Class 44 Locomotive
DCC Sound Information

Important: Please read this sheet before running your locomotive.

Many thanks for purchasing one of our **Bachmann Branchline** Class 44 DCC Sound fitted Locomotives. Please take the time to read through this sheet carefully before running your locomotive to ensure you get the most out of your model.

Decoder Info.

Decoder & Speaker Spec.

Decoder type:	LokSound Select
CV1 Address:	03
Speed Steps:	28/128
Speaker:	4 Ohms

For full details of the decoder please refer to information sheets on **LokSound Select** available from **www.bachmann.co.uk**

For Best Results.

Please make sure your DCC system is set to run on 128 speed steps to obtain the very best results from this decoder.

Keeping the track, wheels and pick-ups clean are essential to ensure good electrical contact and will also contribute to the decoder working to it's best ability.

Loco Decoder Address.

This model is set with a default decoder address of 3.

Running on DC.

Your model is equipped with a LokSound Select sound decoder but will operate on DC powered track producing basic Prime Mover (engine) sounds which will vary with speed, any automated sounds and directionally operated head and tail lights.

Please note: *If this model is to be controlled with an analogue (DC) output controller Bachmann Europe Plc recommend the use of a controller with a smoothed output. If you intend to use a feedback type controller, or one with PWM (pulse width modulation) please consult the controller manufacturer before using it with this model.*

Operation Notes

Important; leaving approximately 1 second between function button presses will ensure a more reliable operation.

The following text has been provided to give you an example of how the decoder and sound file can be used to give you a realistic railway operating experience.

On a Diesel Electric locomotive, movement is created by a diesel engine, also known as the Prime Mover, turning a generator or an alternator to generate electricity which is used to power the traction motors that drive the locomotive.

Please note: Without activating F1 your model will not make any of the automated sound effects.

Before moving the locomotive, you will need to start the engine, or Prime Mover (**F1**).

On your controller, select the appropriate address for the loco (default 03). Before starting the prime mover you may wish to press function 0 to switch on head and tail lights.

Included in this sound project are three different engine start-up sequences;

1) F1 On-Off; this will trigger the sound of a failed start up sequence, which may occur when starting the engine for the first time on a cold morning or after a period out of use. You will hear the oil priming pump working, pumping oil around the engine to minimize wear and tear during start up. The engine will turn over, make a laboured attempt to start but not quite make it.

2) F1 On-Off-On; this sequence will trigger a 'long start', possibly the first start-up on a warmer day or after the batteries have been recharged following an earlier failed start. The prime mover makes a more convincing effort to start, turning over for an extended period before bursting in to life.

3) F1 On; This is the quickest of the start up sequences, and would be exhibited after only a relatively short period of being shut down, perhaps whilst fueling or in between duties.

Once started-up, the loco will stand with the diesel engine, the Prime Mover, ticking over at idle. Ready for service, sound the horn to warn of your movements by pressing **F3** or **F4** (see 'Horns') and slowly move off by increasing the throttle on your controller. You will hear the engine revs increase as the locomotive's speed increases.

In a real locomotive, acceleration, speed and deceleration are under control of the driver. He will use his experience of the locomotive type, the train weight and knowledge of the route (or 'Road') to anticipate the control movements needed to achieve the required performance and safety.

If you reduce the throttle to slow the locomotive, you will hear the engine revs drop and the train's speed will slowly reduce. If you reduce the throttle to off, the engine sound will return to idle and the loco will coast, gradually reducing in speed until it comes to a halt.

The 'Drive Hold' function (**F5**) will allow the locomotive's engine to rev up or return to idle without altering the speed of the train, a useful feature when moving a heavy train. Turning this function off whilst moving will allow the locomotive's sound and performance to return to the current throttle value. The train cannot be stopped whilst F5 is engaged, so it is important to switch it off when it is not required.

The 'Coasting' function (**F6**) will maintain the engine's sound at low revs, whilst still allowing you to alter the trains' speed, ideal when shunting and carrying out light engine movements (a locomotive without any other vehicles coupled) on or off shed.

Deceleration is often achieved by reducing power only, allowing the locomotive to 'coast' to lower speeds. Typically, the brakes are only used to fine tune this rate of deceleration or make a halt at a specific point. At other times, strong braking will be required even at high speed.

Using **F2** (Brake) you can slow the train, or when coming to a stand, reduce the stopping distance, which will reduce the more the brake key is pressed.

For example: to reduce the speed of the train on the approach to a set of points set for the diverging route, reduce the throttle to the new desired speed, then dab ***F2*** and you will see the train slow and hear the sound of the brakes being applied.

As you pass over the points, press **F9** to play the sound of flange squeal, caused by the friction between the flanges on the wheels and the railhead on sharper curves. Please note; this function is speed dependent and will not activate whilst the loco is stationary.

When coupling up to other locomotives or items of rolling stock (coaches & wagons), pressing **F7 On-Off** will trigger the sound of the screw link coupling being thrown over the hook of the adjacent vehicle and the brake pipe being connected. Alternatively, for uncoupling, the use of **F8 On-Off** will trigger the sound of the brake pressure being destroyed to enable the disconnection of the brake pipes and then the sound of the screw coupling being lifted off.

After the day's duties have been completed, the prime mover can be shut down by pressing **F1**. You can also press **F11** before pressing **F1**, this will trigger the sound of the Spirax Valves. These valves (which produce a 'popping' sound) are fitted to automatically drain moisture from the compressed air tanks.

Once the prime mover has shut down, you can then switch the directional lights off by pressing **F0.**

Function Instructions

Important; leaving approximately 1 second between function button presses will ensure a more reliable operation.

Trigger or latch?
The characteristics of this Locomotives functions will depend on whether your DCC controller has the corresponding Function (F) button set to **Trigger** or **Latch**.

In the instructions that follow we have suggested the best setting for each F button in *italic* next to each title.

Please consult your DCC controller instruction for how to change this.

F1. Engine Start (Latch)

F1 On - Engine priming pump on, Standard start.
F1 On/Off – Engine priming pump on, Failed start.
F1 On/Off/On - Engine priming pump on, Long start.

Throttle

Opening the throttle will increase speed up to the position set on your controller, reducing your throttle a couple of speed steps will set the locomotive to coast, (this may vary slightly depending on your make of controller). It will remain at this speed until further adjustments are made to the throttle.

Note: *You can open the throttle whilst the engine revs are falling and the sound will return to the throttle position. Likewise, reduce the throttle when taking power and the locomotive will coast as above.*

F2. Loco Brake (Trigger)

F2 On - Slows the loco down whilst moving - if necessary to a stop. Releasing **F2** will allow the loco to return to its previously speed.

Brake sounds will accompany any use of the Loco Brake function key.

F3 & F4. Horns (Trigger)

F3 On/Off - Single tone.
F3 Held On - Plays a single tone for as long as the button is held.
F4 On - Two tone horn.

F5. Drive Hold (Latch)

Note: Locomotive will not stop until F5 is turned off
F5 On - Locks the speed at the point the F key is pressed (not necessarily the throttle value). This allows the throttle to be opened & closed in order to play the drive sounds more prototypically whilst maintaining a constant speed.
Turning **F5 Off** whilst moving will allow speed & sound to return to current throttle value.

F6. Coasting (Latch)

F9 On - Causes the sound of the engine revs to fall and the locomotive to coast automatically from any throttle position whilst not affecting the speed. During this time, the speed can still be adjusted if required without affecting the sound of the engine. This will continue until F9 is turned Off.

F7 & F8. Coupling (Trigger)

F7 On/Off - Coupling up then the brake pipes being connected
F8 On/Off - Brake Vacuum pressure being destroyed and then the brake pipes & coupling being disconnected.

F9. Flange Squeal (Latch)

A sound caused by the friction between the flanges on the wheels and the railhead on sharper curves. **Please note; this function is speed dependent and will not action whilst the loco is stationary.**

F10. Brake Air Dump (Latch)

F4 On/Off - Full Air Brake application – use when loco has come to a stand and will not be moved for a short period – i.e. at a station

F11. Spirax valve (Latch)

On/Off as required - These valves (which produce a 'popping' sound) are fitted to automatically drain moisture from the compressed air tanks.

F12. Guards Whistle (Trigger)

Turning **On/Off** when stationary will sound the guard's whistle.

F13. Auxiliary 1

F13 - F13 is an Auxiliary function that is currently not in use. This can be used to add a new feature to the model.

F14. Uncoupling cycle (Latch)

On - A movement function to enable automatic uncoupling of tension-lock and knuckle couplings. Use F14 when you have positioned your train's coupling over the uncoupling ramp or magnet, and it will cause the locomotive to reverse to release the tension and allow the coupling to disengage.

F15. Driver's Door (Latch)

On - Drivers door open sound effect plays
Off - Drivers door closed sound effect plays

F16. Master volume (Latch)

Cycles through the six different volume settings, running from the quietest to the loudest.

Function List - Class 44

No.	Function/Sound	F Button *Suggested Setting*	Sound Type
0	Directional Lights	Latch	-
1	**On** - Fuel Pump On - Quick Engine Start	Latch	Continuous
	On / Off - Fuel Pump On - Failed Engine Start	Latch	Single
	On / Off / On - Fuel Pump On - Long Engine Start	Latch	Continuous
2	Brake (Function & Sound)	Trigger	Continuous
3	Single Horn (Playable)	Trigger	Continuous
4	Two Tone Horn	Trigger	Single
5	Drive Hold (Function & Sound)	Latch	-
6	Coasting (Function & Sound)	Latch	Continuous
7	Coupling Up & Brake Pipe Connect	Trigger	Single
8	Uncoupling, Brake Disconnect & Vac Destroyed	Trigger	Single
9	Flange Squeal	Latch	Continuous
10	Air Dump	Trigger	Single
11	Spirax Valve	Latch	Continuous
12	Guard's Whistle	Trigger	Single
13	Auxiliary 1	-	-
14	Auto Uncouple Cycle	Latch	-
15	**On** - Driver's Door Open	Latch	Single
	Off - Driver's Door Shut	Latch	Single
16	Master Volume (See Text)	Latch	-

Volumes

- Before making any Volume changes make sure index CV32 = 1
- Individual volume range is between 0 – 128.

Please note: Writing a value of 08 to CV08 will reset the CVs to factory default (As supplied).

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