Trip report
Trip to Durango Colorado for Standard Parking Systems
August 8-10 2008.

Friday, August 8th.
Left Windsor at 11am. Drove to Durango via Grand Junction taking I25, I70, and C550. Almost hit four deer five miles from Durango (stopped about 2 feet from the deer). Checked into the Durango Super-8 about 9pm.

Saturday, August 9th.
Went to Home Depot and purchase an assortment of 6-32 and 8-32 hardware. Also purchased a fish tape as I had forgotten to pack one. Arrived at airport about 9:30. I had taken the wrong road out of town, and had to turn back to get to the airport. Met with the cashier, Jim. He indicated that Odell George from Republic Parking had requested that I call him, as he would not be in for another hour. Jim also indicated that his manager had not told him that I was coming. I called Odell and left a message.

Called Dave to check in. Dave asked about the package, which was not present in the parking shack. Dave noted that a "Payne" had signed for the package the previous night. Jim informed me that Payne would be Cherry Payne from the main terminal. I walked over to the terminal and asked at the United counter where I could find someone from the airport facility to retrieve the package. The United agent paged the airport person, who was finally found outside picking up trash about fifteen minutes later. She went to the back, and after another fifteen minutes returned with the package. About 10:30 I was back to the parking shack with the package. Opened the package and inspected the contents. As I had not heard from Odell, and did not know when the best time to disable the system to upgrade was, I proceeded to the CCIO lot to pull the Ethernet cable between the entrance and exit stations. I was easily able to pull the cable from the entrance gate box to the exit gate box. I was also easily able to pull the cable from the entrance gate to the exit station. I terminated the Ethernet cable in the exit station. All this time I had been noticing wasps going in and out of two open bolt holes in the back of the entrance station. I checked back at the parking shack for wasp spray, they had none.

First trip back to Durango. Durango is a eleven mile thirteen minute drive from the airport. I went to Wal-Mart, and purchased a can of Raid. I considered buying a two pack, but decided it would be unnecessary. Drove back to the airport.

Wasps, round one. I attempted to spray the raid into the bolt holes the wasps were using to enter the box, this did not work well, although I did get some splash back onto my hands. Seeing what Raid does to wasps, I decided that it would be a good idea to walk into the terminal and wash up. Walked back and used the key to unlatch the cover to the entrance station. Looking into the crack I saw the largest wasp nest I had ever seen. With no other good ideas, I dropped the cover to the entrance station, took two steps back and let loose with the Raid. This probably killed 200 wasps. I used a screwdriver to remove the wasp nest, and left it in the road. At the moment I sprayed the raid, the entrance gate opened, and stayed open. I was able to close it using the switch in the entrance gate, but was not able to close it again in the normal position. I was not aware that there was a second sensor loop which needed to be sensed to close the gate. I finished pulling the Ethernet, and terminated the cable in the entrance station, stopping occasionally to spray more wasps who were returning home the their nest.

Returning to the parking shack, I was called by Odell, who told me to raise the gates on the CCIO while I shut down the system. Jim had a schedule showing that a flight had just arrived, and the next flight would not be arriving for two hours. It seemed that in about twenty minutes would be a good time to make the switch. Called Dave again, told him of my plan. He asked if I had made the power supply cables, which I had not. I had not known (or forgot) that I needed to bring power cords, and had forgot to get the 18 gauge two conductor wire for the DC power.

Second trip back to Durango. Went to Wal-Mart and looked for computer power cords to use for the AC power cords. Wal-Mart did not have these, although I did pick up two molded Ethernet cables to use in the CCIO station. I found power strips for 2/$5.88, and bought two packages. I also bought a trailer wiring kit for the two conductor cable. I also purchased a roll of Velcro tape to secure the fiber converters and power supplies to the TICO and exit stations. The new hardware was attached to the wall of the enclosures, opposite the terminal strips (on the other side of the heater). Back to the airport.

I wired the first power supply AC and DC cable in the parking shack. I installed the new PCNIC in the PC, and did the software update function. I did a "mem /c" command before and after changing the card and updating firmware, and found no reduction in the amount of memory available. I did notice that BTRIEVE seems to be loaded into memory. If this could be loaded into high ram, much more memory would be available. I also copied the PLXCM disk onto the hard disk. These did not load when I booted. I later realized that I had not been in the root directory when I copied the files, and the autoexec file tried to load plxclm before changing directories. I fixed autoexec. Dave then talked me through several steps in VM200 to configure it to use the new boards. I found the the power strip power cord was too short to use in the parking shack. I was able to locate a new unused PC power cord, which I cut off and used for the Ethernet / fiber converted AC power cord in the shack. I noticed that the Ethernet activity light was flashing at an appropriate rate for the the PCNIC to be polling.

TICO station. I changed out the UNIC cards in the TICO station, and mounted the fiber converter, and power supply. All of the old equipment was collected for return to Standard Parking. I had attempted to purchase 6-32 male to female threaded standoffs at CD fasteners in Fort Collins, and again Home Depot in Durango, but was unable to source any in the time I had. As a alternate solution, I added ground wires from the Ethernet ground mounting hole (the top center mounting hole), to a chassis ground. I only had enough lugs to make one ground cable initially. Note, the lower left mounting hole (by the RS232 connector) is the RS485 chassis ground, and the lower right mounting hole (by the LCD jumpers) is not electricity connected. I was unable to find the expected power outlet to plug the fiber converter into. At Dave's suggestion, I pulled to black wire from the bottom of the barrier strip and taped it, made my connections to the top of the barrier strip, then re-connected the wire. I used the new molded Ethernet cables, cut to length with new connectors added to the cut end to complete the wiring of the TICO. All UNIC cards in the TICO were repeatedly polled from Parkweb with no failures.

LCD issues. The TICO LCD was black. I measured from connector to connector, and found that the new UNIC requires a LCD with a right angle connector on the front side, the old LCDs will not work. Dave arranged to send replacement LCDs for arrival on Tuesday the 12th. Directed by Dave, we went through a test process on the TICO, and all was found to work with the following exceptions:
1. The sound played the wrong message.
2. The LCD did not work.
3. The ticket reader needed several initialization commands sent before it functioned correctly.

Back to the CCIO. Returning to the CCIO lot, some helpful individual had picked up the wasp nest, and placed it on top of the entrance station, and it was crawling with wasps again. More Raid activity

ensued. The nest was left on the other side of the road. The entrance station was completed easily, as the existing standoffs were metal, and provided the ground connection without a ground wire. During the work on the exit station two new problems occurred, I ran out of RJ45 Ethernet connectors, and I ran out of Raid.

Third trip back to Durango. I bought another can of Raid, twenty five more RJ45 Ethernet connectors and more lugs to make ground wires at Home Depot.

Back at the airport, I completed the entrance station. All of the UNICs in the entire system polled correctly every time. I encountered the following problems in the exit station:
1. LCD did not work.
2. Speech synthesizer is weak and has poor quality sound.
3. I could not open or close the gate.
Once again Dave helped me determine that the wrong relay was being used to open the gate. I had to go back to the entrance station and move the relay wires there as well. About this time (5:30 or so) Odell arrived, he was beat as he just drove up from Salt Lake City. I told him my plan was to return the following morning to make sure that everything was still working before I left. Odell and I agreed to meet then, and he left. I used two different credit cards to enter and exit the CCIO lot, and both worked. I also watched customers entering and leaving the lot at this time.

Returning to the TICO, I found the same issue with the relay wiring, and corrected that problem. I then removed the LCD from the TICO station, and added the remaining ground wires. A few more tests of the TICO, which seemed to work correctly, and I left for the night, at about 8:00pm.
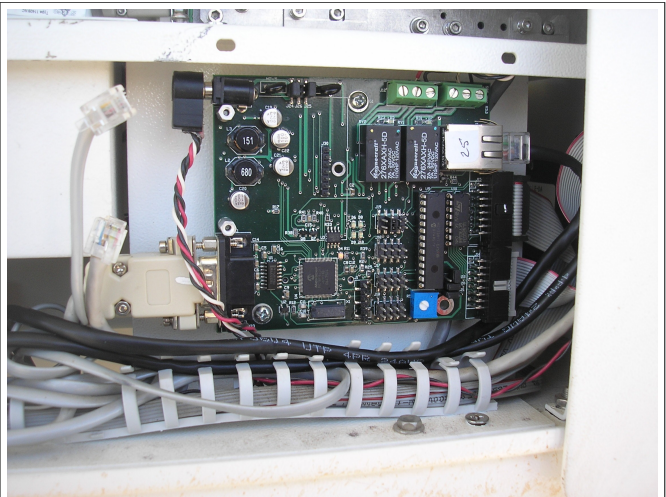
Sunday, August 10th.
The following morning, I returned to the airport, and did a few tests. I tested the TICO again, polled the hardware, did printer tests. I removed the LCDs from the entrance and exit stations (no wasps this time). I also mounted the DIN rail in the parking shack, and attached the power supply and fiber converter to the rail. Jim indicated that the counter in the CCIO lot did not work. He farther indicated that he had personally changed the counter, which did not help. I went to look at that, and Odell arrived about the same time. We had Jim open the gate several times, and the counter counted each opening. Odell indicated that this was the desired function for the counter. I left the SD cards with Jim, and told him that they were to be kept with spare parts, only to be used when directed by SPS. I left the airport about 9:30 am.

The drive home was uneventful, and I arrived home about 7:00pm.
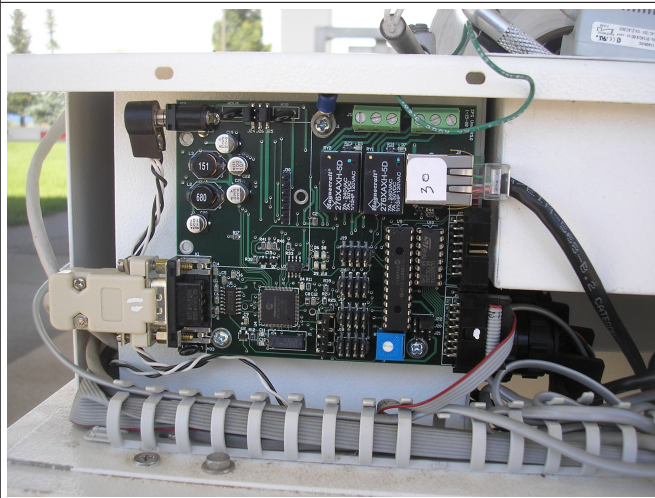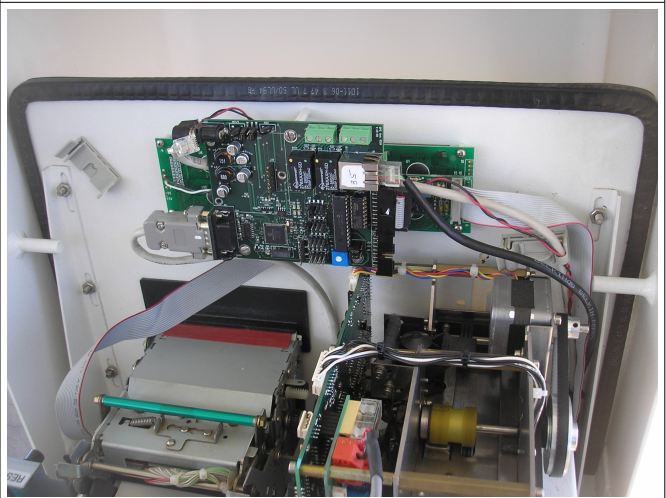
Attached photos:

Entrance Station, showing wasp nest

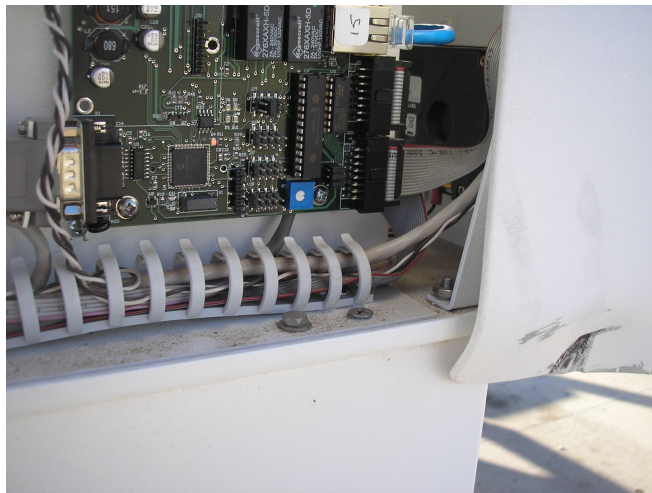TICO, UNIC Card 25

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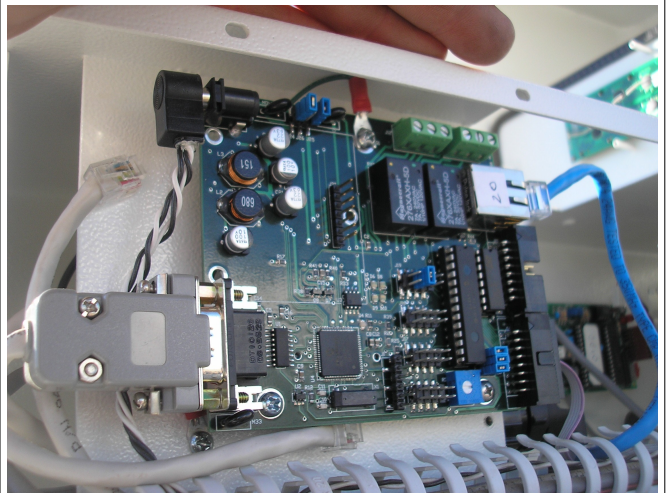

TICO, UNIC Card 35 and LCD

Ethernet hardware in TICO

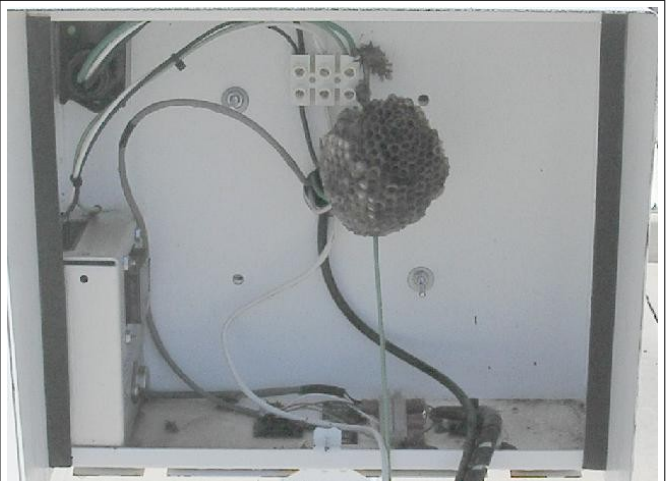Ethernet hardware in shack

UNIC 15 in CCIO

UNIC 20 in CCIO

Just for fun. Car seen on the way home:
Plate reads 27ASCII (Escape)

Close up of wasp nest.