

SLOECC ARES®/RACES Training Plan

Training Module: Section 5.4.1.
Obtain and assemble information and
materials needed for assignment.

Training Plan: Skills-based Task

- 5.4.1. Obtain and assemble information and materials needed for assignment.
 - **Obtain a copy of the county ARES/RACES frequency and Response plan**
 - Obtain and pre-program a suitable personal HT radio programmed with the county frequency plan
 - Assemble a 24-hour kit suitable for a county mission and assignment

www.slocounty.ca.gov

Emergencies

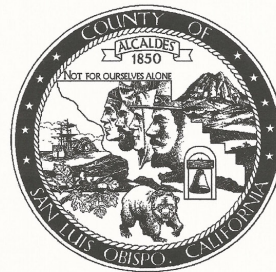
Office of Emergency Services

Plans & Reports

NPP Administrative Plan

SAN LUIS OBISPO COUNTY/CITIES

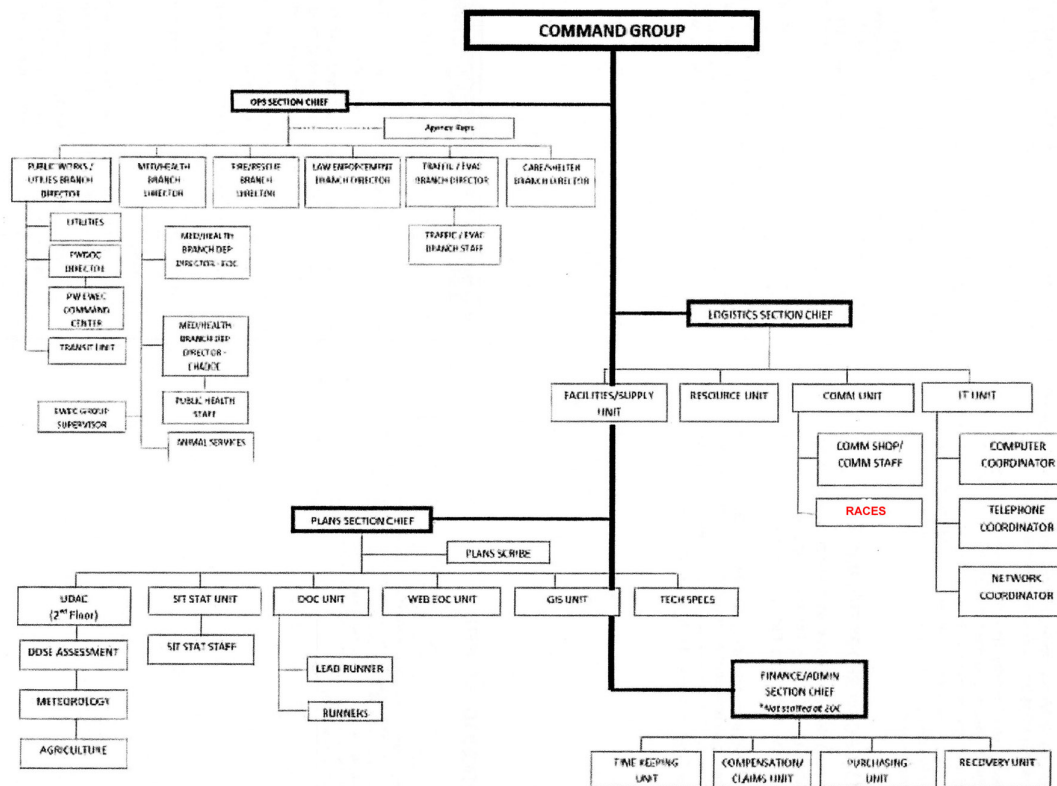
NUCLEAR POWER PLANT EMERGENCY RESPONSE PLAN



REVISION DATE:
JANUARY 2014

San Luis Obispo County
Office of Emergency Services

FIGURE 4.1.1: COUNTY EMERGENCY ORGANIZATION



RACES SOP III.60

**APPLIES TO AMATEUR RADIO OPERATORS
INVOLVED IN RACES**
(SEC. 1.2)

**RACES OPERATORS VOLUNTEER IN SUPPORT
OF SLO NUCLEAR POWER PLANT EMERGENCY
RESPONSE PLAN**
(SEC. 2.2)

**RACES AMATEUR OPERATORS MUST BE 18
YEARS & TECHNICIAN LICENSED OR GREATER**
(SEC. 3.3)

**RACES LEVEL I VOLUNTEERS MUST COMPLETE
BACKGROUND CHECK**
(SEC. 3.4)

CHECKLIST 1: RACES RADIO OFFICER

PURPOSE: The purpose of this Checklist is to provide guidance for the RACES Radio Officer in implementing this SOP and the San Luis Obispo County RACES Plan.

1. UNUSUAL EVENT

No action is required at the declaration of an unusual event.

2. ALERT, SITE AREA EMERGENCY, GENERAL EMERGENCY

_____ 2.1 Respond to EOC as requested

_____ 2.2 Check in and receive briefing from Comm Unit Lead and identify needs for additional RACES staffing.

_____ 2.3 Upon Request: Call out of key RACES volunteers in accordance with the RACES Plan.

Provide them with the following information:

_____ 2.3.1 Number of volunteer personnel needed

_____ 2.3.2 Where to report (as directed by Comm Unit Lead)

_____ 2.3.3 Whom to report to

_____ 2.3.4 Communications modes and nets to use

_____ 2.3.5 Brief description of incident.

_____ 2.3.6 Task assignment(s)

_____ 2.4 Keep the Comm Unit Lead in the EOC informed of the status of RACES resources and locations staffed as requested.

_____ 2.5 Serve as a liaison between the RACES volunteers and the County Emergency Organization, especially with regard to resources needed by the volunteers.

_____ 2.6 Ensure that provisions for 24-hour operations are established, as needed.

VOLUNTEER REQUIREMENTS

LEVEL I VOLUNTEERS

REGISTERED AS DISASTER SERVICE WORKERS

COMPLETE LOYALTY OATH/AFFIRMATION

REQUIRE BACKGROUND CHECK

ISSUED COUNTY IDENTIFICATION BADGES

EOC OPERATORS ISSUED SEPARATE BADGES

LEVEL II VOLUNTEERS

REGISTERED AS DISASTER SERVICE WORKERS

COMPLETE LOYALTY OATH/AFFIRMATION

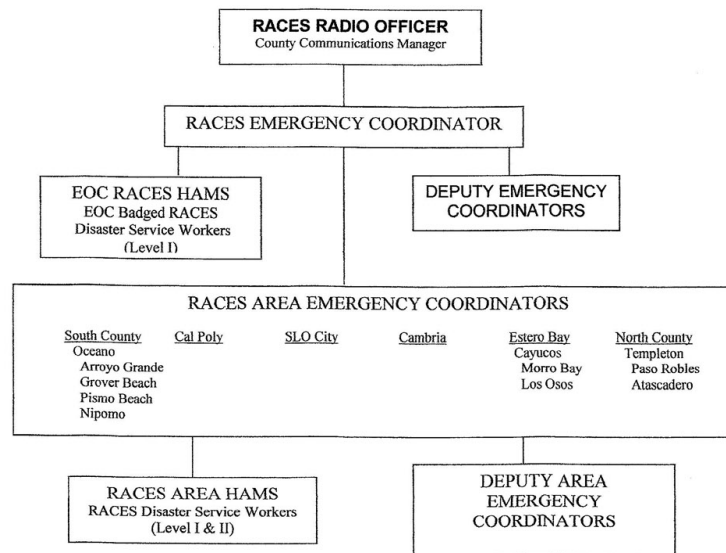
DO NOT REQUIRE BACKGROUND CHECK

NOT ISSUED COUNTY IDENTIFICATION BADGES

APPENDIX 3

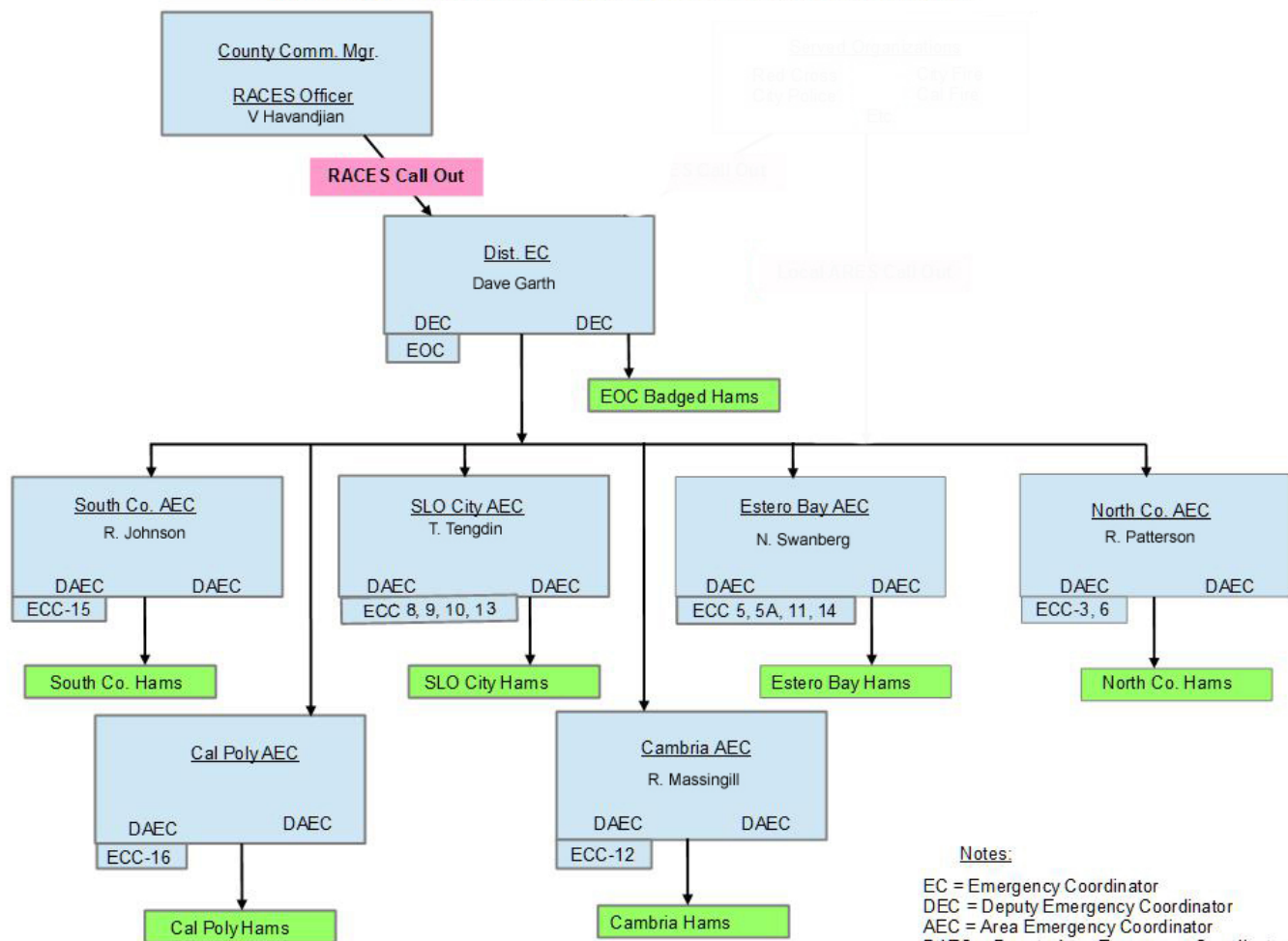
IMPLEMENTATION AND ADMINISTRATION OF RACES RESOURCES

Page 1, RACES organization chart



SLIDE 6

Ham Operator Emergency Call-Out Schematic



NETWORK AND FREQUENCY ASSIGNMENTS

Slide 8

APPENDIX 5

**FIXED STATION EMERGENCY OPERATIONS CENTERS LOCATIONS AND
TACTICAL IDENTIFIERS**

ECC	LOCATION	ADDRESS
ECC-1	SLO County EOC	1525 Kansas Ave.
ECC-2	City of Arroyo Grande EOC	200 N. Halcyon Rd. Not Equipped
ECC-3	City of Atascadero EOC	5505 El Camino Real
ECC-4	City of Grover Beach EOC	711 Rockaway Ave. Not Equipped
ECC-5	City of Morro Bay EOC	Community Center, 1001 Kennedy Way
ECC-5A	City of Morro Bay Alt. EOC	Fire Station, 715 Harbor St.
ECC-6	City of Paso Robles EOC	Public Safety Center, 900 Park St.
ECC-7	City of Pismo Beach EOC	1100 Bello St. Not Equipped
ECC-8	City of San Luis Obispo EOC	Fire Station 1, 2160 Santa Barbara Ave..
ECC-9	SLO Red Cross Headquarters	225 Prado Rd., San Luis Obispo
ECC-10	CDF/County Fire	635 N. Santa Rosa St. SLO Not Equipped
ECC-11	Los Osos/Baywood Park EOC	South Bay Fire Station, 2315 Bayview Hts. Dr.
ECC-12	Cambria EOC	Cambria Fire Dept., 2850 Burton Dr.
ECC-13	County Health and Disaster Ctr.	Johnson Ave. & Bishop St., San Luis Obispo
ECC-14	SLO County Office of Education	Highway One and Education Dr.
ECC-15	South County Sheriff's Station	1681 Front St., Oceano
ECC-16	Cal Poly Campus	Building 20, Rm 123, Engineering East
ECC-18	North County Sheriff's Station	Templeton, 356 N. Main St. Not Equipped
ECC-21	Incident Command Post	Assigned as Needed

Training Plan: Skills-based Task

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Amateur Radio FM Repeater Basics

Al Duncan – VE3RRD Updated October 2007

Copied from www.146970.com/PDFs/Repeater_Basics.pdf

- The most often used frequencies for FM repeater operations (listed in order of popularity) are:
 -
 - 144 – 148 MHz referred to as the “2 meter” band (2M band)
 - 430 – 450 MHz referred to as the “440 band” or the “70cm band”
 - 50 – 54 MHz referred to as the “6 meter band”
 - 28 – 29.7 MHz referred to as the “10 meter band”
 - 220 – 225 MHz referred to as the “220 band” or “1 . meter band” or “125 cm band”
 - 902 – 928 MHz referred to as the “900 band”
 - 1240 – 1300 MHz referred to as the “23 cm band”
-
- Note that the name “2 meter”, “70 cm” etc. refers to the approximate wavelength of the radio wave.
- Within these frequency ranges, “standards” have been created as to what frequencies can be used for
- repeater transmit (output) and receive (input).
- In most cases, FM (frequency modulation) is used with repeater operations. The most popular transceivers available today will either be “2M only” or “2M/440 dual-band”, with the occasional model offering three or even four bands of operation.

Amateur Radio FM Repeater Basics

- **Simplex**

- When you wish to talk to another ham without using a repeater, a “simplex” frequency is used. Simplex refers to the fact that everyone involved in the radio communications are both transmitting and receiving on the same “single” frequency. In simplex communications, only one person can talk (transmit) at a time, and he cannot hear (receive) anyone else while he is transmitting.
- Popular designated simplex frequencies are (you may find others in various parts of Canada/U.S.):

- **2 meter band FM simplex frequencies**

- 146.520 MHz (often called “52” or “652”) This frequency is also the “national calling frequency”
- 146.550 MHz
- 146.580 MHz
- There are also 6 less common simplex frequencies from 147.420 through 147.570 (30 KHz spacing)
- Note that 146.565 MHz is reserved for fox-hunts (hidden transmitter hunts) in Canada and the U.S.

- **440 band FM simplex frequencies**

- 446.000 MHz national calling frequency
- 446.000 through 446.175 MHz (25 KHz spacing is often used)

Amateur Radio FM Repeater Basics

- **Full-duplex**

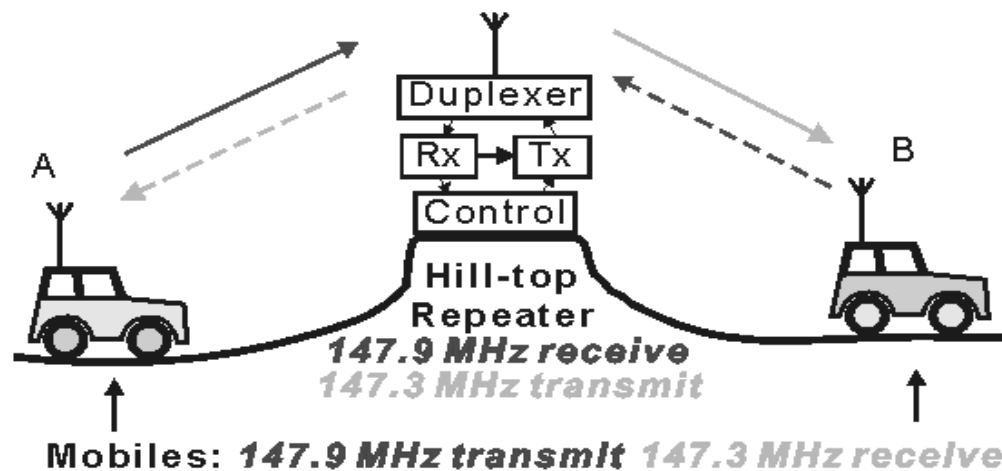
- This mode is generally not used by Amateur Radio Operators. Full duplex permits simultaneous transmitting and receiving (talking and listening) the same as on a normal house telephone. In radio communications, separate transmit and receive frequencies must be used for full-duplex – note that there will be no “push-to-talk” microphone button. A repeater operates in a full-duplex mode.

- **Half-duplex**

- Used by Amateur Radio operators when communicating through repeaters; where two separate frequencies are used for transmitting and receiving as in full-duplex, but the transceiver can only transmit or receive (not both simultaneously). A push-to-talk button on the microphone is used to switch the transceiver from the receive mode to the transmit mode.

Amateur Radio FM Repeater Basics

What is a repeater?

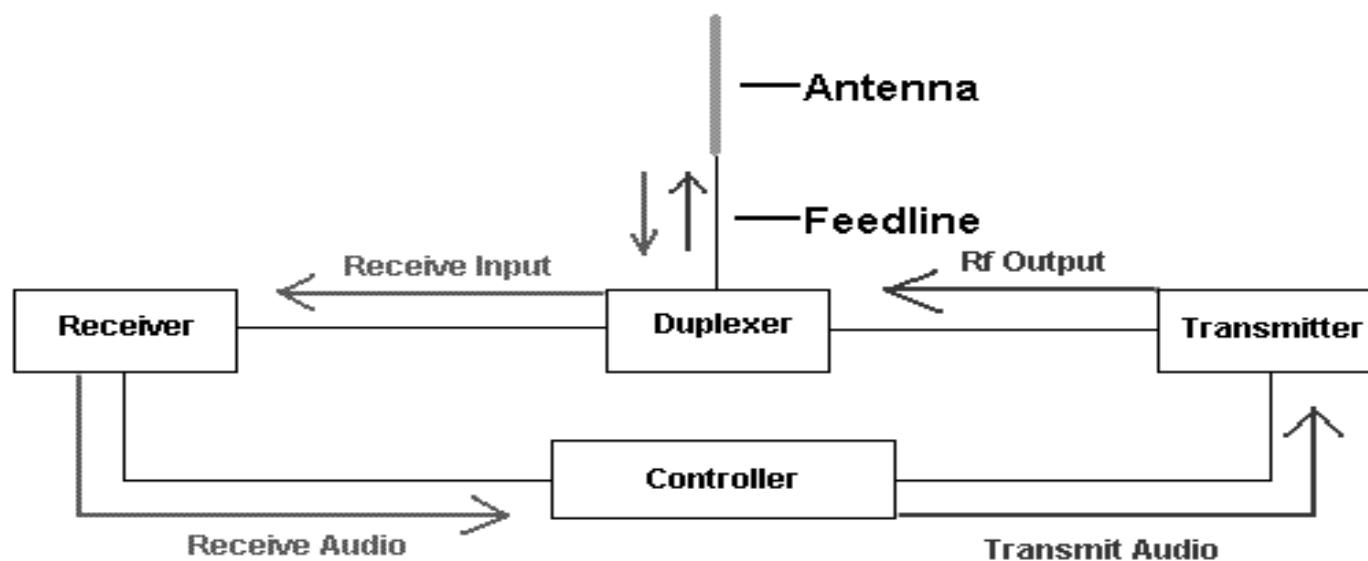


A repeater is a full-duplex radio which receives signals on one frequency and simultaneously re-transmits them on another frequency, usually with higher power and from a better location with greater communications coverage range. A repeater greatly extends the operating range of amateur mobile and hand-held transceivers.

Amateur Radio FM Repeater Basics

- In the drawings, the repeater is shown broken down into its main parts:
 - a transmitter (TX)
 - a receiver (RX)
 - a duplexer filter assembly which allows the transmitter and receiver to both operate at the same time through a single antenna (prevents the repeater TX from desensitizing the RX).
 - a repeater controller (the brains), which takes care of keying up the TX when a signal appears at the RX input, periodically transmitting identification in morse code or voice etc.

Amateur Radio FM Repeater Basics



BASIC REPEATER BLOCK DIAGRAM

N4UJW

Amateur Radio FM Repeater Basics

- In order to have your hand-held or mobile radio signal retransmitted by the repeater, your radio must receive on the repeater's transmit frequency and transmit on the repeater's receive frequency. When in the receive mode, your radio will be tuned to the repeater output frequency. If you press the push-to-talk button, the radio will automatically change to the repeater input frequency and begin transmitting.
- The repeater input (receive) frequency can be either higher or lower in frequency than the repeater output (transmit) frequency. If it is lower (such as 146.850 output/146.250 input) then the repeater frequency is written as 146.850 – (the minus sign indicating that the repeater input is below the output frequency). If it is higher (such as 147.000 output/147.600 input) then the frequency is written as 147.000 + (the plus sign indicating that the repeater input is above the output frequency).
- Standard FM repeater “offsets” (difference between output and input frequencies) are:
 - 2 meter band 600 KHz
 - 440 band 5 MHz
- Note that all modern transceivers will automatically select the proper offset for the frequency you use.

Amateur Radio FM Repeater Basics

- **Repeater Etiquette**

- The first and most important rule before using a repeater is to LISTEN FIRST – make sure the volume on your radio is turned up and that the squelch level is not set too high. Nothing is more annoying than someone that "keys up" in the middle of another conversation without first checking to make sure the repeater is free. If the repeater is in use, wait for a pause in the conversation (when no one is keying the repeater) and simply announce your callsign and wait for one of the other stations to acknowledge your call.
- Remember that this is not CB, so refrain from using CB lingo such as 10-4, "what's your handle", or BREAKER. The word BREAKER or BREAK, BREAK on Ham Radio is commonly used to indicate that you have priority or emergency information to pass.
- When you are using the repeater, leave a couple of seconds between exchanges to allow other stations to join in or make a quick call. Most repeaters have a "Courtesy Tone" (a short beep or series of beeps) that will help in determining when the repeater has un-keyed.
- Repeaters usually have a time-out function that will shut down the transmitter if the repeater is held in transmit mode for too long a time (normally two to four minutes). This ensures that if someone's transmitter is stuck on for any reason, it won't hold the repeater's transmitter on indefinitely. Of course this also means that if someone is too long-winded, and doesn't periodically un-key his microphone to reset the time-out timer, those listening to him will hear the repeater controller announcement "REPEATER TIME OUT" followed by silence and then "TIME OUT CANCEL" when he does finally un-key his microphone.

Amateur Radio FM Repeater Basics

- **CTCSS (Continuous Tone-Coded Squelch System)** - This is a sub-audible tone transmitted by your radio in addition to your voice signal. When it is equipped with a CTCSS decoder, a repeater will not function unless it hears the CTCSS tone and the "carrier" signal from your transmitter. Different CTCSS tones are in use for different repeaters or areas. These may be applied to input or output frequencies, or both. CTCSS tones are used to minimize the effects of co-channel interference due to band-openings causing reception of distant signals.
-
- Common CTCSS tone frequencies in Hz
- 67.0 74.4 82.5 91.5 100.0 114.8 127.3 141.3 156.7 179.9 203.5 218.1 233.6
- 69.3 77.0 85.4 94.8 107.2 118.8 131.8 146.2 162.2 186.2 206.5 225.7 241.8
- 71.9 79.7 88.5 97.4 110.9 123.0 136.5 151.4 173.8 192.8 210.7 229.1 250.3

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All about the Radio Go-Bag



The best kit for you may not fit a "canned" list, but should be based upon your operating mode, experience and local conditions

Dick, AF6MP 5-25-2016

Level 1: Sheltering in the Home

- Using the HT from your house --- what do you need?
 - 2m or dual-band HT
 - Copy of current FCC Operating License.
 - "Tiger tail" or gain antenna
 - Extra high-capacity battery, or backup AA battery case for HT (spare batteries).
 - DC adapter & cigarette plug cord for HT
 - Two extra 2A fuses, for HT cord .
- Earphone and/or speaker mike
- Mini-Mag-Lite, extra bulb and spare AAs
- Pencil and pocket notepad
- Spare eye glasses of current prescription.
- Operating reference card or MANUAL for HT
- Phone and frequency reference card

Level II: Day Kit

- 2m or dual-band HT
- Copy of current FCC Operating License.
- "Tiger tail" (enhances transmit and receive of typical "rubber duck" by 3 db).
- Extra high-capacity battery, or backup AA battery case for HT (spare batteries).
- DC adapter & cigarette plug cord for HT
- Two extra 2A fuses, for HT cord .
- Earphone and/or speaker mike
- Swiss Army pocket knife
- Leatherman multi-purpose tool
- Mini-Mag-Lite, extra bulb and spare AAs
- Pencil and pocket notepad
- Emergency gas / phone money (\$10 bill, + four quarters and five dimes in pill box).
- SO-239 adapter to fit HT to mobile antenna coax
- 6 ft. RG8-X jumper
- Spare eye glasses of current prescription.
- Band aids, moist towelettes and sunscreen
- Pocket sewing kit, matches
- Small pocket compass
- Operating reference card or MANUAL for HT
- Phone and frequency reference card