

# CAB-05

## Intermediate Cab



## Operation Manual

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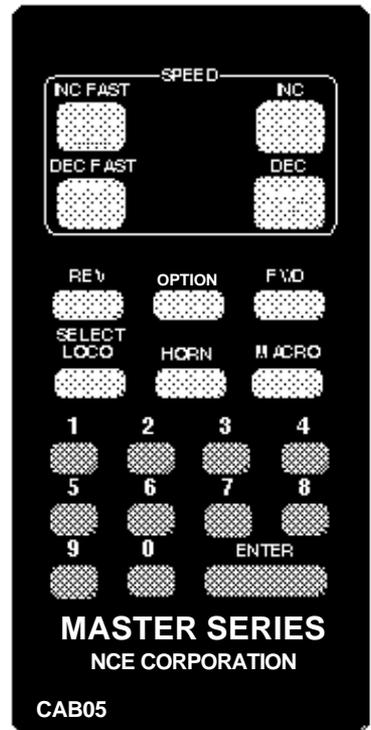
To the right is an illustration of the CAB05 Intermediate Cab. Following is a description of the various controls and indicators of the cab.

## STATUS LED

Toward the top of the Cab, between the speed control buttons, is a status LED. It will briefly flash whenever a key is pressed or will glow continuously to indicate when data entry is required.

## SPEED BUTTONS

The left two buttons increase or decrease the speed by 4 or 10 speed steps, depending on the speed mode. The right buttons increase and decrease the speed by one speed step at a time. These buttons are factory set to automatically repeat about 2 times per second. This repetition rate may be changed (see **SETTING UP YOUR CAB**)



**CAB-05**

## DIRECTION KEYS

Pressing the **FWD** key will cause the Loco to move in a forward direction. The **REV** key will cause the Loco to move in a reverse direction.

## OPTION KEY

This button comes factory set up to act as a direction toggle. Each push of this button will change the direction of the locomotive. This button can be programmed to act as any button you wish (see **SETTING UP YOUR CAB**).

## HORN

This button is factory set to operate Function 2 which is the de-facto standard for the horn/whistle feature of DCC sound systems. Unlike other keys which toggle functions on and off this key is momentary, activating the function only as long as the button is held down. If you wish Function 2 to toggle on and off use the “2” button

## **NUMBER KEYS**

The keys 0 through 9 serve two purposes. First, when operating a locomotive if a number key is pressed it toggles the corresponding function on the loco (if that function is connected and supported by the decoder). The second purpose is for entering numeric data that is required for selecting a locomotive or other device. Use the **0** key for Headlight.

## **HEADLIGHT**

The “**0**” button (the headlight is Function 0) toggles the Headlight on and off.

## **ENTER**

Used to confirm numeric input.

## **SELECT LOCO**

This allows the selection of a locomotive/consist to operate. When this key is pressed, the Status LED will light indicating that a numeric entry is expected. Enter the loco/consist number, then press **ENTER**. As each key is pressed the Status LED will “wink” to confirm the key press.

## **MACRO**

Macros are explained in detail in our system reference manual. When this key is pressed, the Status LED will light indicating that a numeric entry is expected. Enter the macro number, then press **ENTER**. Macros are used to control one or more accessory decoders with a single command.

# SETTING UP YOUR CAB05

Just as every locomotive has a separate number (address in DCC terms) each cab needs a separate address so the command station can distinguish one cab from another. Each CAB05 is shipped from the factory with the address of 5. If this is not your first CAB05 you will have to change the address before using the cab.

## To change the cab address:

- 1) Turn on the command station
- 2) Unplug your cab from the command station
- 3) Press and hold down the SELECT LOCO button on the cab while plugging in the cab. The cab will now enter its internal setup program. This is indicated by a flashing of the status LED.
- 4) Press “1” to enter the **cab address setup** mode. Notice the flashing of the LED slows to indicate it is ready to accept the new address.
- 5) To change the address type in a new address such as 3 followed by the ENTER key. Valid cab addresses are 1 to 63. If you enter a number outside this range the LED will flash rapidly indicating an error. If you get an error go back to step 2. This finishes setting the cab address.

NOTE: previous versions of the cab required setting internal “DIP” switches to the cab address. This switch is still included inside the cab but is non-operational for setting the cab address. however switch numbers 7 and 8 should always be up (on) unless the optional radio is installed.

## Setting the repeat rate for the speed buttons:

- 1) Turn on the command station
- 2) Unplug your cab from the command station
- 3) Press and hold down the SELECT LOCO button on the cab while plugging in the cab. The cab will now enter its internal setup program. This is indicated by a flashing of the status LED.
- 4) Press “5” to enter the **repeat rate setup** mode. Notice the flashing of the LED slows to indicate it is ready to accept the new rate.
- 5) Enter a new rate in the range of 16 to 255 followed by the ENTER key. If you enter a number less than 16 the LED will flash rapidly indicating an error. If you get an error go back to step 2. Larger numbers slow the rate, smaller numbers speed it up. The table below gives some useful values.

Numeric Value	Repeat Rate
16	4 times per second
32 (factory setting)	2 times per second
64	once per second
128	once every 2 seconds
254	once every 4 seconds
255	never

## Setting the OPTION key:

- 1) Turn on the command station
- 2) Unplug your cab from the command station
- 3) Press and hold down the SELECT LOCO button on the cab while plugging in the cab. The cab will now enter its internal setup program. This is indicated by a flashing of the status LED.
- 4) Press “4” to enter the **OPTION key setup** mode. Notice the flashing of the LED slows to indicate it is ready to accept the new key value.
- 5) Enter a new value for the OPTION key from the table below followed by the ENTER key. If you enter a number less than 64 or greater than 127 the LED will flash rapidly indicating an error. If you get an error go back to step 2.

Value	Key Name	Value	Key Name
64	<b>Enter</b>	96	Assign Loco to Cab
65	Program	97	Program on Main
66	Recall	98	Set Clock
67	<b>Direction</b> (factory setting)	99	Use program track
68	Setup consist	100	Setup command station
69	Add loco to consist	101	Setup Procab
70	Delete loco from consist	102	Setup macros
71	Kill consist	103	Setup old consist
72	<b>Select loco</b>	104	Setup advanced consist
73	<b>Horn/Whistle</b>	105	Display LCD lines 3 and 4
74	<b>1 Speed step faster</b>	106	<b>Forward</b>
75	<b>1 Speed step slower</b>	107	<b>Reverse</b>
76	<b>Emergency Stop</b>	108	“Key 32” from old CAB01
77	<b>Bell</b>	109	“Key 33” from small cabs
78	Select Accy (do NOT use)	110	reserved
79	Expn (Expansion) key	111	<b>Momentum (future)</b>
80	<b>Headlight, Zero key</b>	112	<b>F10</b>
81	<b>F1, number 1 key</b>	113	<b>F11</b>
82	<b>F2, number 2 key</b>	114	<b>F12</b>
83	<b>F3, number 3 key</b>	115	reserved
84	<b>F4, number 4 key</b>	116	reserved
85	<b>F5, number 5 key</b>	117	reserved
86	<b>F6, number 6 key</b>	118	reserved
87	<b>F7, number 7 key</b>	119	reserved
88	<b>F8, number 8 key</b>	120	reserved
89	<b>F9, number 9 key</b>	121	reserved
90	<b>4/10 seed steps faster</b>	122	reserved
91	<b>4/10 seed steps slower</b>	123	reserved
92	<b>Macro</b>	124	reserved

93	<b>14/28/128 select</b>		125	“no key” pressed
94	<b>Brake</b>		126	reserved
95	do not use		127	do not use

## Notes on OPTION key settings:

Some of the possible values for the OPTION key are impractical as they require many visual prompts on the LCD of a ProCab. In the above table the most practical key values are listed in bold type. If you are adventurous you can try some of other key values. We use Programming On The Main fairly often.

What we did to use programming on the main:

1. Set the option key value to 97
2. Use Programming on the Main with your ProCab and record the key strokes to access CV programming. (PROGRAM ON MAIN, ENTER, ENTER, 2, CV#, CV value, ENTER [the last ENTER exits programming])
3. Press OPTION on the CAB05 and notice the LED will light indicating data entry mode. Press the keys you recorded in step 2.

## If you set the OPTION key to EMERGENCY STOP (76)

Pressing the **E-STOP** key once will stop the active loco/consist for this Cab only. Speed will be immediately set to zero (no momentum). Loco is restarted by changing the speed or direction.

### WHOLE LAYOUT EMERGENCY STOP

Pressing the **E-STOP** key three times in quick succession will bring the *entire* layout to a stop. The Status LED will light and is cleared by pressing the **ENTER** key. Only the Cab that executed the Emergency Stop can clear it. Each Loco or Consist can now be restarted by sending it a command, such as a speed step increase or decrease, or by toggling a Function output.

**If the E-Stop does not clear, press E-Stop until the status LED lights, then press ENTER again.**

## If you set the OPTION key to SELECT ACCESSORY (78)

You will lose control of your cab if you press OPTION. This happens because you currently need to press PROG/ESC to exit from the accessory control mode so the cab will appear to “hang”. You can correct this by cycling the power to the command station which will take the cab out of Select accessory mode.

## Trouble shooting:

### Speed buttons don't work but all other buttons seem OK:

The cab was probably inadvertently set to YARD mode.

- 1) Turn on the command station
- 2) Unplug your cab from the command station
- 3) Press and hold down the SELECT LOCO button while plugging in the cab. The cab will now enter its internal setup program. This is indicated by a flashing status LED.
- 4) Press "2" to enter the **mode setup**. Notice the flashing of the LED slows to indicating it is ready to accept the new data.
- 5) Set the cab to REGULAR mode by pressing "0". If you enter a number outside this range of "0" or "1" it will not be accepted and the cab will continue to wait for "0" or "1". A value of one sets the cab to YARD mode which is causes the buttons to not work.

### To display the cab version number (not normally needed):

- 1) Turn on the command station
- 2) Unplug your cab from the command station
- 3) Press and hold down the SELECT LOCO button while plugging in the cab. The cab will now enter its internal setup program. This is indicated by a flashing status LED.
- 4) Press "0"
- 5) After 2 seconds the LED will flash indicating a 2 digit software revision number. It will flash the number of "tens" in the number followed by the number of "ones". There will be a 3 second pause and the process will repeat. Press and hold ENTER for 5 seconds to continue using the cab without unplugging. The version should be 22 for this production release of the cab.

### Setting the cab back to its original factory settings:

- 1) Unplug your cab from the command station
- 2) Press and hold down the SELECT LOCO button on the cab while plugging in the cab. The cab will now enter its internal setup program. This is indicated by a flashing of the status LED.
- 3) Press "1" to enter the **cab address setup** mode. Notice the flashing of the LED slows to indicate it is ready to accept the new address.
- 4) Press "0" followed by the ENTER key. Valid cab addresses are 1 to 63. If you enter 0 the cab resets all its internal settings back to factory defaults and flashes the cab version number as in step 5 above.

Feature	Default	Acceptable range of values
Cab address	5	1-63
Speed button repeat rate	32	16-254
Option button	67	64-127
Regular/Yard mode	0	only regular mode is useful