

**Update for Rev 2n CAB. (see previous CAB\_insts.doc for main information)**

**Changes:**

**Emergency Stop:**

From Rev 2b onwards, pressing the **Em. Stop** button once will stop the selected loco as before. The displayed message is

**STOP!**

Pressing the **Em. Stop** button twice will now issue a 'stop all' and all locos will be stopped. The display will show

**STOP ALL**

This message will appear on all CABs currently connected to the bus. A CAB doesn't need a loco selected in order to issue a 'stop all' so any CAB can be used in an emergency.

As before, a STOP! or a STOP ALL can be cleared by turning the speed control to zero, or if already at zero by pressing the **Loco** button.

From Rev 2g.

**Accessory control from CABs**

The ability to control accessories from a CAB has now been added. As an accessory needs to be controlled from any CAB, only the 'Device addressing' or 'short event' scheme can be used. Devices such as turnouts need their own unique Device Number (DN).

**To operate a device.**

Press **Enter**.

This will bring up the accessory set menu provided the CAB is not expecting an Enter for any other reason like when selecting a loco, a consist or any programming activity. In normal driving mode or with no loco selected, Enter will show the accessory message. Note that this will not affect the driving of a loco and the speed, direction and Em. Stop will remain active. However, the numeric keys will not now activate a function. The display top line continues to show the loco address and speed.

The message format is

**AC=            +**

The '+' sign shows an ON event and can be changed to a '-' for an OFF event by pressing the **Consist** button. At some future stage, the labelling will be changed to show this dual function.

Enter the device number with the numeric keys. 0 to 9999 are valid. The + / - can be toggled using the Consist button anytime. To send the event, press **Enter** again. The event will be sent and the AC= menu will be shown again with a blank number. You can change a succession of devices this way.

At any stage, you can abort the process just by pressing the **Loco** button.

The CABs will send 'short' events with a Node number (upper two bytes of the four byte message) set to all zeroes. This means that you can teach devices their DNs from a CAB. Put the module into learn mode and select the desired input or output with the SLiM switches. (See individual module instructions for further information on this). Send an event from the CAB with the desired device number. (ON or OFF is irrelevant here). Take the module out of learn mode. Note that a 'device' can comprise a complete route so you can set a whole route, signals, the lot, from a CAB just by entering the 'route' number.

You can now activate that device from any CAB.

You can even teach a control panel switch (CANACE3) or an input module (CANACE8C) a DN for its switch or input. If you make that number the same as the one taught to an output module (turnout driver) then the control panel or other input will activate the turnout directly as well as being able to activate it via the CAB. This way, you can use a CAB for layout configuration without a PC connection, albeit in SLiM mode only.

### **Momentary or toggle action for Fn buttons.** (From Rev 2n)

Any function from F0 to F28 can be set individually to be either 'toggle' (ON or OFF) or 'momentary' (ON as long as button is pressed). The default state is 'toggle'. The display now shows the Fn number and either ON or OFF when the button is pressed. This display remains till another Fn button is selected.

To set a Fn to 'momentary', select the Fn (0 to 28) and hold the button in. Now press the 'Consist' button. The display on the bottom line will change to **Fn mom +** if the Fn was originally ON or to **Fn mom –** if it was originally OFF. In momentary mode, the Fn button will send an ON event when pressed and an OFF event when released. The sign will indicate the state.

To clear a momentary action back to a toggle, press the Fn button and the Consist button – in that order.

The Fn button action is stored in the CAB EEPROM. It will remain the same for that CAB after a power off or a walkaround. To clear all Fn buttons back to toggle (the default) unplug the CAB. Hold in the Consist button and then replug the CAB.

### **Loco 'Dispatch'**

If you 'release' a loco with its speed already at zero, it will show '**Release?**' on the display as before. From Rev m, if the speed is not zero, it will show '**Dispatch?**' instead. Presently, the action will be the same and the loco will continue till the command station 'times out' after about 20 seconds. Future upgrades in the command station will recognise a 'Dispatch' and allow another CAB to take over the loco without it stopping.

### **Language options.**

The CAB code now allows for language options for the display using a specified language file (cbusmessages.inc). This is not user selectable and is implemented at assembly time by choosing the appropriate language '.inc' file. You can cycle through all the messages by repeatedly pressing the 'Prog' button with no loco selected.