

S-CAB Operation – Version 2.5

S-CAB operation requires a hand-held controller (throttle) and a loco with an on-board S-CAB receiver. This receiver will either:

- be bundled with a DCC decoder (direct radio connection), or
- supplied with a mini-booster that replicates track DCC.

Both configurations require a decoder with a known address; 3 is the factory default.

Throttle – CAB mode

Turn on the throttle and select CAB mode. Default loco address is "3". To select a different loco, press 'Loco#', enter desired address ("12", for example) and press 'Enter'. The throttle sends forward commands if direction switch is to the right and backward commands if to the left. Speed is controlled by the slider.



The throttle's number keypad is used to send a variety of commands, with actions determined by the task to which the keypad is assigned. Buttons labeled 'Speed', 'FG1' and 'FG2' assign the keypad to either speed step control or one of two function groups. Once assigned, the keypad continues this assignment until reassigned.

FG1 enables control of basic loco functions and is the most convenient keypad use for loco operation.

FG2 supports a variety of commands, some for configuring the throttle itself and three; '0', '1', and '2', for addition decoder commands. When assigned this way, the respective buttons become function commands '10', '11' and '12'.

'8' displays the firmware version number.

'9' saves the current active loco address as throttle default.

Speed provides 10 discrete speed steps including zero, minimum (speed step 1) and maximum (speed step 28).

ALL addresses a command to *all* decoders. All active decoders will respond. Only 3 commands are allowed;

ALL HALT, all loco emergency stop; ALL '0', all loco reset (zero speed, forward direction); ALL, '5', all battery-off (new with firmware v2.5).

Throttle - CV mode

It's not an introductory topic, but the number keypad serves another purpose when throttle is switched to CV programming (CV mode). 'FG1' becomes 'CV#' meaning CV number, and FG2 becomes 'CV=', meaning CV value. Their specific use is beyond the scope of this note.

Using New Features

1. Version 2.5 starts with number keys assigned to function control. No need to press 'FG1'.
2. In control mode, the 'ALL' button initiates the following 3 commands:
 - 'ALL', 'HALT' All loco emergency stop
 - 'ALL', '0' All loco reset (zero speed, forward direction)

- `ALL`, `5` All batteries off
3. In CV mode, the `ALL` button initiates global addressing, which is the radio equivalent of using a Programming Track and must be used to program CV values of SoundTraxx decoders
 4. CVs 128 and 120 only work for SoundTraxx decoders and their use requires the following procedure:
 - Be sure to turn off all decoders except the one to be programmed
 - Switch the throttle to CV mode. Display will show "C" blank.
 - Press `ALL`. Display will show "CA".
 - To adjust sound volume, press `FG1(CV#)` multiple times as display cycles through CVs; C1, C2, C3, C4, C5, 29, until "2.8" is displayed.
 - Press `FG2(CV=)` and display will show "70". This is a prompt suggesting 70% of maximum sound volume.
 - Press `Enter/Send` if 70% is acceptable. If not, use number keys to enter an alternative (for example, `4`,`0` to select 40%) before pressing `Enter/Send`. Display will show "40", but actual value transmitted to decoder will be 40% of 255, which is rounded to 100 and is a recommended level when using a 1 watt speaker.
 5. CV120 is horn/whistle select. SoundTraxx decoders include a selection of sound files and experimenting with different horn/whistle sounds is an interesting way to add some uniqueness to a loco roster. The procedure is similar to CV128. Press `FG1(CV#)` repeatedly until display shows "2.0", Then press `FG2(CV=)` and enter a number from SoundTraxx list. Default choice is zero.
 6. `ALL`, `5` All batteries off. This command has been added as a convenience for operators with a large roster of battery powered locos. However, it only works when a decoder function output has been wired to the BPS battery-off terminal (which is default wiring for an S-CAB system). Again, by default, keypad button `5` operates the correct function output. `ALL` addresses the message to all locos and every active decoder will respond if the message is repeated a few times (3 is usually enough). Once pressed, `ALL` is latched, so `5` button repeats the command.