USER MANUAL
TAD M10

We at **TAD Radio** of Canada Inc., a distributor and designer of professional two-way radios, thank you for using the M10. We are confident that you will be pleased with the M10 -VHF and it will provide you with dependable, trouble-free communications.

IMPORTANT
Please read all the instructions thoroughly
before operating the unit.

INTRODUCTION

The M10 is capable of 396 channels. This is achieved by 4-groups of 99 channels each. Your dealer has the option of designating different frequencies in each group of the radio for you. This is like having 4 radios in 1. The M10 covers 138-174 MHz without having to be retuned. It has an alphanumeric display for the channel numbers, channel names, and channel frequencies. The display can be dimmed if necessary, and the display buttons have been backlighted for easier viewing. Its' new compact size and lighter weight make installing the M10 quicker. For information on the M10 functions, please read the following pages.

The following is a list of items which can be programmed by your Dealer.

General Radio features:
-1,2, or 4 Banks of 99 channels each plus operating options within each Bank.
-Enable "Theft Protection" by installing a lock number.
Each Bank may be programmed with:
-TX Time out Timer(30 to 300 seceonds).
-How the "Priority" channel reacts when coming off hook.
-Beeps turned off.
Each Channel may have:
-A Receive(RX) and a Transmit(TX) frequency from 138 to 174 MHz.
-A RX and a TX subaudible tone - CTCSS or DCS(Digital Coded Squelch).
-A Busy Channel Lockout in conjunction with the channel tone.
-A Channel name. This can be an ALPHA name or a NUMERIC number.
-TX RF power at a HIGH or a LOW setting. (Usually 30 watts or 10 watts).

M10 Radio Controls

PWR/VOL-	Power and volume control
SQL-	Squelch noise control
SCAN -	Channel Scan
DISP. -	Display control
PRI.-	Priority scan
PRG.-	User program control

Each of these controls is described in the following section.

PWR/VOL Control

The radio is turned on and off by pushing this control (Push on, push off.) The audio level from the speaker increases as this control is rotated clockwise.

SQL Control

This controls the receiver silencing circuitry. To correctly utilize this control, first select an unused channel, then rotate it counterclockwise until noise is heard in the speaker and the "BUSY" indicator shows in the display. Now rotate the control clockwise until the noise is squelched and the "BUSY" indicator goes out on the display. This is the most sensitive setting for this control. Rotating this control further clockwise decreases the sensitivity of the receiver. This is sometimes handy in noisy conditions.

Channel selector knob

Use this control to select a channel.

Panel Buttons

The four front panel buttons perform two functions each. The first one is performed when the button is pressed and then released after the first "beep". The second function is performed when the button is pressed and held in for 2~3 seconds and a second beep is heard.

1 -When the panel button is pressed and released after the first "beep":

The "**SCAN**" button toggles the radio in and out of the scan mode. The "SCAN" indicator, on the display, will be "on" when in the scan mode.

The "**DISP**" button changes the display from channel number, an alphanumeric name (up to 7 characters), to frequency, to tone frequency, then back to channel number only.

The "**PRI**" button toggles the radio in and out of the priority mode. The "PRI" indicator, on the display, will be on when in the priority mode. The Priority channel may be selected in the "User Programming Mode."   If no priority channel has been selected a double beep will be heard and the indicator will not come on.

The "**PRG**" button puts the radio into the "User Programming Mode. The "U PROG" indicator, on the display, will be "on" when in the user programming mode.

2- <u>When the panel button is pressed and held until the second "beep":</u>

The "**SCAN**" (A/D) button adds or deletes the present channel from the scan sequence.
The "**D**" indicator is turned on when the channel is deleted from the scan sequence.
(The channel will not be scanned if it is deleted from the scan sequence).

<u>When adding or deleting channels, it is recommended that you be out of the SCAN Mode, thus viewing all the channels in the Group.</u>

The "**DISP**" (DIM) button toggles the display backlighting between dim and normal.

The "**PRI**" (L/N) button toggles the receiver between "normal" and "low" sensitivity. (The "LOW" indicator is on when the receiver is least sensitive. This is useful in areas where very strong interfering signals are present. The receiver is reset to the "Normal" condition everytime the radio is turned off.)

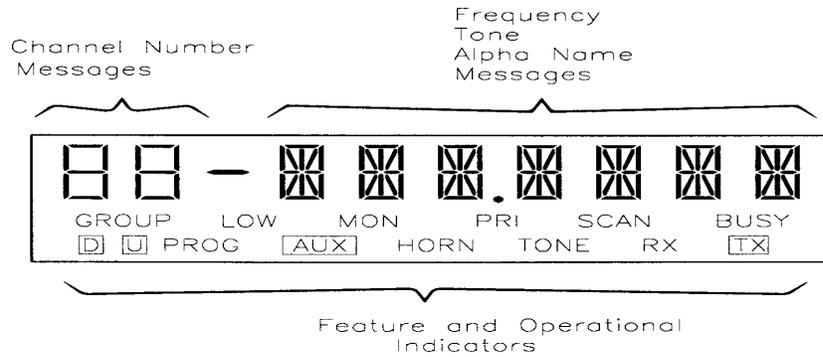The "**PRG**" button provides access to further programming by an authorized person. (Dealer)
MIC connector
This is used to connect the microphone to the radio.
Cloning Plug
Used to connect to another M10 radio, or to a PC, to clone information.
or program the radio.

INDICATORS

Channel Number
Messages

Frequency
Tone
Alpha Name
Messages

```
┌─────────────────────────────────┐
│  ┌┐┌┐ ─ ▨ ▨ ▨.▨ ▨ ▨             │
│  GROUP   LOW   MON   PRI   SCAN   BUSY │
│  D U PROG  AUX  HORN  TONE  RX  TX │
└─────────────────────────────────┘
```

Feature and Operational
Indicators

GROUP   Active when a group of scanned channels have been selected. A number above will indicate which group is active. Only valid in radios with Group Scan Software.

LOW   During RX operation this indicates the receiver is operating in reduced sensitivity mode to prevent strong signals from overloading the receiver. During TX operation this indicates low power has been programmed into the TX of this channel.

MON   This will only appear when a tone has been programmed into the RX. MON will indicate that the muting function of the tone has been disabled. This may happen when the mic is taken "off hook" or by enabling the monitor function.

PRI   "On" when the priority function has been activated.

SCAN   "On" when the radio is in scan mode. The radio also requires the mic to be "on hook" and channels programmed into the scan sequence.

BUSY   Indicates a received signal has exceeded the squelch threshold. Audio will be heard unless a tone is also muting the channel.

D   Appears on all channels NOT in the scan sequence.

D PROG   Radio is operating in Dealer Programming Mode.

U PROG   Radio is operating in User Programming Mode.

AUX   Not used.

HORN   "On" when the external horn blowing function has been activated. (MTS versions.)

TONE   Active when a CTCSS or DCS tone has been programmed into the channel. RX and TX tones are indicated independently.

RX   Used only during Dealer programming.

TX   Appears when the radio is transmitting.

SCAN MODE

When the "SCAN" indicator is "on" the radio will scan all the channels that have been entered into the scan sequence whenever the microphone is hung up. When the radio comes to a channel that is busy it will stop and stay on that channel for the duration of the "scan resume time" that has been programmed in the "User Programming" mode or until the channel becomes clear. If a tone is programmed into the RX, it must be valid as well, unless the Monitor function is on.

PRIORITY MODE

When the "PRI" indicator is "on" the radio will continually sample the status of the priority channel. If the priority channel becomes busy the radio will "beep" and stay on the priority channel until it becomes clear. ***"Pr" plus the priority channel number*** will be displayed on the display. If the mic is taken off hook, one of the following will happen, depending on how your dealer has set the priority option.

> 1) The radio will always revert to the "PRI" channel.
> 2) The radio will revert to the priority channel only if the radio is not on a busy channel. If the radio is on a busy channel, when the mic comes "off hook" the radio will stay on that busy channel until the mic is placed back on hook.

<u>USER PROGRAMMING MODE</u>

The "User Programming" contains four separate modes.

> i)   Bank number select.*(if available)*
> ii) Priority channel select.
> iii) Monitor on/off select.
> iv) Scan delay select.

Please Note:

> a) To enter "User Programming" press the "PRG" button.
> b) Once in the "User Programming" mode, use the "PRI" button to select the desired mode.
> c) In the "Priority channel select" and the "Bank number select" mode, use the "Channel knob" to select a channel or a bank number. In any of the other three modes use the "DISP" button to select the proper function.

Bank: 1, 2, 3, or 4.

The "BANK" mode in "User Programming" lets the user select up to four different "BANKS" of frequencies depending on how the dealer has set up the radio. This   means that there can be up to, 4 times 99, or 396 channels installed in the radio. If there are no frequencies installed in a bank it will display "CH ALL CLR".

Priority Channel

```
Pr-01
  PROG
```

May be any valid channel.

Monitor on/off

```
  MON OFF
  PROG
```

Monitor ON = defeats tone muting while on hook unless Busy Channel Lockout has been enabled on the channel. "MON" indicator is visible on the display when the function is active.

```
Sc-C
  PROG
```

Scan Delay :0, 3, 6, or C.

0 = No delay , the radio will resume scanning as soon as the channel clears.
3 = 3 seconds delay, the radio will resume scanning after 3 seconds.
6 = 6 seconds delay, the radio will resume scanning after 6 seconds.
C = The radio will resume scanning 3 seconds after the channel has cleared.

NOTE: Each "BANK" is separate from the others so you cannot scan channels that are in another 'BANK". However, you can have separate Scanned channels, Priority channel and Scan resume times, etc. for each "BANK."

Channel Revert

Active when the radio is in the scan mode (the radio is scanning)

If the radio is scanning and not on a busy channel, when the USER takes the microphone "Off Hook", the radio will "REVERT" to the channel that was selected when the scan key was pressed to enter the scan mode. (This channel does not have to be one of the scanned channels.)

However, if the radio hears a signal and stops on a channel and the USER takes the microphone "Off Hook" before the radio resumes scanning, the radio will stay on that channel.

M10 DISPLAY MESSAGES

```
CH ALL CLR
```

Indicates there are no frequencies programmed into this Bank.

```
  U L
```
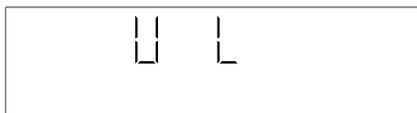
The radio's PLL is "out of lock", on the present channel. If RX is active, no TX is permitted. If TX is active the radio will beep and return to RX when the PTT is released.   Radio requires service.

Indicates TX Time Out Timer has expired. A beep is heard intially, then momentarily until PTT is released.

```
 TOT
```

POWER (START) UP WARNINGS

00 INVALID- Wrong Lock Code entered

01 INVALID- Wrong option switch selected or front panel switch is active on "turn on". (or Mic).
02 INVALID- Front panel switch is active on "turn on".(or Mic)
03 INVALID- Incompatible software.
04 INVALID- Invalid PC request.
05 INVALID- Radio "turned off", and "turned on" too quickly.

```
00 INVALID
```

Radio's theft protection has been triggered and the code has been entered incorrectly more than 10 times.

```
LOCKED
```

Scan was selected and the mic placed "on hook", however, no channels have been selected to be in scan within the Bank or group.

```
no SC CH
              SCAN
```

Priority function has been selected and the priority channel has become active.

```
Pr-01
        PRI      BUSY
```

No Alpha name has been programmed into the channel.
(Display selected with DISP key)

```
99-NO NAME
```

No Tone has been programmed into the channel.
(Display selected with DISP key).

```
99-NO TONE
```

THEFT PROTECTION

A four digit "LOCK" number can be entered into the radio for theft protection. If a "LOCK" number is entered into the radio, disconnecting the power from the "RED" power wire for more than approximately 10 seconds will cause the radio to go into a "sleep" mode. When the radio is hooked up to power again the "LOCK" number will have to be entered into the radio before it will operate properly.
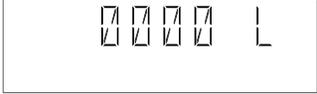
To enter the "LOCK" number, use the "Channel switch" to move the flashing digit number up and down in value. Use the "PRI" button to change to the next digit. Once the correct "LOCK" number is displayed, press the "DISP" button. If the correct number is entered, the radio will go to a normal display.

NOTE: If the radio powers up asking for the "LOCK" number, even when the radio has not been disconnected from the vehicle, check the fuse in the RED cable or the cable's connection.

If the wrong "LOCK" number is entered, the display will read "INVALID" and the radio must be turned off and then on again. Now enter the proper "LOCK" number. If the proper "LOCK" number is not entered after 10 attempts, the radio will display "LOCKED", the display will begin flashing, and the radio will beep every second. The radio is now useless and will not work!

Any radio that displays"LOCKED" will have to be sent back to "TAD Radio of Canada Inc." by an authorized TAD Dealer to be unlocked.

M10

FM VHF MOBILE TRANSCEIVER

SPECIFICATIONS

General

Frequency Range, 138-174 MHz
Frequency Separation, 36MHz
Number of Channel   Up to 396 Channels
Frequency Determination, 5KHz + 6.25 KHz Steps
Modulation, 16K0F3E 11K0F3E
Power Requirements, DC 13.6V ± 10% negative ground
- Nominal Audio Distortion
-STBY-250MA
-RX @ 4W Audio-750MA
-TX @ 30W- 6AMP
Dimensions, 50(H) x 140(W) x 182(L)mm (2.0 x 5.5 x 7.3 inch)
Weight, Approximately 1.4 kg (3 lbs)
Operation Temperature, -30 C to + 60 C
Frequency Stability   ±0.0005%

Receiver

Sensitivity (12dB SINAD), 0.25uV
Adjacent Channel Selectivity, 70dB
Intermodulation, 65dB
Spurious & Image Rejection, 70dB
Hum & Noise, -45dB
Audio Response, +1, -3dB from 6dB/oct. de-emphasis(300 -3000Hz)
Audio Distortion, 3% at 4 watt output
Audio Output Power, 5 watts at 3.2 ohm load

Transmitter

RF Output Power, Adjustable LO1-10W HI15-30W

Spurious Emissions,-70dB below carrier

hum & Noise, -40dB

Audio Response, +1,-3dB from 6dB/.oct. pre-emphasis(300-3000hz)

Aduio Distortion, 3% at 60% modulation

Others

User Operational Keys, Scan, Priority, Display, User Programming

Programming Method, PC, Cloning + Field Programming

Memory System, EEprom

Tone System, CTCSS(50 tones)

DCS, 83 standard & complementary

Standard Accessories, Microphone, Mounting Bracket and power cable

Optional accessories,MTS boards, DTMF Mic