

SD079 - Class 390

F#	Spot Sound Description	Mode								
F0	Headlight/Rear Lights	T								
F1	Sound Enable/Engine Start	T								
F2	Multiple Horns (4)	M	F2a_High_High	F2b_High_High_Low_Low	F2c_Low_High	F2d_Fancy_Long	UNUSED	UNUSED	UNUSED	UNUSED
F3	Multiple Horns Fancy (4)	M	F3a_Fancy_Low_Long	F3b_Fancy_Fancy_Long1	F3c_Fancy_Low_High_Long	F3d_Fancy_High_High_Low_Long	UNUSED	UNUSED	UNUSED	UNUSED
F4	Brake	M								
F5	Cab Start Up	M								
F6	*Detonators	T								
F7	Air Conditioning	T								
F8	**Coach Doors Open/Close	T								
F9	AWS Warning Siren	M								
F10	Sander	T								
F11	Wipers	T								
F12	***Slow Speed Rail Clack	T								
F13	Pantograph Arc	M								
F14	Flange Squeal	T								
F15	****Cab Door Open/Close	T								
F16	Coupling	T								
F17	Multiple Safety Announcements (4)	M								
F18	Multiple Destination Announcements (6)	M								
F19	Guards Whistle	M								
F20	Passing at Speed	M								
F21	Aux 1	T								
F22	Aux 2	T								
F23	Aux 3	T								
F24	Aux 4	T								
F25	Shunting Mode	T								
F26	Creep Mode	M								
F27	Dynamic Brake	M	M = Momentary Action							
F28	AFC Enable	T	T = Toggle On/Off							

NOTES -

*F6 Detonators only functions if the loco is in operation between SS5 - SS75. The detention rate will increase/decrease depending on the loco speed.

**F8 Coach Doors Open/Close work as a toggle operation i.e F8 Doors Open playback starts when enabled and the Doors Close sound is played when the function is disabled. Note, loco will not move until function is disabled.

***F12 Slow Speed Rail Clack - only functions if the loco is in operation between SS15 - SS25

****F15 Cab Doors Open/Close work as a toggle operation i.e F8 Doors Open playback starts when enabled and the Doors Close sound is played when the function is disabled. Note, loco will not move until function is disabled.

Please refer to the main HM7000 Series Decoder Reference Manual for further information

CV119 Function Masking

The Class 390 operates with 2 decoders..... e.g with one fitted in each of the motor cars at the ends of the rake. The decoders can then be set up to have different responsibilities...see below for further explanation.

Decoder 1 and decoder 2 will be used to control the motor, lighting and a variety of corresponding engine and spot sounds at each end. However, it may be desirable for sounds (typically horns) to be played by either “decoder 1” or “decoder 2”... but, not both at the same time. This is usually dependent on the locomotive direction.

Since it usual to configure the decoders in the above scenario with a common address, it is therefore desirable to set up the system so that e.g. “horns,” are only played from the desired “end” of the rake... dependent on direction. Other, sound functions could also be direction dependent.

However, by using CV119 it is possible to select a preset function mask for each decoder so that common commands to the decoder pair will only be active in the desired decoder... i.e. decoder 1 or 2.

The masks are referred to as “Normal”, “Motorised Profile 1”and “Un-Motorised/Motorised Profile 2”. Please check the tables below for full details... there are 3 mask states...

CV#	Default Value	Range	Comment
CV119	0	0 - 2	0: Normal 1: Motorised Profile 1 2: Un-Motorised/Motorised Profile 2

Example..

By setting decoder 1 decoder to a value of 1 and decoder 2 decoder to a value of 2, the correct sounds will be played by each car according to direction. **Note:** On the later Class 390 models that have a motor fitted at both ends of the train, decoder 1 refers to the motor car with traction tyres.

Electric Mode Trigger Thresholds

A detailed overview on Electric mode notch configuration and playback can be found in the main HM7000 manual under section “ELECTRIC LOCOMOTIVES... Engine Running Sound Playback.”

Sound Play Configuration ELECTRIC Locomotive... ELECTRIC LOCOMOTIVES... Engine Running Sound Playback...				
	Automatic Idle	Default -- Range		Applies to SS of > 0 but less than ETT1
220	ELECTRIC Trigger Threshold 1 (ETT 1)	3	1-127	Applies when SS > EET1 but < ETT2
221	ELECTRIC Trigger Threshold 2 (ETT 2)	20	1-127	Applies when SS > ETT2 but < ETT3
222	ELECTRIC Trigger Threshold 3 (ETT 3)	45	1-127	Applies when SS > ETT3 but < ETT4
223	ELECTRIC Trigger Threshold 4 (ETT 4)	65	1-127	Applies when SS > ETT4 but < ETT5
224	ELECTRIC Trigger Threshold 5 (ETT 5)	85	1-127	Applies when SS > ETT5

F17 Safety Announcement Configuration

F17 allows the user to playback a variety of safety announcements. i.e. each time F17 is enabled a different announcement is played. Which announcement is played is configurable via CVs.

The announcements can be played in either random or sequential order, thus, a different announcement is played at each press of F17. This function can have up to 8 different announcements associated with it.

Note the APP does not display the content i.e., announcement list for F17. Thus, it is recommended downloading the full function list for your “Locomotive Profile”.

The table below contains full details of the “announcements” available F17...

	Value	Announcement
CV195	0	CCTV
	1	Security Announcement
	2	British Transport Police - See it Say it Sorted
	3	Luggage Unattended

Using the list, you will be able to configure which announcements are in play... see below

CV#	CV Name	Default Value	Range	Comments
195	Sound Selection F17	15	0 - 255	bit7 bit6 bit5 bit4 bit3 bit2 bit1 bit0
196	Sound Play Mode F17	0	0 - 1	0: Sequential 1: Random

CV196 Explanation... This CV configures whether each press of F17 cycles through the selected announcements sequentially or randomly.

CV195 explanation... Announcement selection for play. *** The default value shown in the table above, will depend on the maximum number of announcements available for play for F17. This CVs work in a similar way to CV29, and the AFC setup procedure described earlier... i.e they are bit maps. Each bit position selects a announcement for inclusion for F17.

e.g. If the maximum number of announcements for F17= 4 ...then the default CV value would be as follows.... CV195 = 15.

Programming tips...

The system can support up to 8 sound slots.

Referring to the table below... Select the desired announcements and add the number in the ADD column to arrive at simple Decimal value to programme the CV with.

As per the announcement table on the previous page this will give a full list of all announcements available for use with F17.

Once you have downloaded the “Function List,” ascertain how many sounds are associated with F17. Once this has been determined, when programming you only need to consider the first applicable bit positions for CV195.

e.g. If there are 4 different announcements associated with F17 then you only need to consider bit0 to bit3.

Bit numbers higher in the CV value are ignored, i.e., in the example above this will be... bit4 to bit7. Attempts to programme non-existent ”bits” will leave the current CV value unchanged.

The default of 255 means that all possible announcements will be available for F17 #. i.e., all will be available only limited by the number actually installed. On a power down, the system will revert back to the first announcement in the sequence.

CV195 Announcement Selection re F17		
Announcement Reference	Bit#	ADD
F17a	0	1
F17b	1	2
F17c	2	4
F17d	3	8
F17e	4	16
F17f	5	32
F17g	6	64
F17h	7	128

Please note: F17 operation will only execute when the train is stationary. The sequence will also be interrupted if another momentary spot sound is initiated mid-way through playback.

F18 Destination Announcement Configuration

The operation and configuration of F18 Destination announcements, is identical to F17 playback as above.

Please see table below. CV197 controls which destination will be played. To change your chosen destination, simply change the value in CV197 to that shown in the table (0-5).

The default destination is Glasgow Central which is indicated by having a value of 0.

CV197	Value	Destination	Travelling From
	0	Glasgow Central	London Euston
	1	London Euston	Glasgow Central
	2	Liverpool Lime Street	London Euston
	3	London Euston	Liverpool Lime Street
	4	Preston	London Euston
	5	London Euston	Preston

Using the list, you will be able to configure which announcements are in play... see below

CV#	CV Name	Default Value	Range	Comments
197	Sound Selection F18	63	0 - 255	bit7 bit6 bit5 bit4 bit3 bit2 bit1 bit0
198	Sound Play Mode F18	0	0 - 1	0: Sequential 1: Random

CV198 Explanation... This CV configures whether each press of F18 cycles through the selected announcements sequentially or randomly.

CV197 explanation... Announcement selection for play. *** The default value shown in the table above, will depend on the maximum number of announcements available for play for F18. This CVs work in a similar way to CV29, and the AFC setup procedure described earlier... i.e they are bit maps. Each bit position selects a announcement for inclusion for F18.

e.g. If the maximum number of announcements for F18= 6 ...then the default CV value would be as follows.... CV197 = 63.

CV197 Announcement Selection re F18		
Announcement Reference	Bit#	ADD
F18a	0	1
F18b	1	2
F18c	2	4
F18d	3	8
F18e	4	16
F18f	5	32
F18g	6	64
F18h	7	128

Please note: F18 operation will only execute when the train is stationary.