SLPS PCC 1743 Progress Report

STL PS 1743 Progress Report 2/13 to 2/19/16

2/13/16

1. Steve traced some of the loose wires to their destination and found others where the destination could not be found.
2. Steve found that the circuit breaker feeding the battery charger receptacle was tripped and charged the batteries.

2/16/16

1. This morning I traced the wiring between the MG and GC contactors and found that the aux contact on the GC contactor is not connected. This means that the 10 ohm starting resistor is always in the circuit and does not get bypassed when the GC contactor energizes. I suspect the contact was disconnected before we received the car.
2. While tracing the C1 contact wiring we found that the LB1 contact that connected wire 3F to ground was missing. The ground terminal had arced to 600 volts on LB1 and is fried. In addition the arm that carried the contacts is missing. Thursday morning we will examine the LB1 contactor that was used to fix Chicago Transit car #44. Hope fully it has the parts we need to fix LB1 on PCC 1743. We have plenty of contacts to replace the ground contact on spare contactors.
3. While tracing the C1 coil we found wire 5A sticking out of the wire bundle under C1. The wire is too short and the insulation is cracked. It will be replaced with a new wire.
4. Steve pointed out several places on the new connection diagram where the controller fixed arm was not shown with a black dot. I will fix this.
5. We still have some unidentified wires sticking out of the wire bundle below the contactors and 2 below the PC controller. I think we will find where some of them go as we complete tracing and tagging the wires. If not they will be insulated and left in place.
6. Steve has agreed to purchase 100 of the mini wire tags from Nelco. These will be easier to attach to small diameter wires and won't have to be trimmed.
7. Steve and I discussed where to install the conduit through the wire trough from the contactor enclosure to the controller enclosure and how to get wire 5 and ground into the LB1 enclosure. Wire 3F is already there. Ed Lindstrom and Jeff Hackner suggested ways to accomplish this.

2/18/16

1. The LB1 in the streetcar shed did not have the contacts we needed. I found out from Ed Lindstrom that this contact was deleted in later models of LB1. It slowed the opening of LB1 to reduce the arc.
2. I found on an auxiliary circuits drawing for 1600 series cars that the each brake light had a resistor. We do not know where the brake light resistors are or the resistance.
3. Steve and I traced all of the wires on the back up controller and wire tags were installed on the BUC end.
   B6 to the BUC pushbutton
   B7 from the other side of BUC pushbutton to wires 2G and B8
   Since we could not trace the wires on the GE reverse switch on the end of the PC cam we traced wire B8 to BUC R1 and BC L2
   2P on BUC R5 to wire 2P on top of relay S5, right side
   3B on BUC L2 to PC1
   3 on BUC R1 to BC2
   G to BUC R2 and BUC R4 and to the car body
   5A on BUC R4 to 5C on BC3
   6X on BUC L5 to the coil wire on relay R5
   59 on BUC L5 to the bottom of the door bypass knife switch over exit doors 3 and 4
   6A and AA1 on BUC L4 were previously traced to BC10
   BUC L1 was not traced due to lack of time

4. I sent photos of the missing contact assembly to Ed Lindstrom

2/19/16

1. Ed Lindstrom replied that he had the assembly from a spare LB1 and would send it to me.
2. I sent a message to Ed Lindstrom questioning the wiring on relay R5. Ed replied that the S5 contacts are normally open. They close whenever the doors are closed, the deadman is depressed and the BUC is in the OFF position. This allows the brakes to release when operating from the front controls. When moving to the rear, S5 opens, preventing inadvertent releasing the brakes from the front. BUC R5 then becomes the only way to release the brakes. And it can only do so if the 2D wires for S3 are located on the right side. It would probably be less confusing to relabel all the wiring to S3 and D1 coils from S5 (R) as 2P. BUC L5 contacts also opens the circuit to the S5 coils whenever the BUC handle is moved to any position except off (handle removed).

Plans for Saturday, next week and the near future.

1. Tag wires that were traced from the BUC on controllers, contactors and relays under the car.
2. Finish wire tracing and labeling.
3. Install the missing contact assembly that grounds wire 3F when LB1 is energized.
4. Verify integrity of wiring to toggle switches, fuses and fuse clips, wiring to DM and propulsion circuits to prevent low voltage problems from occurring in the future. Tighten connections and re-terminate wires if necessary
5. Isolate wiring that cannot be traced.
6. Complete sequence test.
7. Attempt to move car slowly in forward and reverse and test brakes.
8. If the ABR relay does not work properly have the coil rewound.
9. Continue working on connection diagram and auxiliary circuits drawings.