

### Function Keys List

Some sounds have a finite length and will play from start to finish when selected. Other sounds will ‘loop’ until switched off, whilst others will vary in length, depending on how you operate the F keys on your DCC controller.

Some keys have a control function rather than a sound.

| Key | Sound or Control Function                          | Volume CV |
|-----|--|-----------|
| F0  | Coal shovelling (random sound)                     | CV511     |
| F1  | Sound on/off/fade                                  |           |
| F2  | Brake key  | CV517     |
| F3  | Speed related single whistle                       | -         |
| F4  | Speed related double whistle                       | -         |
| F5  | Reverser control                                   | CV526     |
| F6  | ‘Five feet, four feet.....one foot, whoa!’         | CV529     |
| F7  | Live Steam injector                                | CV532     |
| F8  | Blower   | CV535     |
| F9  | Speed related wheel flange                         | -         |
| F10 | Safety valves lifted                               | CV541     |
| F11 | Functional hand brake                              | -         |
| F12 | Enable speed related detonators                    | -         |
| F13 | Despatch whistle                                   | CV550     |
| F14 | Enable buffering and coupling feature              | -         |
| F15 | Cylinder drains opened                             | -         |
| F16 | Filling water tanks - variable length              | CV559     |
| F17 | Light engine mode                                  | -         |
| F18 | Enable automatic wagon snatching (heavy mode only) | -         |
| F19 | Vacuum ejector                                     | -         |
| F20 | Shunt mode (Half speed, No inertia or Momentum)    | -         |
| F21 | ‘Morning Charlie’                                  | CV677     |
| F22 | ‘Going under’                                      | CV680     |
| F23 | ‘Fancy a brew’                                     | CV683     |
| F24 | Loco lamps (if user fitted)                        | -         |
| F25 | Not used   | -         |
| F26 | Not used   | -         |
| F27 | Overall volume down                                | -         |
| F28 | Overall volume up                                  | -         |

Volume setting range 1 - 255, higher values give louder sounds.

Thank you for purchasing a sound-fitted **Planet Industrials** Kerr, Stuart “Victory”.

*Please spend a few moments to read these notes which have been produced so that you may obtain the maximum satisfaction from your new loco.*

### Operating Your ZIMO sound fitted model

As supplied, the sound in your model will operate in ‘full gear’ i.e. steam admitted for the whole of the piston stroke. This project utilises ZIMO’s ability to switch between ‘full gear’ sounds, typical of starting a heavy train or steam ‘cut-off’ sounds heard when the driver reduces the duration of steam input to the cylinders.

Refer to the Reverser Control (**F5**) for full details on how to switch between the available sound sets using your DCC controller.

There are many Functions, most of which have an individual sound attached. Some will perform a physical function and some will do both depending on equipment installed. Please study the list to the left.

All the CVs have been optimised, but you may need to make minor adjustments to perfect it for your individual tastes.

All sounds may be modified (including changing or removing them) individually, and the volume levels of each one may also be varied to your own preference.

### F1 • Get moving

Function **F1** will activate the sound project.

In any of the driving sound sets, increasing the speed step by 1 or more will produce an acceleration sound for a few seconds. For continuous acceleration, ease the throttle setting upwards.

In any of the driving sound sets, a reduction of 1 speed step or more will stop the exhaust beats and the loco will ‘coast’ (or drift) for a few seconds before resuming exhaust beats. Continuous drifting can be simulated by easing the throttle settings down, one step at a time.

## F2 • Working Loco Brakes

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

Deceleration is often achieved by reducing power only, allowing the locomotive to 'drift' 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.

The objective is to simulate the real driving experience as closely as possible, so here's how it works.

With the locomotive moving, reduce the throttle setting to zero. The loco will drift, gradually decelerating and the exhaust sound will fade into rod clanking.

Now engage brakes with **F2**.

A short 'dab' will produce a short brake application sound and a modest increase in deceleration rate. You can think of this as 'Speed Trimming'. This can be repeated if required, and is entirely prototypical in operation.

A longer application will produce a longer brake application sound and a higher rate of deceleration. The longer the Brake Key is held 'on', the greater the brake force applied.

Holding the Brake Key down continuously will produce a long brake application sound and the loco will perform a prototypically modelled emergency stop, i.e. brake force increases with time; maximum brake force and deceleration rate is achieved immediately prior to coming to a halt. Automatic brake squeal will accompany the final moments before halting.

The Brake Key can also be used to simulate brake testing.

The Brake Key may also be operated during deceleration between different speeds, e.g. speed restricted areas.

In this case, reduce the throttle to a suitable lower setting. The engine sound will change according to the features described earlier and the model will gradually decelerate. To increase the rate of deceleration, use the Brake Key as before, and the speed of the loco will be 'trimmed' to the newly selected speed step.

Please note that real locos do not stop dead even during an emergency stop. To reflect this, an emer-

gency stop will be reasonably abrupt but not sudden.

If your DCC controller is equipped with a 'panic button' to avert imminent catastrophe, this will still operate as usual, and will have more immediate, though less prototypical, effect than the Brake Key.

Please note that the inclusion of the Brake Key allows high inertia settings in CV4. This produces a realistic drawn out drifting action; use the brake key to stop the model accurately when required, e.g. signals at danger or station stops.

## F3 & F4 • Whistles

There are 8 different whistle sounds which are selected automatically by the decoder depending on speed and direction. They have been included to more closely follow typical practice – short 'toots' to warn of intended loco movement and long blasts when travelling at higher speed.

These are still controlled by **F3** (single whistle) and **F4** (double whistle) but a short 'acknowledgement' version of each will play when the model is stationary.

When the loco is moving at low speed (0 - 24 speed steps) slightly longer sounds will play. When the loco is moving at medium speed (24 - 64 speed steps) different and longer sounds will be played. At 65 speed steps or higher, long duration sounds are played. Each whistle function key can be selected at any time.

## F5 • Reverser Control

This project has two reverser positions in each direction. The default setting is 'full gear', but a cut-off of around 60% is available with the **F5** key which operates as a reverser. The exhaust sounds are modified as follows:

**Full Gear:** This is the one to use to start off if you have a heavy train on the hook. Steam is admitted to the cylinders for the whole of the piston stroke. The Chuffs are loud and harsh as steam at virtually boiler pressure is exhausted. This configuration gives the maximum power, but is the least efficient setting.

**Cut-Off:** With a light engine movement, or when a train has been 'lifted', the driver will reduce the duration for which steam is admitted to the cylinders. The steam still provides power for the rest of the stroke by expansion. This reduces the pressure of the exhausted steam, resulting in softer more subdued chuffing.

The reverser control allows you to change the sounds to simulate reality more closely. In model form, there's nothing to stop you from using it to vary the exhaust sounds simply to add interest.

## F9 • Flange Squeal

Enabled with **F9**. If it is not engaged, Flange Squeal will not sound. If the key is engaged, sounds will operate in the following automated way:

1. Loco is stationary or comes to a halt. No sounds.
2. Loco is moving slowly. A slow speed flange squeal will play.
3. Loco is moving more quickly. A faster speed flange squeal will play.
4. Loco is moving very quickly. Flange squeal ceases until speed drops below the threshold set.

## F11 • Functioning Handbrake

When **F11** is engaged, the sound of the handbrake being 'wound on' will be heard. When this sound stops, the model will no longer be drivable.

To release, disengage **F11**. The sound of the handbrake being 'wound off' will be heard. When this sound ends, you may drive the loco (subject to the status of **F2**)

## F12 • Speed Related Detonators

**F12** enables the warning Detonators to sound. The first explosion is heard immediately, but the time for the subsequent two alerts in the series will depend upon the road speed of the loco.

Since the detonators would be placed at fixed intervals, the faster the road speed, the quicker the sound will repeat.

The appropriate time interval will be calculated by the decoder.

So, when you hear the first 'bang', reduce the throttle to zero and hit the Brake Key (**F2**) for an emergency stop. If you manage to stop the loco in time, you may prevent subsequent detonations.

**F12** must be disengaged and road speed reduced to zero before you will be able to operate this feature again.

## F14 • Buffering and Coupling

To operate, bring moving loco to a stand at the required 6 ft distance from stock to be coupled. Engage **F14**. There will be a vocal '6 Feet to buffer-up'. This confirms the feature is active and you may move the loco to the stocks buffers. (See also **F6**).

Use the Brake Key **F2** to stop the movement. You will hear, in addition to any braking sounds, the sound of buffering up. Release the brake. The other distance count-down vocals can be found on key if still engaged.

Allow sufficient time for the shunter/2nd man to get into position then release **F14**. The sound of coupling will be heard.

This feature will not operate again until **F14** is disengaged and the loco has been driven. This is to allow for starts and stops not associated with shunting/coupling.

## Shunter's distance countdown

The use of **F6** is optional. This adds the rest of the distance countdown sequence started at **F14**.

Alternative ON/OFF switching of **F6** will enable you to match loco movement to distance. The sequence ends with 'Whoa!' and will begin a fresh cycle at the next press of **F6**.

## F17 • Light engine (Special Zimo Function)

The Inertia and Momentum settings by default are set high, producing acceleration and deceleration rates expected from a heavy train. A light engine, or very lightly loaded train, can accelerate more rapidly, so when engaged **F17** will instantly reduce inertia and momentum to provide more brisk acceleration and deceleration.

*Tip: You can also use **F17** to reduce the stopping distance without using, or use in conjunction with, the Brake Key*

## F18 • Wagons Snatching and Buffering

Enabled with **F18**. If not engaged, the wagon Snatching and Buffering sounds will not play under any circumstances.

If the key is engaged, and the Light Engine Mode (**F17**) is also engaged, the sounds will not play under any circumstances. (No wagons should be coupled when in Light Engine Mode).

If the key is engaged, and the Light Engine Mode (**F17**) is not engaged, sounds will operate in the following automated way:

1. Loco is stationary. No sounds.
2. Loco moves off/accelerates gently. No sounds.
3. Loco moves off/accelerates more rapidly. The sound of the couplings taking up slack as the train stretches plays. This is also the case if the loco accelerates further when already moving.
4. Loco decelerates gently. The sounds are not played.
5. Loco decelerates more rapidly. The sound of several wagons buffering up is played each time.
6. Loco comes to a halt with the Brake Key (**F2**) engaged. The sound of several wagons buffering up is played after it comes to a halt.

## F21 • Shunt Mode

Shunt mode is on **F21**. Inertia and momentum are reduced to zero plus speed is halved. This gives very fine control if required. The sounds will change automatically to suit the circumstances.

## F27 & F28 • Live Volume Control

Provided the sound is switched on and the 'fade' button is not active, it is possible to change the overall volume to suit changing needs.

Engage **F27** and the sound levels will gradually reduce, eventually to silence.

Engage **F28** and the sound levels will gradually increase, eventually to maximum.

In each case, disengage the F key when the desired level is attained. Set **F27** and **F28** as 'momentary' if your DCC controller allows you to do so.

*Note: If the volume controls appear to not function, check that **F19**, **F27** and **F28** are disengaged before making a further attempt.*

## Additional CV settings

### Coasting Sound Volume

You can independently change the volume of the sounds played when the loco is drifting (coasting) to suit your requirements.

**CV286** = 180 is the project default. Higher values will increase volume, lower values will reduce volume relative to the other sounds.

### Locomotive Character

As with all machinery, the 'character' of the sounds generated by a locomotive would have varied during its lifetime, depending upon use and maintenance.

The default sounds are from a loco in good order.

You can change the sounds on your model to represent a loco which needs a little TLC and a good service by changing the value in **CV265** from the default '1' to '3', and revert back again with **CV265** = 1 at any time.

If you have more than one Victory Class locomotive, you can use this feature to differentiate them.

## Acknowledgements

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