

**FAIRFAX COUNTY FIRE AND RESCUE DEPARTMENT**  
**BASIC TRAINING SECTION**



**MOTOROLA XTL/XTS5000**  
**MOBILE & PORTABLE RADIOS**



## REFERENCES

- NFPA 1001 Standard for Fire Fighter Professional Qualifications
- Fairfax County FRD Communications Manual rev July 2012
- NOVA Procedural Bulletin 2008-002 Emergency Activation (EA) Button
- Motorola ASTRO XTS 5000 User Guide



## CLASS GOALS

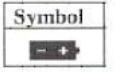

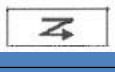

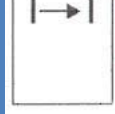
- Demonstrate the proper method of operating a portable radio.
- Understand the proper method of operating a mobile radio.



# XTS-5000 LAYOUT



# ICONS

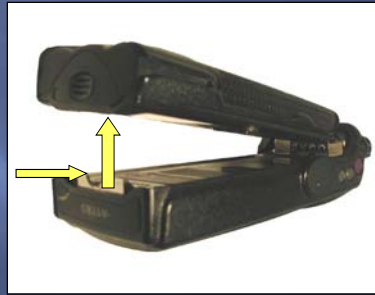
Symbol		
	<b>Battery Status</b>	<b>Flashes when Battery is Low.</b>
	<b>Call Received</b>	<b>Indicates receipt of a Private Call or Page / Call alert</b>
	<b>Scan</b>	<b>Indicates radio is scanning.</b>
	<b>Program</b>	<b>Radio is in View Program state.</b>
	<b>Direct / Talkaround</b>	<b>Indicates radio is in Direct / Talkaround mode and not receiving system communication.</b>

## INSTALL/REMOVE ANTENNA

- Screw the antenna into the antenna receptacle on top the radio.
- Tighten the antenna firmly with your fingers.



## INSTALL/REMOVE BATTERY



**Note: The battery must be charged before use. Memory effect is a phenomenon that causes a loss in battery capacity or voltage due to repetitive shallow discharging or long – term overcharging.**



# HANDMIKE

- ❑ Handmike allows for placing microphone closer to user
- ❑ In fire incidents the cord has burned through



## TURN RADIO ON / OFF



1. Turn the radio on by rotating the On / Off / Volume Control Knob clockwise.
2. Turn the radio off by rotating the On / Off / Volume Control Knob counterclockwise until you hear a "click."

## SET VOLUME

1. Turn the On / Off / Volume Control Knob clockwise to increase volume, counterclockwise to decrease volume.



# SELECT A ZONE



1. Press the key below ZONE. The current zone name "4" flashes on the display.
2. Press the arrow keys until the desired zone name appears on the display.
3. Press the HOME button to lock in the displayed zone.
4. Pressing the HOME button for 2 seconds will return you to 4A DISP
5. Go back to 46D2. Now turn the channel to 46A and 46P.



# FAIRFAX ZONE 4 CHANNELS/TALKGROUPS

- Dispatch
- Response
- Talk-around
- Incident
- Tactical
- Command

11	4 Fairfax Fire	46A DISP	46B RESP	46C INTR	46D	46E	46F	46G	46H	46I	46J	46K	46L BU1	46M BU2	46N T/A	46O SAF	46P DISP
12	41 Fairfax Fire	41A DISP	41B RESP	41C INTR	41D	41E	41F	41G	41H	41I	41J	41K MCI	41L MCI2	41M OF2	41N T/A	41O SAF	41P DISP
13	42 Fairfax SOPS	42A DISP	42B RESP	42C INTR	42D	42E	42F	42G HAZ1	42H HAZ2	42I HAZ3	42J TRT1	42K TRT2	42L MARI	42M MARI2	42N T/A	42O SAF	42P DISP
14	43 Fairfax Fire	43A DISP	43B RESP	43C INTR	43D	43E	43F	43G	43H	43I	43J	43K	43L	43M	43N T/A	43O SAF	43P DISP
15	44 Encryption Zone	44A DISP	44B RESP	44C INTR	44D FO/PO 1 E	44E FO/PO 2 E	44F SR STAFF E	44G OEM 3 E	44H FO COMM 1 E	44I FO COMM 2 E	44J NCR 2 E	44K NCR 3 E	44L	44M	44N T/A	44O SAF	44P DISP
16	45 TRAINING ZONE	45A DISP	45B RESP	45C SVHQ	45D SVT1	45E SVT2	45F SVT3	45G SVT4	45H INSP	45I EVT	45J INVES E	45K HAZDEV E	45L FO/PO 1	45M FO/PO 2	45N T/A	45O SAF	45P DISP
17	46 TRAINING ZONE	46A DISP	46B RESP	46C TRN1	46D TRN2	46E TRN3	46F TRN4	46G BATS	46H BATS	46I BATS	46J BATS	46K BATS	46L BATS	46M BATS	46N T/A	46O SAF	46P DISP
18	47 FAIRFAX CITY ZONE	47A DISP	47B RESP	47C FEV	47D FXPD	47E GAMU1	47F GAMU3	47G ADC	47H AIB	47I CTS	47J CFX	47K TRN	47L ADM	47M PRV	47N T/A	47O SAF	47P DISP
19	48 BACKUP ZONE	48A DISP	48B RESP	48C INTR	48D	48E	48F	48G	48H	48I	48J	48K	48L	48M	48N T/A	48O SAF	48P DISP
20	49 HOSPITAL ZONE	49A HCC4	49B PFX	49C MTRN	49D FOAK	49E RSTN	49F SPFLD	49G ACFX	49H ACRS	49I ALEX	49J VACTR	49K FBCH	49L MSTR	49M PWER	49N PTMC	49O LDN	49P HCC 6
21	Fairfax POLICE 1	SU DISP	SU OPS1	SU OPS2	MV DISP	MV OPS1	MV OPS2	MC DISP	MC OPS1	MC OPS2	MS DISP	MS OPS1	MS OPS2	RE DISP	RE OPS1	RE OPS2	PD TAC2
22	Fairfax POLICE 2	FR DISP	FR OPS1	FR OPS2	WS DISP	WS OPS1	WS OPS2	FO DISP	FO OPS1	FO OPS2	HQ DISP	HQ OPS1	SCHOOL	SCH T1	MOPS 1	MOPS 2	MOPS 3
23	Fairfax POLICE 3	CF DISP	CF TAC1	CF TAC2	CF TAC3	CF TAC4	CF EVT	HR DISP	HR TAC1	HR TAC2	HR TAC3	HR TAC4	VN DISP	VN TAC1	VN TAC2		



## OTHER ZONES

- Zone 41-second/alternate primary
- Zone 42-Special Ops
- Zone 43-MI channels
- Zone 44-Coordination
- Zone 45-Prevention
- Zone 46-Training
- Zone 47-Fairfax City
- Zone 48-Back-up zone
- Zone 49-Hospitals



## MUTUAL AID ZONES

- Zone 1 - Arlington County
- Zone 1A1 –Arlington County Second Zone
- Zone 2 - Alexandria City
- Zone 3 - MWAA
- Zone 5 - Prince William County
- Zone T1 - Manassas City
- Zone T9 – Manassas Park
- Zone 6 - Loudoun County
- Zone 7 - Montgomery County
- Zone 71 – Montgomery County Second Zone
- Zone CFEMAIN – Charles County



# SELECT A CHANNEL

Rotary Select Knob



Once you have the desired zone displayed, rotate the 16 – position Rotary Select Knob to the desired talkgroup. The new channel name will appear on the display.



# KEYPAD LOCK

Keypad Lock



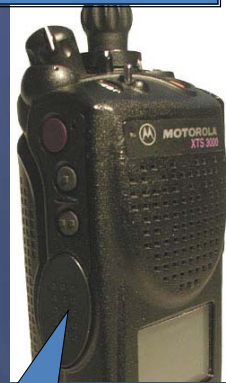
Rotate the switch to enable the keypad lock. When the line is pointing to the O the keypad is unlocked, the O with the line through it is keypad locked.





# TRANSMIT/RECEIVE

1. Turn the radio on and select the desired zone and mode. The selected channel appears in the display.
2. Listen for ongoing conversations: if channel becomes available, proceed with your call.
3. Press the PTT button to transmit and wait for the talk permit tone. When speaking, keep the microphone 1-2" from your mouth and speak in a normal tone. (If you hear a busy signal, wait for a call back tone, then proceed with your call.)
4. Release PTT button to listen.




Transmit=Press & Hold PTT switch  
 Receive=Release PTT switch

<u>User Actions</u>	<u>Radio System Results</u>
Turn radio on	<Associate to Talkgroup>
Press PTT	<Request Freq. for Tx>
	<Assigns available Freq.>
	<Sends control message to all associated users to monitor assigned Freq.>
	<Sends you an "OK to talk" Signal>
Start Talking	OR
	<Sends you a "Busy" Signal>
Release PTT	<Sends you signal indicating System Available>
	OR
	<Sends you an "Out of Range" Signal>
Relocate to area of coverage and Press PTT again	

# SCAN ON / OFF



- 3-Position Switch**
- A. Scan Off
  - B. Scan On
  - C. Scan On

1. Place the 3- position Switch to the B or C position to enable Scan. The Scan icon  will appear indicating Scan is active.
2. Place the 3-Position Switch to the A position to disengage Scan. The Scan icon will disappear indicating Scan no longer active.
3. While scanning, the radio will use the selected channel as the scan priority, and the default transmit channel.
4. Model II radios will only scan while on channel A or B and I.



# ALERT TONES

## Alert tones

## Causes

Single, low-pitched tone	Indicates invalid key press or radio self –test fail. Also out of range, in programming mode to long- generally an error tone.
Continuous low-pitched tone when pressing the PTT button	Indicates you are out of range, or system is out of service, or talk prohibit.
Short, medium-pitched tone	Exiting emergency state.
Continuous medium-pitched tone	Indicates activating emergency button or receiving page.
Short, high-pitched tone or “chirp”	Low battery.



# LED INDICATORS

LED	Description
<b>With PTT pressed (transmitting):</b>	
Continuous red	Normal transmission
Unlit	Not transmitting
<b>With PTT released (receiving):</b>	
Blinking green	Private call or page has been received



# TROUBLESHOOTING CHART

Symptom	Possible Cause/Solution
Doesn't turn on	Check that your battery is charged and connected properly.
Busy signal	You cannot transmit because all system channels are busy. Release the PTT button and wait for call back tone. (same as talk permit, must transmit within 3 seconds to "grab" channel).
Cannot transmit or receive	<p>Be sure the radio is turned on and the 16-position Select Knob is turned to the correct channel.</p> <p>Replace or recharge the battery. The first time a new battery is used, it should charge a minimum of 16 hours.</p> <p>The antenna must be screwed on properly, with its base flush against the top of the radio.</p> <p>Check your accessories i.e. public safety microphone or ear piece for improper connections.</p> <p>Try operating the radio from several different locations, especially when using the radio inside buildings.</p> <p>Check the transmitter by transmitting with an alternate portable radio from the same location.</p>



## EMERGENCY ACTIVATION BUTTON



EMERGENCY  
ACTIVATION  
BUTTON

1. To initiate an alarm, press and hold the Emergency Activation (EA) button.
2. Do Not turn the rotary knob once the EA button has been activated. Turning the knob will activate an Emergency on every channel the knob is turned to. The emergency activation will also activate on other Jurisdictions Radio Zones, depending on the Zone the radio is set on.
3. To cancel an alarm, press and hold the EA button until you hear a continuous exit tone.



## EMERGENCY ACTIVATION

- Accidental Activation of the EA Button
- When Not to Use the EA Button
  - Talk around channels (4N/40)
  - Failsoft



## "MAYDAY"

- Reporting a lost or trapped firefighter or team of firefighters during any working incidents
- Limited to only those rare occasions when a firefighters life is known, or perceived to be in danger, and immediate notification to the incident commander is essential in order to initiate an action plan or deploy the rapid intervention team
- Once the phrase "MAYDAY" is announced, all other radio traffic shall cease



## "PRIORITY TRAFFIC"

- Request (DPSC) to grant immediate access to a radio channel to report a significant event
- Reporting a significant event
- When something of significance occurs, on an incident, that severely affects standard operations (e.g., losing a water supply, burst hose, locating victim or fire)



## SIGNAL CODE

- SIGNAL 1 - Responder in immediate danger.
- SIGNAL 2: Responder needs assistance/back-up
- SIGNAL 3: Responder is taking or anticipates taking subject into custody (for FM use).
- SIGNAL 4: Responder/Dispatcher needs to convey sensitive, confidential, or safety information.



## RADIO SYSTEM COMPLICATIONS

- MANUAL MODE
- FAILSOFT
- Other Events:
  - SITE TRUNKING/TOWER SITE OUTAGE
  - POWER FAILURE AT DPSC
  - CATASTROPHIC EMERGENCY AT DPSC



## BACKUP RADIO ZONE

- Zone 48 is the Backup zone.
- There are some limitations to this system and they are:

If we lose our radio system for any reason the UFOD will make the decision to have all units switch over to the Backup Radio System.



## MOBILE RADIO

- Much stronger signal
- Basic functions identical
- Layout of keys is main difference



# **BEWARE THE OPEN MIKE!!!!**



## **REVIEW**

- 1) Which button is the EA button?
- 2) What are two methods to transmit with the portable radio?
- 3) If you receive an “Out of Range” tone and display on your radio, what should you do?
- 4) How do you lock the keypad?
- 5) No matter what zone you are operating in, how can you get back to 4A?
- 6) What is the Zone 48 utilized for?
- 7) What does “Day Mode” refer to?
- 8) What is “Signal 1”?





# SUMMARY

- Understanding the operation of your portable radio may save your life and the lives of your fellow fire fighters.
- The ability to change channels and zones while en route to calls, as well as while operating on the emergency is critical.
- Continual practice and training must continue to ensure your proficiency.

