Making Class 37s 'GROWL'

TOOLS
SOUND DECODER INSTALLATION
- Soldering iron
- Heatshrink tubing
- Black Tack (sourced from Amazon)
- Insulation tape

The English Electric Type 3 is one of the most popular diesel locomotives and it has been the subject of many models over the years. **MIKE WILD** tackles the Bachmann and ViTrains 'OO' models in this double sound installation.

ENGLISH ELECTRIC hit on a winning formula when it developed its 1,750hp Co-Co Type 3 for British Railways in the early 1960s. These characterful and flexible locomotives have enjoyed a career spanning six decades and even today they continue to be used on the main line on a daily basis.

It was November 1960 when the first of the class entered service with British Railways. It was built by English Electric at Vulcan Foundry and became the first of a class of 309 locomotives. They were designed as mixed traffic engines and achieved that goal throughout being seen at the head of passenger, parcels, freight and engineers trains and reaching all points of the UK mainland in the process.

Over the years the class has carried a huge range of liveries from original BR green to corporate blue, Railfreight 'red stripe', the triple grey of Sectorisation and a myriad of privatisation era colour schemes. They've also been overhauled and modified to create a range of sub-classes including Electric Train Heat equipped Class 37/4s, refurbished Class 37/5s, 'heavyweight' Class 37/7s and even the re-engined Class 37/9s. In fact, they are so important to the diesel and electric story that no model railway set after 1960 should be without at least one of these go-anywhere, do anything locomotives.

For this sound installation project we decided to tackle two locomotives from different sources – a Bachmann model with

TECHNICAL DETAILS – BACHMANN CLASS 37	
Manufacturer:	*www.bachmann.co.uk*
First released:	2004
Description:	Class 37 Co-Co diesel electric
Gauge:	'OO'/16.5mm
Scale:	4mm:1ft
Length (over buffers):	243mm
Price:	£169.95
Era:	9 (37055 as featured)
Couplings:	Small tension locks in NEM pockets
DCC:	DCC ready, 21-pin socket
Speaker space:	40mm x 20mm
Exterior lights:	Directional head and tail lights
Interior lights:	Cab lights
Motor type:	Five pole, skew wound
Flywheel:	Two
BR power classification:	Type 3
Wheel arrangement:	Co-Co
Purpose:	Mixed traffic
Haulage capacity (expected):	30 wagons
Haulage capacity (actual):	40+ wagons

The subjects for this sound installation feature are Bachmann's model of split headcode Class 37/0 37055 *Rail Magazine* (a new release for April) and ViTrains' model of Class 37/7 37710 in Loadhaul black and orange which was released in 2008. Both have been equipped with Zimo decoders.

STEP BY STEP

INSTALLING SOUND IN BACHMANN AND VITRAINS CLASS 37S

Intermediate
Beginner SKILL LEVEL Advanced

1 Our first candidate for sound installation is Bachmann's new South West area regional exclusive. The process shown can be used for any Bachmann 21-pin socket equipped Class 37.

2 Removal of the Bachmann Class 37 body requires six small crosshead screws to be undone. The first pair is positioned at opposite corners of the fuel tanks behind the bogies.

a 21-pin decoder socket and space for a 40mm x 20mm speaker and a ViTrains model with an 8-pin decoder and no specific space for a speaker. They model two late 1990s locomotives – 37055 *Rail Magazine* in Mainline blue and 37710 in Loadhaul black and orange – which were repainted in the first years of freight privatisation prior to the takeover by English Welsh & Scottish Railway (EWS) in 1997.

The two models require slightly different methods to install sound using our chosen decoders and speakers. Both use the same Digitrains Active Drive sound file which includes 20 sound functions, live volume control using F27 and F28, working brakes on F2 and the ability to adjust the performance of the locomotive through CV265 to suit different situations. This latter function also caters for the differences between Class 37/0 and 37/4 locomotives within the sound scheme.

With such a capable decoder and sound project installed, these two locomotives are now ready to enter service on *Hornby Magazine's* West Coast Cement exhibition layout which will be making its next outing at the Great Electric Train Show on October 12/13. In the meantime you can head over to *www.hornbymagazine.com* to see video of the pair running on our office test track Topley Dale.

The following step by step guide shows how we installed Zimo decoders and speakers into a Bachmann and ViTrains Class 37 while making the minimum amount of modifications to the actual models.

TECHNICAL DETAILS – VITRAINS CLASS 37	
Manufacturer:	ViTrains (no longer in production)
First released:	2008 – 37/7 (HM18)
Description:	Class 37 Co-Co diesel electric
Gauge:	'OO'/16.5mm
Scale:	4mm:1ft
Length (over buffers):	243mm
Price:	Second hand prices around £75
Era:	9 (37710 as featured)
Couplings:	Small tension locks
DCC:	DCC ready, 8-pin socket
Speaker space:	None
Exterior lights:	Directional head and tail lights
Interior lights:	None
Motor type:	Five pole, skew wound
Flywheel:	Two
BR power classification:	Type 3
Wheel arrangement:	Co-Co
Purpose:	Mixed traffic
Haulage capacity (expected):	30 wagons
Haulage capacity (actual):	40+ wagons

GO ONLINE! VISIT WWW.HORNBYMAGAZINE.COM TO BOTH MODELS IN ACTION

Mainline blue liveried Class 37/0 37055 passes the only Class 31/4 painted in the same colour scheme at Derby on October 17 1996. The two locomotives were engaged hauling spoil trains to and from Chaddesden. Paul Robertson.

15

The red roof fan is a push fit on the black base. Separate it and then glue the support pin into the centre of the fan. The tail of this can then be trimmed back to match the depth of the fan.

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We then simply glued the fan against the etched brass mesh using Deluxe Materials Rocket Rapid super glue completing preparations for reassembly of the body.

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With the body refitted, the speaker can only just be seen inside. After completing this project we added black insulation tape over the top of the speaker to disguise it completely when looking through the roof fan grille.

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Moving on to the ViTrains Class 37, we chose 37710 in Loadhaul black and orange as our subject but, like the Bachmann model, our steps relate to all versions of the ViTrains model which have 8-pin decoder sockets.

19

First the body needs to removed. There are no screws on this model – simply spread the lower bodysides until they undip from the chassis mounts. Repeat on both sides working on one corner at a time.

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Once the body is clear of all of its mounts it will lift straight off the die-cast chassis.

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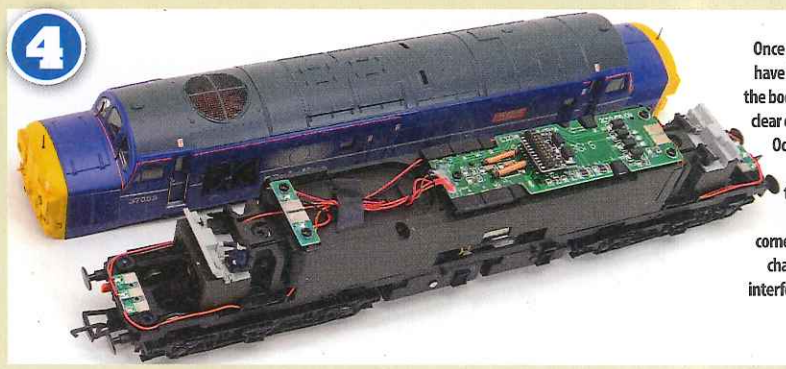
The chassis of ViTrains locomotives is quite simple, but doesn't include a specific location for a speaker to be installed. With a choice of speakers to hand we were looking for the simplest method possible to bring this locomotive to life.

STEP BY STEP

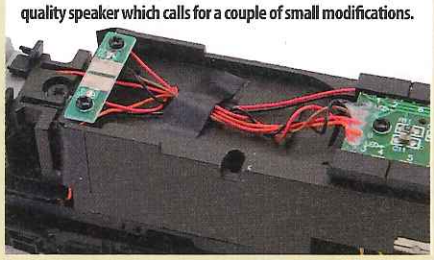
INSTALLING SOUND IN BACHMANN AND VITRAINS CLASS 37S

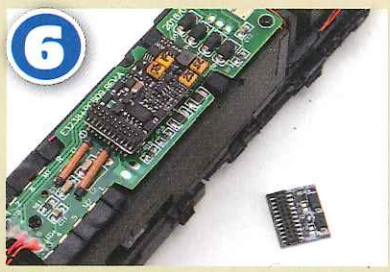
3 The remaining four screws which hold the body in place are located behind the bufferbeam – two at each end. Access is a little tricky as the bogie needs to be turned to each side and the heads only just fit past the rear of the buffers.



4 Once all the screws have been undone the body simply lifts clear of the chassis. Occasionally we have found that the black tape on each corner of the main chassis block can interfere with body removal.

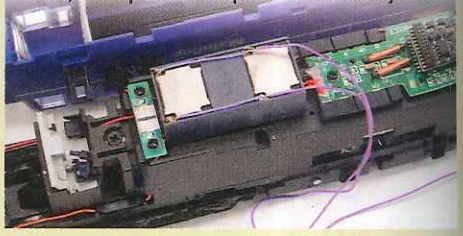
5 A space for a standard 40mm x 20mm speaker is cast into the chassis block while a mounting point is offered on the base of the roof fan moulding which is attached to the body. However, we are going to use a higher quality speaker which calls for a couple of small modifications.





6 Being a 21-pin socket locomotive, installation of the Zimo MX644D decoder is very neat and straightforward. Carefully lift the blanking plug (right) off the socket, taking care not to bend the pins, and then replace it with the new decoder.

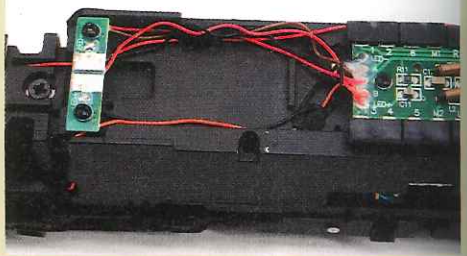
7 Our choice of speaker is the new Rail Exclusive 'Boom Box' which measures 40mm x 20mm x 10mm. This new design features two speakers in an injection moulded sound chamber and replaces the previous generation with 3D printed endosures. However, it won't quite fit into the space available without adjustment.



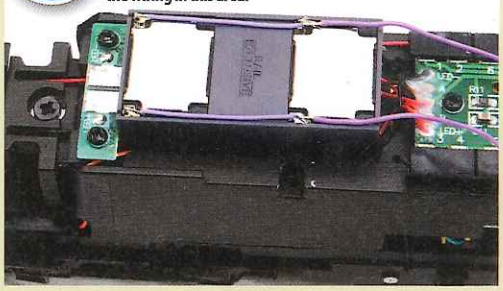
SOUND FUNCTIONS	
DIGITRAINS ZS37A CLASS 37	
F0	Lights on/off
F1	Sound on/off
F2	Brakes
F3	Low horn
F4	Dual horn
F5	Light engine mode
F6	Speed lock
F7	Coupling
F8	Aux 1
F9	Flange squeal
F10	Brake release
F11	Horn
F12	Door slam and switches
F13	Unlock driving desk
F14	Fire bell
F15	Cooler group fan
F16	Compressor
F17	Guard's whistle
F18	Spirax valves
F19	Fade all sounds
F20	Shunt mode
F21	Aux 3 and 4
F27	Volume down
F28	Volume up

8 To make the speaker fit within the casting on the chassis we trimmed the corners of the plastic moulding. Once the installation is complete it is important to ensure that these small holes are filled again for the best sound performance.

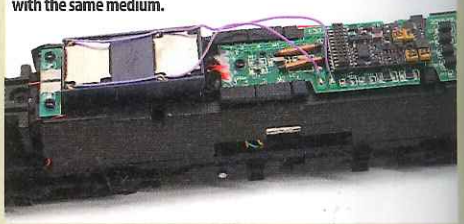
9 We also tidied up the wiring on the chassis around the speaker location, rerouting the light and pick-up wires to each side of the space. They have been secured with Black Tack.



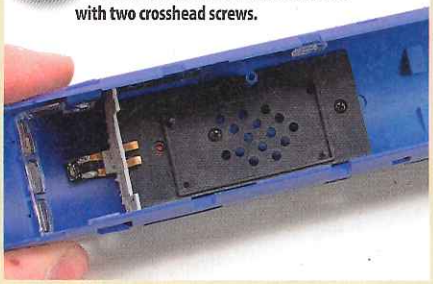
10 The speaker now comfortably fits into the space available and also sits level along its length as a result of rearranging the wiring in this area.



11 To complete the speaker installation on the chassis, the two purple wires were trimmed to length and soldered to the speaker connections on the locomotive's Printed Circuit Board. Note we have now filled the back corners of the speaker chamber with Black Tack – it has been fixed in position with the same medium.

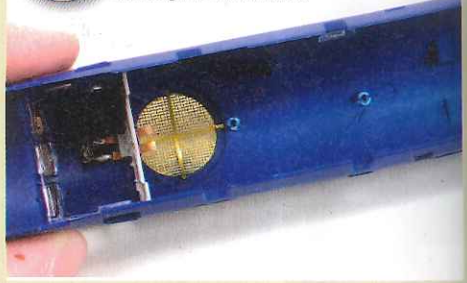


12 However, our choice of speaker won't fit within the body with the original roof fan moulding in place. This is held in place with two crosshead screws.



13 With the moulding removed it leaves two plastic supports standing proud of the body which need to be removed. We can also reuse the fan underneath the etched mesh to assist in concealing the speaker underneath.

14 The plastic supports have been cut away carefully with a craft knife to reduce their length to the minimum.



Loadhaul liveried Class 37/7 37710 double heads with EWS maroon and gold Class 37/0 37057 with the Exeter Riverside-Westbury stone empties at Silverton on April 8 1998. John Chalcraft/Railphotoprints.uk.

STEP BY STEP

INSTALLING SOUND IN BACHMANN AND VITRAINS CLASS 37S

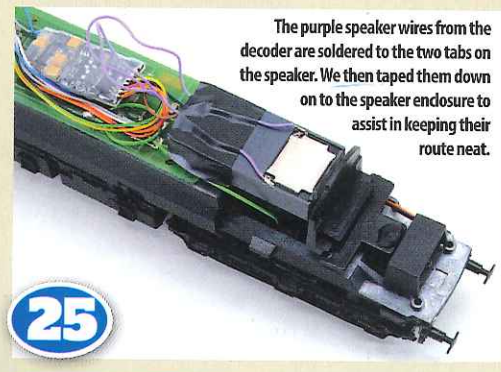
Beginner — Intermediate — Advanced — SKILL LEVEL

22 Having test fitted a couple of speaker options we found that the Rail Exclusive 'Big Boomer' 40mm x 20mm x 7mm speaker could be added behind the No. 2 end bulkhead. It is mounted onto the PCB at the rear with Black Tack as well as using the same medium to attach it to the bulkhead at the other end.

23 The 8-pin decoder socket blank is different on the ViTrains models and consists of two brass three-pin parts. Both need to be removed for a decoder to be installed.

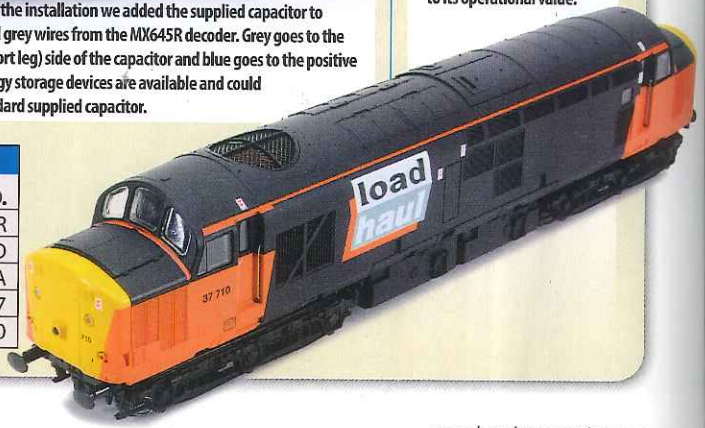
24 The 8-pin decoder socket plugs in as shown with pin 1 (orange wire) orientated to the top left of the socket in this view. This allows correct operation of the lights and direction of travel. The Zimo MX645R has been secured to the PCB with Black Tack to keep it in place.

25 The purple speaker wires from the decoder are soldered to the two tabs on the speaker. We then taped them down on to the speaker enclosure to assist in keeping their route neat.



26 To complete the installation we added the supplied capacitor to the blue and grey wires from the MX645R decoder. Grey goes to the negative (short leg) side of the capacitor and blue goes to the positive side. Larger energy storage devices are available and could be used in place of the standard supplied capacitor.

27 From the outside, like the Bachmann model of 37055, the addition of sound is entirely invisible on 37710, but makes a big difference to its operational value.



WHAT WE USED

PRODUCT	SUPPLIER	CAT NO.
Zimo MX645R 8-pin sound decoder	www.digitrains.co.uk	MX645R
ZImo MX644D 21-pin sound decoder	www.digitrains.co.uk	MX644D
Zimo Class 37 Activedrive sound file	www.digitrains.co.uk	ZS37A
'Big Boomer' 40mm x 20mm single speaker	www.digitrains.co.uk	SP40x20x7
'Boom Box' 40mm x 20mm twin speaker	www.digitrains.co.uk	SP40x20x10