

# SLPS PCC 1743 Progress Report

## STL PS 1743 Progress Report 2/6 to 2/11/16

2/6/16

1. Steve was not feeling well and did not work on Saturday.

2/8/16

1. I completed revisions to the connection diagram and printed it on 4 pages of 11" high by 17" wide paper. The drawings overlap so the pages need to be trimmed and taped to the next page.

2/9/16

1. Before Steve arrived I traced and labeled BUC-L4 wires AA1 and 6A on both ends. I had to make a new 25' jumper to reach from the BUC to under the car.
2. I thought the PC and BC pedals were interlocked and could not be pressed at the same time. This is not true, both pedals can be pressed all of the way down at the same time. If this happened then fuse 4 would blow because PC4 and BC4 would ground wire 3A. This wiring will be removed to prevent the loss of B6 and control power if both pedals were pressed at the same time.
3. I then thought about how we could prove the cause of the alternating relays and discussed it with Steve. I made a jumper direct from the battery + terminal to B6 on LB2 and Steve made a second jumper that was installed from B6 to wire 3 on BC1.
4. When Steve turned on the MG toggle relays B1, B2 and FS1 energized. When the DM was set and the PC pedal was pressed between 1" and 1 1/2" there was no alternating and I was able to measure the battery voltage at 33.5 (the charger was on). We then ran part of the sequence test up to manually operating C1 and picking up relays B3 and LB3.
5. On Thursday the battery jumpers will be removed and testing the wiring by voltage will begin at wire 6X. I expect the relays to alternate. Then measure at wire 59 at the input to BUC-L4, then back to wire 13 after the BUC contact and before the door bypass switches. Then back to wire B6 feeding DM 3. If the alternation has not stopped then back to the battery feed to fuse 4.
6. Using voltage to trace the wiring is sure to lead us to the problem contact or wire termination. I suspect that DM3 is the cause but it may not be.
7. If there is time we will try to complete the sequence test. We still need to complete ringing out all of the wires and identify them with tags.
8. Steve took the new connection diagram home and scanned into a .jpeg file and printed the drawing on 8" high by 11" wide paper.

2/11/16

1. Before Steve arrived I made and installed a jumper with #12 wire for DM 3. I removed the jumpers listed in item 2 above. The MG toggle was turned on for the duration of the testing.
2. When Steve arrived he his new drawing and where he had highlighted the DM switches, relay coils and contacts in different colors to make trouble shooting easier.
3. Steve then pressed the DM and the PC pedal and B1, B2 and FS1 alternated with LB2. PC contact 5 (LB2) closes and contact 7 (FS1) opens almost at the same time. When LB2 energizes B1, B2 and FS1 de-energize.
4. We testing the fuses in the front fuse box and found that fuse 2 was blown. Fuse 2 powers the headlight, marker, sign lights, defroster and sander. When the fuse was replaced it blew out immediately.
5. The door bypass knife switch was closed and the voltage was measured. B6 = 31.71 and 3 = 31.14. When the DM and PC pedal were pressed there was no alternation. B1, B2 and FS1 de-energized when LB2 energized. When the door bypass switch was opened the alternation started again.
6. It seemed odd that the battery voltage was not dropping faster with the track brakes on.
7. The track brakes were not on because the DM pedal was stuck and could not spring back up when Steve took his foot off of it. WD40 was sprayed on the DM pedal and it came un-stuck. Now the battery voltage started

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dropping. The jumper across DM 3 was disconnected. The DM pedal became stuck sometime after January 19<sup>th</sup> when the track brakes and indicator were tested.

8. All of the doors were closed and the door bypass switch was opened. There was no alternation until entry door 1 was manually opened. Alternation stopped when door 1 was manually closed.
9. The door bypass switch was closed so Steve could operate the DM and PC pedal with door 1 open as the battery voltage continued to drop. When the voltage dropped to 25 volts B1, B2 and FS1 closed slowly and made almost no sound. When the voltage dropped to 24 volts alternation started.
10. It is now clear that low voltage on wires B6 and 3 are the cause of the alternation. Perhaps low voltage through DM3 caused by the stuck DM pedal was the cause of the alternation.
11. The MG and battery switch were turned off and the battery charger was connected.

Plans for Saturday, next week and the near future.

1. Carefully look for things that have changed on the car from day to day like the DM pedal. Fixing this earlier could have saved several days trying to find the cause of the relay alternation.
2. 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.
3. Finish wire tracing and labeling.
4. Isolate wiring that cannot be traced.
5. Complete sequence test.
6. Attempt to move car slowly in forward and reverse and test brakes.
7. If the ABR relay does not work properly have the coil rewound.
8. Continue working on connection diagram and auxiliary circuits drawings.