

STATIC



January, 2010

Which Rig Is Best for EmComm?

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The most common question among enthusiastic new amateurs interested in EmCom is "what radio should I get?" Hams fantasize about the perfect "one" rig, with "DC to daylight all in a box." If you can afford only one radio, the HF+VHF+UHF rig "may" be a viable choice. But "do-everything" radios usually do so on only one band and mode at a time. They're neither the best 2m nor the best HF rig. They work for some people, but I don't favor the "one-radio does all" concept. You must evaluate this for yourself.

Rigs for EmCom should have been on the market long enough to have established a reputation for reliability. If you follow the "one rig does-all" approach, the IC706 in its later versions has been in production a long time, is greatly improved from the original, and has few "bugs." Few Mk. II Gs linger for long on the used market. Over a million 706s of all variations have been sold. This speaks well for the basic model. You see more used FT100s and FT817s, which suggests that impulse buyers of these rigs were less than thrilled. Keep equipment that works and sell what doesn't. Don't change just because a new model comes out.

Encourage others in your EmCom unit to quasi-standardize on the same proven rigs, so it is easier to use each others equipment. Radios for EmCom should be simple to use, rugged and reliable. Controls should be intuitive. Some newer rigs are not user-friendly, because of their small displays, confusing controls, layered menus and obscure keystroke combinations defy anyone from guessing how to use one without the manual.

Practice Redundancy! Multiple radios are better than one. If the only rig you have fails, you can't communicate unless you know smoke signals!

If you drive a car, get a mobile rig first. A modern 2m mobile costs little more than a HT, but has far better simplex capability. Newly licensed un-coded technicians should consider a sturdy 2-meter or dual-band mobile for a first rig.

In suburban areas a dual-band mobile makes the most sense. *If you can, find one which has DUAL RECEIVE.* In high RF urban environments 2 meters may almost useable due to intermod. VHF is less effective in and around high rise buildings, and urban ground clutter due to shadowing, reflection and building attenuation. Having 440 or 220 capability make sense in urban areas. UHF has better building penetration, and in most urban areas good repeater coverage. Almost everywhere there are more unused 220 and 440 repeater pairs than on 2 meters, so it is much easier for your group to get a new coordination.

(continued page 3)

LBARA MEETING SCHEDULE

MONTH	BOARD	REGULAR
JANUARY	NOTE: BOARD	1/21
FEBRUARY	MEETINGS WILL NOW	2/18
MARCH	TAKE PLACE ONE	3/18
APRIL	HOUR PRIOR TO THE	4/15
MAY	REGULAR MEETING	5/20

PUNS FOR EDUCATED MINDS

She was only a whiskey maker, but he loved her still.

A rubber band pistol was confiscated from algebra class, because it was a weapon of math disruption.

I thought I saw an eye doctor on an Alaskan island, but it turned out to be an optical Aleutian.

No matter how much you push the envelope, it'll still be stationery.

A dog gave birth to puppies near the road and was cited for littering.

A grenade thrown into a kitchen in France would result in Linoleum Blownapart.

Two silk worms had a race. They ended up in a tie.

A hole has been found in the nudist camp wall. The police are looking into it.

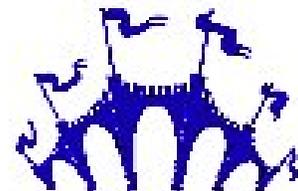
Atheism is a non-prophet organization.

I wondered why the baseball kept getting bigger. Then it hit me.

In a democracy, it's your vote that counts. In feudalism, it's your count that votes.

Monday Night Net (7 PM)

System	Location	Freq	Offset	PL
MCARS	Bullhead City	145.27	-	131.8
	Kingman	146.76	-	131.8
	Kingman	448.25	-	131.8
	Lake Havasu	146.62	-	131.8
	Willow Beach	147.12	-	131.8
CRRRA	Lake Havasu City	146.96	-	162.2
	Lake Havasu City	224.24	-	156.7
	Lake Havasu City	146.64	-	156.7
	Lake Havasu City	449.95	-	141.3
BARN	Lake Havasu City	447.54	-	136.5
	Las Vegas, NV	449.95		136.5
	Onyx(Palm Springs)	449.34	-	136.5
	Orange County, CA	447.54	-	100



(Continued from page 1)

Emergency nets may require working from inside, out of and around steel-reinforced buildings where VHF simply doesn't work very well. Every urban ARES or RACES member should seek at least a HT, on either 220 or 70 cm. If you operate both voice and packet nets from locations in close proximity, assigning them on different bands reduces problems with receiver desense and interference.

The 220 band has a lot going for it for EmCom. It penetrates buildings almost as well as UHF, with better simplex range, similar to 2 meters. 220 works very well for simplex, with a low noise floor, and range much like 2 meters.

In mobile ops 220 has less intermod than 2 m or 70 cm. Another advantage of 220 is that few scanners receive it, which makes it better to relay things you'd rather not read in the newspaper tomorrow. While no amateur mode is "secure" in the national security sense, using bands or modes not received on common consumer scanners, such as packet, SSB on 2m and any mode on 220 is more "discreet" if you want to limit who is listening.

2 meters SSB, if enough people have it, works well beyond repeater range when HF conditions are not in your favor. It is a viable alternative to HF for "short path" during high SFI or solar storms when even 40, 60 and 75 meter NVIS is unreliable for those "short paths" beyond repeater coverage. Using modest output power, such as 25w into a compact, horizontally polarized loop, 2 meter SSB is generally reliable for portable and mobile units to about 60-80 miles. This weighs in favor of the "do everything" radio, by providing long-haul capability which can be exploited by your un-coded techs.

If you have a General license, the one rig does all in the vehicle may make more sense for you than an FM only mobile. But you still have the disadvantage of listening and working only one band and mode at a time. Installing multiple antennas for different bands on the vehicle, getting power to the rig(s), addressing fuel pump and alternator noise to get decent HF mobile performance can be a challenge for new operators.

Any amateur equipment used for EmCom should be frequency agile and capable of being readily programmed from the keypad in the field and have not less than ten field-programmable memories and CTCSS encode.

Intermod rejection is important, but receiving outside the amateur bands is not. Many amateur rigs with wide receive fail miserably in intermod rejection, so carry a notch filter. The ones made by Par Electronics offer the best "bang for the buck."

You shouldn't listen to anything except your assigned net. Don't use a transceiver needed for "Comm" as a "scanner" because you may be distracted by other events and miss important traffic to you. If your served agency really wants you to monitor their net they will issue you a radio.

FM Mobile radios should be simple to operate, rugged and have a large and easily read display. Transmitter output should be at least 25w output per band; with at least ten memories per band, and selectable CTCSS encode.

(Continued page 6)

Upcoming Activities and Hamfests

January 17-23

Quartzfest, Quartzsite, AZ

January 30

Desert Rats Hamfest and Palm Springs Dx Club, Palm Springs, CA

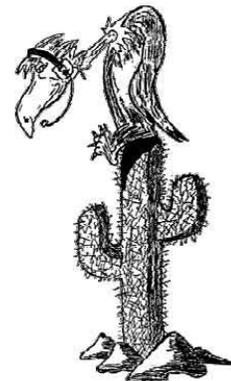
February 1

WVARD 2010 Ham Equipment Auction, West Valley ARC

February 19-20

Yuma Hamfest and Emergency Preparedness Show

6th Annual
Yuma Hamfest
& Emergency Preparedness
Show
Yuma, Arizona
Feb. 19 & 20, 2010



Yuma County Fairgrounds
 2520 East 32nd Street, Yuma, Arizona

www.yumahamfest.org

Check the Website for Additional Information
 and a Current Schedule of Activities and Seminars

Amateur Radio Equipment
Emergency Supplies
Batteries & Power Inverters

Disaster Preparedness Information
Solar Power
Emergency Bug Out Bags

Gates Open for Camping Thursday, 4 pm Vendor Setup Friday, 7 am - Noon	Event Hours Friday, Noon - 5 pm Saturday, 8 am - 5 pm	Buzzard BBQ & Grand Prize Drawing Saturday Night 6:00 - 8:00 pm
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Country Store (Equipment Consignment Sales)
Testing for New Hams **Seminars**
License Upgrades **Hospitality Area**

Hamfest Talk-In Frequency: 146.840 (-) PL 88.5 Hz

Contact for more Information:
 Richard Palaszynski (KC2LGR)
 kc2lgr@gmail.com

Presented by Yuma Amateur Radio Hamfest Organization (YARHO)



We are proud to have the Amateur Radio
 Council of Arizona (ARCA) as a sponsor of
 our event.



The Yuma Hamfest is an American Radio
 Relay League (ARRL) sanctioned event.

The Desert RATS and the Palm Springs DX Club



Invite you to attend our

HAMFEST - PICNIC - RAFFLE - WINTER FIELD DAY

On Saturday, January 30, 2010

From 9:30 A.M. to 4:30 P.M.

PLACE:

the BARN at "the Boskovich's Estate" Gary, KD6QLT & Susie, KD6TVO.

DIRECTIONS:

From the west: Take I-10 East to Palm Drive Exit.
Turn Right onto Gene Autry Trail
(becomes Matthew Dr. as it crosses Hwy. 111/E.
Palm Canyon at Von's Market))
4193 Matthew Dr. is on left

From East: Take I-10 to Palm Drive Exit
Turn Left onto Gene Autry Trail.
(becomes Matthew Dr. as it crosses Hwy. 111/E.
Palm Canyon at Von's Market))
4193 Matthew Dr. is on Left

We are encouraging folks to bring their musical instruments and join in an evening of Jamming on the Saturday night...

Bring your ham gear... no fee charge for selling... bring own table
...items table with a sign and tell us your reserve price... (for a small commis-
...we'll handle the sale... set-up time 10-9:00 AM

**Visit our
website!**



<http://www.desertrats.am>

Web Promotion and Special Events
Station for Winter FIELD DAY:
Peter Reinzuch, VE7REZ~President of 'the
Desert RATS' Club ve7rez@desertrats.am
VE7REZ Twitter Name: hamradio ~read the
Tweets @ <http://twitter.com/>

VENDORS:

HAM RADIO OUTLET
ARRL
CABLE EXPERTS
DX-STORE
ALL THINGS HEATHKIT
HAMS FOR LESS DOT COM
WPSS
WARFA
W5YI
EDS

760-328-9662 sboskovich@dc.rr.com Gary Boskovich KD6QLT Event Coordinator
760-340-4894 ritasteffen@aol.com Bart Susman K6UNR Event Promotions
(contact Bart to make reservations for vendor & flea market space~~book early!)
760-328-9662 sboskovich@dc.rr.com Susie Boskovich KD6QVO Secretary

Nearby Hotel: Holiday Inn, corner Sunrise & E. Palm Canyon, Palm Springs - 2 miles west of Gene Autry Tr.
760-323-1711 Mention Desert RATS or Palm Springs DX club for special \$85.00 room rate.

RSVP: RV Dry Camping reservations: sboskovich@dc.rr.com

Talk-in frequency: 146.940- PL 107.2 Desert RATpeater

(Continued from page 3)

An HT for EmCom should ideally be able to operate from three power sources: 1) its NiCd, NiMh or Li-ion battery pack, 2) from AA batteries using a battery case which fits the rig, and...3) From an external DC source using an adapter cord capable of connection to a gel cell, cigarette plug or external power supply.

My HF rigs are Yaesu FT900CAT mobiles. These are discontinued, but common used. They are great rigs because the controls are intuitive; the ones you use on all the time are on the front panel, which can be removed. The display is large, the rig has very loud audio, a built-in antenna tuner, an effective noise blanker, a sensitive receiver, IF shift and notch filters. If you know how to use almost any HF radio, you don't need the manual on an FT900. The only thing the FT900 lacks which newer rigs have is Digital Signal Processing. I recommend and use the ad-on AmCom Clear Speech DSP units for noise cancellation, which are very effective.

I loved my FT900 so much I couldn't bear the thought of being without it if it needed to go to the shop for repair, so got three identical HF rigs for base, portable and mobile. These are modified for 60 meters and programmed alike. The base radio is equipped with a Gregoire head set / boom mic with Heil HC-5 element. The hand mic and headset are connected to an MJ-89 mic switch and the Clear Speech DSP unit, which permits using either the hand mic or a boom mic headset connected to a foot PTT switch.

My portable HF is another FT900 stored in a quick-detachable mobile mount bolted into a waterproof Pelican box.

My field deployable HF antenna is a set of paired ham sticks on quick disconnects for 40, 60 and 75m. One of each pair may be used on-the-go; or when stationary, mounted horizontally on a dipole adapter with 25 ft. of military MS-44 mast on a tripod base.

If I know I will set up stationary and not need to move quickly, I carry end-fed quarter wave wires for each HF band with dog bone insulators, 100 ft of nylon cord and a weight to throw up into a tree. Then I just drive the Jeep forward enough to draw the wire out as a sloper, connecting it to the mobile antenna mount using a ham stick quick-disconnect. Use your jumper cables to bond your vehicle to a highway guard rail or wire fence for counterpoise.

My primary EmCom vehicle is equipped with two batteries. The single-band VHF and UHF rigs are connected directly to the Optima "red top" AGM battery which is the vehicle starting battery. The HF rig is connected directly to a Yuasa NP65-12, 65ah gel cell boxed and strapped behind the front passenger seat. The auxiliary battery is charged on the go through a 10A fused cigarette lighter plug using AWG14 gage wire from a dashboard power port which is "hot" only when the engine is running. I carry a military mast kit, two Group 27 batteries and two 20w solar panels for battery charging.

The family car has two stacked 2 meter and 70 cm radios. The 2 meter rig is a Kenwood TM255 all mode and the UHF rig is an ICOM F221 landmobile programmed both with GMRS for which I am licensed, and 70 cm ham band. The VHF and UHF mobiles are duplexed into a Diamond SG7200 dual-band antenna mounted on an NMO through the trunk lid. A mast mounted horizontal KB6KQ loop is also connected to the TM255 via an A/B switch into the 2 meter side of the mobile duplexer.

I have an extra spare power cord connected to the battery which exits the firewall through the glove box, out of the way and coiled up. This is quickly, accessible to get going again if the primary cable blows a fuse, or to enable the temporary installation of an HF rig using a 6-pin Molex to OEM-T pigtail.

If you run an HF rig using a standard mobile power cord, limit transmitter output to 50w with the smaller AWG 12 gage wire and 15A fuses.

(Continued page 7)

(Continued from page 6)

My old Yaesu FT5100 dual-band is set up to carry for portable operation in a Pelican box with 17ah gel cell battery, 25 ft. of coax, dual-band mag-mount, extension cord and 10A power supply which can be deployed at a shelter or as a cross-band repeater.

For portable auxiliary power I carry either a pair of BCI Group U1 AGM batteries in .50 cal. M2A1 ammunition cans, which provide 64ah capacity, or a single Yuasa NP65-12 gel cell 65ah battery with retractable handles. I also carry a 20amp power supply, a 6A gel cell charger and 100 ft. heavy-duty UL-rated extension cord on a hose reel.

Good field deployable dual-band antennas are the Diamond X50N or Cushcraft AR-270, which are compact and fit easily in a vehicle for transport. While dual-band for 2m and 440, either "works" for low power on 220, with acceptable VSWR as an expedient tri-band antenna. I carry a mobile antenna adapter with mast clamp and radial kit as an extra field antenna.

My dual-band HT is an old but reliable Standard C558A with 200 channel expanded memory. In the go kit I carry two AA battery cases plus an external DC power cord and 7ah-gel cell battery. I like the old Standard better for EmCom than most new rigs because it is as solid as commercial handheld, with dual receive and the best inter-mod rejection of any ham HT I've used.

In my go kit also keep a Mirage BD35 dual-band brick amp, Comet CX722A dual-band half-wave rigid antenna with BNC, an extra CX72A flexible dual-band antenna, fused 20 ft. AWG10 gage power cord with battery clips for connecting the brick amp to a car battery, a KPC-3 TNC, laptop and 17ah gel cell for portable packet operation.

I hope this article provides you with some good "thought starters" for your EmCom and radio "go kit" planning.

73 de KE4SKY/WC4VAC/WQAX587

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www.lbara.net

FROM THE EDITOR

If you have anything you would like to see included in these issues, please let me know. I'm always looking for articles, news items, construction articles, or anything that might be of interest to our readers. You can contact me at 928.855.7941 or email at grf@uneedspeed.net or francej@ajsinsurance.com.

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STATIC

ATTENTION READERS

Please note that this issue represents a “work-in-progress” and there are a number of changes to be made in subsequent issues. I would greatly appreciate your comments, both good and bad, as well as any suggestions for future issues. This issue also begins our first attempt to deliver the **STATIC** to your doorstep electronically. Please keep me abreast of any email address changes you may have and I promise to have this delivered promptly and accurately. Also, I still have a number of articles awaiting publication and will do so in the future. This is your newsletter, so keep the articles, letters, and pictures coming. I can be reached at home (855.7941), at work (855.3081) or via email at grf@uneespeed.net .

EQUIPMENT FOR SALE

EDITOR’S NOTE: List your items for sale here. Ham radio related only, please. Include a picture if you like (please use a jpg format). Email all to me at grf@uneespeed.net along with your name and phone number.

