

**San Benito County  
Amateur Radio Emergency Services  
Use of Amateur Radio Operations in Emergency Operations**

This document describes the use of Amateur Radio Operators to assist the County of San Benito in emergency communications.

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## **Participants**

Amateur Radio Operators will participate two different levels depending on their availability, expertise, equipment and what they best feel their level of commitment can be. Appropriate FCC licenses will be required for those who will be called to operate on the Amateur Radio Frequencies. Basically, there are two levels of participants:

**Level 1 Participants:** These Amateur Radio Operators have agreed that the emergency communications for San Benito County will be their primary response activity. These operators have participated in previous training and are aware of the basic procedures that will be followed in emergency incidents. These operators could be used immediately in emergencies with minimal direction and preparation.

**Level 2 Participants:** These are Amateur Radio Operators who chose to not serve as regular volunteer staff but may be available to work in some emergency; or those brought in and trained during an extended emergency.

## **Groups**

In emergencies, Amateur Radio Operators can be assigned into three basic groups. Assignment is based on the number of operators needed, the level of expertise of the operator, the type of equipment available and the availability of the operator.

### Group 1: County EOC

In most emergencies, the County Emergency Operational Center will be activated and one Amateur Radio Operator will be assigned to this center. Currently, the EOC will be stationed at the Hollister Police Department. Depending on the length of the emergency, this position will be rotated on a regular basis during the event. Duties will include:

1. Giving direction and control to other Amateur Radio Operators not at the OEC as directed by the County OES;
2. Contacting outside agencies (such as the State OES) for assistance and information as directed by the County OES;
3. Receiving calls from the local Amateur Radio Operators (Group 2) that are relaying important information and requests for assistance;
4. Contacting local home base stations manned by Amateur Radio Operators (Group 3) for relaying incident information and requests.

## Group 2: Mobile Operators

Most Amateur Radio Operators will be assigned into this group. This group will include those operators assigned to a fixed or mobile field location. This would include assignments at local agencies (cities, fire, staging, shelters, etc.) or on a mobile task. It is expected that the members of this group own a VHF hand-held and/or a mobile radio.

## Group 3: Home Base Stations

Those Amateur Radio Operators that have multiple base radios permanently set up in their residences may fall into this group. In emergencies, a traditional job of Amateur Radio Operators has been to provide long-range communications to areas outside the emergency area. These could include making requests for emergency assistance, relaying the status of the local emergency to outside agencies and relaying requests for health & welfare checks. The base stations should also monitor the National Simplex channel to direct any outside Amateur Radio Operators coming up on the air volunteering their assistance.

They can also serve as a back up to the EOC for local communications when traffic levels are high. They could monitor other radios used by the general public (such as FRS, GMRS and CB frequencies) to relay important information obtained from these bands. Many members of the public have FRS radios and FRS radios could be used in the future by local CERT teams. Conditions of regional roads could be obtained from commercial truck drivers on CB channel 17.

It is expected that the Amateur Radio Operators in this group will have a HF and a VHF base station at their residence. Other desirable radios include UHF, Family Radio Service (FRS), General Mobile Radio Service (GMRS) and Citizen Band (CB) radios. It would also be desirable to have a back-up power system.

Frequencies to monitor:

HF 7230.0 KHz LSB (Daytime)

3992.0 KHz LSB (Night primary)

1987.0 KHz LSB (Night secondary)

VHF 147.315 MHz Hollister repeater

146.625 MHz South County (Bear Valley) repeater

146.520 MHz National VHF simplex

147.495 MHz San Benito County simplex net

146.555 MHz San Benito County simplex net (backup)

UHF 446.000 MHz National UHF simplex

FRS channel 1 (462.5625 MHz, no PL)

GMRS frequency 462.675 MHz

CB Channel 9 or 17

4-14-2008

## Equipment Inventory

Currently, the Amateur Radio group has some older equipment that was purchased shortly after the Loma Piedra earthquake of 1989. At this time, this equipment is being kept in a large storage box in the Amateur Radio Communications Room at the Hollister Police Department. The current equipment is listed below:

HF Radio: Icom IC-735  
HF Antenna Tuner: MFJ Versa Tuner II (MFJ-941D)  
Power supply for above radio: 35 amp, 12 volt  
Amplifier for VHF handheld radios  
HF "Butternut" antenna  
HF Dipole antenna  
VHF magnetic mount mobile antenna  
Miscellaneous coax and antenna fittings

In February of 2007, the County Office of Emergency Services purchased the following equipment:

Qty	Make	Model	Description
3	Yaesu	FT-8800R	2M/440 dual band mobiles
2	Kantronics	KPC-3 PLUS	Packet
3	Astron	RS-35M, RS-12	Power supplies
3	Diamond	X50A	2M/440 base station antennas
2	Yaesu	FT-60R	2M/440 HT
1	Icom	C-706 MKIIG	HF/6m/2m/440 Transceiver
1	Kenwood	D-700	2m/440 dual band mobile
1	Alpha-Delta	DX-CC	80 thru 10 meter dipole antenna

Currently, this equipment is being stored at County OES or in the Amateur Radio Communications room at the Hollister Police Department.

2-5-2008

## **County Emergency Operations Center (EOC)**

The main conference room at the Hollister Police Department will be used as the County's EOC. The small room at the SE corner of the conference room will be the amateur radio communications room. There are two radios on the communications desk, a VHF/UHF unit and a HF/6m/2m/440 unit. The VHF/UHF unit is attached to a coax that leads to VHF/UHF antenna located on the roof. The HF/6m/2m/440 radio is attached to a 2m mag-mount antenna that is on a shelf in this room. The other coax in the room is not in service at this time.

## **Hazel Hawkins Hospital (HHH)**

There are two ham antennas on the roof of Hazel Hawkins Hospital, a 2 meter vertical and a HF dipole. They were installed by the local hams and were last serviced in 2006. The coax leads into the Board Conference Room. The coax for each antenna is behind a plastic electrical outlet cover located on the south wall of this room. It would be best to bring a PL-259 barrel connector and a short length of coax to connect to the antennas.

## **Local Frequencies**

For local communications, the following frequencies will be used as described under Communication Networks:

Primary:	Hollister repeater 147.315MHz
Secondary:	Simplex 147.495 MHz (TAC 1)
Backup:	Simplex 146.555 MHz (TAC 2)

For incidents south of Paicines, the South County repeater (146.625 MHz) would be the primary repeater to be used.

Incidents where a mobile unit is set up as a cross-band repeater, on-scene communications will be held on 446.500 MHz (UHF TAC).

A complete listing of frequencies is found under San Benito County ARES Frequency Plan on page 9.

## Communication Networks

Communications for incidents will be assigned to five nets: 1, 2, 3, 4, and 4R.

### Level 1 (Regional Net): County OEC to State OES

Level 1 nets provide direction and control communications between the County Emergency Operations Center (EOC) and Regional Emergency Operations Center (REOC) located in Oakland. The REOC is the regional office for the State Office of Emergency Services (OES). Depending on the equipment availability at the EOC and other considerations, contact with the REOC may be delegated to home amateur base stations. The home base stations will receive direction from the EOC via the Level 3 network.

Frequencies: HF 7230.0 KHz LSB (Daytime)  
3992.0 KHz LSB (Night primary)  
1987.0 KHz LSB (Night secondary)

VHF (to be determined)

### Level 2 (Inter-agency Net): County EOC to Local Agencies

Level 2 nets provide direction and control communication between the County EOC and the Amateur Radio Operator assigned to a local agency's headquarters. Examples would be city halls, fire agencies, public works, Hollister airport, animal control, school districts or shelters. This would also include communications to the staging area.

Frequencies: VHF 147.315 MHz Primary (repeater)  
146.625 MHz (primary repeater for South County incidents)  
147.495 MHz Secondary (simplex)  
146.555 MHz Backup (simplex)

### Level 3: County EOC to mobile or base amateur radio operators

Level 3 nets provide communications between the County EOC and deployed mobile or home base Amateur radio units. Amateur Radio Operators may be assigned to mobiles or to their home base stations. Home base stations may contact outside agencies or other local Amateur Radio Operators when delegated to by the EOC. Direction and communication between the home base stations and the EOC will take place on a Level 3 net.

Frequencies: 147.315 MHz Primary (repeater)  
146.625 MHz (primary repeater for South County incidents)  
147.495 MHz Secondary (simplex)  
146.555 MHz Backup (simplex)

4-16-2008

#### Level 4 (Local Net): Local Agencies to Amateur Radio Mobiles

Level 4 nets provide communications between Amateur Radio Operators assigned to local agencies and to Amateur Radio Operators working under those agencies. This net is also used by mobile Amateur Radio Operators assigned to the same task to contact each other directly.

Frequencies: VHF 147.315 MHz Primary (repeater)  
146.625 MHz (primary repeater for South County incidents)  
147.495 MHz Secondary (simplex)  
146.555 MHz Backup (simplex)

#### Level 4R: Outside Resources Net

Level 4R net is used to establish initial communication with other Amateur Radio Operators who are volunteering their services to the incident. These operators might be those who are arriving from outside the area or other local Amateur Radio Operators who are not aware of the local calling procedures. This net will be used to direct these operators to the staging area or to another location where they can be signed up and assigned to a task. After initial contact is made, further communication will be conducted on a designated Level 3 or 4 net.

Frequencies: VHF 146.520 MHz Primary  
UHF 446.000 MHz Secondary



### San Benito County ARES Frequency Plan

SAN BENITO COUNTY									
CH #	Service Area	Display	Resource Name	Callsign	R/S	Frequency	OS	PL	Notes
1	North San Benito County	H VHF	Hollister Repeater VHF	KA6BPT	R	147.315	+	94.8	Downtown Hollister
2	South San Benito County	SC VHF	South County Repeater	KD6ZXG	R	146.625	-	94.8	Bear Valley
3	North San Benito County	H UHF	Hollister Repeater UHF	W6MOW	R	441.900	+	110.9	San Juan Canyon Road
4	North San Benito/Monterey	FP VHF	Fremont Peak Rptr VHF	K6JE	R	145.470	-	94.8	Fremont Peak
5	North San Benito/Monterey	FP UHF	Fremont Peak Rptr UHF	K6JE	R	441.450	+	123.0	Fremont Peak
6	South-West San Benito Co.	WIL HL	Williams Hill / WALA	N6SPD	R	145.370	-	100.0	King City
11	Local	V TAC1	VHF Tactical 1	Simplex	S	147.495		94.8	
12	Local	V TAC2	VHF Tactical 2	Simplex	S	146.555			
13	Local	U TAC3	UHF Tactical	Simplex	S	446.500		94.8	
14	Local	V CALL	VHF National Calling	Simplex	S	146.520			
15	Local	U CALL	UHF National Calling	Simplex	S	446.000			
21	Cross-Band/Hollister	XB 1	(147.315+ to 446.500)	Cross-Band	R	147.315	+	94.8	Portable
					S	446.500		94.8	
22	Cross-Band/South County	XB 2	(146.625- to 446.500)	Cross-Band	R	146.625	-	94.8	Portable
					S	446.500		94.8	
23	Cross-Band/TAC 1	XB 3	(147.495 to 446.500)	Cross-Band	S	147.495		94.8	Portable
					S	446.500		94.8	

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