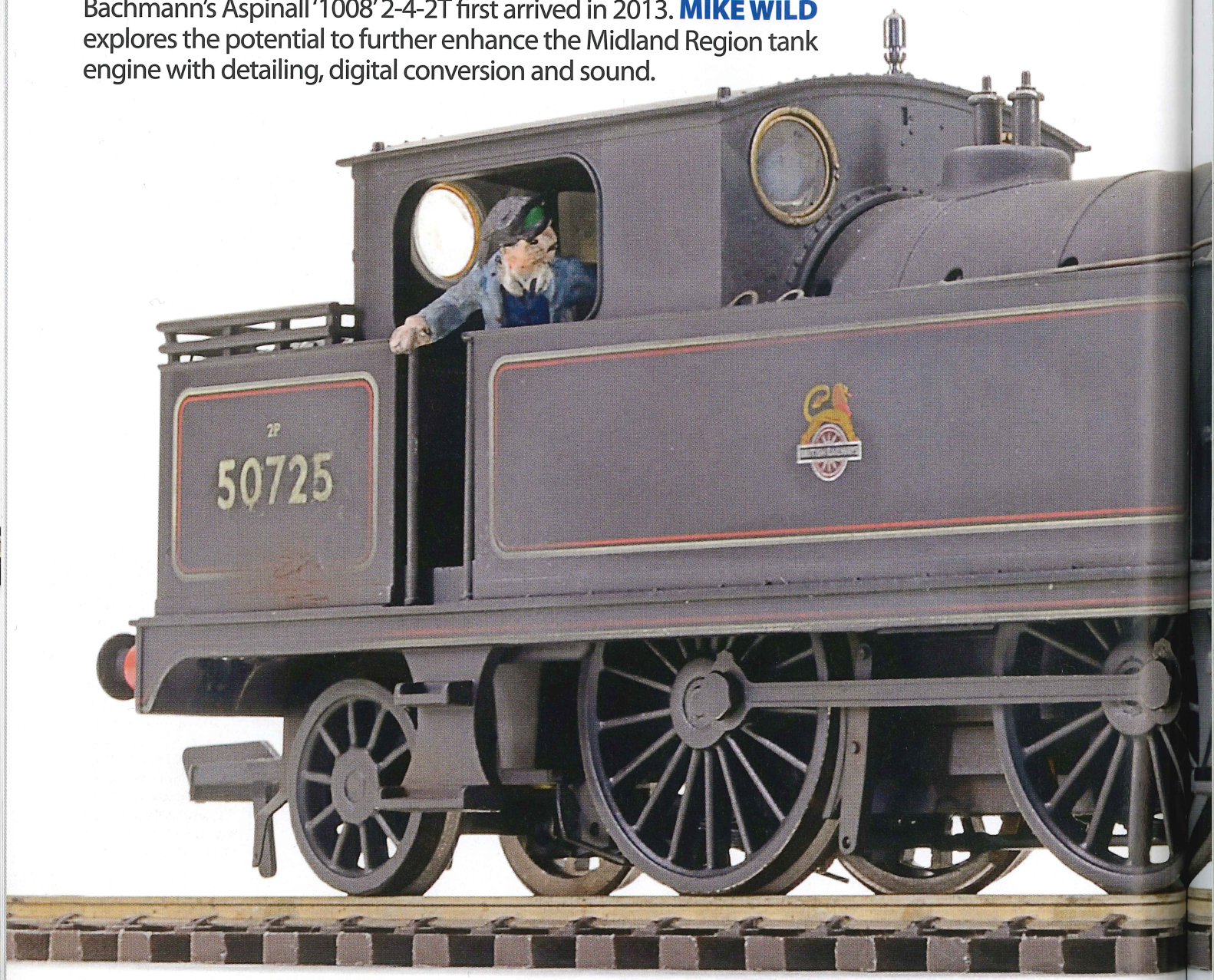
ASPINALL APPEAL

Bachmann's Aspinall '1008' 2-4-2T first arrived in 2013. **MIKE WILD** explores the potential to further enhance the Midland Region tank engine with detailing, digital conversion and sound.



TANK ENGINES can be tricky for sound installation. Limited space for decoders and speakers and the need to hide additional equipment are a great challenge which sometimes requires a little lateral thinking to come up with a workable solution.

For this step by step guide we are working on a Bachmann Aspinall '1008' 2-4-2T in 'OO' gauge. The model first appeared in winter 2013 (HM79) and a number of versions have been released covering Lancashire and Yorkshire Railway (LYR), London Midland and Scottish Railway (LMS) and British Railways (BR) colour schemes. Our candidate is BR lined black liveried 50725, renumbered from 50705, with early crests on the side tanks.

To show the full potential of the locomotive, we are illustrating how a standard motor control decoder can be installed as well as going to the lengths of installing sound. Adding a motor control chip to convert this locomotive for Digital Command Control (DCC) operation is straightforward – the challenge comes when introducing sound due to the limited internal spaces in the 2-4-2T.

Our choice of decoder for the sound installation is a Zimo MX648R which we have hardwired into the locomotive in place of the original socket. A Zimo 15mm x 11mm x 12mm cube speaker emits the sound while the sound file selected is Digitrains latest for the LMS Fowler 'Jinty' 0-6-0T. This new sound file includes manual reverser settings for a more direct driving experience, but as you might expect, using it for the 2-4-2T means a couple of small adjustments.

To prepare this locomotive for service, we gave it a four-digit address – 0725 – using the last four digits of its number and then adjusted the exhaust beat in CV267 to 125 to match the wheel revolutions. We also adjusted the coasting time by setting CV285 to 255 – this extends the period which the coasting sounds play to their maximum on decreasing of the speed by one speed step. This adds a great deal of operational value to the model, as it can coast for greater distances (25.5seconds to be exact) without a need to keep reducing the speed.

The process of installing the MX648R decoder takes care and a steady hand and it should be noted that the work we have carried out will void warranties on both the locomotive and decoder. We recommend you read the full guide before committing to any modifications to understand what is involved. If you haven't already, you will need a fine nib for your soldering iron to allow access to the tiny solder pads on the MX648 decoder board.

The end result though is a superb sounding tank engine which is perfect at the head of a short passenger train or on duty as station pilot. HM

● Visit *www.hornbymagazine.com* to hear and see this model in action with its new sound decoder.

TOOLS

- Soldering iron with 1mm nib
- Solder
- Wire strippers
- Small crosshead screwdriver
- Craft knife
- Sanding pad
- Superglue
- Insulation tape

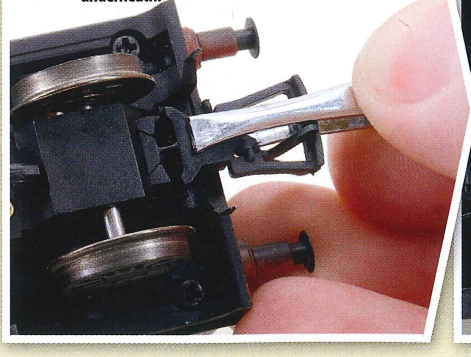
The Bachmann '1008' 2-4-2T is a simple conversion to digital control, but more complex to introduce sound into. However, by using the cab space and a crew to disguise the location of the speaker, it is perfectly possible.

STEP BY STEP

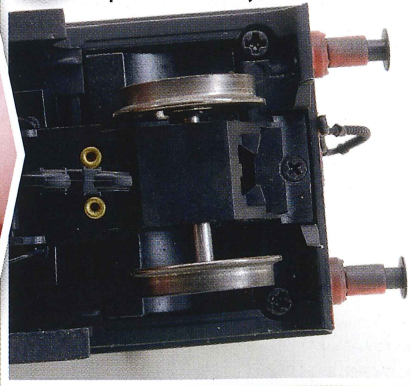
INSTALLING A DECODER AND SOUND IN A BACHMANN 2-4-2T

Beginner — Intermediate — Advanced — SKILL LEVEL

1 To begin we need to dismantle the locomotive for access to the chassis and decoder socket. Start by removing both couplings and their respective pockets using tweezers to allow access to the screw heads underneath.

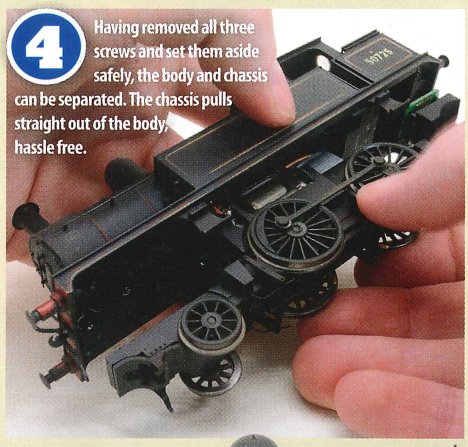


2 The first screw we need to remove is located at the centre rear of the chassis. Remove it and keep it safe for reassembly.

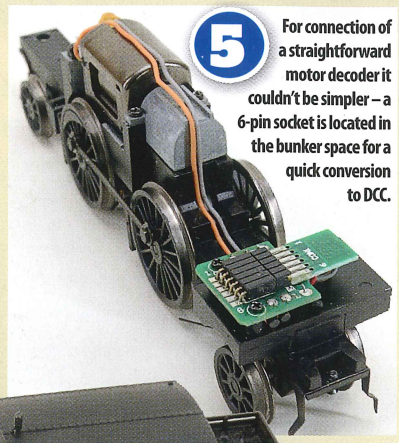


3 At the front are two screws to separate the body and chassis – one above the coupling mount right at the front and the other behind the leading pony truck where our screwdriver is located.

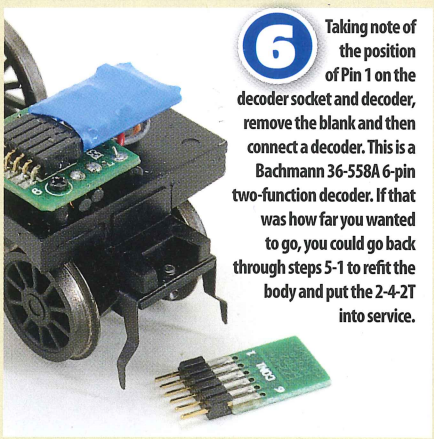
INSTALLING A DECODER AND SOUND IN A BACHMANN 2-4-2T



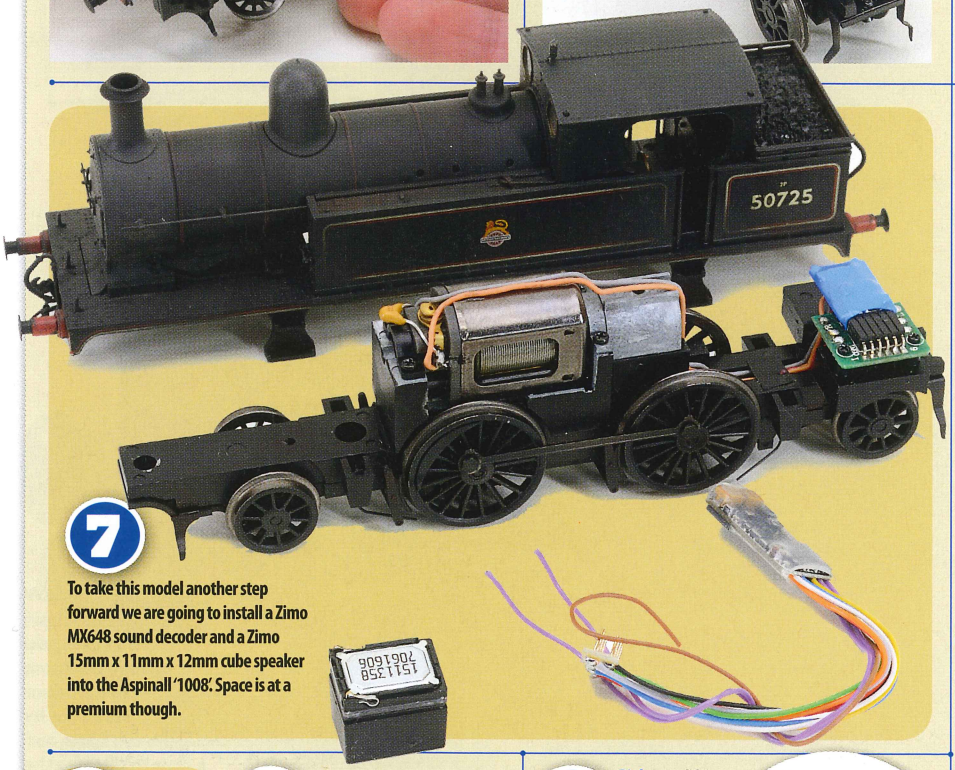
4 Having removed all three screws and set them aside safely, the body and chassis can be separated. The chassis pulls straight out of the body, hassle free.



5 For connection of a straightforward motor decoder it couldn't be simpler – a 6-pin socket is located in the bunker space for a quick conversion to DCC.



6 Taking note of the position of Pin 1 on the decoder socket and decoder, remove the blank and then connect a decoder. This is a Bachmann 36-558A 6-pin two-function decoder. If that was how far you wanted to go, you could go back through steps 5-1 to refit the body and put the 2-4-2T into service.



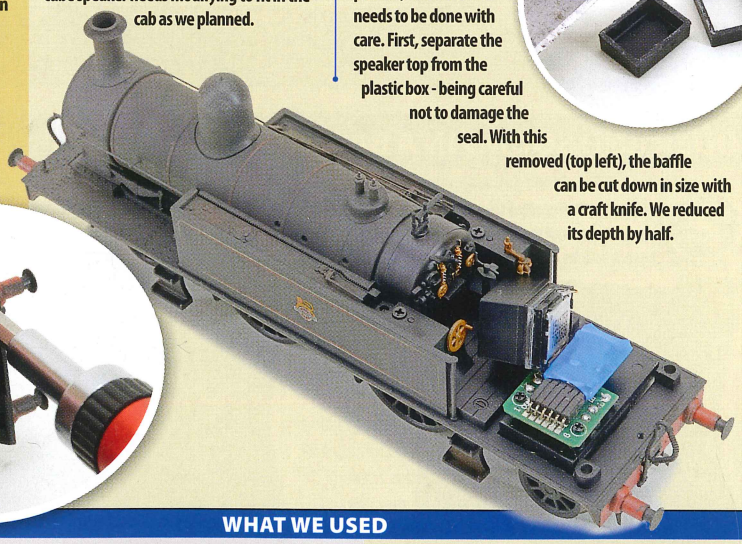
7 To take this model another step forward we are going to install a Zimo MX648 sound decoder and a Zimo 15mm x 11mm x 12mm cube speaker into the Aspinall '1008'. Space is at a premium though.

SOUND FUNCTIONS – ZS026A

FUNCTION	SOUND EFFECT
0	Short whistle
1	Sound on
2	Brake key
3	Long whistle
4	Double short whistle
5	Reverser position one
6	Reverser position two
7	Reverser position three
8	Blower
9	Flange squeal
10	Live steam injector
11	Hand brake
12	Coal shovelling
13	Wagon snatching
14	Buffering up
15	Cylinder drain cocks open
16	Coupling
17	Heavy train/light engine modes
18	Guard's whistle
19	Fade all sounds
20	Shunt mode
21	Safety valves
22	Water filling

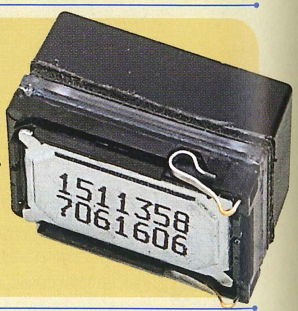
8 However, the 2-4-2T has a secret weapon – a removable cab and bunker. To do this, release the two screws at the rear corners which hold the assembly in place.

9 With the cab removed, and the chassis temporarily relocated in the body, we can see how much space is available. Even our cube speaker needs modifying to fit in the cab as we planned.



10 Right: Modifying the speaker baffle is a simple process, but one which needs to be done with care. First, separate the speaker top from the plastic box - being careful not to damage the seal. With this removed (top left), the baffle can be cut down in size with a craft knife. We reduced its depth by half.

11 Having retained the original seal intact during dismantling, we were able to stick the speaker components back together, making for a quick adjustment to its depth.



12 Having rechecked that it would fit, we found it was more comfortable to install the speaker standing up in the centre of the cab. To disguise its appearance a pair of crew figures from Masterpiece Models were selected from our spares box. All the parts are dry fitted here, not glued.

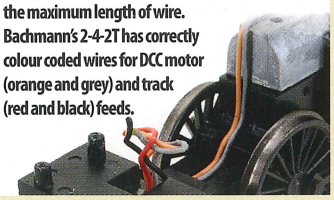
WHAT WE USED

PRODUCT	SUPPLIER	CAT NO.
Zimo MX648 20mm x 11mm x 4mm sound decoder	*www.digitrains.co.uk*	MX648R
LMS 'Jinty' sound file for Zimo decoders	*www.digitrains.co.uk*	ZS026A
Zimo 15mm x 11mm x 12mm cube speaker	*www.digitrains.co.uk*	LS15x11x12

Intermediate
Beginner SKILL LEVEL Advanced

13 Now we move on to the tricky bit – replacing the 6-pin socket with the MX648R decoder. First, release the decoder socket from its mount by undoing the two securing screws.

14 Next cut the wires from the back of the decoder socket – make the cut as close as possible to the PCB so that you have the maximum length of wire. Bachmann's 2-4-2T has correctly colour coded wires for DCC motor (orange and grey) and track (red and black) feeds.



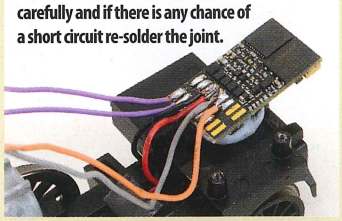
15 The decoder needs to have its cover cut open so that we can make the most space efficient connections between the locomotive and the chip. Carefully score down one edge of the cover with a craft knife and peel it open. Keep it safe for reuse later in this guide.

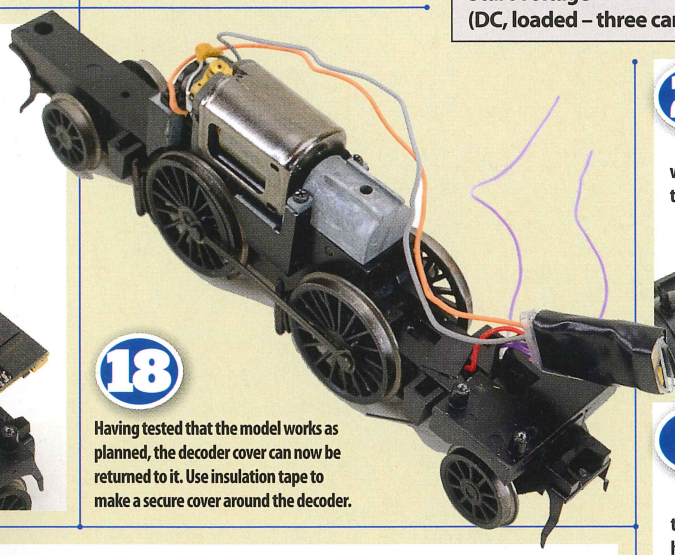
16 Here we have removed all the surplus wires for this installation (brown, blue, white, green and yellow) leaving stubs of the orange, grey, black and red wires as a note of their location. The purple speaker wires are left in full.

TECHNICAL DETAILS

Manufacturer:	*www.bachmann.co.uk*
Cat No:	31-169
Description:	LYR Aspinall '1008' 2-4-2T
Gauge:	'OO'/16.5mm
Scale:	4mm to 1ft
Length (over buffers):	147mm
Price:	£114.95
Era:	4
Couplings:	Small tension locks in NEM pockets
DCC:	DCC ready, 6-pin socket
Speaker space:	None provided
Exterior lights:	None
Interior lights:	None
Motor type:	Five pole, open frame
Flywheel:	One
BR power classification:	2P
Wheel arrangement:	2-4-2T
Purpose:	Light passenger and station pilot
Haulage capacity (expected):	Two-three carriages
Haulage capacity (actual):	Five Bachmann Mk 1 carriages
Start voltage (DC, light engine):	1.2volts
Start voltage (DC, loaded – three carriages):	1.3volts

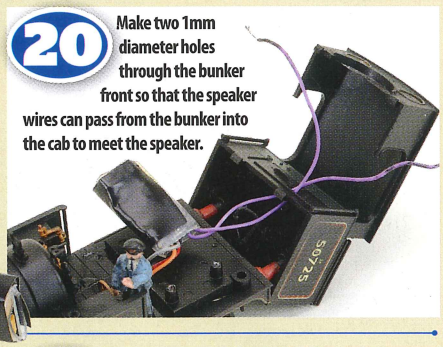
17 Working carefully to ensure you connect the right wires to the right positions on the decoder board, the original decoder wires are replaced with those from the locomotive. To solder at such a small size use a 1mm nib on a soldering iron and a quick action to minimise the chances of damaging the decoder board. Check all your connections carefully and if there is any chance of a short circuit re-solder the joint.





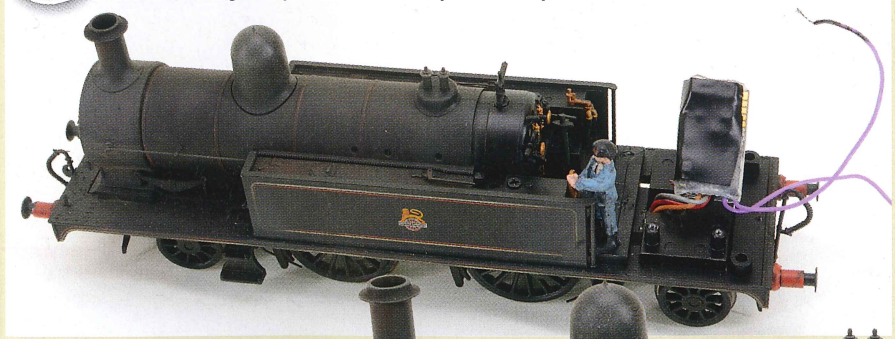
18 Having tested that the model works as planned, the decoder cover can now be returned to it. Use insulation tape to make a secure cover around the decoder.

20 Make two 1mm diameter holes through the bunker front so that the speaker wires can pass from the bunker into the cab to meet the speaker.



21 Solder the bare ends of the speaker wires to the speaker and add black insulation tape over the top to disguise their appearance. We also painted the purple wires black at the top and glued the fireman in place to further disguise the speaker. Superglue has been used to fix the crew and speaker in place.

19 Next we reunited the chassis with the main bulk of the body, leaving the cab and bunker off, using the reverse process of its removal, to allow connection of the speaker to complete the installation. The driver has been glued in place as a marker for the position of the speaker.



USEFUL LINKS

Digitrains	*www.digitrains.co.uk*
Masterpiece Models	01428 727341
Zimo	*www.railexclusive.com*

22 Finally, the speaker wires are fed back into the bunker and the cab assembly is dipped back into place at the front and secured at the rear with its original screws. As you can see, the speaker is difficult to see inside the cab with the addition of a crew. The 2-4-2T is now ready to enter service.