FOUR MILE RADIO COMMUNICATIONS

January 2001

Radio communications are at the very heart of every response by Four Mile Fire Department. Effective use of this essential information link between people can make or break the success of any incident.

Four Mile has approximately 4 base station radios (100 Watts); 7 truck radios (100 watts); and a dozen or more hand-helds (or pack-sets as they are sometimes called). We have a variety of hand-helds, including about 5 Motorola 16 channel (MT1000), 5 Maxon 16 channel, 1 King 14 channel (the chief's). There are several other 4 channel radios. All hand-helds are 5 watts maximum. The 16 channel radios are the most common, and are all programmed with the following frequencies (in MHz):

#	Name	Transmit	Receive	tx Tone	Use
1	Red 1	154.325	154.325	179.9	Primary Dispatch**
2	Red 1 reptr	154.325	151.355	179.9	Primary Dispatch**
3	Red 2	154.205	154.205	179.9	Boulder City Fire
4	Red 3	154.415	154.415	179.9	Local comms & IC
5	RED 4	153.830	153.830	179.9	Local (&traffic control 4 mile)
6	AIRT	172.325	172.325		Air tactical channel
7	FERN 1	154.280	154.280		As needed (e.g. Staging,)
8	FERN 2	154.295	154.295		As needed
9	FERN 3	154.265	154.265		As needed
10	EMS1	155.280	155.280	179.9	Medical
11	GREEN	155.865	155.145	179.9	Sheriff
12	RMR	155.235	155.235	179.9	Rocky Mtn. Rescue
13	BES	155.205	155.205	179.9	Boulder Emergency Squad
14	CSFS1	151.340	151.340	151.4	Forest Service
15	WTHR1	n/a	162.475		NWS Weather
16	WTHR2	n/a	162.550		NWS Weather

** Red 1 and Red 1 repeater are more or less interchangeable. However, Red 1 *with out* the repeater is given because occasionally the repeater frequency goes down, and we need it as backup. Use the red 1 repeater as your first choice for communications with Dispatch. The telephone number of Boulder County Communications Center (Dispatch) is 303-441-3374.

IMPORTANT: Note the difference between the NUMBER of the channel and the RED frequency number (e.g. Red **3 is on NUMBER 4** !!).

On every request for a response from Four Mile Fire Department, one of our four base stations will come up on RED 1, and act as a local information center, helping responders find addresses, providing local knowledge (i.e. "It's the red house on the left, just past the barn"). Base will continue to monitor RED 1 and RED 3. The Four Mile Base will also record important information like times, run numbers, etc. and can serve as a repository of information otherwise lost in the confusion on scene. Never hesitate to ask Base for help.

IMPORTANT CHANNEL USE FOR FOURMILE

RED 1　　　　　Use this channel to communicate with Dispatch all-important information. (response, arrival, updates, termination, etc.). Also is the evacuation channel.

RED 3　　　　　Use this channel for communication with Four mile Base, Incident Command (IC) and any local comms for the incident.

RED 4　　　　　Use this channel for TRAFFIC CONTROL (e.g. upper and lower traffic control comms) NOTE: Traffic controllers also in scan-mode for RED 1 while on RED 4.

FERN 1　　　　If Flight for Life has been requested they will likely come up on this channel to exchange information on final approach, and guidance with local landing site.

Always check in with Incident Command and confirm what channels are being used for the incident. Monitor your assigned channel, except when contacting another party on a different channel as necessary.

If your radio has an ability to scan, learn how to program it, and learn how to turn this feature on and off, and know if you are scanning or not. Often times callers will not identify the channel they are using, and you will not know which one to respond on if you are uncertain about the scan feature. Know your radio and how to work it, particularly in the dark.

RADIO PROTOCOL

Here is a short list of things to be aware of before transmitting on your radio.

1.)　　　　Always think about your message and practice it in advance (in your head, or even aloud!) before transmitting the message. Keep your message in plain English, short, and clear.

2.)　　　　Press your transmit key on the microphone at least a ONE FULL SECOND before You speak. This avoids the common error of 'clipping' the first part of your message, and helps to prevent misunderstandings. Be aware of "dead zones" or areas in the district where radio transmission is difficult, for example in narrow spots of the canyon shadowed by large hills. If having problems being heard, move the radio and try again, but avoid walking and talking. If you really can't be hear or be heard, try relaying through Four Mile Base.

3.)　　　　When speaking with Dispatch ('Communications') use "Four Mile" + call number. For Example: "….Communications…Four mile 4603 is responding, status one". Using the Four Mile department name before the radio call number makes it easier to keep track of different radio traffic. New dispatchers may not be used to many of the smaller departments with infrequent radio traffic and may get confused. Also, using this 'prefix' before the number gives the listener advance warning that a number is to follow.

4.)　　　　When on scene and communicating with other department members on channels other than RED 1, it is suggested that you use last names instead of numbers. This is the protocol for

State and Federal fires, and greatly simplifies communications. So instead of saying: "4661, 4665 on RED 3", try: "Gibson, Vaughn on RED 3". This is clear. Also, in the confusion of heavy radio traffic, it is easier to hear and key into our names rather than numbers.

5.)   Be aware of 'feedback', or speaker-to-microphone interference. If transmitting on your portable radio, make sure your monitor is reset, so you don't get electronic feed-back between the two. The same is true between truck radios, and portables. Turn off your hand-held while transmitting on the truck radio, otherwise the receiving party can't hear you over the feed-back. This a common mistake -we've all done it, and hate it.

6.)   The radio channels we use are public airways, often monitored by newspapers and private citizens and therefore require some special caution. For example, do not use personal names of victims, even if you know them, or refer to anyone as "drunk" or deceased. You *can* say "ETOH is involved" or "DK". 'Drunk' can be a legal determination that we are not in a position to make. For a deceased party, "code black" is the correct term, but used only when necessary.

7.)   All responding trucks need to announce on RED 1 when they are: a) in route with status #, b) arrival, and c) back in quarters. Initial response on Red 1 should be limited to first Four Mile person to respond, Base and trucks. After Base comes up, all Four Mile traffic should go to Red 3. All trucks that have come up on Red 1 at all MUST call 'back in quarters', otherwise the Chief gets a call at midnight asking if he knows where his trucks are!!! In general, important info should be repeated along with the 'copy' statement. Communications can be reminded echo all our Red 1 traffic unless Red 1 is truly swamped. This is especially important during the day when folks are responding from town and can't hear canyon traffic.

RADIO CALL SIGNS

Each agency has its own unique range of radio call signs, or numbers. For example, all Sunshine units are in the 5000's while the city of Boulder Fire trucks are in the 2000's (See attached complete listing of Boulder County Emergency agencies). Within each departments range there usually is some kind of organization. The radio call signs for Four Mile are in the 4600's and are organized as follows:

FOUR MILE CALL SIGNS:

Low 4600's = Trucks :	Engine 1	= 4601
	Engine 2	= 4602
	Engine 3	= 4603
	Brush truck	= 4631
	Tanker 1	= 4641
	Tanker 2	= 4642
	Tanker 3	= 4643

4660's = Officers:	4661 = the Chief, (C1)
	4662 = Assistant Chief (C2)
	4663 = C3 …likewise for C4,C5)
4670's = Medical officers	4671 = H1
	4672 = H2…etc.

4680's = Fire fighters	4681 = F1
	4682 = F2…etc.
4690's = Base stations	4691 = Base 1 (Luanne Shirley)
	4692 = Base 2
	4693 = Base 3
	4694 = Base 4

A GLOSSARY OF (SOME) RADIO TERMS

Term	Meaning	Example
Arrival	Person(s) responding are on scene.	"4602 –arrival, investigating"
RP	Responsible party (i.e. The 911 caller)	"Did the RP say where…?"
Status	# of people in the vehicle responding.	"4601 responding, status 2"
Code 4	All okay	"Everything is code 4"
Copy	Message understood	"Copy, address is 39310"
SO	Sheriffs Officer	"SO is on scene"
PD	Police Department	"PD is in route"
PV	Personal Vehicle	"All PV's park at next pull out"
Stage	Remain at a safe distance, and wait for a uniformed officer to indicate scene is safe to enter.	"Proceed to address and stage"
UTL	Unable to locate	"We are UTL at this time"
Break	Separation between messages Intended for different parties. Often used by communications When radio traffic is heavy.	"Copy, 4631 is arrival; Break; 4671, can you see the fire?"

Land line	Telephone or non-radio connection.	"Will contact you later on land line"

Some extra Medical terms you might hear on the radio:

Term	Meaning	Example
A&O times 3	**A**lert and **O**riented times [1,2, or 3] States indicating the level of neural functioning (3 = okay)	"Patient is A&O times 2, has slight discomfort in right leg"
BP	Blood Pressure	"Patient's vitals are BP 120 over 80; pulse 72."
Code Black	Fatality (mentioned **only** if Necessary over the radio)	"Patient is code black"
Universal- Precautions	Scene requires protection from infectious disease, blood borne pathogens, etc. Use gloves, mask, etc.	"RP reports patient is coughing up blood…Universal precautions are recommended."
DK	Drunk	"RP says patient DK"
ETOH	Alcohol is suspected to be playing a role..	"43 year old male, ETOH suspected"

SAMPLE RADIO TRAFFIC

If you are unfamiliar with the pacing and protocol used on the radio, listen in to other calls, and you can learn a lot. An example of radio traffic for a Four Mile incident might go something like this:

Following a tone sent out to all Four Mile units, Communications comes on RED 1:

***Communications*:** " Four Mile Fire, and Pridemark ambulance, respond to 39000 Boulder Canyon, on a roll-over injury accident; party calling indicates the car is in the creek; Time out 02:40".

4 MILE FIRE FIGHTER #1: (a few moments later) "Four Mile 4672 is responding".

*Communications***:** "Copy: 4672 in route at 02:41"

4 MILE BASE: "Four Mile Base standing by". (This is good to hear- it means you have local radio support to help you with directions, or to relay messages if you get into 'radio dead' zones where the base station can hear you but Communications can not.)

*Communications***:** " Four Mile Base standing by, at 02:42."

4 MILE ENGINE 3: (another moment later) " Four Mile 4603 responding, status one. Could you repeat the address please?"

*Communications***:** " Copy, 4603 and Four Mile units responding… The injury accident is at 39000 Boulder Canyon… RP phoned in from emergency phone at the base of the canyon- no further details given..Time is 02:43"

4 MILE ENGINE 3: (a few moments later) " Four Mile 4603 is arrival, injured parties are out of the automobile. This will be Canyon Command,…. and we'll be in medical mode." (This lets them know you are on scene, there are definite injuries, you have named the command, and you are going to be busy for a while and not to expect you on the radio).

*Communications***:** " Copy, 4603 arrival, injured parties visible. This will be Canyon Command, and you will be in medical mode; time is 02:45".

The call progresses, with radio exchanges as needed. Communications is updated periodically, additional resources are requested if needed. Vehicle traffic in the canyon is controlled by firefighters using a secondary radio frequency (RED 4). At the conclusion of the call, after all Four Mile personal have cleared the scene, a message is given to communications…such as:

4 MILE ENGINE 3: Hails communications by saying: "Communications, Canyon Command:"… and after acknowledgement, "Communications, all patients have been transported. The car is out of the creek. This call is terminated and all Four Mile units are clear of the scene and back in service"

*Communications***:…**Echoes the message…..Etc.

4 MILE ENGINE 3: Hails Four Mile Base on RED 3 and checks out with them as well…

SUMMARY

- Know your radio and the Four Mile Call signs.

- Understand the proper use of all the channels.

- Keep communications clear and concise. Try to stay calm.

- For safety, keep your monitor on you, even though you have a radio.

- When in doubt, ask.

Appendix

Boulder County Emergency Services
Radio Numbers – An Abbreviated List

100-320 Boulder Police Department
400-479 Louisville Police Department
480-489 Ward Marshal's Office
490-499 Nederland Marshal's Office
500-599 Boulder County Sheriff's Office
700-790 Boulder County Sheriff's Office Reserves
791-799 Boulder County Animal Control
800-899 University of Colorado Police Department
900-999 Boulder County Sheriff's Office Explorers
1120-1125 Boulder County Coroner's Office
1200-1299 Colorado State Parks
1720-1799 Boulder County Parks and Open Space Departments
1900-1999 Rocky Mountain Rescue Group
2000-2199 Longmont Fire
2200-2299 Mt. View
2300-2399 Boulder Rural
2400-2499 Cherryvale
2500-2599 Boulder Fire
2600-2699 Lafayette Fire
2700-2799 Louisville Fire
2800-2899 Hygiene
2900-2999 Rescue Dogs
3000-3099 Longmont Emergency Squad
3100-3199 Boulder Emergency Squad
3200-3299 Boulder County Haz Mat
3900-3999 City of Boulder Mountain Parks
4000-4099 Lyons
4100-4199 Lefthand
4200-4299 Jamestown
4300-4399 Boulder Heights
4400-4499 Pine Brook Hills
4500-4599 Sunshine
4600-4699 Four Mile
4700-4799 Eldorado Springs
4900-4999 Big Elk Meadows

5000-5099 City of Boulder Open Space
5100-5199 Pinewood Springs

5200-5299   Allenspark
5300-5399   Indian Peaks
5400-5499   Gold Hill
5500-5599   Sugarloaf
5600-5699   Nederland
5700-5799   High Country
5800-5899   Boulder County - Others
5900-5979   U.S. Forest Service
5980-5999   Colorado State Forest Service
6000-6099   City of Boulder - Others
7000-7099   Coal Creek
"Charlie" Units Colorado State Patrol
"Edward" Units Erie Police Department
"Lincoln" Units Lafayette Police Department
"Paul" Units Longmont Police Department
Paramedic 1-8 American Medical Response
Paramedic 64- Broomfield Ambulance
Paramedic 130- Tri Area Ambulance
Fire and Rescue Assignments:
XX01-XX15   Engines
XX16-XX19   Ladders
XX20-XX29   Rescues/Squads/Meds/Dives
XX30-XX39   Brush/Scats
XX40-XX49   Tenders
XX50-XX59   Utilities/Urban Interface/Misc.
XX60-XX79   Command/Admin
XX80-XX99   Admin/Others

Last updated: May 04, 2000