposition (Empties)

**Table 11 - UP Symbol Codes**

**b) Manifests**

Manifests are general merchandise freights which handle a variety of traffic. These freights forward cars from major yards to Milpitas destined for the industries served by the locals working Milpitas. With the staging available there are two manifests, one during each half of the session. Manifests set out their consists and pick up outbounds. .

**i) MOAWC – Oakland to West Colton Manifest**

Leaves staging around 8:30 (after the ACE 5 is clear) and runs down the Niles Sub on hidden track as far as the Niles cut off and then crosses onto the visible layout. (This simulates the Niles sub – former SP Hayward line). Upon arrival at Milpitas it leaves its consist as directed by the Yard Clerk and picks up outbounds per the switch list prepared by the Clerk. It departs via the Milpitas sub (and onto the Coast Sub) and returns to staging via hidden track.

**ii) MRVSJ – Roseville to San Jose Manifest (Becomes San Jose to Roseville Manifest - MSJRV)**

Leaves staging around 9:00 AM (after the ACE 2 is clear) and runs across the layout on the Oakland Sub to the Milpitas Sub via Pleasanton. Upon arrival at Milpitas it leaves its consist as directed by the Yard Clerk and picks up outbounds per the switch list prepared by the clerk. It returns via the same route.

**c) Auto Trains**

Auto Trains are trains of Auto Racks, empty and loads. We assume all racks trains are destined to Oakland where they are mixed with other autos and sent to mixing facilities around the country. We run two rack trains per session.

**i) AOAMIR (Autos: Oakland Milpitas, empty) and AMIOA (Autos Milpitas Oakland) “O”**

AOAMIR runs down hidden track (Niles Sub) and crosses over to the Milpitas Sub at the Niles Cutoff. Upon arrival at Milpitas it leaves its consists of empty Autoracks as directed by the Yard Clerk and pick up loaded outbounds per the switch list prepared by the clerk. AMIOA returns to Oakland via the same route and ties up in staging as directed.

**ii) AOASP (Oakland – Spring, TX via West Colton) “□”**

The Automobiles, Oakland to Spring, TX leaves staging from “Oakland” via the Niles Sub, crossing over on the Niles Sub at the back switch and entering the visible layout at Niles Jct, between Niles and Irvington. It picks up the outbound loads that NUMMI-2 or NUMMI-5 just brought in.

AOASP can depart via the Valley Route (over Altamont Pass) in which case the power runs around the train and it departs to the East/North (left) and runs over the visible layout (Oakland Sub) OR with the Superintendent’s approval, it can run down the coast, departing to South (right). This can avoid congestion if one of the locals is working in Pleasanton. Check with the Dispatcher to determine today’s routing.

**iii) AMINP (Milpitas – North Platte, NE via Roseville) “Δ”**

The Automobiles, Milpitas to North Platte, NE will arrive as an Oakland empties (AOAMIR), leaving “Oakland” staging via the Niles Sub, crossing over on the Niles Sub at the back switch and entering the visible layout at Niles Jct, between Niles and Irvington. It picks up the outbound loads that NUMMI-2 or NUMMI-5 just brought in.

The incoming AOAMIR power runs around the train and it departs to the East/North (left) and runs over the visible layout (Oakland Sub) enroute to Roseville and over Donner to North Platte as AMINP.

## **9) Overhead traffic – run occasionally as needed if staging permits**

*d) Swift RoadRailer (ZCIPD)*

Runs Northbound from Milpitas to Staging via Radum. I caught this on Highway 99 in 1997 and when the I5 corridor was shut down, it traveled up the coast and over Altamont Pass. It was still running in 1999. Runs through hidden track and enters the visible layout at Milpitas and continues via Pleasanton to staging.

*e) Coast Intermodal (IOALBR)*

Empty well cars and some Autoracks. Runs south into hidden track and staging.

## Appendix 1

### 8) Track Warrants

We are currently operating under CTC using CATS so Track warrants are only used in case of CTC failure.

Track Warrants are transmitted and acknowledged over FRS (Family Radio Service) Radios. Any movement on the main must be made with the permission of the Dispatcher (addressed as "DS 58, Omaha"). A sample of the Track Warrant form is enclosed, below:

Union Pacific Railroad TRACK WARRANT	
No	_____, 1999
To:	_____ At: _____
1.	<input type="checkbox"/> Track Warrant No. _____ is void.
2.	<input type="checkbox"/> Proceed from _____ to _____ On _____ Track _____ SubDivision
3.	<input type="checkbox"/> Proceed from _____ to _____ On _____ Track _____ SubDivision
4.	<input type="checkbox"/> Work Between _____ and _____ On _____ Track _____ SubDivision
7.	<input type="checkbox"/> Not in effect until after the arrival of _____ at _____ _____ at _____ _____ at _____
8.	<input type="checkbox"/> Hold Main Track at Last Named Point
9.	<input type="checkbox"/> Do not foul limits ahead of _____, _____, _____
10.	<input type="checkbox"/> Clear Main Track at last named point.
11.	<input type="checkbox"/> Between _____ and _____ make all movements at restricted speed. Limits occupied by train or engine.
17.	<input type="checkbox"/> Other instructions: _____ _____ _____
18.	<input type="checkbox"/> Joint with: _____ between _____ & _____ _____ between _____ & _____ _____ between _____ & _____
This Warrant Has _____ Boxes marked: _____, _____, _____, _____, _____, _____, _____, _____	
OK _____ Dispatcher _____	
Limits reported Clear at _____ By _____	

Figure 8 - Track Warrant Form



## Union Pacific Railroad

Dispatching generally follows Union Pacific (GCOR) practices. Trains are addressed by locomotive number (e.g. "UP1342" or "DRGW 3105") rather than symbol (e.g. "54 local" or "MRVSJ")

We provide a nominal timetable (transportation plan) and string chart for the dispatcher's use, but because the railroad is set in 1999 there is no formal timetable and the timetable does **NOT** grant authority to occupy track.

### **Track Warrant Radio Protocol:**

Crews will radio to "DS 58, Omaha" and request a warrant, they should be prepared with:

- conductor's name
- lead engine number
- number of cars
- first location where they have work

Crew: This is [Train symbol], locomotive number [Road] [number]

*Example: This is NUMMI-1, UP 1342 calling DS58, Omaha*

DS: DS58, Omaha, Who is your conductor, 1342? (for initial warrant only)

Crew:

Conductor Marenzi, we'd like authority to cross your main from the East Yard Lead to NUMMI Siding at the West Switch, NUMMI. [note – spells out place names]

DS: Are you ready to copy track warrant number 1?

Crew: Ready to Copy

DS:

This will be warrant number 1, of [today's date], 1999, to the UP 1342 at Milpitas (note that crew does not have authority to enter the track until the warrant is issued)

X box two, Proceed from East Yard Lead to NUMMI Siding on the Milpitas Sub [note – spells out place names]

X box ten clear main track at last named point  
There are 2 Boxes Marked, boxes Two and Ten

Copy?

Crew:

## Union Pacific Railroad

Reads back warrant EXACTLY

DS: That is OK at [Railroad time], Dispatcher [dispatcher's initials]

When the UP 1342 is in the clear at NUMMI, they will report in:

Crew:

This is engine number [Road if not UP] [number]  
*Example: This is UP 1342 calling DS58, Omaha*

DS: DS58, Omaha, go ahead 1342

Crew: UP1342 is clear of the limits of Track Warrant [One], at [time]

DS:

Limits reported clear from East Yard Limits Milpitas to NUMMI at [time] by  
Marenzi

Limits of authority may be any named point or milepost on the railroad.

Hints:

- A proceed box only grants authority to the first switch at a siding. If the dispatcher wants the train on the siding, he must issue box 10, "clear the main track at last named point."
- The dispatcher does NOT own the siding under TWC (unlike CTC/TCS).
- It is not necessary to issue a box ten for the last location the train is going to (e.g. Staging or Milpitas yard) as the train is leaving the main anyway and not coming back under the same name.
- Use two Proceeds (boxes 2 and 3) when crossing two subdivisions, that is:
  - X box 2: proceed from Stockton to Niles Jct on Oakland Sub
  - X box 3: proceed from Niles Jct to Milpitas Yard on the Milpitas Sub
- Use box 7, "not in effect until the arrival of..." to hold a train using a box 2/3 "proceed" until an opposing train has cleared
- Use box 9 "Do not foul limits ahead of" to hold a train using a box 4 "work between"
- Boxes 11 and 18 offer a handy way to get mainline traffic through an area occupied by a local or work train:
  - When issuing a box 4 "work between" add a box 11 "restricted speed" with the same limits as the box 4 to the local/work train
  - When issuing a box 2/3 "proceed" to a through train moving through the limits occupied by the local/work train, also issue
    - Box 11 "restricted speed" with the same limits as the local or work strain
    - Box 18 "joint with" the local/work train and same limits

## Union Pacific Railroad

- This effectively creates yard limits within the working area and the conductor of the local/work train controls traffic within the limits so the crews can work it out on the ground