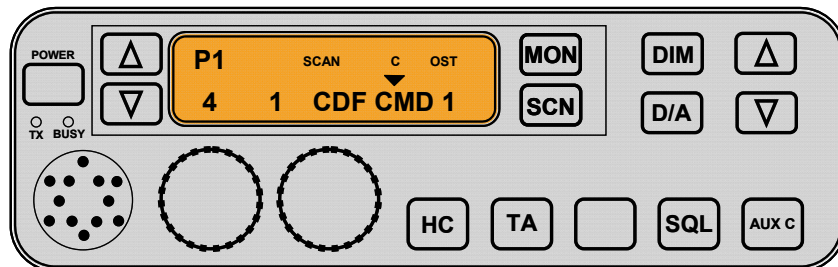


San Diego County Operational Area North Zone



Operating Instructions for the Kenwood Model TK-790 Mobile Radio



1. Kenwood TK-790 Cal Fire Mobile Radio Features

The Kenwood Model TK-790 (Cal Fire Version software) was developed specifically for Cal Fire based on operational needs. Many North Zone Fire Departments utilize these radios in their mobile equipment. Some of the radio features are:

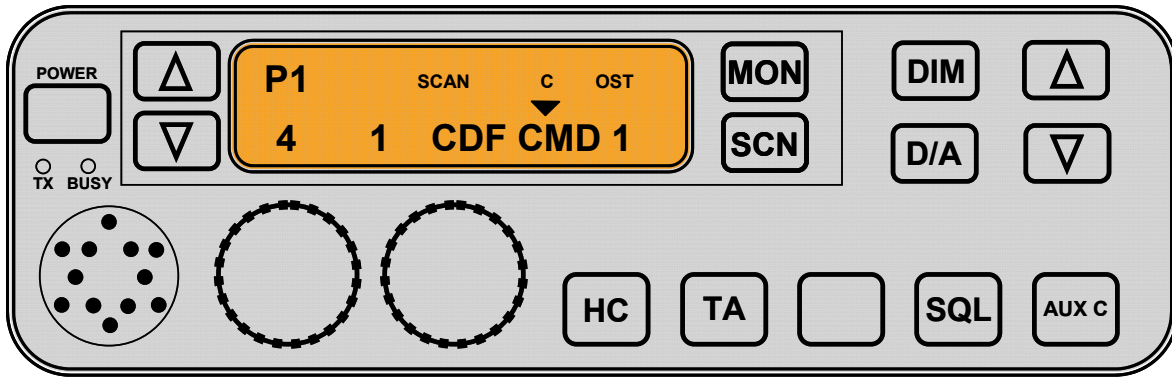
- **254 Channels**
- **Alpha-numeric display**
- **45 Watts power output**
- **1 group user modifiable (COMMAND GROUP)**
- **16 Repeater tones available**
- **User modifiable scan with 2 levels of priority**
- **1 Direct access channel button (Home Channel)**
- **Display Dim Button**

The 254 channels are divided into 20 plus groups and attempt to mimic each agencies VHF radio channel configuration.

In addition to the 20 plus groups, there is a "Command Group". This command group can be any number of channels and the frequencies that are taken from any of the individual Groups. The command group can be created or deleted at any time by the user.

This radio is capable of 16 CTCSS (Continuous Tone-Coded Squelch System) capable of accessing mountain top repeaters.



The next page shows a picture of the Cal Fire Control Head.



The button operation of each function of the control head is listed below:

- **[POWER]**- Button used to turn radio off and on.
 - **[▲], [▼]** Group up and down arrows- These two buttons control the group locations and are located just to the right of the power button.
 - **DISPLAY AREA**- The display example shows the following:
 - **P1**- Shows that channel is assigned as Priority 1.
 - **SCAN**- Shows that the scan feature is activated.
 - **Ⓞ**- Shows Command group is currently selected.
 - **OST**- “Operator Selectable Tone” Shows that a tone as been selected.
 - **▼**- Down arrow shows that channel is in scan list.
 - **4**- Group number. Can be 1-20.
 - **1 CDF CMD 1**- Channel number and name displayed with up to 11 characters.
1. **[MON]**- Button used with the **[SCN]** button to define Priority 2.
 2. **[SCN]**- button. Used to turn scan on and off.
 3. **[DIM]**- button. Used to dim the display.
 4. **[D/A]**- Used to delete or add a channel from scan.
 5. **[▲], [▼]** Tone up and down arrows- Located on far right. Used to change tones.
 6. **Volume knob** (Left round knob under display) - Adjusts volume of radio.
 7. **Channel knob** (Right round knob under display) - Selects channels.
 8. **[HC]**- Home channel. This button is pre-programmed to go directly to your main dispatch channel.
 9. **[TA]**- Talk Around, Direct or Car to Car.
 10. **[SQL]**- Squelch control.
 11. **[AUXC]**- Use this to add or delete a channel in the command group.

2. Kenwood TK-790 Cal Fire Mobile Radio Operations

- Power [POWER] - Push this button once to turn on the radio and push again to turn off. *Note: The Kenwood Mobile radio is designed not to lose any operator selectable features on power down. The radio will “remember” what it is last told to do upon re-power.*
- Group up and down arrows [], [] - These two buttons control the group locations and are located just to the right of the power button. Press the up arrow to go up from groups 1 thru 20. Press the down arrow to go from groups 20 down to 1. Pushing again below group 1 puts you into the “Command Group”. (If the command group has been created by the operator)
- Home Channel [HC] - This button is used if you want to go to your home channel. Pressing this button will take you directly to your Home Channel, from any group in the radio. When this button is pushed again, it takes you back to the last group and channel you were on.
- Talk Around [TA] - To talk directly to another radio without using a repeater (car to car), press the [TA] button. Notice the TA symbol in the display
- Squelch [SQL] - To adjust the squelch, press the [SQL] button. The squelch can then be adjusted by turning the channel selector. Once the squelch is set, press the [SQL] button again to resume normal operation.
- Command Group [AUX C] - Press this button to add or delete a channel from the command group. This feature is discussed further in these instructions.

- Scan Feature- Press **[SCN]** to start or stop the scanning sequence. You can only scan one group at a time. You cannot scan multiple groups. When you activate scan, a tone sounds, and the SCAN icon appears on the display. When a signal is received while scanning, the scan will halt, the audio is unmuted, and the channel name appears in the display.

This radio has the capability to add or delete any channel from within the same group by rotating the channel selector knob to the desired channel you want to add (or delete) in scan and pressing the **[D/A]** (Delete/Add) button. Press once to add a channel and press once to remove the channel from scan. The steps to add or delete a channel to scan are as follows:

1. Confirm which group you are going to scan.
2. Make sure Scan is OFF.
3. Rotate channel selector knob to the channel you want to add to scan.
4. Press **[D/A]** button. The down arrow appears in the display. That channel is now in the scan list. Move on to the next channel to add, and repeat above.
5. To remove a channel from the scan list, repeat as above except when you go to that channel you will press the **[D/A]** button and that will remove the down arrow icon and that channel will be removed from the scan list.

Note: There is a way to temporarily remove an unwanted channel from the scan list by doing the following:

While in the scan mode, and the scan is stopped on the channel you want to temporarily delete from scan, press the D/A button once and this channel is now out of scan. This channel will return to the scan list if the radio is powered down or the scan button is pressed again.

- Priority Scan Mode This radio has the capability of two levels of Priority Scanning. They are called Priority 1 and Priority 2. Priority 1 takes precedence over all other scanned channels in the group including Priority 2. Priority 2 takes over all scanned channels except Priority 1. This means you now have a way to have any number of channels in scan and have two levels of priority.

An example of this would be setting up a scan group on an incident with Command and Tactical channels as Priority 1 and 2 and other lesser priority channels in the Scan group.

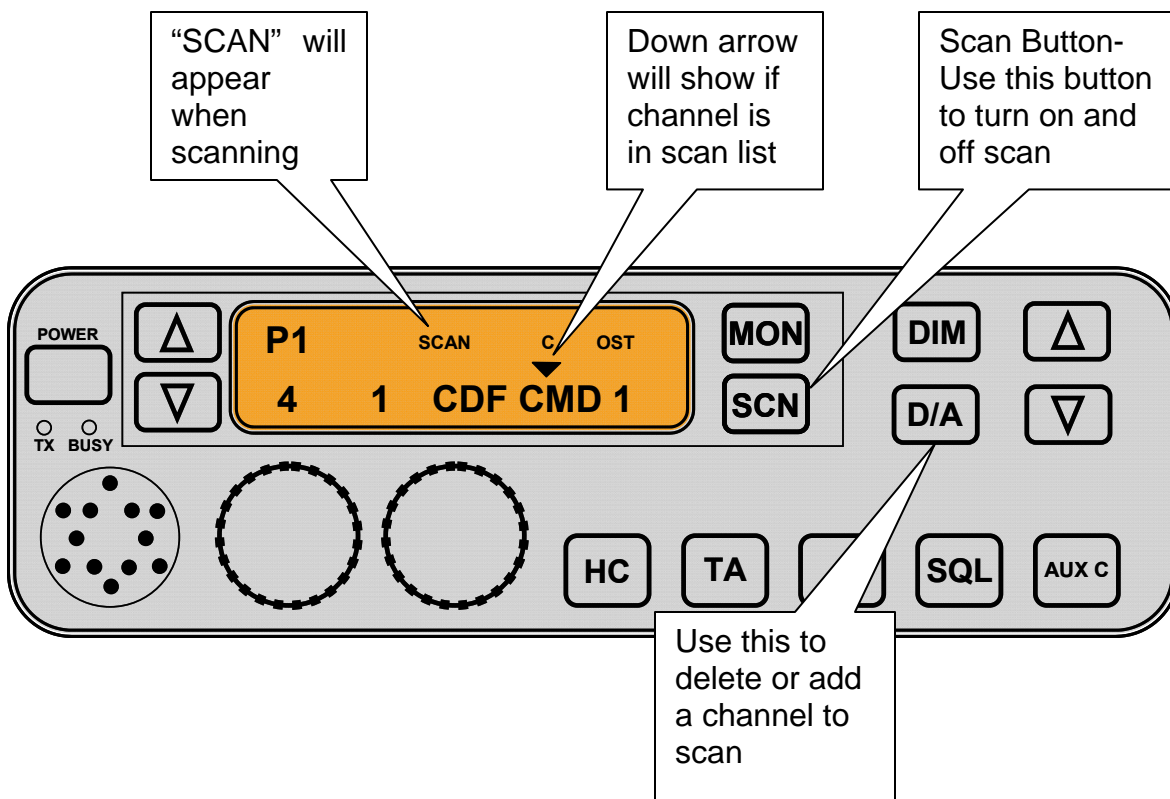
Priority 1 Channel Assignment

The Priority 1 channel is by default the channel you have selected in the display before pressing the scan button. In other words, when you want a specific channel to be priority, rotate the channel selector to that channel and stop, press **[SCN]**. This channel is now your Priority 1 channel. The radio will always transmit on the priority channel when in scan mode.

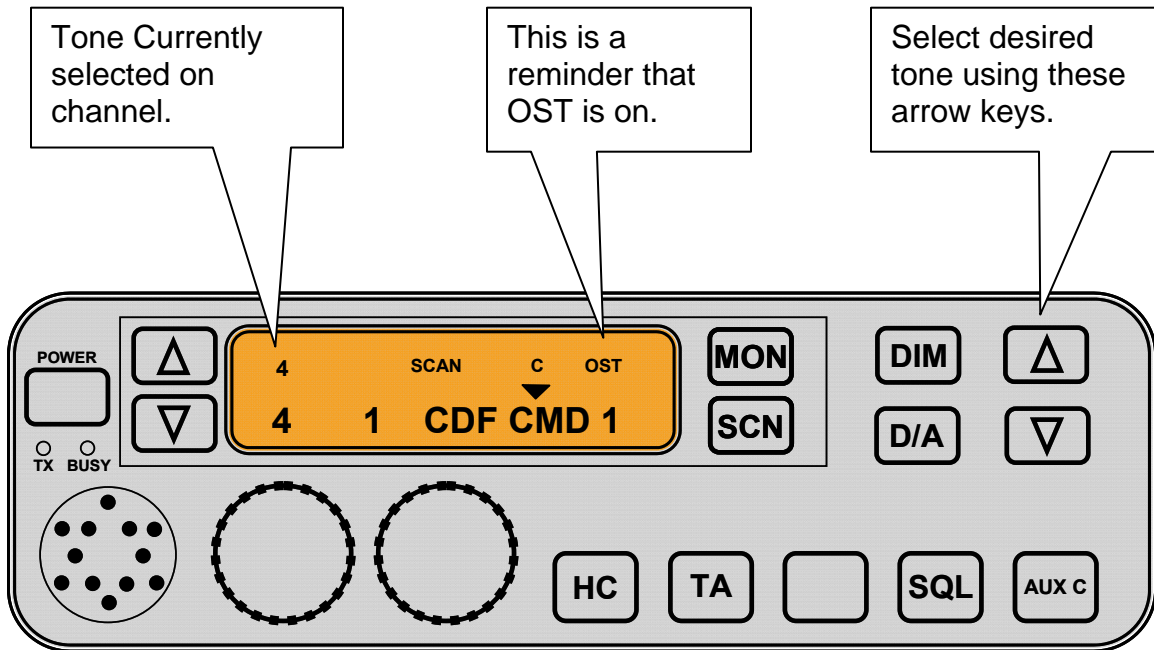
Priority 2 Channel Assignment

1. Turn Scan off. (Press **[SCN]**).
2. Rotate channel selector knob to desired channel for Priority 2.
3. While holding down the **[SCN]** button, press the **[MON]** button 2 times. Priority 2 channel is now set. PP (Programmable Priority) shows in the display.
4. To make another channel Priority 2, repeat step 1.

Note: To activate any of the Scan or Priority features or to change any feature of scan or priority, the SCAN feature must be turned off.



- Using the Operator Selectable Tone- The TK-790 mobile radio uses the two up/down arrow keys, (upper right hand corner), to cycle thru up to 16 custom CTCSS encode tones for access to repeaters. For safety, the radio operating system does not permit OST (Operator Selectable Tone) on channels that have been pre-assigned a transmit tone via programming.



Operator Selectable Tone memory:

The TK-790 automatically memorizes the last OST the user set for a particular channel, even when the radio is turned off or unplugged. Different operator selectable tones can be assigned, or re-assigned, individually to any channel desired. You can have different tones for different channels i.e.: CDF C1 (Tone 2) and MVU LOC (Tone 4) etc. The radio will always remember which tone the user assigned or if no operator selectable tone was assigned to a particular channel at all. Once tones have been assigned for a particular channel, the operator need only change the channels, tones stay fixed to those channels until changed.

COMMAND GROUP OPERATION

This radio has the ability to setup a user programmable command group separate from the other 20 groups. This group is capable of any channels from any of the groups. There is one button **[AUX C]** that adds or deletes channels from this group.

To use this command group, simply do the following: (Turn Scan off 1st!)

1. Use the channel select knob to dial up the desired channel to add to the command group from any group in the radio.
2. Press and hold the **[AUX C]** button until you hear a short beep and a momentary © icon appears on the display.
3. To add additional channels continue same procedure as above.
4. To Add a whole group – hold **[AUX C]** for 10 seconds or until you hear the long beep. The whole group will now be copied into your command group.
5. When finished selecting channels for the command group, press the group down arrow until the icon © shows in the display. (*This will be one step below Group 1*)
6. You are now in the command group. You must now re-define Priority 1 and 2 channels if so desired at this time and any channels in scan that you want.
7. To remove channels from the command group press **[AUX C]** until the channel disappears and you hear a short beep.
8. If you want to remove the whole group at once, press and hold the **[AUX C]** (while your in the command group) button for 10 seconds or until you hear the long beep, and the entire group will be gone. The radio will revert to group 1.

It is important to understand that the command group is USER programmable. YOU define what you want in this group. This group will in most cases be your own day to day operating group. When you go out of county, etc. you can add channels you need or you can erase that group, build a new one. Then when you return to your area, rebuild your day to day group again.

Listed on the next pages are several drawings showing the operation in detail:

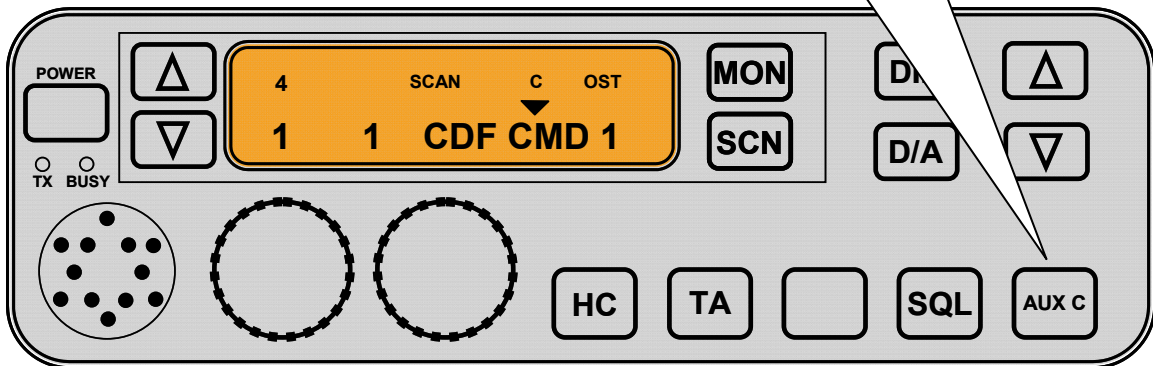
COMMAND GROUP OPERATION

Adding channels to Command Group

Press and Hold: [AUX C]

Short Beep = Channel Copy
Long Beep = Group Copy

The Command group is automatically created, and the desired channels or groups are added.

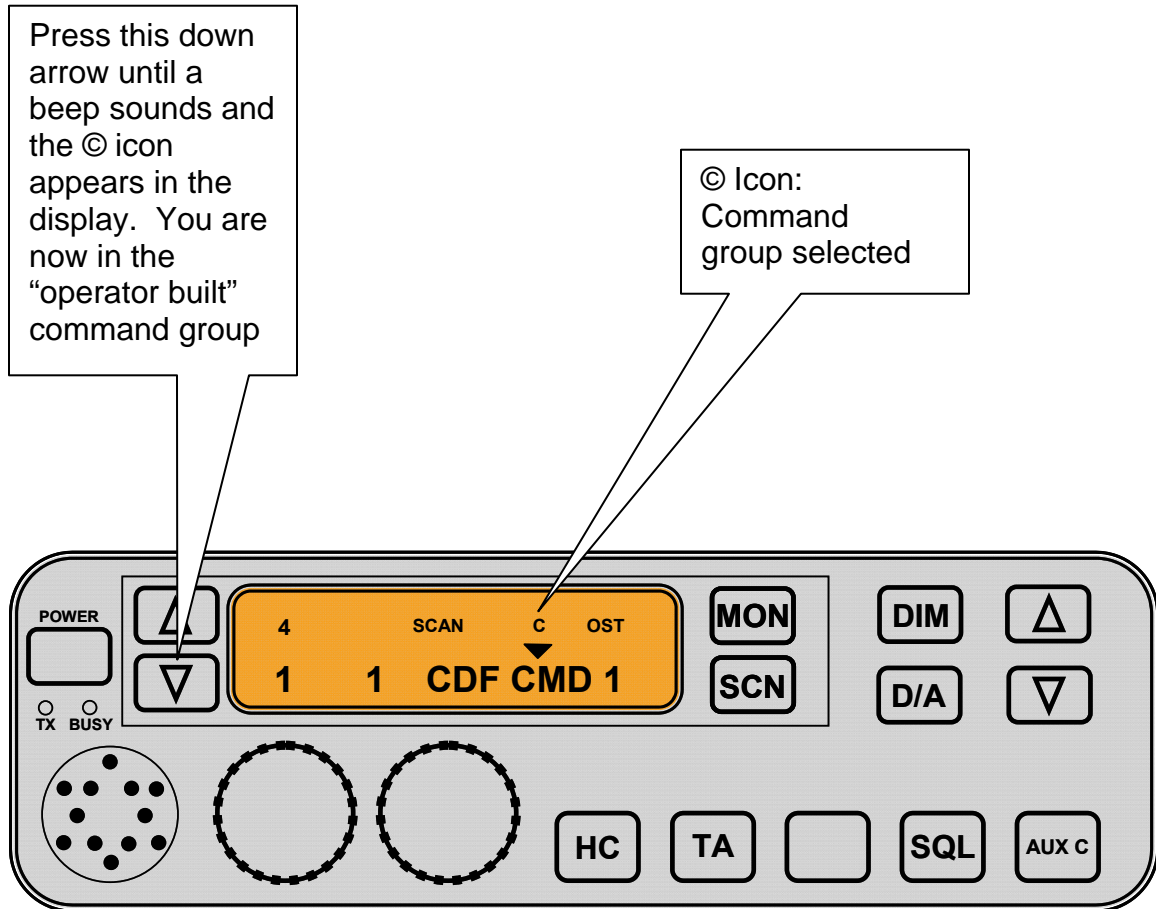


Note: There has been some confusion as to why Group 1 Icon appears at the same time as the C icon when you are in the command group. It makes it difficult to tell if you are in the Command group as the C is a little hard to see. This is the way the radio was designed.

REMEMBER: Scan must be **off** when deleting or adding channels in the command group.

COMMAND GROUP OPERATION

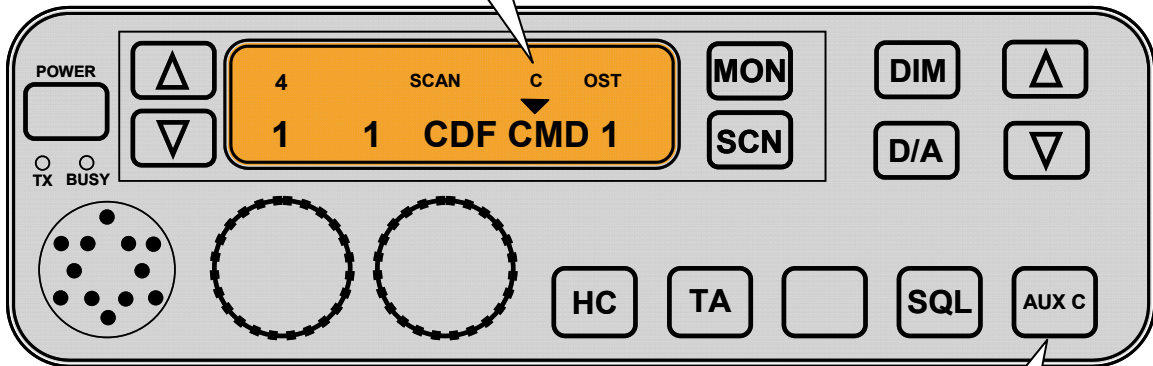
Locating the Command Group



COMMAND GROUP OPERATION

Deleting channels from Command Group

The © icon disappears when you delete the command group, and radio reverts to Group 1



To remove a channel:
Press for two seconds
Two short beeps are heard
and channel disappears.

To erase the entire group:
Press for ten seconds
(while your in the command group).
After two short beeps, a long beep is heard and the command group is erased.