Troubleshooting Soil Rail (MP-41) Controls:

TS (Transport to Storage Control):

"**ERROR !!! … Dest R#3 Went to R#8 … CLR = Ack**" – This alarm occurs if a bag is sent to a Storage Area (to a SB control) and the bag rolls into any storage rail other than its destination rail. This alarm occurs on the Control that sent the bag because it is the one controlling the gates into storage (this will usually be the TS control but may possibly be a SB control if you have more than one SB control in the system and one SB sends bags to another SB control). When a bag rolls into a storage rail, its destination (taken from the bag record) is compared to the actual Storage Rail number that the bag entered. If the actual Storage Rail number is not the same as the Destination Rail number, this alarm occurs.

When the CLR key is pressed to acknowledge the alarm, then another display will appear "**RESET for Bag into … wrong Rail ERROR!**". A Special Reset Code (**9 + 5 key press)** entered on the control key pad is required to reset the control and resume normal operations. The purpose for this special reset is to prevent situations where an operator may just acknowledge the above alarm (CLR= Ack key press) without determining the reason for the error. For example, a rail selector gate may be jammed or a control output blown. Requiring this additional reset provides a way to insure maintenance or other supervision is informed of the above ERROR unless it is determined to make all operators aware of the Special Reset Code.

SB (Storage to Buffer Control):

Waiting Bag Out … of Idxr Zone – This message will be displayed on SRAIL Version 6 and later when an Indexer output has come on to release a bag from a storage rail. It will stay on until the released bag has passed the first down line sensor which indicates the bag has actually been released and moved out and away from the Indexer.

Indxr Bag Out ERROR / YES+ 1 =Toggle Idxr / Rail ## - This message indicates that approximately 40 seconds have elapsed since an output was turned on to release a bag from a storage rail and the bag has not been detected by a down line sensor. This usually indicates the bag is stuck in the Indexer or for some reason has failed to roll past the down line sensor. Another possible problem is that the down line sensor is out of adjustment or is no longer operational.

The last line of this error display "Rail ##" (## is some actual number from 1 – 24) shows the rail number from where the bag was released. As the display indicates, pressing the YES and 1 keys at the same time from the controls key pad will toggle the Indexer output On or Off each time the key press is made. This is very useful if a bag has stuck in the indexer.

When the bag is finally detected by the down line sensor, this error will automatically clear itself.

Stand By for … BUF RAIL PRIORITY! – This message indicates that the Storage Control has bags on a storage rail that have been marked to be pulled out of storage but a buffer rail that is in parallel with the storage rail(s) has priority. The buffer rail is given priority if the control's memory register holding the number of bags on the buffer rail (bag count register) has a value greater than zero or if the sensor at the buffer rail indexer indicates a bag is present. The system could come to a stop at this display if the bag count register were to be greater than zero and no bag is detected at the indexer.

TL (Tunnel Loader Control):

"**Waiting for   …Txpt Rail Clr**" – This display will appear when the Tunnel Buffer has bags to be delivered to the Tunnel Drop Point but the Drop Point is not clear to receive a bag. The Drop Point is clear to receive a bag when TL-103 (Bag at Drop Point) Input and TL-110 (Drop Point Indexer) Output are both off and Zone 1 (the Bag Drop Point) does not have a bag record present.

"**Sending Bag   ...Indexer ON Delay**" – If the control is holding at this display, the On Delay Timer is unable to count up to the setup parameter value for On Delay Time. This is caused by TL-102 (at buffer indexer sensor) not detecting a bag trolley present or TL-103 (bag at drop point) detecting a bag present (check both sensors to see that they are operating correctly). If this doesn't solve the problem, check Override Displays to see if the TL control indicates a value other than zero for the number of bags on Storage Rail #2 (See Override Display Document or use Arcpac to read 3 byte register at $294F (Var-710)). Storage Rail #1 is the Tunnel Load Buffer for the TL control. Storage Rail #2 doesn't actually exist for the TL control but it is possible for a nonzero value to appear in the number of bags on Storage Rail #2 register. If this is the case, initialize TL Storage Rail #2 using Pulsenet tools and then press the Stop Button on the TL control and press "ENT + CLR" to reset. This should fix the problem.

"**Bag Sent   …Indexer OFF Delay**" – If the control is holding at this display, necessary events have not occurred to complete the send bag to drop point sequence. Once the tunnel buffer indexer output turns on (TL-109) to send a bag to the drop point and the trolley rolls out of the indexer, the OFF Delay Timer starts counting up. Then, when the bag rolls into the drop point indexer and the Off Delay Timer has incremented to a value greater than or equal to the "OFF Delay Time" setup parameter value, the "send bag sequence" is complete and the Buffer Indexer should reset.

If the sequence didn't complete, possible problems are:

Bag never left the buffer indexer or the sensor (TL-102) is still indicating a trolley present (may need to check sensor).

The bag never fully made it into the drop point indexer or the drop point sensor (TL-103) does not detect the presence of the trolley (check sensor if the trolley is present).

Other Status and Error Messages:

Destination Rail … to Full for Ld – (… to Full for Load) The sending control had determined that the destination rail is or will be to full for the load to be sent. The sending control will not only check the number of bags currently on the destination rail but will also count bags already in transport that have not yet made it to the destination rail.

Invalid … Dest Rail # ! – This message indicates the system has a bag that is marked and ready to be sent out of a storage rail but the Call Off Code (Destination) is invalid. The bag record should be viewed by using the Edit Bag Record function in Pulsenet to check the Call Off Code. The Call Off Code is the first (top) byte of the last register in the Bag Record.

For bags going to a WL (Washer Loader) control, the top digit indicates the WL control number and the least digit indicates the spur number. Call Off Code Examples: For a bag marked to go to the second washer spur of the first WL control, the Call Off Code would be 12. For a bag marked to go to the fifth washer spur of the second WL control (WL2), the Call Off Code would be 25.

For a TL (Tunnel Loader) control, the top digit of the Call Off Code is always a nine, the least digit is the tunnel washer number. For a load going to Tunnel Washer number three, the Call Off Code would be 93.

Sending Bag … Indxr ON Delay – On Rail Control systems running a program version prior to Version 6, this message is sometimes seen when a bag marked for call off is not being released from a storage rail. This message indicates a Storage Rail Indexer is ready to release a bag but the Index ON Delay timer will not count up for the release because a bag is not detected by the Indexer Sensor. To resolve the problem, check to see if the bag trolley is fully in the indexer and/or check the sensor to see if it is properly aligned and operational.

Waiting for … ANet Tsk Clr – (… Arcnet Task Clear) An Arcnet read or write task (send bag record, get bag record, get rail status, etc.) has not cleared. Arcnet communications to and from the sending and destination controls may need to be verified. A control reset may be required after communications have been verified.

Waiting for … Rail Zone Clr – This message indicates the system has a bag that is ready to be sent out of a storage rail but a transport zone in the path of the bag to be sent is indicating a bag present.

Waiting for Reply … Dest Rail Status – The control trying to send a bag has initiated an Arcnet read request to the destination rail control to determine the status of the destination rail. The purpose is to check to see if space is available on the rail. If the Arcnet read request was made and then failed to complete, this message would be displayed. Arcnet communications to and from the sending and destination controls may need to be verified. A control reset may be required after communications have been verified.

Alternate Displays - Device Status Messages:

Bag Sent – This indicates an Indexer output has been turned On to release a bag from a Buffer Rail. If this message appears for more than a few seconds, the bag is most likely stuck in the indexer. For this message to go away, the bag must move out of the indexer (sensor must not detect the bag there) and roll past the down line sensor.

Bag wo Rec ERR – (Bag without Record ERROR) This message indicates the Buffer Rail "Bag at Indexer" Sensor detects a bag present while the "Number of Bags on Rail" Register = 0. Check to see if there is actually a bag present or is the "Bag at Indexer" Sensor out of adjustment or faulty? If a bag is actually present, a bag record may need to be inserted on the rail.

no Bag at Idxr – This message indicates the Buffer Rail "Bag at Indexer" Sensor does not detect a bag present while the "Number of Bags on Rail" Register > 0 . Check to see if there is actually a bag present on the buffer rail. If so, then check to see if the bag trolley is fully in the indexer. If so check to see why the sensor is not detecting the bag present.

If no bag(s) is actually present on the rail while the "Number of Bags on Rail" Register > 0, then the Buffer Rail needs to be initialized to reset the "Number of Bags on Rail" Register = 0.

no Bag to Send – This message indicates "Number of Bags on Rail" Register = 0 and the Bag at Indexer sensor does not detect a bag present.

not Selected – In some systems it may be beneficial to enable or disable an Indexer with an input to the control. This may be done with a toggle switch or with a jumper wire. The message "not Selected" indicates the input is Off and the indexer will be disabled until the input is turned On.

Zone ahead Ful – Indicates a bag record in a transport zone in the path of the bag to be released. The zone should clear if an actual bag is moving along the transport rail. If no bag is present in the zone, it is possible that an actual bag moved to a destination and the record did not follow. If this is the case, the record should be moved to the bags destination using the tools available in Pulsenet. If the record in the zone is not valid but maybe trash data, then use an appropriate key press at the Rail Control to clear the zone.

DAD - 10 June 2014

Revisions:

12/01/14 – Added information for "Bag into wrong Rail Error" in an added TS troubleshooting section. Add a SB troubleshooting section and move some error messages to this section.

11/25/14 - This file "Error Messages.docx" was saved as "Troubleshooting SRAIL.docx" to be expanded for general troubleshooting purposes.