

DCC: What's that all about?

Mick Moignard



Sharing Know-how



We could talk about the past...



Image sourced via Google

improvements in performance...



Images sourced via
Google

to modern state of the art



Images Athearn, Kernow, Bachmann via Google

and functionality...



dcc-updates.uk

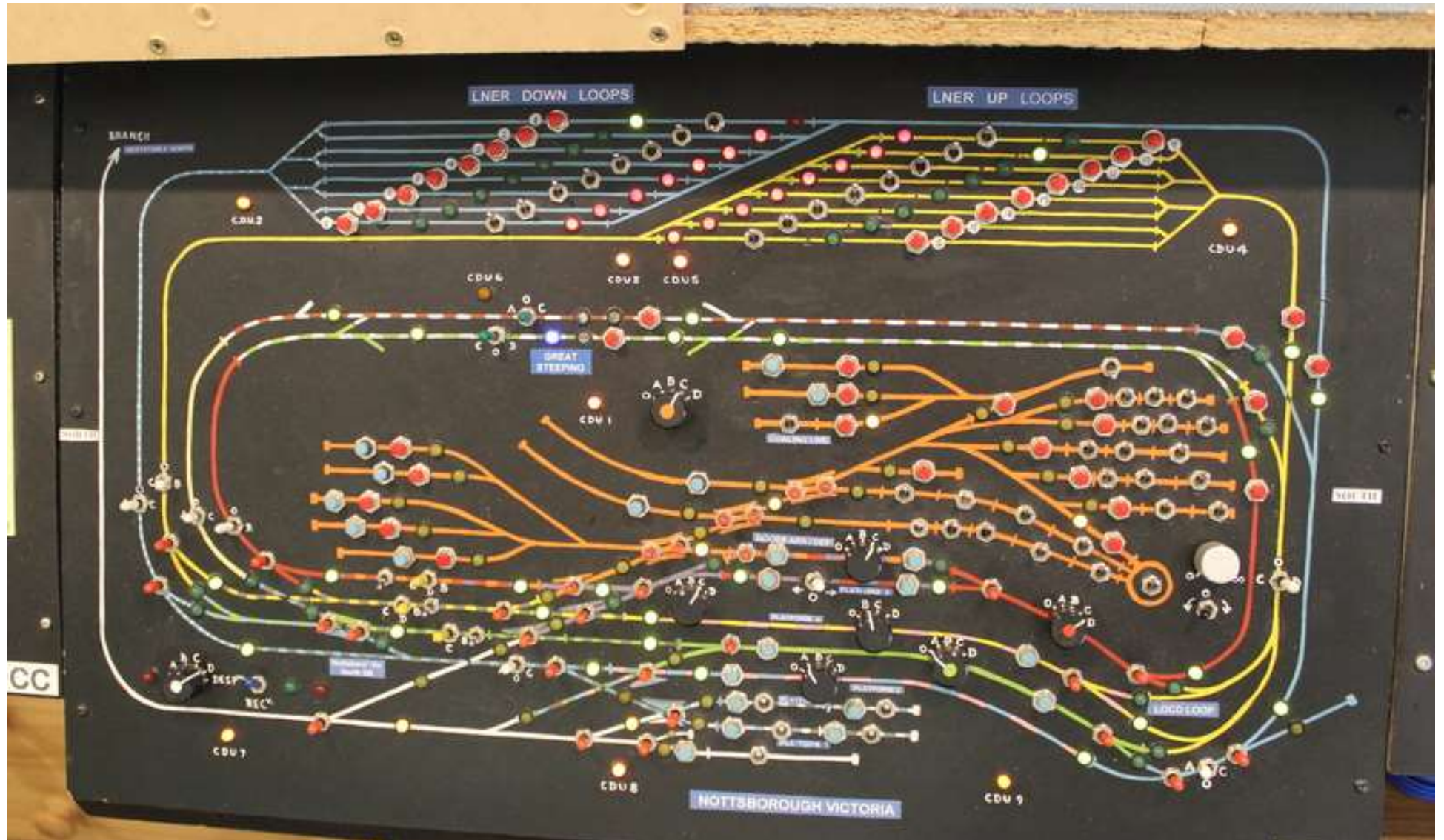


Images dcc-updates.uk, Soundtraxx, ESU via Google

Or, we can talk about

Freedom!

Freedom from this!

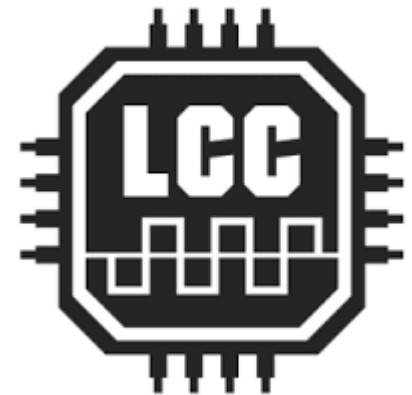


Freedom...

- From: Block wiring and Block switches
 - **there aren't any**
- From: Artificial constraints
 - **You run the **trains**, not the track**
- From: Poor and mismatched controllers
 - **Match the “controller” to the loco, every loco**
- From: Unrealistic operation
 - DCC locomotives **run better** and **sound better**
 - **Drivers need to pay attention** to signals, and points, and everything else around them

It's Standardised

- By
 - NMRA US and Worldwide
 - Rail Community and MOROP in Europe
- Define
 - Track power and control packets for locos.
 - Accessory decoder addressing and packets.
 - Some CVs for mobile decoders
 - Programming methods
 - Decoder wiring colours (some)
- Which means
 - Everything works pretty much with everything else
 - Your investment is protected



Why would you build a new layout without DCC?

It's Main Stream

- Trainset manufacturers offer DCC as standard
 - Hornby, Bachmann,
 - OK, some are pretty basic, but...
- DCC-ready, Decoder and Sound-fitted locos abound
 - O: Dapol, Heljan, Hattons, Atlas, Bachmann...
 - S: S-Scale Helper...
 - OO: Hornby, Bachmann, Dapol, Kernow, Rapido, Accurascale....
 - HO: Bachmann, Atlas, Athearn, Kato, Intermountain, Rapido....
 - N: Dapol, Bachmann, Revolution Trains, Rapido, Athearn, Atlas, Kato, Intermountain, Fox Valley....
 - Pretty much everything is DCC ready
 - Decoder sockets, lights, often speaker locations
- It's no longer bleeding edge stuff

Why would you build a new layout without DCC?

So what are the advantages?

- Simpler and more realistic operations
 - Free of wondering where the rail breaks are
 - And whether you've set the block switches
 - Running the **trains**, not the **track**
 - More reliable loco operation, particularly at low speed
 - Decoder assisted acceleration & deceleration; brakes
- Constant track power
 - Constant and controllable lights
 - Better pickup
 - On-board Sound (not just in locos, either!)
- Simpler to wire
 - Faster to build, More reliable, less to go wrong
- Easy to learn (**yes, really**)
 - Easy to run another layout
 - Take along your throttle (if he has the same system)

Easy to learn

- Camp 93 experience
 - Layout 24 * 2
 - 8 switches/points
 - No control panel
 - Digitrax Chief
 - DT400/DT402 throttles
- Learning time to operate
 - If you've used a DT40x before: < 5 minutes
 - DCC but not Digitrax: < 10 minutes
 - No DCC experience: under 20 minutes.



Easy to learn

- Aylesbury LNWR
 - EM Gauge layout built in '70s
 - Saved from the skip....
- More complex layout
 - 15+ DCC operated points
- Harder to see movement
 - No sound, either
- But still only an hour or so...
 - Mostly getting used to operating the points
 - And remembering point numbers from s/box diagram



Disadvantages?

- Cost?
 - Look at what you get for the investment
- Learning Curve?
 - There is more to learn eventually – but that's because it does more
- Complexity?
 - No. Simpler than a DC layout, but also different

Look at other "revolutions" in the hobby:

Those also had costs attached: but where the benefits outweighed those costs, they succeeded.

What attracted me?

- Faster layout building
 - Freedom to change things easily
- Flexibility of operation
- Better loco performance
- Extra functionality with builtin simplicity
 - Lights, Sound, Points operation
 - No **need** to build a control panel

What's in a DCC system?

- Command Station: the heart of the system
 - Generates DCC packets based on throttle commands
- Booster(s)
 - Creates track power and adds packets to it
 - Often integrated into the command station
- Throttles
 - Tell the Command Station what to do
 - May be integrated into command station
- Decoders
 - Mobile: the driver in the cab
 - Accessory: under the layout, manage points, signals....

Choosing a DCC System

- Serious or Trainset?
- Capacity
 - Power: amperage available
 - 5 amp systems: 8-10 4mm locos at once
 - Slots – the number of locos it can handle at once
 - Matters more than you might think...
 - Number of throttles supported
- Extensibility
 - You, and the System!
- Reputation and Support

Choosing a DCC System

- The Throttle design
 - If you don't like the throttle, you'll hate the whole system
- Hold it in your hand and **use** it
- Check out how to:
 - Run trains
 - Operate functions
 - Check how many functions work on **one** key press
 - Switch points
 - Program decoders

Digitrax DT400/402 Throttle layout

Throttle Knobs

LOCO

FUNC

Left Throttle's
Direction

Right Throttle's
Direction

DISP

DT400

| | | | |
|------|------|------|-------|
| FUNC | MU | LOCO | SWCH |
| L ↔ | Y + | N - | ↔ R |
| DISP | A 1 | 2 | 3 |
| PROG | 4 | 5 | |
| EDIT | 7 | 8 | 9 |
| FIND | EXIT | 0 | ENTER |
| BACK | A 10 | B 11 | C 12 |
| PWR | OPTN | CLOC | EMRG |
| t | | c | STOP |

SWCH
T (Thrown)
C (Closed)

Numeric
Keypad area

EMRG STOP



Choosing a System

- Talk to people who have DCC:
 - Ask them what they like and don't like about their systems.
 - Ask them if they'd buy the same again
 - Go play with their layouts.
- Buy to a spec, not a price
 - Buy for the layout you aspire to, which may not be the one you have now
 - Ask the dealer for a play
 - Ask him about support, too
 - If he can't or won't answer **before** you buy, can he or will he afterwards?
- **Don't buy blind...**

Buying a System

- Buying to a spec...
- Cheap is **expensive** in DCC terms
 - Because you will grow out of cheap, fast
 - And then buy what you should have bought first time round
- That goes for decoders as well as systems!

What's Stopping You?

- Need more?
 - Come and meet us – when we're open
 - Join the Risborough & District MRC
 - Email me at mick@mickmoignard.com