



Tony's Tech Notes

PowerCab Review

By Don Fiehmann



The Low End Market for DCC

There was a poll on the internet asking how many operators do you normally have when you run your layout. I was surprised that over 60% responded that they run their layout by them selves. The next highest was about 18% with two operators.

This is where low end DCC systems that are designed for just a few operators fit. Having a limited number of operators and a low cost system should not mean that the system is limited in what it can do!

The Low End NCE System

NCE has entered the low end DCC market with a system called the **Power Cab™**. This system is competitively priced with other low end DCC systems. The Power Cab is a Cab, Command Station and Booster all fit into in a single handheld package. The new Power Cab system has the capability of growing into a full version system. With the up and coming additional NCE Smart Booster there is even a step up from the Power Cab to an intermediate size system that is between the Power Cab and Pro Cab. The NCE DCC systems are known for the easy way they are to setup and operate without having to having to hold the manual in one hand and the cab in the other hand.

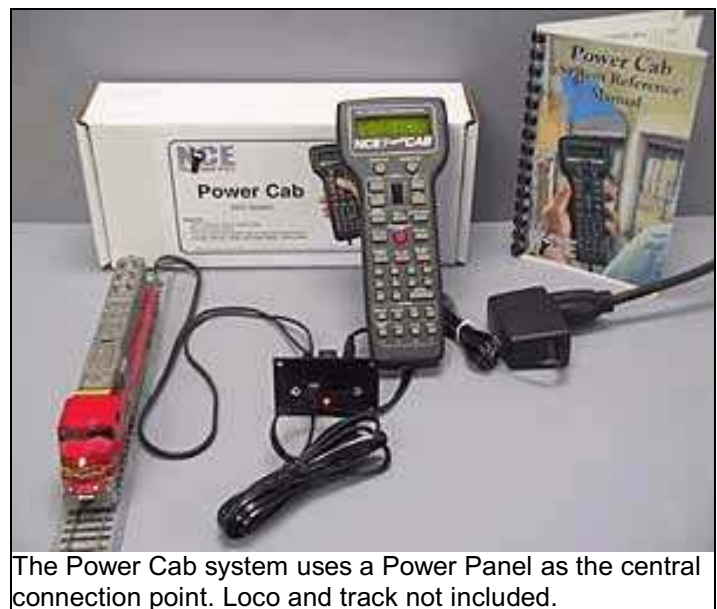
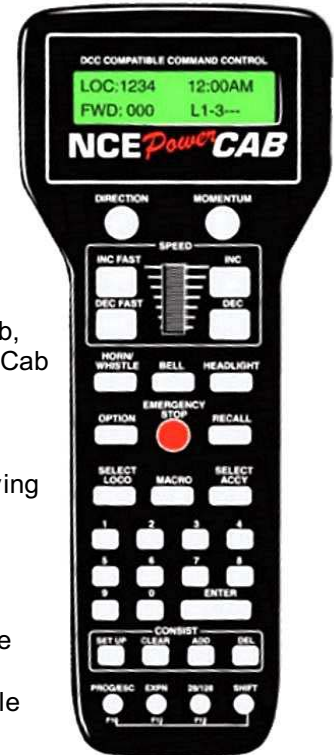
NCE Power Cab

The NCE **Power Cab™** DCC system is designed to fit all the requirements of a small layout. The Power Cab is rated at less than 2 amps and limited to two operator cabs. The Power Cab system has most of the programing and operational ability of the full blown Power Pro system. The logic in the Power Cab is up to date, it even has the new Playable Whistle feature. Some of the limitations are that the Power Cab does not support the wireless radio control its self. The Power Cab can support ONE wireless cab using the option cab at the fixed address of 3.

The Power Cab comes with a **Power Panel** that lets you connect and operate another standard NCE cab. The Power Cab supports the program track and has OPS mode on-the-fly programing. The **program track** current in the Power Cab has been increased to accommodate the newer sound decoders that need more power when programed. The increased current minimizes the "Can't Read CV" problem on the program track.

Since the Power Cab is a Command Station and a Power Booster, it must be left connected to the Power Panel to operate. The second optional cab can be moved to another Cab Bus connection.

The Power Cab system comes with the full size cab that is the same size and key arrangement as the Pro Cab. The only external difference between the two is the label. The Power Cab can also be used as a Pro Cab when plugged into the standard NCE system Cab Bus. The Power Cab comes with a plug-in-the-wall Power Supply. The supply is designed for use with an input of voltage of 100 to 240 volts, 50 or 60 Hz. This would allow it to



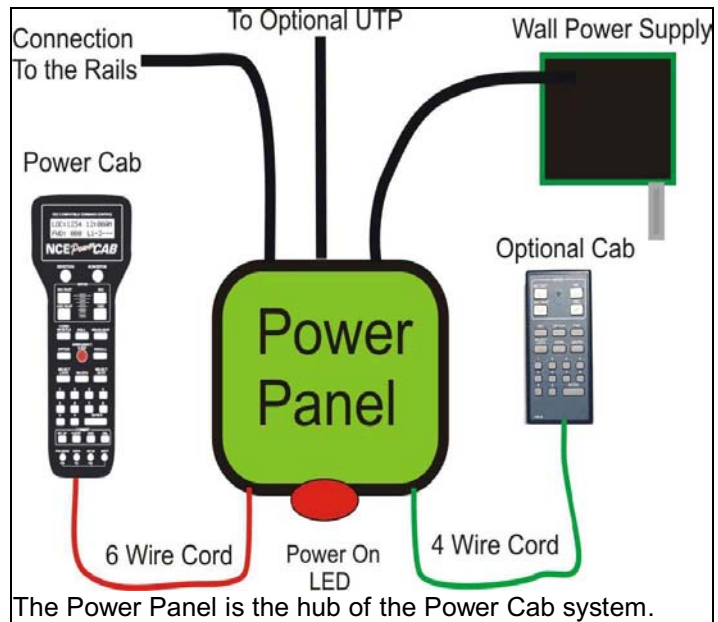
The Power Cab system uses a Power Panel as the central connection point. Loco and track not included.

work in almost any country. It is a switching supply that provides a regulated 13.5 volts.

The **Power Panel** is the connection hub of the Power Cab system. This is where the power is plugged in along with the Power Cab and an optional additional cab. The panel also has the output connection for the track power. A red LED shows when track power is on. There is a connector on the back to extend the Cab Bus to other standard cab UTP panels.

Two telephone type cords are supplied, one flat 6 wire cord, and the second is a 4 wire coilcord. The 6 wire cord **must** be used with the Power Cab on a Power Cab system. The 4 wire coilcord can be used when the Power Cab is plugged into a standard NCE Cab Bus.

The Power Cab comes with a very well detailed manual. I went to the NCE website and found that they had an updated version of the manual. (It is in a PDF format). I printed out the new manual and put it into a three ring binder. The manual that comes with the Power Cab is a smaller 6 1/2 X 5 3/4 inch size. It comes with a spiral binding that lets it lay flat so you can read it while using the cab.



The Power Panel is the hub of the Power Cab system.

Upgrade Options

If the 1.7 amp rating of the Power Cab is inadequate for a layout, there is a 3 amp booster in the works for the Power Cab system. It is called the **Smart Booster™** and provides more power to the Power Cab system. The Smart Booster is rated at 3-amps and has support for additional handheld cabs plus it is wireless compatible. The Smart Booster requires a separate transformer for power, like Tony's XFR4.

If you upgrade the Power Cab to the full Power Pro DCC system, most of the Power Cab components can be used. The Power Cab would work on the Cab Bus. The Power Supply could be used to as an auxiliary power source for the Cab Bus. Any optional cabs you've added would also work with the new system. Even the Power Panel could be used as a UTP for connecting more cabs. (You would need to rewire the LED because it is wired to lite with track power.)

DCC System Testing

I do enough DCC system testing that my layout is setup to quickly connect in a new system. The old toggle switches that were used for dc are now used to select between DCC systems. Four pin Jones plugs allow me to quickly connect and disconnect DCC systems. In addition to my main layout I have two small portable layouts configured with the same four pin plugs, one HO and one N scale. Once a plug is wired to a DCC system it can be moved between the small HO switching layout and a small 2 by 4 foot N scale layout. Either of the HO layout can also be used to checkout On30 operation.

Operating the Power Cab

If you are familiar with the Pro Cab there is little to no learning curve to operate the Power Cab. When the Power Cab system is turned on, there is a couple of seconds of startup time while the system initializes. One interesting feature of the Power Cab is a the ability to monitor the output current. The current readout takes the place of the fast clock on the display. This mode does not "stick", and each time the system is powered up the clock displays returns.

When I mounted the Power Panel on the layout and connected the Power Cab the red track power LED did not turn on! My favorite trouble shooting technique is "**Look for something simple.**" Simple it was, one of drawings in the manual shows the Power Panel with the LED on top and the Power Cab plugged into the left connector. When plugged into the right connector it worked. (Larry at NCE has corrected the manual.) One other drawing of the Power Panel is correct, but it is a view from the bottom This can be a bit confusing as we are used to looking from the top down.

I started out by running a number of sound equipped engines. The Power Cab operated the same as the Pro Cab. All the responses were the same. Even the turnout operation with the accessory commands work the same. To get the maximum power, four HO sound equipped locomotives were consisted using advance consisting. The four ran OK. But, when I tried to add a fifth locomotive it tripped the overload. When going thru a reversing loop that used the PowerShield reverse loop adapter(PSRev) the engine would stall at the reversed polarity gap. The Power Cab had sensed a short and shut down. When power was restored, the PSRev came up with the correct polarity and the engine continued on. The PSRev does have adjustments that will allow the Power Cab to function without tripping the overload.

One of the new tools I have to check out system operation is the **DCC Pocket Tester**. This tester analyzes the DCC signals and voltage on the rails. The tester checks bits, preamble, and data packets for errors. It also keeps track of mobile and stationary decoder addresses and data. I connected the tester to the rails to monitored the output of the Power Cab, no problems showed up. The output was clean and all the zero and one pulses were within specifications and no major errors showed up.

One of the decoders that is hard to read on the program track is the SoundTraxx Tsunami. I felt this would be a good test for the Power Cab's increased current to the program track. I put an engine with a Tsunami sound decoder and



Testing the Power Cab to see how it works when used on the program track. It read back the Tsunami sound decoder CVs with no problems. Another new feature was the playable whistle. I set up the playable whistle and used it on the Daylight. That also worked OK.

switched to program track mode. I had no problems reading the Tsunami CVs. The Power Cab read all the CVs without **any added booster** devices.

The Power Cab was checked out on the 2 X 4 foot N scale layout. I ran two N scale diesel locomotives and was able to operate the two switches with the accessory decoders. The Power Cab worked well with N scale on this small

layout..

There are some limitations to the Power Cab. It only has a recall of depth of two. The one you are looking at and one that can be recalled. Only two locomotives can be consisted using the "old" method. There is a limit to the number of a advance consists. There is no limit to the number of locomotives in an advance consisting, only the power of the system.

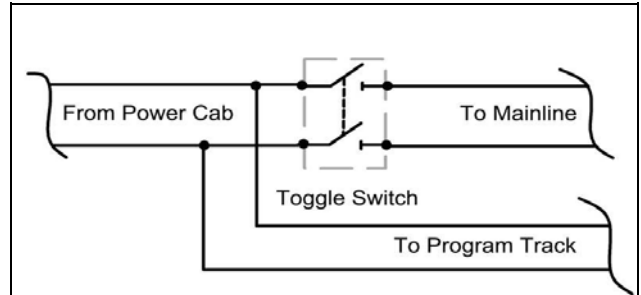
The optional second cab can be moved to any available Cab Bus connector at any time. But, the Power Cab must always stay connected to the designated connector on the Power Panel. The Power Cab always has an address of 02 and the optional second cab can only have an address of 03 when used in a Power Cab system.

Suggested Program Track wiring

The Power Cab only has two wires for feeding both the mainline and the program track. The problem comes if you try to program on the program track and leave an engine on the mainline. You end up with all the engines programed the same. You need to isolate the mainline from the program track to avoid this problem. The wiring shown leaves the program track active, and isolates the mainline. Just remember, you need to throw the toggle switch when using the track for a program track.

Optional USB Connection

NCE plans to have a USB (Universal Serial Bus) adapter that would plug into the Cab Bus for use with the Power Cab. With this optional USB connection to the Power Cab, it could be connected to a PC or Mac. You could use the Power Cab to setup decoders with programs like Decoder Pro and operate layout accessory decoder equipped turnouts with Panel Pro. (Part of Decoder Pro)



Wiring for Program Track with the Power Cab

A toggle switch can be used to turn off the mainline while programming a locomotive on the program track. This isolates the track from the mainline. so only the locomotive on the program track is programmed.

Conclusion

The abilities of the Power Cab closely matches that of its bigger brother, the Power Pro. This means you get a lot of bang for the buck in a small operation. It makes it a great starter set for conversion to DCC. (None of the NCE DCC systems support the ability to operate a non-decoder equipped locomotive.)

The Power Cab can be used as a second system. It could be used to power separate parts of a layout, like a trolley line or narrow gauge section of a larger standard gauge layout. If the club you belong to has an NCE system, the Power Cab would be a good system for use at home on a test track or small layout. You could also use the Power Cab on the club layout. When connected to a Power Cab system the address is always 2, but it can be changed to any address (1 to 63) when use with a standard Pro Cab system.

A club could have the Power Cab for setting up decoders. This could be used without affecting the main layouts operations. With a loop of track the Power Cab could be used for speed matching. When the USB adapter is available decoder files could be saved on a PC or Mac.

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