

NORWICH & DISTRICT SOCIETY OF MODEL ENGINEERS

Founded 1933

Incorporated 1967

EATON PARK MINIATURE RAILWAY

eBULLETIN

Sept 2018



An exotic stranger?



Cover story - Bullied's finest hour?

The 27th of August saw the society putting on its second Lord Mayor's Charity day. Besides all the other locos that attended there was one rather exotic stranger, brought along by the Coles from Attleborough, It is a scale replica of the last of a class of only three 3rd rail Co-Co electric locomotives.

The initial two locos were built by the Southern Railway at Ashford Works in 1940–41 and 1945 and were numbered CC1 and CC2 - the Southern Railway by then preferring French practice for locomotive numbers which also gave an indication of the wheel arrangement. Electrical equipment was designed by Alfred Raworth and the body and bogies by Oliver Bulleid. CC2 was modified slightly from the original design by C. M. Cock who had succeeded Raworth as Electrical Engineer. The third was built by British Railways in 1948 and numbered 20003 and it is this loco that is shown in the pictures.

The third member of the class, numbered 20003 from new, was built at Brighton. S. B. Warder (later to become Chief Electrical Engineer of the British Transport Commission and architect of the UK 25 kV AC overhead



system still in use today) was, by then, the Southern Railway's Chief Electrical Engineer and he modified the design somewhat. Although counted as the same class, 20003 was markedly different externally from its two earlier sisters, being 2 inches (5 cm) longer with flat 4SUB-like cab ends rather than the HAL domed ends of the first two, an arguably simpler (and therefore cheaper) design than the earlier two. Equipment changes, though, added 5 tons to the earlier 100-ton design.

The class soon proved their worth. The six traction motors providing 1,470 hp (1,100 kW) allowed them to handle 1,000-long-ton (1,000 t; 1,100-short-ton) freight and 750-long-ton

(760 t; 840-short-ton) passenger trains with ease. However, there was a potential problem. Being much shorter than the predominant multiple units, electric locomotives can suffer from a problem known as "gapping" - becoming marooned between supplies at breaks in the third rail and snatching at the couplings whilst moving as they come on and off the power. The latter places undue stress on couplings and has been known to cause separations of a train. Raworth overcame this by having a motor-generator set (booster) with a large flywheel. The traction current, instead of feeding the traction motors directly through the control assembly, powered a large motor which turned a shaft with the flywheel and fed into the generator. The output of the generator could be combined with the 3rd rail power to reduce or boost the voltage applied to the traction motors. With the generator output polarity reversed, the control assembly could deliver around 1200 V DC by combining the generator output with the 650 V from the 3rd rail to give positive 650 V *and* negative 500-600 V - leading to the nickname "boosters". The flywheel ensured the generator continued to turn whilst no current was available from the 3rd rail, thus ensuring a continuous supply to the traction motors.

Even while stationary, Class 70 produced a noticeable droning noise due to the booster-set turning inside the body. Two booster sets were fitted in each locomotive, one for each bogie. It was not sufficient to allow the locomotives to work "off the juice" as the load on the generator whilst under power meant it would quickly consume the stored kinetic energy in the flywheel. They needed attentive driving, to ensure they were not brought to a halt on a gap and the booster set allowed to run down.

There were losses incurred in the conversion of electrical energy to kinetic and back again, but Raworth mitigated this in the control mechanism. Instead of having large, heavily built resistances in the power lines for the motors, the 26 taps on the controller changed resistances in the field coils of the generator. These correspondingly made the construction much lighter and more easily maintained. Instead of "burning-up" unrequired power through resistances by conversion to heat, the controller simply altered how much power was generated.

A cross-arm pantograph (seen on the model) was fitted each of the three locomotives to allow them to work from overhead lines erected some yards, (notably Hither Green marshalling yard, South East London) where it was deemed too dangerous to have 3rd rail, with staff



to

in

constantly at track level, particularly in war-time blackout. The pantograph was recessed into a cut-out on the roof when not in use, to keep within the loading gauge.

The locomotives were fitted with electrically-powered train heating boilers to generate steam for train heating allowing them to pull passenger trains, if necessary, including the prestigious *Night Ferry* from Victoria to Paris between 1936 and 1980.



The class formed a "proof-of-concept" for booster-based electric locomotives. Although thought of as prototypes for the later Class 71, which used the same concept, the latter differed greatly in its design and construction, being based on contemporary Swiss practice.

All three were withdrawn in the winter of 1968/1969 without receiving TOPS numbers, although 20001 received BR "Rail Blue" for its final years. Sadly, none survived to preservation at a time when the emphasis was on preserving steam and the view "steam good, non

steam bad" was common. Now, we have only models to remind us of this small but important class of locos.

This model is a little different in that it is a Bo-Bo, ie two (powered) axles per bogie rather than the three on the full size loco. This is because it was originally constructed to run on a railway at a public house in Newbury. Curves on this line were so tight that three axles would have been unworkable (except by using a flangeless centre axle) so the owners solved the problem by removing the centre axle. The loco is powered by 4 250w motors (2 per bogie) and geared to the axles by chain drives to run at about 7mph.



These same motors are used in bus heating/cooling systems and thus are 24v. The loco was originally designed to fit in the estate car of the teacher who had it as part of a school project. The current owner acquired the loco in 1994, rebuilt the bogies and added a 4QD control, which has since been replaced. A vacuum system is also fitted. The missing axle doesn't spoil the look of the model though and only a SR aficionado would spot the difference. Another nice feature is the dummy whistle (not horn) at each end and an actual whistle is rigged up to give an authentic sound. (Sources: Wikipedia: Creative Commons; Owner Mr Coles)

WANTED

CHRISTMAS DECORATIONS, LIGHTS ETC FOR THE SANTA SPECIALS IN EARLY DECEMBER.

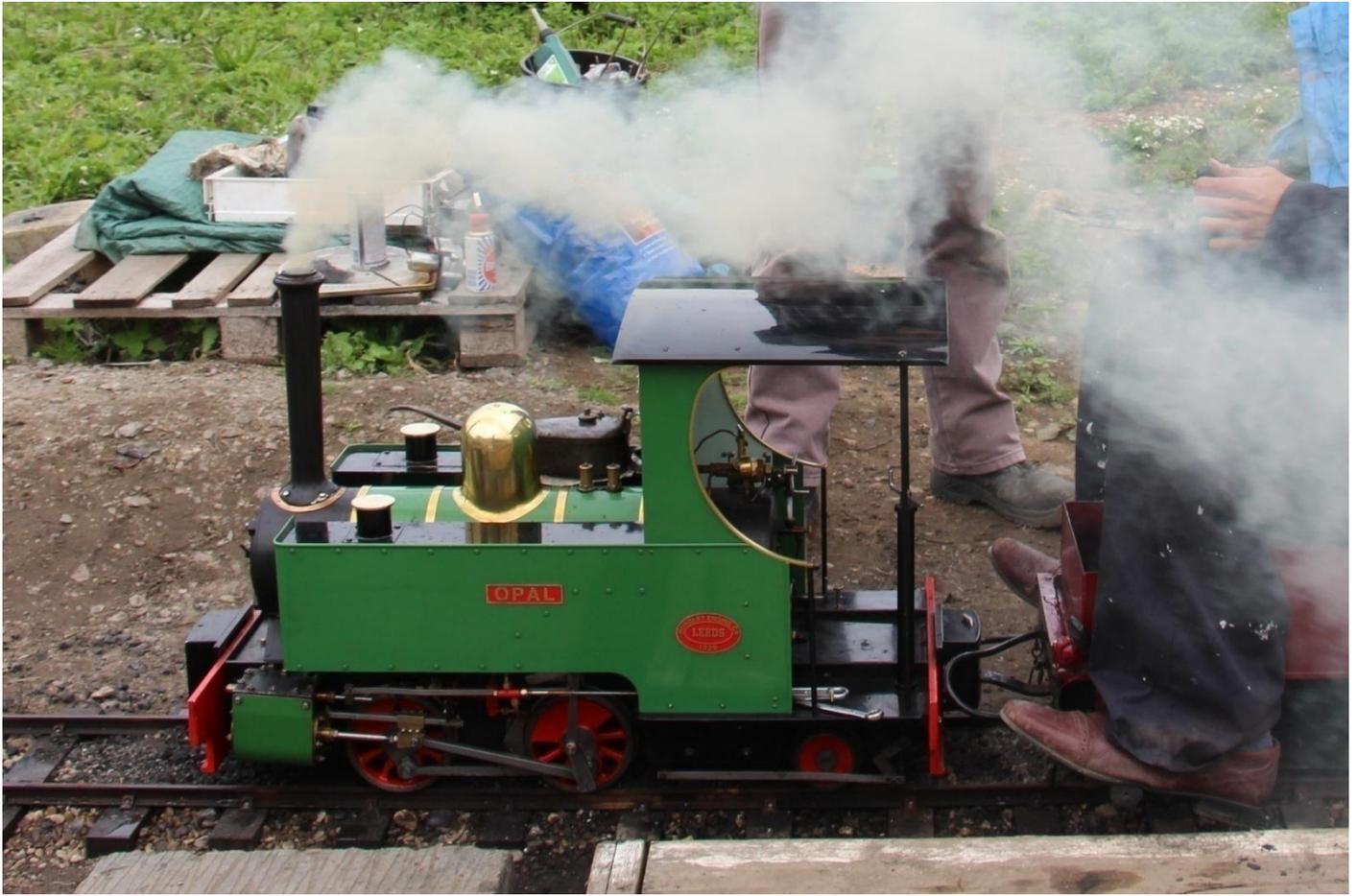
ALL OFFERS TO PHILIP MOORE OR MIKE FORDHAM PLEASE

A visit to Southwold

Mike Fordham visited the Southwold Railway project at Wenhanston. These are some of the pics he sent in to the eBulletin...



It also has a rather nice little 7,25" line...

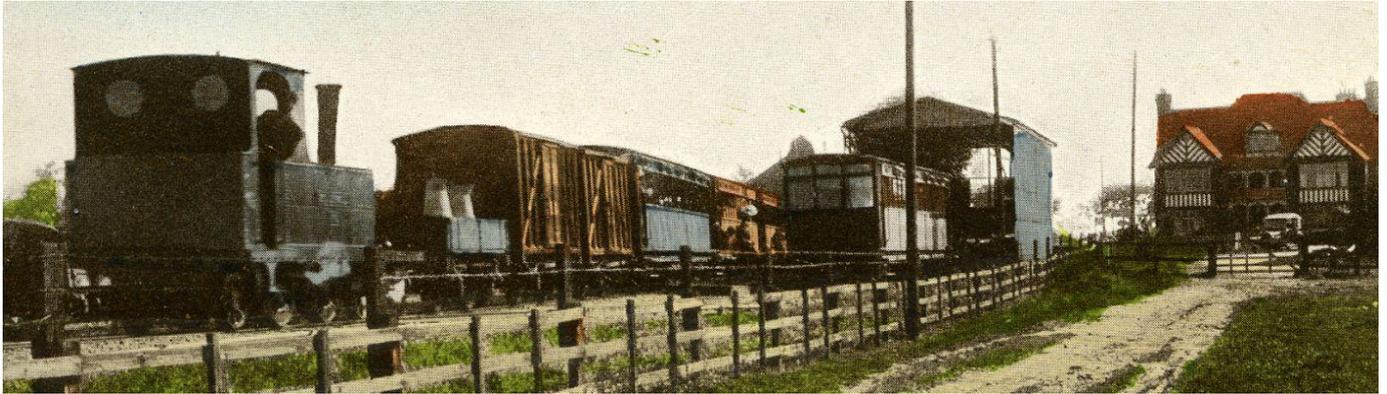




VAN 40
This is a full size replica of a Southwold Railway goods van. There were two supplied originally at this size numbered 13 and 14. The ten foot length was later increased to thirteen feet. One of these survived and was found on an allotment in the 1960s. It is now at the East Anglia Transport Museum in Carlton Colville, the only piece of surviving SRy rolling stock. But this is the original ten foot model. It was made by the S.O.L.D workshop in Lowestoft.



THE TRAM
This is a Belgian tramcar trailer originally from Charleroi and built by Braume et Marpent in 1915. It was rebuilt in the 1950s and later used on the County Donegal Railway. Its interest to the Trust is in its 3 foot gauge like the Southwold Railway. It is also similar to Southwold coaches with its facing slatted seating. It has been renovated by members of the Trust and may well be the first passenger coach we will use if we can sort out the braking.



[Southwold Railway Trust](#)

England's premier 3-foot gauge railway

The Southwold Railway was a remarkable 3 foot narrow gauge line linking the fashionable Suffolk seaside resort of Southwold with the Great Eastern main line at Halesworth 8¾ miles inland. Opened in 1879, it gently wound its way towards the sea through the beautiful valley of the River Blyth, with intermediate stations at Wenhaston, Blythburgh and Walberswick. After almost 50 years the line closed suddenly in April 1929, and now the Southwold Railway Trust is dedicated to preserving the memory of this special little railway and re-opening as much of the old route as they can. As can be seen from [this film](#) parts of the trackbed are still in good condition.

[Here](#) is more about the 7.25" Blyth Valley Light Railway.

[Spotted on YouTube](#)

[metal bender](#)

Simple but effective!

LOST

Allan, who is Santa's representative at ndsme, has mislaid 400 Santa Special tickets. Any info on their whereabouts gratefully received.

LETTERBOCKS



Mr Trellis is back this issue and he comments on our Christmas Specials

Now, I was thinking about the Christmas Specials that the society puts on in December. My question is this, December is one of the coldest months when there's likely to be freezing temperatures, snow or ice on the roads and it gets dark at half past three. Why do we have Christmas at this bleak time of the year? Whose idea was it to have Christmas in December anyway? Surely June or July would be much better. And instead of the snow man we could have the Wicker Man! That looked much warmer if I remember correctly. Lots of people in fancy costumes, parading around in front of their Lord and generally having a good time. Much more fun! And another thing... (contd. P78)

Has he got a point? Or is this meaningless ramble? Watch this space.

Have you got a letter to send to the eBulletin? (Or an email, pigeon, microdot or whatever)

ON THE MOVE? Be sure to let us know if any of your details change. Always inform the membership secretary so our records can be updated.

NDSME – affiliated to the Southern Federation and also the Northern Association – for the benefit of all our members.

COMEDY CORNER



One-liners

A friend got to the final of the local model railway competition. He lost on points.

Never liked the troll who lives under the local railway bridge. He's my arch enemy.

Went to a railway fancy dress party. Everyone was wearing platforms.

Got a couple of railway buffers going cheap. It was an end of line sale.

I've always liked one-liners. That's why I'm a fan of monorails.

Ticket inspectors. You've got to hand it to them...

What's the difference between a teacher and a railway security guard? One trains the mind, the other minds the trains...

I know someone who tried to run away after camouflaging a railway. He tried to cover his tracks.

I miss the old days of railway when the driver had plenty of esteem.

A driver took a train for a service, but the vicar said it was blocking the aisle.

A train track and a motorway walk into a bar. The train track says "A pint for me, please, and one for the road".

I know an elephant who refused to travel by train because he didn't want to leave his trunk in the baggage car.

A friend of mine quit his job as a reporter and left town by railway. It was an ex-press train.

IMPORTANT NOTICE

Please note that the NDSMEs insurance policy does NOT cover any members' locos or assets stored at Eaton Park. Members should ensure that their own insurances cover this eventuality, should they wish to store any locos, rolling stock or other items at the Society premises.

Mystery Photo

What and where is this? (last edition)

Answer – it is the sole surviving piece of the tramway that ran from City station to the Pumping station in New Mills Yard.



Forthcoming Events

- 30 September Children in Need
- 06 October Raised track day with Pete
- 07 October Private Members day, ground level
- 10 October Monthly meeting. *I haven't made anything!* Brian Baker.
7:30pm

For other events, see the ndsme website



Do you know somewhere we could visit on one of our monthly meetings? Contact the committee if you have any ideas and we will do our best to arrange it if possible...



NDSME directors (committee) and officers as at Sep 2018

President	Neville Gower	Company Sec.	Jim McDonell
Chairman	vacant	Membership Sec.	Allan Shirley
Treasurer	Jim McDonell	Publicity	Mark Rhodes

Other directors: James Horrex, Andrew Shirley, Peter King (PW), Dave Beeken, Pete Ottley, Mike Riches and Philip Moore (Estates).

Other officers. Rolling stock – Roger Montgomery

Bulletin distribution, *digital* – Allan Shirley, *hard copy* – Philip Moore.

There is a number of other roles, such as meetings organiser, that need filling. Contact the Company Secretary if you can help. The email is clubsecretary@ndsme.org



At the Park – recent activity



James isn't training for the skeleton, he's actually checking the alignment of the raised track. Pete is there to make sure he doesn't fall off! And carry the clipboard!

"Look! A pigeon!"

It's actually the first raised track pop-up session on a Saturday in mid - September



Didn't your mummy tell you, *"Never buy things out the back of a van!"*

Pete has an extensive selection of modelling materials for railway and aero modellers

One of our new members working on the much-neglected stationary engine.

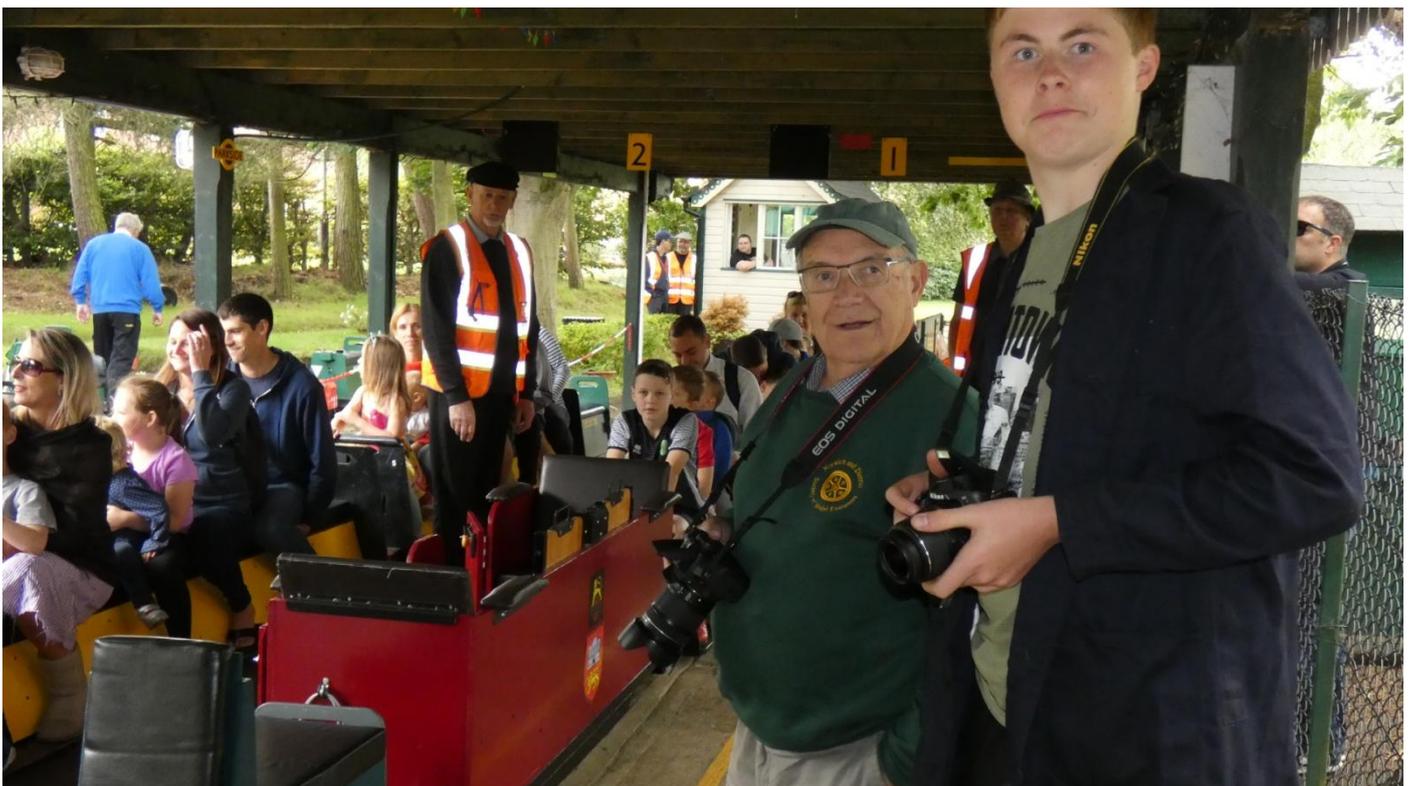


Above. The Lord Mayor and Mr President on 27th August



Above. A fine spread was laid on for the Mayor. And ndsme members too. Here Philip supervises...

Below – What has startled the photographer?





ndsme Tours presents...

A coach trip to the Midlands Model Exhibition
Sat 20th October, d. Eaton Park @ 0730.

Limited places left. £22 coach only fare.

Contact Barry Fane or Roger Montgomery

In the next eBulletin...

James Horrex brings us right up to date with
his 5" new build, warts 'n' all.

From the Clubhouse...

Salient points from the September meeting.

The question of new toilet facilities was discussed and the council voted in favour of a small facility attached to the main building. Estimates are to be obtained.

The council has decided to enact powers within the articles and elect a chair at each meeting until a suitable candidate for a permanent position emerges.

Two new board members were co-opted.

The membership secretary noted that membership was on the up again`.

The track in the tunnel was discussed and Mr Moore was asked to instigate repairs at a suitable time.

A financial report was presented by the treasurer and an expenditure plan to March 2019 will be produced.

Articles of Association – a draft is being considered.

A member is pursuing a grant application from *Aviva*. If this is awarded it will pay for a wheelchair compatible passenger car.

Investigations are underway re possible professional hedge cutting as this task is now proving too onerous for our parks staff.

A Wednesday meetings organiser is still being sought.

Access code for padlocks is being changed and members advised of new code.

From the Membership Secretary

We must be doing something right, two new members have joined and another guy who was watching an attempt to get Richard Wells loco going, has shown interest in joining next week.

Santa bookings are trickling in with nearly 20 completed forms processed. The block of missing tickets are still successfully playing hide-and-seek. If anyone can shed any light on where they may be located, please speak up.

Allan

The next monthly meeting...

Wednesday 10th October

I haven't made anything! by Brian Baker. 7:30pm at the clubhouse. Another interesting session from regular raconteur Brian, who has much of interest to tell...

MISSING!

Four packets of Santa Special tickets. Last seen at the clubhouse in mid July. Any info to Allan please.

For disposal

The society has been donated a 5" loco chassis (not steam). Any members interested in acquiring this please email the club secretary.

Raised Track Group.

There is now a thriving 5"/3½" raised track group, meeting on the first Saturday of each month, plus other Saturdays too. Contact Pete Ottley via email for further details or see the members page on the website for updates.

SMALL ADS

Pete Franklin has for sale,

Hornby live steam *Rocket* 3½ “ gauge loco and tender. Comes complete with track, both in original boxes. Spare *Ronson* valve and socket spanner for fuel tank. Model runs on lighter fuel. Personal demo if required, video of loco running available. £250 ovno.

Contact Pete via pef@talktalk.net 01603 749417

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