Fresh thinking...

New technology is breeding new ideas. **PAUL CHETTER** describes how Bachmann have updated the chassis of the venerable 'V3' 2-6-2T to equip it for potential DCC sound installation and puts it to the test.

A CHASSIS update was long due for Bachmann's 'V3' 2-6-2T and it's running characteristics were covered in HM110. It was one of Bachmann's very first new models in the early 1990s and until now previous versions had relied on the old and outdated split chassis design. That chassis had no facilities for installing even a standard motor decoder making it a difficult choice for those using DCC.

That Bachmann took the opportunity to equip the model not only for Digital Command Control (DCC) readiness, but to include features to simplify fitting of DCC sound is a welcome move. The inclusion of a Next18 decoder interface brings things right up to date.

To fit a non-sound DCC decoder could hardly be simpler. Remove one screw, separate body and chassis, remove blanking plug, install decoder, refit body to chassis and secure with screw. What is more surprising is that because of the preparation for its installation at the design stage, adding sound is equally straightforward. This is something that for several years we at *Hornby Magazine* have been lobbying manufacturers to provide.

In each case, the decoder must be of the Next18 interface. This will be new to many readers, but you will be seeing a lot more of it from now on with Bachmann firmly committed to replacing its 6-pin socket locomotives with upgrades to Next18 and DJ Models also revealing it will be using the socket type for its new Class 92 in 'N' (see Update).

What is a Next18 decoder? Essentially it's a non-wired connection which provides multiple Function Outputs and a standardised format guaranteed to fit into models having the Next18 interface. A predetermined space is provided for the decoder, as each Next18 decoder is designed to fit within a given footprint.

Bachmann branded non-sound Next18 decoders are supplied by Zimo, and are identical to the Zimo MX618N18 which is a top link item. For this installation I chose the MX658N18 sound decoder as the basis for my conversion.

DESIGNED CLEVER

Introduction of the Next18 decoder socket goes further than just a different socket design. Making life considerably easier for the modeller, the chassis has solder pads on the printed circuit board (PCB) to which speaker wires can be connected and a dedicated route for the speaker wires through three separate built-in retaining guides. Provision has been made to fit a 12mm x 15mm x 9mm cube speaker at the front of the chassis ahead of the motor. These 8 ohms speakers are ideally matched to the MX658N18. Another feather in Bachmann's cap is the inclusion of comprehensive sound fitting instructions with clear diagrams, though you will find a couple of extra tips in the step by step guide which follows.

And there is more. There are additional solder pads for front and rear light operation which tempted me to add working locomotive lamps. It's a pity that more pads for the decoder's other function outputs aren't provided but hopefully in later models this will be addressed as it would allow separate control of tail lamps, cab lighting and more.

To provide realistic lighting I used the working LNER locomotive lamps from the DCC Concepts range. These, painted white, claim to be 'ready to use'. They are really good scale replica lamps but in my experience they benefit from a little extra preparation before installation.

There can be a degree of 'light bleed' both through the body of the lamps and more particularly from the open base of each lamp. This is more obvious if you set your lamps to be very bright. To overcome this tendency, I always begin by plugging the base with a very small ball of mastic or Blu Tack.

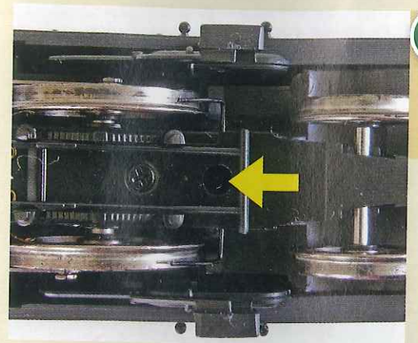
Next, I give the lamp a coating of black paint, avoiding the lamp 'lens'. When this has dried, I then coat with white. An imperfect finish allows the black to show through in parts giving some suggestion of wear and tear. The handles can be modelled in the upright or folded position, useful in this case as the space available for the rear lamp is restricted due to the rear handrail.

I used a 4.7K ohms series resistor in the positive connection of each lamp. This protects the LEDs from over-current and reduces the brilliance to more realistic levels. Final dimming adjustment can be made with CV60 on the decoder as required. I used a cyano adhesive to fix the lamps and wiring in place, with a transition to normal insulated wires for connection to the appropriate (labelled) PCB solder pads.

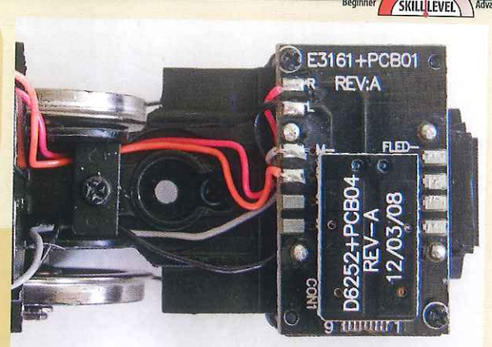
I loaded the decoder with my own custom 'V3' sound project, and then plugged it into its socket prior to refitting the body to the chassis. The Next18 interface is an excellent step forward, but combined with the solder pads and designed-in speaker location it makes the new 'V3' chassis one of the most thoughtful internal designs that we have seen in recent times. It is highly encouraging and for the sound installer it is a brilliant move which makes the process all the more simple.

STEP BY STEP INSTALLING SOUND AND LIGHTS IN A BACHMANN 'V3' 2-6-2T

Beginner — Intermediate — Advanced — SKILL LEVEL



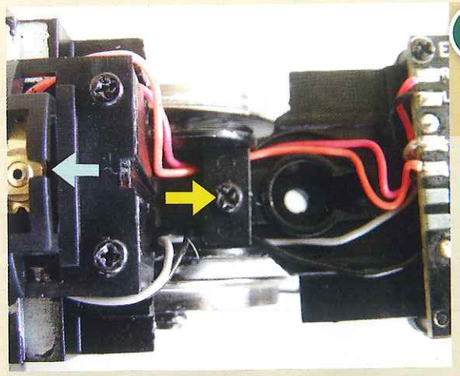
1 Remove this screw to allow the body to tilt forward, releasing the forward retaining lug and allowing the body to be removed from the chassis.



2 This shows the blanking plate fitted to the hidden Next18 socket on the PCB.

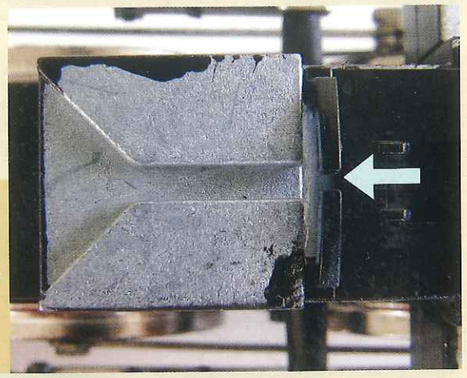
The latest generation LNER 'V3' 2-6-2T features a new chassis design with a Next18 decoder socket and provision for installing a Zimo sugar cube speaker. This internal design makes the sound fitting process straightforward.

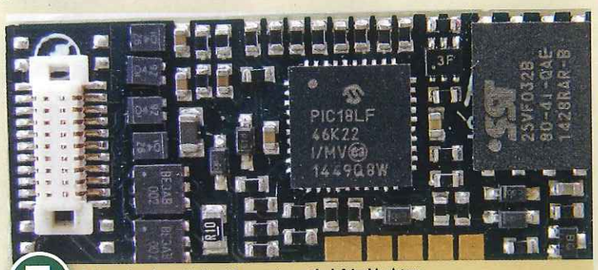
STEP BY STEP INSTALLING SOUND AND LIGHTS IN A BACHMANN 'V3' 2-6-2T



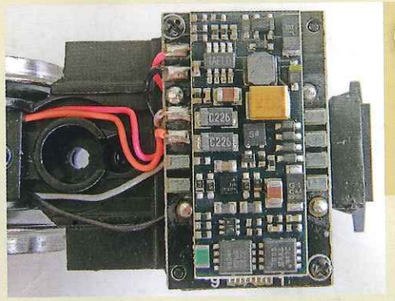
3 The blue arrow points to one of the speaker wiring guides, whilst the yellow shows the guide for multiple wires below the cab floor.

4 The blue arrow highlights the forward speaker wiring guide. In the forward chassis high point, the channel for the wiring, opening up to allow wires to meet the cube speaker connectors, can be seen.

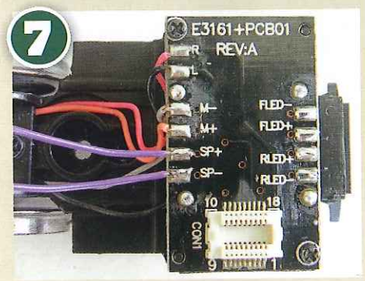




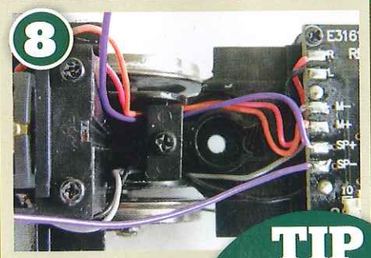
5 A doser view shows the Next18 connector on the left in this picture.



6 The compact size of the decoder is used to good effect by fitting it transversely.



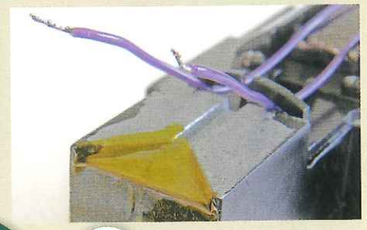
7 The decoder was removed to solder the speaker wires (each wire should be 120mm long) to the PCB.



8 The speaker wires should pass under the screw fitted clamp and in the channels provided.

TIP

The clamp is very fiddly to replace if removed. Instead, loosen the screw a couple of turns then feed each wire through as shown. Re-tighten screw afterwards.

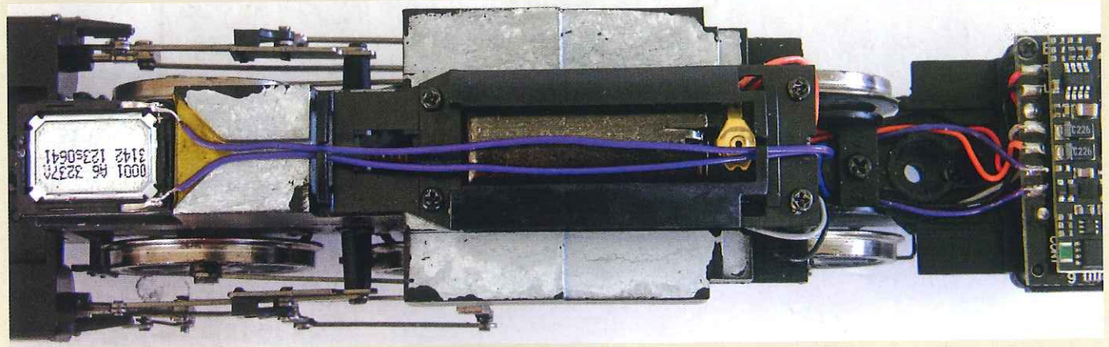


9 Just to be extra safe, insulate the metal areas near to the speaker's solder points. This will stop any potential for a short circuit occurring. Kapton tape has been used here.

10 Fix the speaker enclosure to the front of the chassis block and solder the speaker wires to it, ensuring all wires are correctly in place.

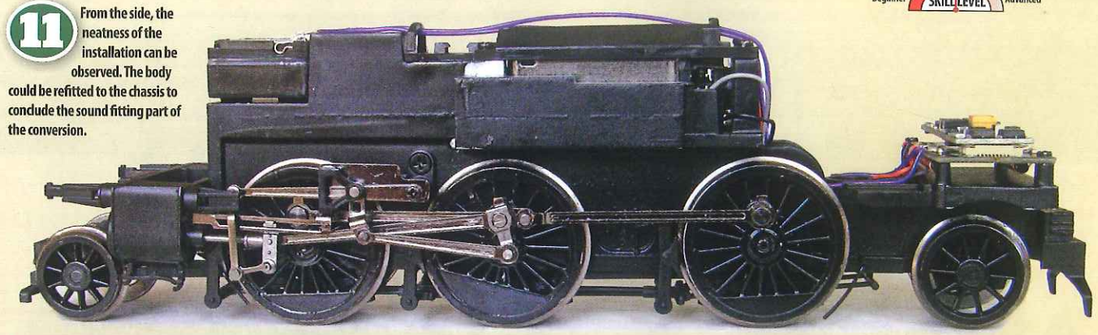
WHAT WE USED

Product	Supplier	Price
Zimo MX658N18 sound decoder	*www.digitrains.co.uk*	£90.00
Zimo 8mm x 12mm cube speaker	*www.digitrains.co.uk*	£9.00
DCC Concepts locomotive lamps	*www.digitrains.co.uk*	£30.00



Intermediate
Beginner SKILL LEVEL Advanced

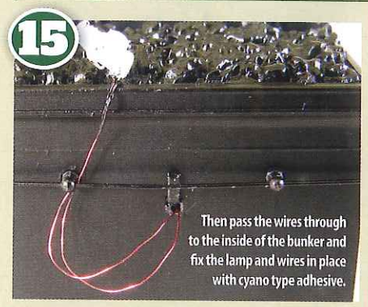
11 From the side, the neatness of the installation can be observed. The body could be refitted to the chassis to conclude the sound fitting part of the conversion.



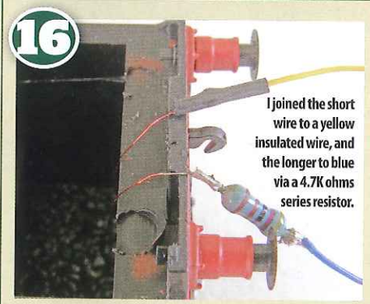
12 On the left can be seen a locomotive lamp with an open base. To prevent light bleed, plug the base similarly to the lamp on the right.

13 A coating of black paint helps to stop light passing through the plastic body of the lamps. Finish off with a coat of white - but not too white!

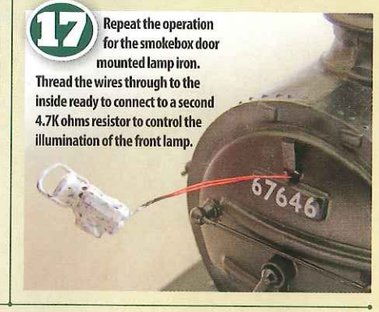
14 I used a 0.5mm drill bit in a pin vice to drill just below the upper lamp iron. Pass the rear lamp wires behind the handrail when installing the lamp.



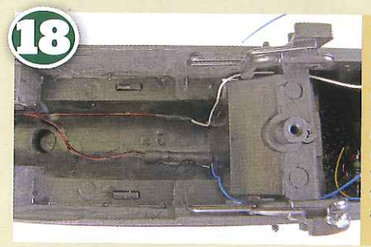
15 Then pass the wires through to the inside of the bunker and fix the lamp and wires in place with cyano type adhesive.



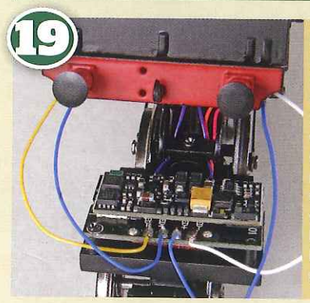
16 I joined the short wire to a yellow insulated wire, and the longer to blue via a 4.7K ohms series resistor.



17 Repeat the operation for the smokebox door mounted lamp iron. Thread the wires through to the inside ready to connect to a second 4.7K ohms resistor to control the illumination of the front lamp.



18 I fixed the wires in place with adhesive, checking that no fouling would occur on reassembly. This is particularly important near the rear driving wheels, but will be safe if passed though the mouldings as shown.



19 One of the beauties of the new PCB design for the Next18 socket are the solder pads for lighting wires. Simply solder the correct wire to the correct pad (with the decoder and body removed). White connects to front LED negative, yellow connects to rear LED negative, blue to front LED positive and rear LED positive.

20 A touch of yellow tint tones the whiteness of the LED to something closer to the colour of oil lamps. The rear lamp receives the same treatment and will automatically illuminate if the locomotive runs bunker first when lamps are switched on.