NOTES

BITTERROOT NATIONAL FOREST RADIO USER'S GUIDE

BK RADIO

Revised 05/24/2017

The Bendix King Mobile Radio and You!

UPDATED BY. John Walters

Introduction:

This guide is designed to assist radio users in operating the Bitterroot National Forest's radio system, which utilizes Bendix/King Mobile radios and Bendix/King hand-held radios that have been programmed to the Bitterroot National Forest's frequencies.

Users will obtain a general understanding of how the Forest's radio system works, how to operate Bendix/King radios, and how to properly use a radio to communicate.

Radio users should read this guide and use it in the field as a reference.

:IMPORTANT:

Think Safety First!

Forest Radio System:

There is one main radio communication center on the Bitterroot National Forest: the Bitterroot Dispatch Center **(BRC)**, radio call sign Hamilton Dispatch. Hamilton has a full-time dispatcher that generally can be reached on the radio Monday through Friday during business hours. In rare cases during the winter months the center may be unstaffed, users are informed via email, so be aware that this may occur. The Forest is split into two zones, North and South. The North half is comprised of the Stevensville, Darby, and Sula Ranger Districts, the South half West Fork District. When contacting the dispatch center identify which zone channel you are using, the dispatcher may be away from their console and not see the call indicator flash.

The Bitterroot National Forest radio system is comprised of base stations, repeaters, hand-helds and mobiles. As mentioned above, the dispatch center and district offices utilize main consoles to receive and transmit messages. **Main consoles** are control points connected to base stations by telephone lines or radio links. There are **5 base stations** on the Bitterroot. Base stations on the North Zone are Willow Mountain and Deer Mountain and Sula peak. South Zone base stations are located at Deer Mountain, and Barecone on the West Fork District. Base stations have limited ranges and signals can easily be blocked by mountains or other topography.

5. TRANSPORT PLAN:

AIR TRANSPORT: (Agency Aircraft Preferred)			
☐ Helispot	☐ Short-Haul /Hoist	☐ Life Flight	☐ Other
GROUND TRANSPORT:			
☐ Self-Extract	☐ Carry-Out	☐ Ambulance	☐ Other

6. ADDITIONAL RESOURCES / EQUIPMENT NEEDS:

☐ Paramedic / EMT	☐ Crew(s)	☐ SKED / BackBoard / C-Collar
☐ Burn Sheet(s)	☐ Oxygen	☐ Trauma Bag
☐ Medication(s)	☐ IV / Fluids	☐ Cardiac Monitor / AED
☐ Other (eg., splints, rope rescue, wheeled litter)		

7. COMMUNICATIONS:

Function	Channel	Receive (Rx)	Tone	Transmit (Tx)	Tone
Ex. Command	*Forest Rpt. Ch. 2*	*168.325*	*110.9*	*171.4325*	*110.9*
COMMAND					
AIR-TO-GROUND					
TACTICAL					

8. EVACUATION LOCATION:

Lat / Long (Datum WGS84)	
Patient's ETA to Evacuation	
Helispot/Extraction Size	

9. CONTINGENCY:

Considerations: If primary options fail, what actions can be implemented in conjunction with the primary evacuation method? BE THINKING AHEAD!

MEDICAL INCIDENT REPORT

Use items one through nine to communicate situation to communications / dispatch

1. **CONTACT COMMUNICATIONS / DISPATCH**
   Ex. "Communications, Div. Alpha. Standby for priority Medical Incident Report."
   (If life threatening, request that designated frequency be cleared for emergency traffic)

2. **INCIDENT STATUS: Provide incident summary and command structure**

NATURE OF:		*Describe the Injury (Ex. Broken leg w/ Bleeding)*
INCIDENT NAME:		*Geographic Name ("Medical (Ex. Trout Meadow Medical)*
INCIDENT COMMANDER		*Incident Commander of The Medical Incident*
PATIENT CARE:		*Name of Care Provider (Ex. EMT Smith)*

3. **INITIAL PATIENT ASSESSMENT:** Complete this section for each patient. This is only a brief, initial assessment. Provide additional patient info after completing this 9 line report. See page 100 of IRPG for detailed patient report.

NUMBER OF PATIENTS:	**MALE/FEMALE:**	**WEIGHT:**
CONSCIOUS?	☐ **YES**	☐ **NO = MEDEVAC!**
BREATHING?	☐ **YES**	☐ **NO = MEDEVAC!**
MECHANISM of INJURY:		
LAT / Long (Datum WGS84)		

4. **SEVERITY OF EMERGENCY, TRANSPORT PRIORITY**

SEVERITY	TRANSPORT PRIORITY
URGENT = RED **Life threatening injury or illness.** Ex. Unconscious, difficulty breathing, bleeding severely, 2"-3"burns more than 4 palm sizes, heat stroke, disorientation.	Ambulance or MEDEVAC Helicopter. Evacuation need is **IMMEDIATE.**
PRIORITY = YELLOW **Serious Injury or illness.** Ex. Significant trauma, not able to walk, 2"-3" burns not more than 1-2 palm sizes.	Ambulance or consider air transport if at a remote location. Evacuation may be **DELAYED.**
ROUTINE = GREEN **Non-Life Threatening injury or illness.** Ex. Sprains, strains, minor heat-related illness.	Non-emergency. Evacuation considered **ROUTINE of CONVENIENCE.**

Repeaters are set in high elevation locations and help enhance coverage for base stations, mobiles, and hand-held. Repeaters receive transmissions from the field on one frequency and then transmit the messages to base stations on another frequency. To use a repeater on the North Zone of the Forest, you must transmit on 168.1500 and receive on 169.6250. This means that the repeater receives your transmission on 168.1500 and then converts it to 169.6250 for the base station to receive. Repeaters on the South Zone of the Forest receive on 168.1500 and transmit on 168.7500. In essence, the repeater is a translator between the field and the base stations. The Bitterroot has 4 repeaters, each with its own distinct tone and Hell's Half Repeater which is a stand alone repeater with it's own frequency. The Bitterroot now has a Scene of Action repeater with it's own frequencies not tied to Dispatch for use on small incidents around the Forest.

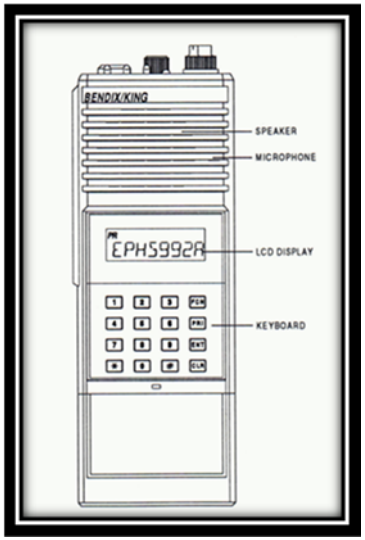
The Bitterroot National Forest has a comprehensive tone system. A tone is a special code that is required by each base station and repeater in order to transmit or receive a signal. The tone and the frequency together act as a unique identifier for each individual base station and repeater. Without the tone system, all Forest repeaters could be activated when a message was transmitted on the repeater frequency 168.1500. This can cause a condition called heterodyning and make the transmission unreadable. However, with the current tone system, only one site will be activated based on a selected frequency and tone. While radios in line of sight of each other can still communicate without a tone, repeaters and base stations will not be able to receive a transmission from an untoned radio. Un-toned radios are capable of receiving transmissions from repeaters or base stations which enables users to at least monitor radio traffic. It is important to be aware of repeater locations so that the closest and most accessible site can be selected.

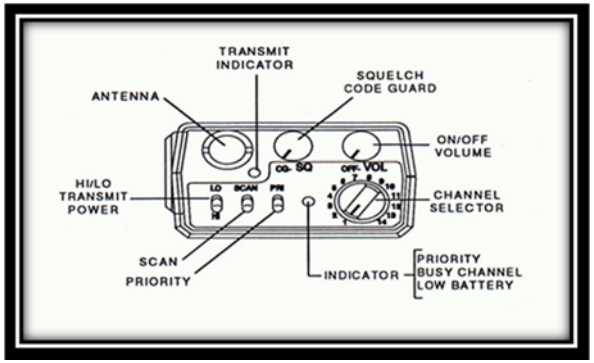
Due to regulations and licensing restrictions, only the Forest Supervisor has legal authority to program radios. However, this function has been delegated to the Radio Shop. In addition, contact the district FMO to find out who the radio contact point for the district is for the current year. If you have any radio concerns you should contact the appropriate person on your district (FMO) or **Mark Thrailkill** (SO RADIO SHOP).

FIRE MANAGEMENT OFFICER (FMO) PHONE

SO. MARK THRAILKILL	**406-363-7145**
D1. WARREN APPLEHANS	**406-777-7436**
D2. DEREK DAVENPORT	**406-821-4258**
D3. DEREK DAVENPORT	**406-821-4258**
D4. DOUG DEMOSS	**406-821-1243**

Portable Radios





Components and functions of a Bendix/King portable radio:

On-Off/Volume: Turn the On-Off/Volume Knob clockwise to power the radio. Continue turning the knob clockwise to increase the volume.

Squelch: Squelch is the function that sets the lower limit of signal reception and ensures that background noise is muted in the absence of message signals. If the radio is adjusted just past the squelch threshold (the point at which the static noise stops), the radio will pick up weak signals. In fact, even minor interference will "break squelch" at this point. Only strong signals will be detected as the Squelch Knob is adjusted further away (counter-clockwise) from the threshold point.

To get rid of the rushing static noise, perform the following steps:

1) Turn the Squelch Knob completely to the left.

2) Turn on the radio and increase the volume to a comfortable level.

3) Turn the Squelch Knob clockwise. Stop as soon as the rushing noise is heard.

4) Slightly turn the knob counter-clockwise and stop as soon as the rushing noise is gone.

NOTES

NOTES

Channel Selector: Turn the Channel Selector Knob to the desired channel (see the attached Bendix/King Radio Channel Guide).

Groups: Multiple Groups is a feature of the Bendix/King radio that increases the number of programmable channels. There are 15 groups available and a maximum of 16 channels in each group which allows for a total of 240 channels.

Note: There are currently 2 models of radios on the Bitterroot National Forest: GPH and DPH. The model is located on the back of the radio. The GPH model has 15 groups with 16 channels in each group and the DPH has 25 groups with 16 channels in each group.

To select a group perform the following steps:

1) Press the pound (#) key on the keyboard to display the current group on the LCD display.

2) Press the appropriate number for the desired group (i.e., 01 for group 1).

3) Press ENT for your selection to be accepted, or wait approximately 5 seconds, and your selection will be entered automatically.

Bitterroot NF. Preloaded groups

Group 1 is the primary group used by all personnel. It contains the North and South Zone direct frequencies as well as all the Forest Repeaters. **Groups 2** is the North Zone VFD's, **Group 3** is the South Zone VFD's, **Group 4** is the Mutual aid group, **Groups 5** is the Public Safety, **Group 6** BRF Portable Repeaters, **Group 7 and 8** Admin Lolo NF (NOT FOR FIRE USE) **Group 9-14** adjacent Forests, **Group 15** GPH radios, and **Group 15-25** on DPH radios are open for programing of non-Bitterroot and temporary frequencies. For instance, if on assignment in another region, a communications technician should program any necessary frequencies into groups 15 through 25 depending on the model of radio. To obtain a list of programmed channels and frequencies, contact the Radio Shop.

It is important to check that the proper group is selected. If the proper group is not selected, the channel selected will not transmit on the correct frequency. Press and hold the pound (#) key at any time to view the current group.

Tone: As discussed in the introduction, the Bitterroot Forest uses a tone system in which the tone determines which base stations or repeaters will receive a transmission signal.

Channel Busy/Low Battery Indicator: This indicator will illuminate red when transmitting a message over the radio and when receiving a signal on the priority channel. The light should illuminate solid red when transmitting. If the light blinks once or twice and then goes out or if the light flickers, it means the battery could be low.

Switch A – Hi / Lo Transmit Power: This switch allows you to either use full power (HI) or reduced power (LO). Using LO power conserves energy and helps preserve the battery. LO power should be used when monitoring the radio in town or in close proximity of a base station. **The radio is in HI power when the switch is pushed towards you and in LO power when the switch is pushed away from you.**

Switch B - Scan: Bendix/King radios allow users to monitor frequencies from a preset scan list, including the currently selected channel. When a signal is detected, scanning stops and the message is received. The received channel is shown on the LCD. Once the signal ends, the radio continues to monitor the channel for a preset amount of time before it resumes scanning. If you wish to respond to a message received on a scanned channel, you will have to change the currently selected channel. All transmissions in scan mode will occur on the channel selected (see Channel Selector Knob). **The radio is in scan mode when the switch is pushed away from you. To turn off the scan function, push the switch towards you.**

To determine what channels are being scanned, simply turn the Channel Selector Knob to each channel. If the channel is on the scan list, the word "SCN" will appear on the top portion of the LCD. To add a channel to the scan list, select the channel with the Channel Selector Knob and then press ENT. To remove a channel from the scan list, press the CLR key. After a short beep, the word "SCN" should disappear. When adding or deleting a channel from the scan list, both the Scan and Priority Switches should be turned off (pushed down toward the user). Only channels in the current group can be scanned.

Switch C - Priority: Priority scan allows a radio to monitor traffic on a priority channel. This function can operate with or without the scan function. The radio checks the priority channel every few seconds. When in priority mode, the priority channel is preset and users can only transmit on the priority channel even though the priority channel may not be the currently selected channel.

CH 00 AND GRP 00 QUICK REFERENCE GUIDE

Standard Models

Channel 0 Group One Functions (DPH, DMH, GPH and GPH Plus)

Battery Saver Inhibit	*1-**1**2345*
Group Scan List	*1-1**2**345*
Transmit On Priority 1	*1-12**3**45*
Priority 1 Lock	*1-123**4**5*
Scan List Lock	*1-1234**5***
Channel 0 Group One Functions (Older Models)	
Battery Saver Inhibit	*1-**1**2345*
Priority Mode A	*1-12345*
Priority Mode B	*1-1**2**345*
Priority Mode C	*1-1**23**45*
Priority 1 Lock	*1-123**4**5*
Scan List Lock	*1-1234**5***
Channel 0 Group Two Functions	
User Code Guard Selection	*2-**1**2345*
Busy Channel Indicate	*2-12**3**45*
Busy Channel Lockout	*2-1**23**45*
Busy Channel Lockout w/override	*2-1**2**345*
ANI Mode	*2-123**4**5*
DTMF Mode	*2-1234**5***
ANI and DTMF Mode	*2-123**45***
Channel 0 Group Three Functions	
Reserved for Future Enhancements	*3-**12**345*
Backlight on Display Change	*3-12**3**45*
Backlight on Key Press	*3-123**4**5*
Alphanumeric/Numeric Display Mode	*3-1234**5***

Group 17 New Lolo East Fire (use only if directed to…. Freq changes pending)

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	168.7500	NONE	168.7500	131.8	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	4TAC N	166.9875	NONE	166.9875	NONE	N
5	LNF E DIR	172.3750	NONE	172.3750	127.3	N
6	LNF TAC2	167.6250	NONE	167.6250	127.3	N
7	RCHMDRPT	172.3750	NONE	164.1000	167.9	N
8	LAKE RPT	172.3750	NONE	164.1000	110.9	N
9	QUIGG RPT	172.3750	NONE	164.1000	156.7	N
10	WARD RPT	169.6250	NONE	168.1500	167.9	N
11	R1 TAC	167.1125	NONE	167.1125	NONE	N
12	WHITE RPT	172.3750	NONE	164.1000	107.2	N
13	FIRE-1	155.7000	NONE	158.7600	151.4	N
14	A/G 52-P	168.3875	NONE	168.3875	NONE	N
15	A/G EAST-P	166.5000	NONE	166.5000	NONE	N
16	AIRGUARD	168.6250	NONE	168.6250	110.9	N

Group

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	

To set a priority channel, perform the following steps:

1. Turn off the Priority and Scan Switches (they should be pushed down towards you).
2. Move the Channel Selector Knob to the channel you want to set as the priority.
3. Press the PRI key on the key board. "PR" will appear on the top of the display.
4. Turn on the Priority Switch to activate priority mode.

Antenna: The size of the antenna affects the range capabilities of radio signals. For instance, longer antennas can transmit and receive signals from repeaters and base stations that are further away than radios with shorter antennas. To ensure that clear signals are being sent and received, stand still while communicating and hold the radio straight up and down so that it is perpendicular with the ground. If you are talking to aircraft, you should hold the radio in a horizontal position. It is important to take good care of antennas, as bent or broken antennas will not transmit or receive signals. "Alaska" antennae (antennae that can be thrown over a tree limb for better reception) may be available for check out on the districts.

Push-To-Talk Button (PTT): Pressing this button activates the transmit mode (talk mode). Press in and hold this button throughout the entire transmission. For a complete message to be heard, press the button and wait for a second or two before beginning the message and continue to hold in the button for a few seconds after completing the message. This allows time for the signal to access or "key up" the repeaters if necessary.

Speaker: Radio signals are picked up and transmitted over the speaker. The On-Off/Vol. switch allows users to adjust the volume of their radio.

LCD Display: The LCD display shows a variety of information. The upper part displays codes to let users know if the radio is set in priority mode (PR), and/or scan mode (SCN). The main part of the display will show which channel is selected for transmitting and receiving messages. In addition, by pushing the pound (#) key, the current group selected will be displayed in the main part of the box.

Key Board (w/removable cover): The key board provides a mechanism that allows users to change groups and set scan lists. To remove the cover, remove the battery pack and then slide the cover down. Remember to replace the battery pack after removing the cover.

Battery: As mentioned above, the Channel Busy Indicator will alert users to a low battery. To remove the battery, push up on the metal tab on the side of the case while twisting the battery pack approximately 30 degrees and separating it from the radio. Bendix/Kings have either a rechargeable battery pack or a clam shell which contains 9 AA batteries (DPH & GPH), or 8 batteries for KNG.

Bendix/King Portable Radio Use Procedures:

- **Remove the key pad cover.** Take off the battery pack and slide the LCD cover off. Replace the battery pack once the LCD cover has been removed.
- **Turn off Lo/Hi, Scan and Pri.** The 3 switches should be pushed down toward you.

Turn the radio on and turn up the volume.

- **Turn on the CG-SQ and adjust the squelch.** Turn the switch to the right (clockwise) until you hear a rushing noise, then turn it slightly back (so you don't hear the rushing noise anymore).
- **Check to make sure you are using the proper group.** To select a group, press the # key (this will show the current group) then press the number of the desired group and wait for 5 seconds, or press enter.
- **Select a channel.** Refer to the map and the Bendix/King Frequency Guide to determine what channel and tone to use. Use the Channel Selector Knob to select the channel. There are 14 or 16 channels on your radio.
- **Transmit your message.** Press the PTT (Push-to-talk) button. Hold the button in throughout the entire message. If your message is too long (more than 180 seconds), the transmit signal will time out and cut you off. Therefore, if you have a long message, you may have to pause and release the PTT button and then press it again to continue. For a complete transmission, press the button and wait for a second or two before beginning the message and continue to hold in the button for a few seconds after completing the message. Waiting a few seconds ensures that the repeaters are keyed up and that your message is completely transmitted without being cut-off.
- **Emergencies:** If you are in an emergency situation, begin your transmission by stating that you have an emergency. For example "Hamilton Dispatch, this is Jane Smith, I have an emergency." Broadcasting that you have an emergency lets other listeners know that you have priority and that everyone else should stay off the radio until you are done.

NOTE: Even if you do not receive a response, transmit your entire message. Someone may be able to hear you, but you may not hear them.

- **Medical Emergency:** If you are dealing with an injured person and are requesting medical help, do not give the name of the injured person over the radio. Stick with the facts, stating only the victim's gender, age, and nature of the injury.

Group 15 New Lolo (use only when directed to...Freq Changes pending)

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	EAST DIR	172.3750	NONE	172.3750	127.3	N
2	MLLR PK	172.3750	NONE	164.1000	131.8	N
3	UNIV. MT	172.3750	NONE	164.1000	100.0	N
4	STARK MT	172.3750	NONE	164.1000	103.5	N
5	WHITE MT	172.3750	NONE	164.1000	107.2	N
6	QUIGG PK	172.3750	NONE	164.1000	156.7	N
7	MINERL PK	172.3750	NONE	164.1000	136.5	N
8	MT MOREL	172.3750	NONE	164.1000	146.2	N
9	RCHMDRPT	172.3750	NONE	164.1000	167.9	N
10	LAKE MT	172.3750	NONE	164.1000	110.9	N
11	PORT RPT	172.3750	NONE	164.1000	192.8	N
12	CH-12	INACTIVE	NONE	INACTIVE	NONE	N
13	TAC-1	167.1125	NONE	167.1125	NONE	N
14	CMN 1	163.7125	NONE	163.7125	NONE	N
15	A/G EAST-P	166.5000	NONE	166.5000	NONE	N
16	TAN	155.3400	NONE	155.3400	156.7	N

Group 16 New Lolo West (use only if directed to…. Freq changes pending)

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	WEST DIRECT	172.3875	NONE	172.3875	127.3	N
2	PATS NOB	172.3875	NONE	164.1750	156.7	N
3	KEYSTONE	172.3875	NONE	164.1750	136.5	N
4	THOMPSON	172.3875	NONE	164.1750	103.5	N
5	CAMELS	172.3875	NONE	164.1750	110.9	N
6	EDDY MT	172.3875	NONE	164.1750	131.8	N
7	RICHARDS	172.3875	NONE	164.1750	167.9	N
8	LKOUT PASS	172.3875	NONE	164.1750	146.2	N
9	PORT RPT	172.3875	NONE	164.1750	162.8	N
10	CH-10	INACTIVE	NONE	INACTIVE	NONE	N
11	CH-11	INACTIVE	NONE	INACTIVE	NONE	N
12	CH-12	INACTIVE	NONE	INACTIVE	NONE	N
13	TAC-1	167.1125	NONE	167.1125	123.7	N
14	CMN 1	163.7125	NONE	163.7125	123.7	N
15	A/G 05-P	166.7500	NONE	166.7500	NONE	N
16	TAN	155.3400	NONE	155.3400	156.7	N

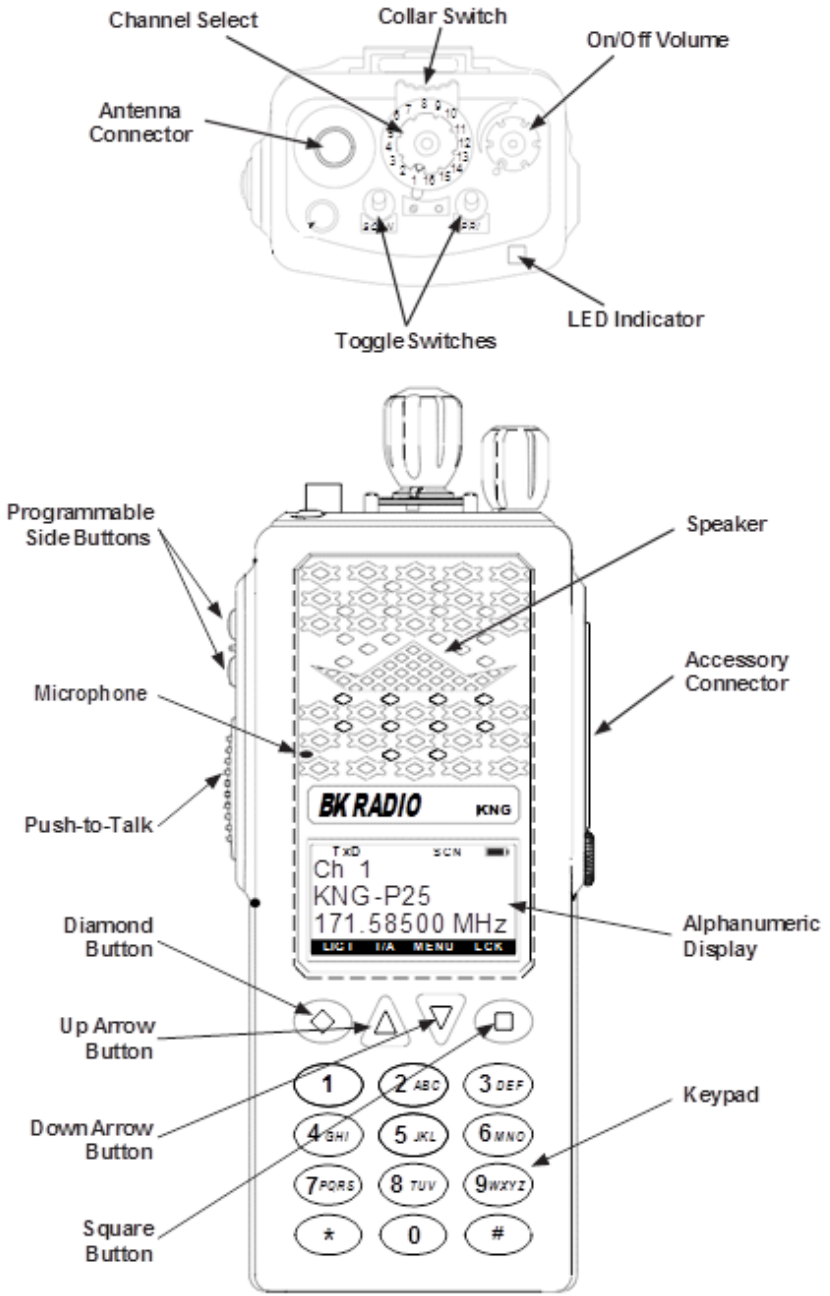
Group 13 Nez Fire

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	168.7500	NONE	168.7500	131.8	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	4 TAC N	166.9875	NONE	166.9875	NONE	N
5	HELL RPT	169.1750	NONE	169.9750	136.5	N
6	BRTKNOB	173.1375	NONE	166.2000	114.8	N
7	GARDNER	173.1375	NONE	166.2000	141.3	N
8	SHISLER	173.1375	NONE	166.2000	156.7	N
9	CMN 1	163.7125	NONE	163.7125	NONE	N
10	FOG RPT	173.1375	NONE	166.2000	146.2	N
11	ANDERSON	173.1375	NONE	166.2000	107.2	N
12	DIABLO	171.5750	NONE	166.2625	151.4	N
13	CMN 2	168.6125	NONE	168.6125	NONE	N
14	A/G 52-P	168.3875	NONE	168.3875	NONE	N
15	A/G 17	167.9875	NONE	167.9875	NONE	N
16	AIRGUARD	168.6250	NONE	168.6250	110.9	N

Group 14 New Bitterroot (use only if directed to…. Freq changes pending)

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	172.2250	NONE	172.2250	131.8	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	4 TAC N	166.9875	NONE	166.9875	NONE	N
5	HELL RPTR	169.9750	NONE	164.1500	136.5	N
6	TEEPEERPT	169.6250	NONE	163.4625	136.5	N
7	LKOUTRPT	172.2250	NONE	165.2250	146.2	N
8	CMN 1	163.7125	NONE	163.7125	NONE	N
9	SPOT RPT	172.2250	NONE	165.2250	156.7	N
10	WARD RPT	169.6250	NONE	163.4625	167.9	N
11	R1 TAC	167.1125	NONE	167.1125	NONE	N
12	CMN 2	168.6125	NONE	168.6125	NONE	N
13	WORK	169.1750	NONE	169.1750	NONE	N
14	A/G 52-P	168.3875	NONE	168.3875	NONE	N
15	A/G 53– S	168.4875	NONE	168.4875	NONE	N
16	AIRGUARD	168.6250	NONE	168.6250	110.9	N

Radio Controls



Basic Radio Operation (KNG)

Receive:

1. Turn power on by turning the Volume knob clockwise. A beep sounds indicating the radio is operational. The LCD display shows the programmed information of the currently selected channel.
2. Select a channel by rotating the Channel Selector knob.
3. Open the squelch to adjust the volume.

(Open squelch can be achieved by selecting the programmed Monitor function)

When a signal is received, the un-programmable top line of the display indicates the current channel's operating mode. RXA = Analog, RXD = Digital

Transmit:

1. Press the PTT (Push-To-Talk) switch. When the radio is transmitting the indicator LED glows red and TXD or TXA appears in the display.
2. Talk in a normal voice with the microphone one to two inches from your mouth.
3. Release the PTT switch to stop transmitting.

If the length of your message exceeds the programmed Time-Out Timer setting, the transmitter automatically shuts off and a tone sounds. To continue transmission, release the PTT switch, then press it again and continue talking.

If the Transmit Indicator does not glow and a tone sounds, you are on a receive only channel or the channel is busy. Select an authorized transmit channel.

Tx Power (LWP): High– Press the Diamond button. LWP will be black with white letters. Low– press the diamond button again and LWP will be just black letters.

Group 11 S-C National Forest

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	168.7500	NONE	168.7500	131.8	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	4 TAC N	166.9875	NONE	166.9875	NONE	N
5	HELLS RPT	169.1750	NONE	169.9750	136.5	N
6	S-C TAC	172.7750	NONE	172.7750	NONE	N
7	LKOUT MT	168.7500	NONE	168.1500	146.2	N
8	S-C DIR	172.2750	NONE	172.2750	103.5	N
9	SPOT MTN	168.7500	NONE	168.1500	156.7	N
10	STEIN RPT	172.2750	NONE	164.5000	146.2	N
11	HORSCKRPT	172.2750	NONE	164.5000	100.0	N
12	LNGTMRPT	172.2750	NONE	164.5000	123.0	N
13	A/G 23-P	166.7625	NONE	166.7625	NONE	N
14	A/G 52-P	168.3875	NONE	168.3875	NONE	N
15	A/G 43-S	167.6000	NONE	167.6000	NONE	N
16	AIRGUARD	168.6250	NONE	168.6250	110.9	N

Group 12 CLWR National Forest

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	168.7500	NONE	168.7500	131.8	N
2	BRF 2	169.6250	NONE	164.9250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	4 TAC N	166.9875	NONE	166.9875	NONE	N
5	CMN 1	163.7125	NONE	163.7125	NONE	N
6	CMN 2	168.6125	NONE	168.6125	NONE	N
7	BVRDGRPT	171.5750	NONE	166.2625	100.0	N
8	DIABLORP	171.5750	NONE	166.2625	151.4	N
9	BEAR MT	171.5750	NONE	166.2625	156.7	N
10	WARD MT	169.6250	NONE	168.1500	167.9	N
11	RCKY RPT	171.5750	NONE	166.2625	162.2	N
12	JNCT RPT	170.5000	NONE	165.0125	136.5	N
13	CH 13	0.0000	NONE	0.0000	NONE	N
14	A/G 52-primary	168.3875	NONE	168.3875	NONE	N
15	A/G 17	167.9875	NONE	167.9875	NONE	N
16	AIRGUARD	168.6250	NONE	168.6250	110.9	N

Mobile Radios

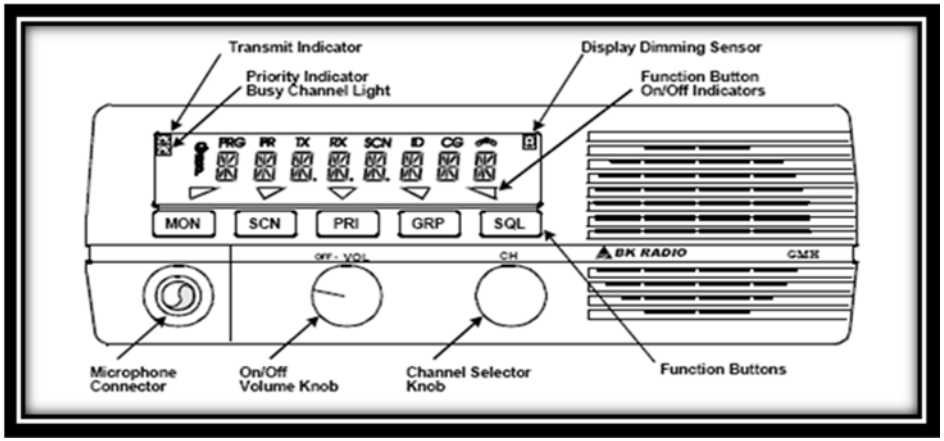
Group 9 Lolo East Fire

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	168.7500	NONE	168.7500	131.8	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	4 TAC N	166.9875	NONE	166.9875	NONE	N
5	LNF E DIR	164.7000	NONE	164.7000	123.0	N
6	LNF TAC2	170.5500	NONE	170.5500	NONE	N
7	RCHMDRPT	164.7000	NONE	164.1000	103.5	N
8	LAKE RPT	164.7000	NONE	164.1000	110.9	N
9	QUIGG RPT	164.7000	NONE	164.1000	131.8	N
10	WARD RPT	169.6250	NONE	168.1500	167.9	N
11	R1 TAC	167.1125	NONE	167.1125	NONE	N
12	WHITE RPT	164.7000	NONE	164.1000	136.5	N
13	MINERAL	164.7000	NONE	164.1000	146.2	N
14	A/G 52-S	168.3875	NONE	168.3875	NONE	N
15	A/G EAST-P	166.5000	NONE	166.5000	NONE	N
16	AIRGUARD	168.625	NONE	168.625	110.9	N

Group 10 B– D Fire

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	168.7500	NONE	168.7500	131.8	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	4 TAC N	166.9875	NONE	166.9875	NONE	N
5	B-D PROJECT	170.5000	NONE	170.5000	NONE	N
6	TEPEERPT	169.6250	NONE	168.1500	136.5	N
7	BVHD DIR	171.4250	NONE	171.4250	131.8	N
8	TIE RPT	171.425	NONE	172.325	136.5	N
9	DRLG DIR	171.0000	NONE	171.0000	141.3	N
10	EMRINE	171.0000	NONE	170.3500	146.2	N
11	R1 TAC	167.1125	NONE	167.1125	NONE	N
12	YELLOW	151.2200	NONE	151.2200	156.7	N
13	ORANGE	151.4000	NONE	151.4000	156.7	N
14	A/G 52-P	168.3875	NONE	168.3875	NONE	N
15	A/G 29	166.900	NONE	166.900	NONE	N
16	AIRGUARD	168.625	NONE	168.625	110.9	N

Components / Functions of a Bendix/King Mobile Radio:



Bendix/King Model GMH / DMH

On-Off/Volume: Turn the On-Off/Volume Knob clockwise to power the radio. Continue turning the knob clockwise to increase the volume.

Channel Selector: Turn the Channel Selector Knob to the desired channel *(see the attached Bendix/King Radio Channel Guide)*.

Busy Channel Light: This indicator will illuminate when a signal is present.

Transmit Indicator: This indicator will illuminate while transmitting.

MON button: This button allows monitoring of squelch noise. This allows you to set a comfortable volume level. **To turn on monitoring, press the MON button so the triangular indicator appears in the display above the button. To turn monitoring off, press the button again so the triangular indicator goes off**

SCN button: Bendix/King radios allow users to monitor frequencies from a preset scan list, including the currently selected channel. When a signal is detected, scanning stops and the message is received. The received channel is shown on the display. Once the signal ends, the radio continues to monitor the channel for a preset amount of time before it resumes scanning. If you wish to respond to a message received on a scanned channel, you will have to change the currently selected channel. All transmissions in scan mode will occur on the channel selected (see Channel Selector Knob).

To activate scanning, press the SCN button so the triangular indicator appears in the display above the button. To turn scanning off, press the SCN button again, so the triangular indicator goes off.

To determine what channels are being scanned, simply turn the Channel Selector Knob to each channel. If the channel is on the scan list, "SCN" will appear on the top portion of the display. To add a channel to the scan list, select the channel with the Channel Selector Knob and then press ENT on the microphone keypad, so “SCN” appears on the display. To remove a channel from the scan list, press CLR on the microphone keypad, so "SCN" disappears from the display. When adding or deleting a channel from the scan list, both the SCN and PRI should be turned off (triangular indicators above buttons not lit). Only channels in the current group can be scanned.

PRI button*:* Priority scan allows a radio to monitor traffic on a priority channel. This function can operate with or without the scan function. The radio checks the priority channel every few seconds. When in priority mode, the priority channel is preset and users can only transmit on the priority channel even though the priority channel may not be the currently selected channel.

To set a priority channel, perform the following steps:

1. Turn off the PRI and SCN buttons (triangular indicators above buttons not lit).
2. Move the Channel Selector Knob to the channel you want to set as the priority.
3. Press the PRI key on the microphone keypad. “PR” will appear on the top of the display.

To activate priority mode, press the PRI button on the front of the radio so the triangular indicator appears in the display above the button. To turn off the priority function, press the PRI button, so the triangular indicator goes off.

Group 7 Lolo East

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	EAST DIR	164.7000	NONE	164.7000	123.0	N
2	RICHMOND	164.7000	NONE	164.1000	103.5	N
3	LAKE	164.7000	NONE	164.1000	110.9	N
4	QUIGG	164.7000	NONE	164.1000	131.8	N
5	WHITE MT	164.7000	NONE	164.1000	136.5	N
6	MINERAL	164.7000	NONE	164.1000	146.2	N
7	E PORTABLE	164.7000	NONE	164.1000	167.9	N
8	WORK	170.4750	NONE	170.4750	NONE	N
9	TAN-EMS	155.3400	NONE	155.3400	156.7	N
10	LOGGERS	151.9250	NONE	151.9250	NONE	N
11	CMN 1	168.6125	NONE	168.6125	NONE	N
12	CMN 2	163.7125	NONE	163.7125	NONE	N
13	MSLA WX	162.4000	NONE	NONE	NONE	N
14	KAL WX	162.5500	NONE	NONE	NONE	N

Group 8 Lolo West

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	WEST DIR	164.9125	NONE	164.9125	123.0	N
2	THOMPSON	164.9125	NONE	164.1750	103.5	N
3	CAMELS	164.9125	NONE	164.1750	110.9	N
4	EDDY MTN	164.9125	NONE	164.1750	131.8	N
5	RICHARDS	164.9125	NONE	164.1750	136.5	N
6	LO PASS	164.9125	NONE	164.1750	146.2	N
7	PORTABLE	164.9125	NONE	164.1750	167.9	N
8	WORK	170.4750	NONE	170.4750	NONE	N
9	TAN-EMS	155.3400	NONE	154.3400	156.7	N
10	LOGGERS	151.9250	NONE	151.9250	NONE	N
11	CMN 1	168.6125	NONE	168.6125	NONE	N
12	CMN 2	163.7125	NONE	163.7125	NONE	N
13	MSLA WX	162.4000	NONE	NONE	NONE	N
14	KAL WX	162.5500	NONE	NONE	NONE	N
15	CH 15	NONE	NONE	NONE	NONE	N
16	CH 16	NONE	NONE	NONE	NONE	N

Group 5 Bitterroot Public Safety

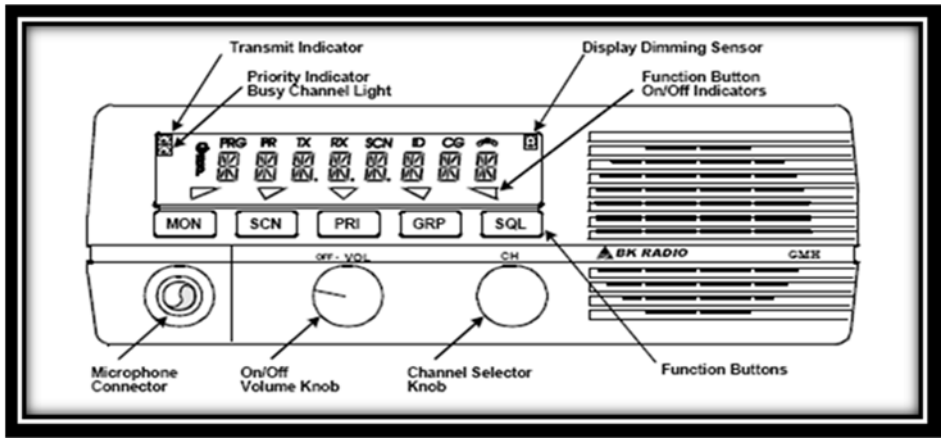
CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	168.7500	NONE	168.7500	131.8	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	4 TAC N	166.9875	NONE	166.9875	NONE	N
5	PURP S+R	155.2200	NONE	155.2200	156.7	N
6	TEPEERPT	169.6250	NONE	168.1500	136.5	N
7	LKOUTRPT	168.7500	NONE	168.1500	146.2	N
8	RCSO	156.2250	67.0	156.2250	67.0	N
9	RCSO-EFK	156.2250	67.0	158.9100	141.3	N
10	RSCO-WFK	156.2250	NONE	158.9100	131.8	N
11	WHITE	155.2800	NONE	155.2800	156.7	N
12	VFIRE 1	154.8600	203.5	151.1525	103.5	N
13	VFIRE 2	154.4450	71.9	154.4450	71.9	N
14	A/G 52-P	168.3875	NONE	168.3875	NONE	N
15	TAN-EMS	155.3400	NONE	155.3400	156.7	N
16	AIR GUARD	168.6250	NONE	168.6250	110.9	N

Group 6 Bitterroot Fire Repeater

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	168.7500	NONE	168.7500	131.8	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	4 TAC N	166.9875	NONE	166.9875	NONE	N
5	HELL RPT	169.1750	NONE	169.9750	136.5	N
6	TEPEERPT	169.6250	NONE	168.1500	136.5	N
7	LKOUTRPT	168.7500	NONE	168.1500	146.2	N
8	PRTRPT S	168.7500	NONE	168.1500	107.2	N
9	SPOTRPT	168.7500	NONE	168.1500	156.7	N
10	WARDRPT	169.6250	NONE	168.1500	167.9	N
11	R1 TAC	167.1125	NONE	167.1125	NONE	N
12	PRTRPT N	169.6250	NONE	168.1500	100.0	N
13	SOA RPT	173.1875	131.8	164.3875	131.8	N
14	A/G 52-P	168.3875	NONE	168.3875	NONE	N
15	A/G 53-S	168.4875	NONE	168.4875	NONE	N
16	AIR GUARD	168.625	NONE	168.625	110.9	N

GRP button: This button toggles between group select and channel select modes.

Groups: Multiple Groups is a feature of the Bendix/King GMH / DMH radios that increases the number of programmable channels. There are 15 groups available in a (GMH) radio and 25 groups available in a (DMH) radio.



To select a group perform the following steps:

1) Press the GRP button on the front of the radio. The current group will be displayed.

2) Use the channel selector knob to select a group.

3) When the group you want to use is displayed, you may press the GRP button to enter your selection and return to channel select mode, or wait approximately 5 seconds, and your selection will be entered automatically.

Alternatively, you can use the keypad on the microphone to change groups:

1) Press the pound (**#**) key on the keypad to display the current group on the display.

2) Press the appropriate number for the desired group (i.e., 01 for group 1).

3) Press **ENT** for your selection to be accepted, or wait approximately 5 seconds and your selection will be entered automatically.

Bitterroot Preloaded Groups:

Group 1 is the primary group used by all personnel. It contains the North and South Zone direct frequencies as well as all the Forest Repeaters. **Groups 2** is the North Zone VFD's**, Group 3** is the South Zone VFD's, **Group 4** is the Mutual aid group, **Group 5** is the Public Safety, **Group 6** BRF Portable Repeaters, **Group 7-8** Admin Lolo NF (NOT FOR FIRE USE) **Group 9-14** adjacent Forests, **Group 15** on GMH radios, and **Group 15-25** on DMH radios are open for programing of non-Bitterroot and temporary frequencies. For instance, if on assignment in another region, a communications technician should program any necessary frequencies into groups 15 through 25 depending on the model of radio.

It is important to check that the proper group is selected. If the proper group is not selected, the channel selected will not transmit on the correct frequency. Press the GRP button on the front of the radio (or press and hold the pound (#) key on the microphone keypad) at any time to view the current group.

SQL button: This button toggles between squelch adjust and channel select modes.

Squelch: Squelch is the function that sets the lower limit of signal reception and ensures that background noise is muted in the absence of message signals. If the radio is adjusted just past the squelch threshold (the point at which the static noise stops), the radio will pick up weak signals. In fact, even minor interference will "break squelch" at this point. Only strong signals will be detected as the Squelch Knob is adjusted further away (counter-clockwise) from the threshold point.

To get rid of the rushing static noise, perform the following steps:

1) Turn on the radio and increase the volume to a comfortable level.

2) Press the SQL button so the display shows SQUELCH, and the triangular indicator appears in the display above the button.

3) Turn the channel select knob clockwise. Stop as soon as the rushing noise is heard.

4) Slightly turn the channel select knob counter-clockwise and stop as soon as the rushing noise is gone.

5) Press the SQL button again, so the triangular indicator goes off, and the display shows the channel information.

Group 3 South Zone VFD

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	168.7500	NONE	168.7500	131.8	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	SULA VFD	151.4300	210.7	159.4650	210.7	N
5	WFORKVFD	154.1600	127.3	150.7750	127.3	N
6	TEPEERPT	169.6250	NONE	168.1500	136.5	N
7	LKOUTRPT	168.7500	NONE	168.1500	146.2	N
8	HAMILVFD	154.9800	167.9	154.9800	167.9	N
9	DARBYVFD	154.4150	167.9	154.4150	167.9	N
10	PROCKVFD	154.1300	71.9	155.6250	67.0	N
11	VFIRE 1	154.8600	203.5	151.1525	103.5	N
12	12 RED	154.0700	NONE	154.0700	156.7	N
13	VFIRE 2	154.4450	71.9	154.4450	71.9	N
14	A/G 52-P	168.3875	NONE	168.3875	NONE	N
15	YELLOW	151.2200	NONE	151.2200	156.7	N
16	AIR GUARD	168.6250	NONE	168.6250	110.9	N

Group 4 Bitterroot Mutual Aid Group

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	168.7500	NONE	168.7500	131.8	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	SCARLETT	154.2950	NONE	154.2950	156.7	N
5	GOLD	153.9050	NONE	153.9050	156.7	N
6	TEPEERPT	169.6250	NONE	168.1500	136.5	N
7	LKOUTRPT	168.7500	NONE	168.1500	146.2	N
8	MAROON	154.2800	NONE	154.2800	156.7	W
9	VFIRE 1	154.8600	203.5	151.1525	103.5	N
10	GREEN	171.4750	NONE	171.4750	141.3	N
11	CORAL	154.2650	NONE	154.2650	156.7	N
12	12 RED	154.0700	NONE	154.0700	156.7	N
13	VFIRE 2	154.4450	71.9	154.4450	71.9	N
14	A/G 52-P	168.3875	NONE	168.3875	NONE	N
15	YELLOW	151.2200	NONE	151.2200	156.7	N
16	AIR GUARD	168.6250	NONE	168.6250	110.9	N

FREQUENCY LIST 2017

GPH/DPH/GMH/DMH/KNG

Group 1 Administrative and Fire

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	BRF 1	168.7500	NONE	168.7500	131.8	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	3 TAC S	166.5500	NONE	166.5500	NONE	N
4	4TAC N	166.9875	NONE	166.9875	NONE	N
5	HELL RPT	169.1750	NONE	169.9750	136.5	N
6	TEEPEERPT	169.6250	NONE	168.1500	136.5	N
7	LKOUTRPT	168.7500	NONE	168.1500	146.2	N
8	8 CMN 1	163.7125	NONE	163.7125	NONE	N
9	SPOTRPT	168.7500	NONE	168.1500	156.7	N
10	WARDRPT	169.6250	NONE	168.1500	167.9	N
11	R1 TAC	167.1125	NONE	167.1125	NONE	N
12	12 CMN 2	168.6125	NONE	168.6125	NONE	N
13	MSO WX	162.4000	NONE	0.0000	NONE	N
14	A/G 52-P	168.3875	NONE	168.3875	NONE	N
15	A/G 53-S	168.4875	NONE	168.4875	NONE	N
16	AIR GUARD	168.6250	NONE	168.6250	110.9	N

Group 2 North Zone VFD

CH	LABEL	RECEIVE	RX Tone	TRANSMIT	TX Tone	
1	VFIRE1	154.8600	203.5	151.1525	103.5	N
2	BRF 2	169.6250	NONE	169.6250	146.2	N
3	FLORVFD	154.1900	151.4	154.1900	151.4	N
4	4 TAC N	166.9875	NONE	166.9875	NONE	N
5	3-MI VFD	154.0100	167.9	154.0100	167.9	N
6	STEVI VF	154.3250	167.9	154.3250	167.9	N
7	VICT VFD	154.2200	167.9	154.2200	167.9	N
8	PINEDVFD	154.2500	167.9	154.2500	167.9	N
9	CORV VFD	154.3850	167.9	154.3850	167.9	N
10	HAMILVFD	154.9800	167.9	154.9800	167.9	N
11	DARBYVFD	154.4150	167.9	154.4150	167.9	N
12	12 RED	154.0700	NONE	154.0700	156.7	N
13	VFIRE 2	154.4450	71.9	154.4450	71.9	N
14	A/G 52-P	168.3875	NONE	168.3875	NONE	N
15	YELLOW	151.2200	NONE	151.2200	156.7	N
16	AIR GUARD	168.6250	NONE	168.6250	110.9	N

Display: The display shows a variety of information. The upper part displays codes to let users know if the channel is the current priority channel (PR), and/or is in the list of channels to be scanned (SCN). The main part of the display will show which channel is selected for transmitting and receiving messages, and displays group information when in the group select mode. The lower part of the display has indicators to show the state of the front panel buttons.

Microphone Push-To-Talk Button (PTT): Pressing this button activates the transmit mode (talk mode). Press in and hold this button throughout the entire transmission. For a complete message to be heard, press the button and wait for a second or two before beginning the message and continue to hold in the button for a few seconds after completing the message. This allows time for the signal to access or "key up" the repeaters if necessary.

Microphone Keypad: The keypad is used for entering tones, and changing priority channels and scan lists. It may also be used instead of the front panel GRP button to change groups.

Bendix/King GMH Mobile Radio Use Procedures:

- **Turn the radio on:** Turn the On/Off Volume knob clockwise. The channel indicator will light up displaying the currently selected channel.
- **Adjust the squelch**: Press the SQL button. Turn the channel knob clockwise until a rushing noise is heard, then turn back counterclockwise until the rushing noise stops.
- **Turn off Scan and Priority:** Press the SCN and PRI buttons so the triangular indicator above each is turned off.
- **Check to make sure you are using the proper group:** To select a group, press the GRP button, and use the channel knob to select a group. Alternatively, you may press the microphone keypad # key (this will show the current group) then press the number of the desired group and wait for 5 seconds, or press enter.
- **Select a channel:** Refer to the map and the Bendix/King Frequency Guide to determine what channel and tone to use. Use the Channel Selector Knob to select the channel. There are 16 channels on your radio.
- **If using a group that requires selection of a tone (groups 3 and 4), select the appropriate tone.** Push the number on the microphone keypad that corresponds to the tone you want to use.
- **Transmit your message:** Press the PTT (Push-to-talk) button. Hold the button in throughout the entire message. If your message is too long (more than 180 seconds), the transmit signal will time out and cut you off. Therefore, if you have a long message, you may have to pause and release the PTT button and then press in again to continue. For a complete transmission, press the button and wait for a second or two before beginning the message and continue to hold in the button for a few seconds after completing the message. Waiting a few seconds ensures that the repeaters are keyed up and that your message is completely transmitted without being cut-off.
- **Emergencies:** If you are in an emergency situation, begin your transmission by stating that you have an emergency. For example "Hamilton Dispatch, this is Jane Smith, I have an emergency." Broadcasting that you have an emergency lets other listeners know that you have priority and that everyone else should stay off the radio until you are done.

NOTE: Even if you do not receive a response, transmit your entire message. Someone may be able to hear you, but you may not hear them.

- **Medical Emergency:** If you are dealing with an injured person and are requesting medical help, do not give the name of the injured person over the radio. Stick with the facts, stating only the victim's gender, age, and nature of the injury.

Montana Fire Service Mutual Aid

Montana Mutual Aid Frequencies

IDENTIFIER	FUNCTION	IDENTIFIER	FUNCTION
GOLD	CHECK-IN / STAGING	FLOR VFD	TAC
MAROON	COMMAND / CONTROL	3-MI VFD	TAC
YELLOW	MT STATE DNRC AIR TO GROUND	STEVI VFD	TAC
RED	TACTICAL	VICT VFD	TAC
CORAL	TACTICAL	PINED VFD	TAC
SCARLET	TACTICAL	CORV VFD	TAC
TAN	EMS AIR TO GROUND	HAMIL VF	TAC
WHITE	EMS GROUND AMBULANCE	DARBY VFD	TAC
PURP S+R	SEARCH / RESCUE	SULA VFD	TAC
RCSO EFK	RAVALLI CO. SHERIFF OFFICE EAST FORK	WFORK VFD	TAC
RCSOWFK	RAVALLI CO. SHERIFF OFFICE WEST FORK	PROCK VFD	TAC
RCSO DIR	RAVILLI CO. SHERIFF OFFICE		
VFD FIRE1	COMMAND DISPATCH CENTRAL (HAM, CORV, VICTOR)		
VFD FIRE2	COMMAND DISPATCH NORTH / SOUTH		

ADMIN GROUP 1 – USERS' GUIDE

CHANNEL	AREA OF COVERAGE
BRF 1	Used only on the south half of the forest (West Fork District). See Bitterroot National Maps for District boundaries
BRF 2	Used only on the north half of the forest (Darby and Stevensville and Sula). See Bitterroot National Maps for District boundaries
3 TAC SOUTH	Tac. channel 3 is primarily used on the West Fork District. **ONLY** used for fire and project work.
4 TAC NORTH	Tac. channel 4 is primarily used on the north half of the forest and Sula. Used for fire and project work.
5 HELLS ½ REPEATER	A stand alone repeater. Only on the West Fork Ranger District in the Frank Church and Selway Wilderness.
6 TEEPEE REPEATER	Extends the coverage of the BRF 2, only on the Sula Ranger District
7 LOOKOUT MTN	Extends the coverage of BRF 1, only on the West Fork District
8 COMMON 1	Use if Tac 3 or 4 are too busy. Can be used on the north or south half of the forest
9 SPOT REPEATER	Extends the coverage of the BRF 1 only in the Selway
10 WARD MTN REPEATER	Extends the coverage of BRF 2, west side canyons
11 R1 TAC	Used anywhere in R1 for Tac
12 COMMON 2	Road crew and recreation channel on the Bitterroot NF
13 WX MSO	Missoula Weather
14 A/G 52 (primary)	Used for air to ground communication on emerging incidents and project work
15 A/G 53 (secondary)	Used if there is communication congestion on BRF A/G Primary
16 AIR GUARD	Used for initial air to air contact or an in flight emergency

Radio Etiquette

- **Use plain text at all times.** Plain text means to speak in complete English. Do not use codes or abbreviations. As with most anything, the clearer you are, the more likely it is that the full intent of your message will be received.

- **Speak slowly and hold the radio an inch or so away from your lips.** If you hold the microphone too close to your lips, your transmission might sound fuzzy and garbled.

- **To initiate a call, state the name of the person or location you are calling followed by your name.** For example: "Bitterroot Dispatch; Jane Smith" or "Bitterroot Dispatch, this is Jane Smith."

- Make sure that the answering party is completely finished talking before you respond. Wait until you hear the squelch tail at the end of the transmission.

- Do not begin a transmission until you are sure there are no other conversations taking place

(EXCEPT IN EMERGENCY SITUATIONS)

- **The person who initiated communications should be the one to end communications.** To close or end a call, say your last name (or call sign) followed by the word "clear." For example "Smith, clear" or "Bitterroot Dispatch, clear." The dispatch office will usually follow their call sign with the current time.

Trouble Shooting for Handheld Radios:

1) Check the battery: Hold in the PTT Button and look at the Low Battery Indicator on top of your radio. If the light blinks on and off, or blinks just once and goes out, your battery is probably bad. The light should stay on the entire time you have the PTT Button pressed.

2) Check your position: Make sure you are standing still and holding the radio up right (perpendicular to the ground). This is important because moving the radio around or holding it at different angles will affect the antennae's power and ability to transmit or receive a message.

3) Check the repeater: Even though it looks like the repeater you have chosen is the closest, you may not have a direct line of site to the repeater. For instance, there could be a high mountain peak between you and the repeater. You may need to select a different repeater or move to a higher location.

4) Check the channel and tone: Each repeater is set to receive transmissions **ONLY** if the appropriate tone is selected.

5) If it appears that your radio will not turn on, it could be because it is on a channel that is un-programmed. It has been discovered that King radio will not turn on if the channel selector is set to an un-programmed channel. Turn off the radio, change the channel and try again.

Cloning Cable Instructions

Insert plug w/ Red switch onto Master radio

Turn on Master radio

Select Group to be cloned from Master radio

Press and hold Red Switch and FCN until display shows "-- -- -- ID"

Type 000000 and press ENT

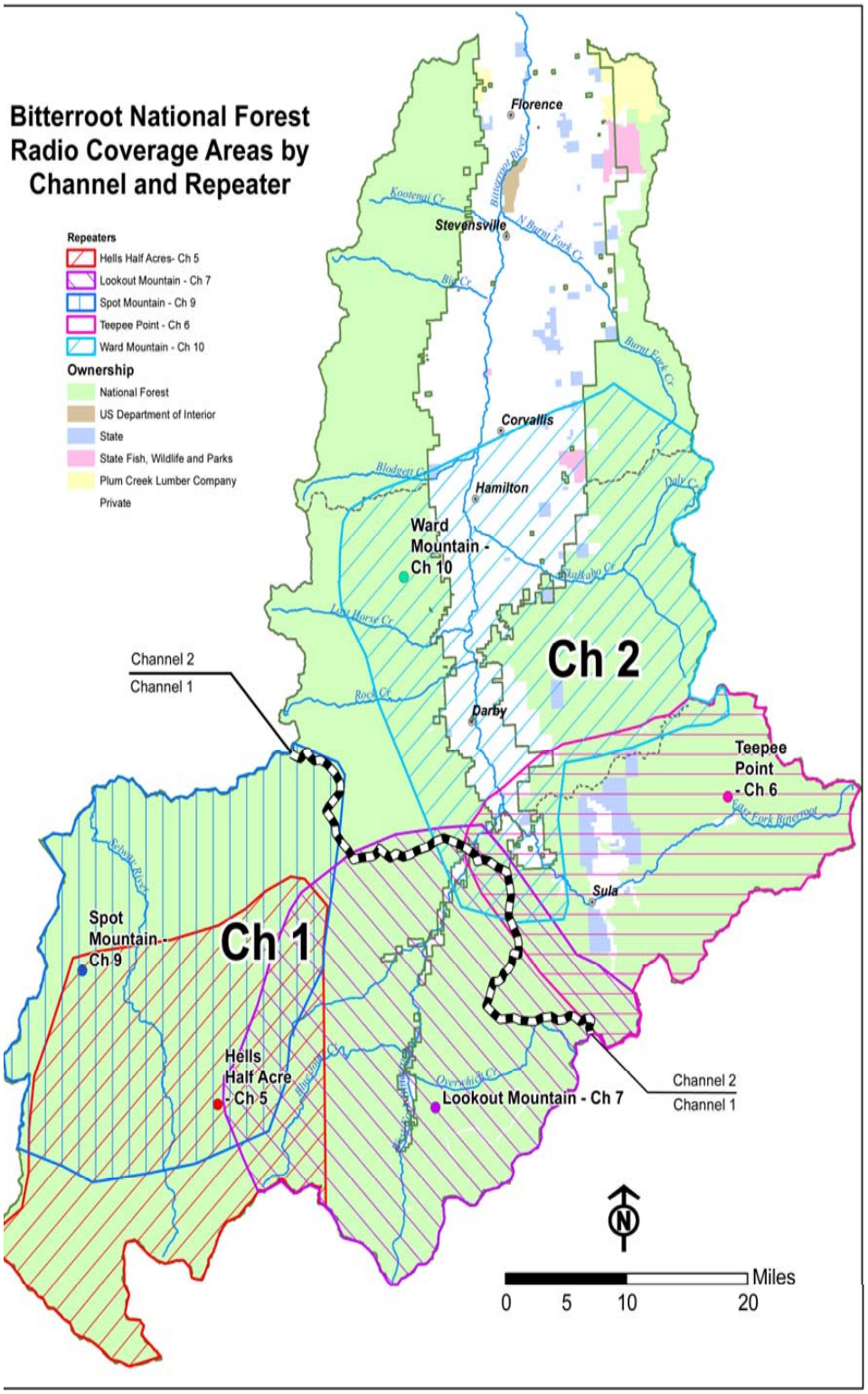
Connect plug w/ Black switch to Slave radio

Turn on Slave radio and set Group

Press * on Master Radio.

Display will flash PROG

Press FCN on master to clone. (When programmed turn off slave and remove from ca-



KNG Programming Instructions Cont.

Channel Label

Highlight 'Chan Label'. Press ENT
Press 'CLR' button to clear the label
Use keypad to select desired letters/numbers for channel
Press 'NXT' to move to next letter/number. (13 Max)
Press 'ENT' to save
Press 'ESC' to return to Menu

RX—Receive Frequency

Highlight 'EX Freq' Press 'ENT'.

Press 'CLR' to clear current frequency

Use keypad to select desired RX Frequency. Press 'ENT'.

Press 'ESC' to return to Menu

RX—Receive Mode

Highlight 'RX Mode' Press 'ENT'.

Use up/down arrows to Highlight Receiver Mode. (Analog, Digital or Mixed)

Press 'ENT' to save and 'ESC' to return to the Menu.

RX—Receive Code Guard

Highlight 'RX Guard' Press 'ENT'.

Press 'CLR' to clear current tone.

Use keypad to enter the tone in Hertz. (67.0-255 Hz)

Press 'ENT' to set Press 'ESC' to return to Menu

RX—Receive Network Access Code (NAC)

If NAC is correct, use up/down arrows to continue in the Menu

Channel Bandwidth (Located after TX on Menu)

Highlight 'Bandwidth' Press 'ENT'.

Use up/down arrows to select desired Analog Bandwidth. (12.5kHz=Narrowband)

Press 'ENT' to set and 'ESC' to return to Menu

Transmit Programming

To change the TX frequencies repeat the steps from the RX instructions above only with TX part of the Menu. Press 'ESC' when finished with all changes to exit the Menu.

Bendix King Programming and Cloning Instructions

Insert Programming Plug and Turn on Radio.
Press and hold the Red Switch and FCN key simultaneously.
The password prompt displays "-- -- -- ID". Type 000000 and press ENT.

Leave CH 00 alone.

Enter the 2-digit channel number, and press **FCN**.

Press # to toggle between narrowband and wideband. An N displayed next to the channel indicates narrowband. No N displayed indicates wideband. All frequencies are now narrowband. No wideband frequencies are allowed.

Press FCN.

RX—Receive Frequency

If frequency is correct, press FCN to advance

To change the frequency:

Press CLR

Enter the 6-digit frequency

Press ENT to save

RX—Receive Mode

If mode is correct, press FCN to advance

Change mode press PRI for A (analog), D (digital), or M (mixed)

Press ENT to save

RX—Receive Code Guard (CG) (Analog/Mixed mode)

If CG is correct, press FCN to advance

To change the CG:

Press CLR

Enter the 4-digit code guard

Press ENT to save

RX—Receive Network Access Code (NAC) (Digital/Mixed mode)

If NAC is correct, press FCN to advance

To change the NAC:

Press CLR

Enter the 4-digit NAC

Press ENT to save

Cloning Instructions Cont.

RX-Squelch Selection (Digital or Mixed mode)

If squelch selection is correct, press FCN to advance

Change squelch press PRI to select NRM (normal squelch) or SEL (selective squelch).

Choose selective squelch if you use talk group or individual call.

Press ENT to save

TX—Transmit Frequency

If frequency is correct, press FCN to advance

To change the frequency:

Press CLR

Enter the 6-digit frequency

Press ENT to save

TX—Transmit Mode

If mode is correct, press FCN to advance

Change mode press PRI for A (analog), D (digital), or M (mixed)

Press ENT to save

TX—Transmit Code Guard (CG) (Analog/Mixed mode)

If CG is correct, press FCN to advance

To change the CG:

Press CLR

Enter the 4-digit code guard

Press ENT to save

TX—Transmit Network Access Code (NAC) (Digital/Mixed mode)

If NAC is correct, press FCN to advance

To change the NAC:

Press CLR

Enter the 4-digit NAC

Press ENT to save

To Exit programming mode, turn off radio.

KNG Programming and Cloning Instructions

Cloning

KNG to KNG or GPH/DPH

Connect cloning cable the Master and Target radio.

Turn on both radios

Select Zone to be cloned from Master radio

Select Zone/ Group on Target radio

Press Menu on the Master radio

Use the up/down buttons to select “Cloning”

Press the ENT button

Select “Active Zone” cloning

Press Enter to Clone

If successful “Cloning Successful” is displayed on Master radio

If process fails “Clone Failed” is displayed on Master radio

GPH/DPH to KNG

Follow the GPH/DPH cloning instructions in this Guide.

KNG Programming Instructions

Programming Channel Information

Press the Menu button to enter Channel Programming Mode

Use up/down arrows highlight ‘Keypad Prog’ and Press ENT.

Use up/down arrows highlight ‘Keypad Prog’ and Press ENT. (Again)

Use keypad to enter the six digit password (six zeros) and Press ENT.

Use the up/down arrows to highlight ‘Channels’. Press ENT

Use up/down arrows to select the Zone of desired channel. Press ENT

Use up/down arrows to select desired channel. Press ENT

Use the up/down arrows to select the function you wish to edit.