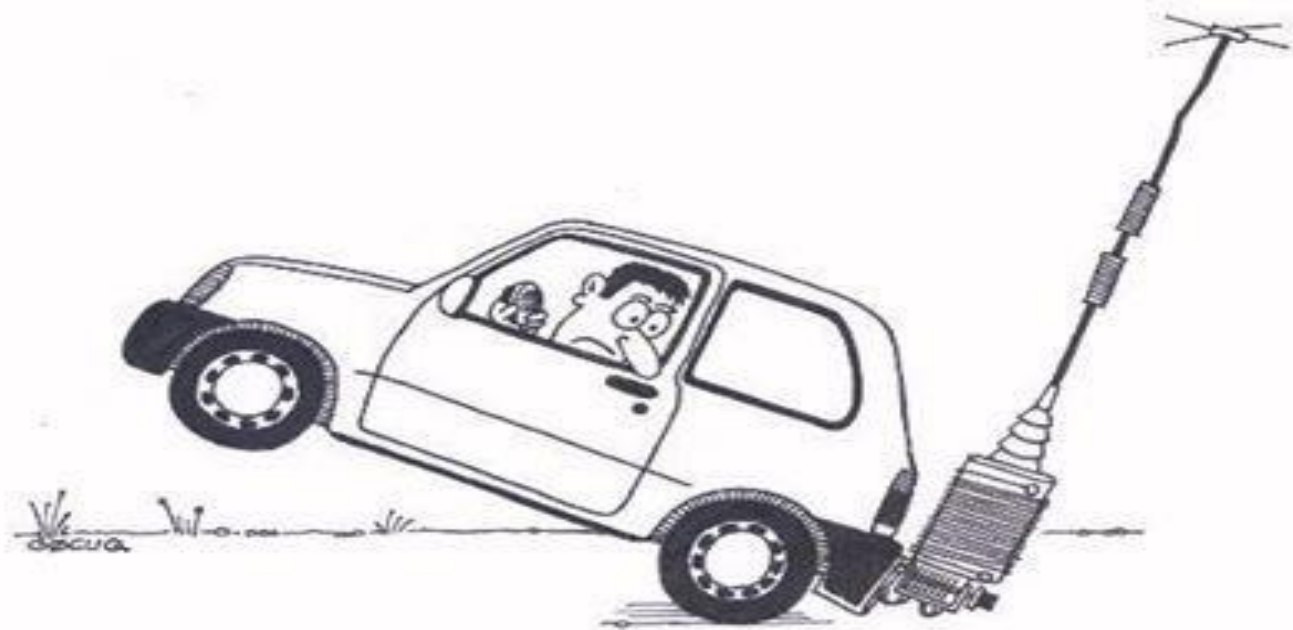
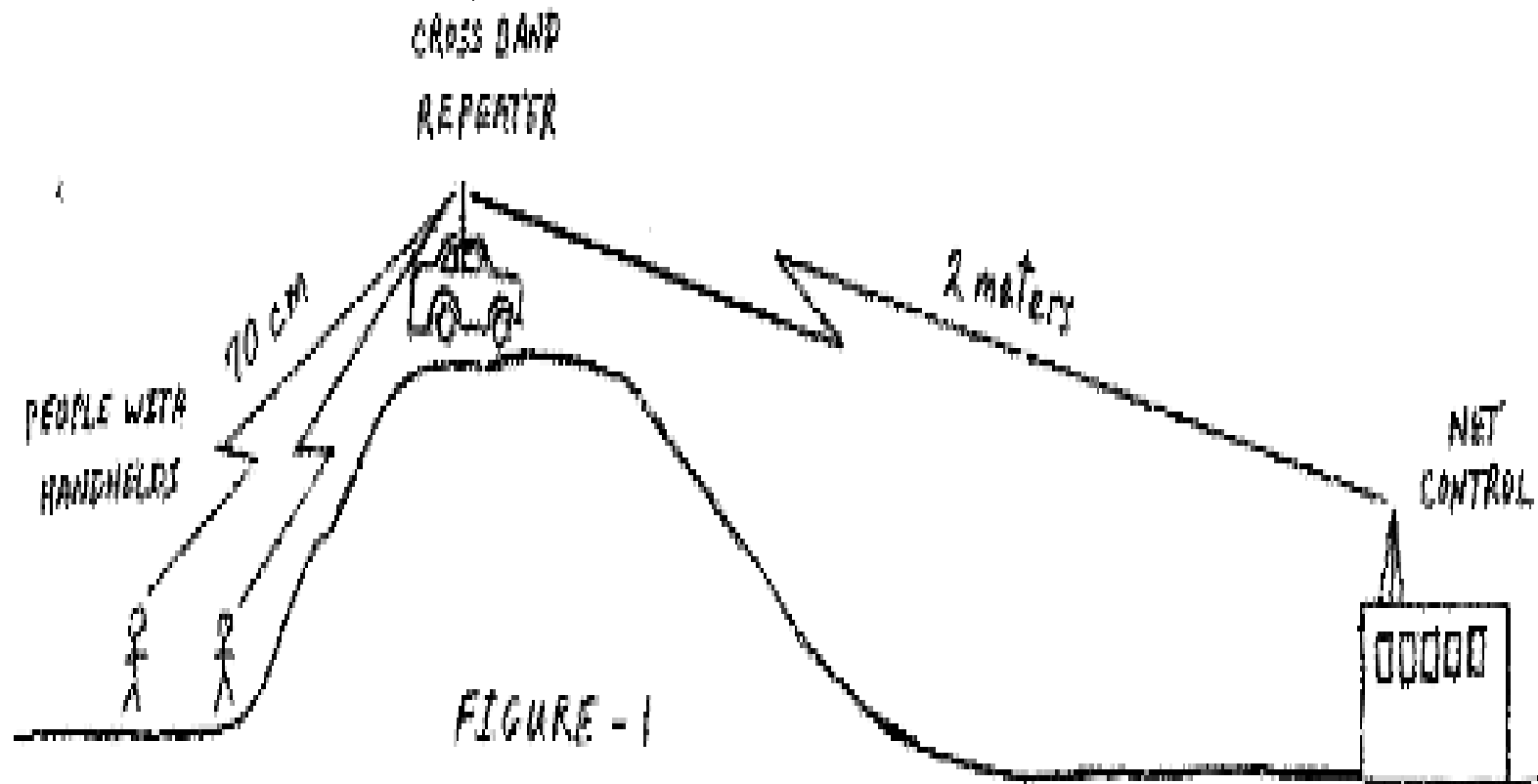


CROSS BANDING FOR HAM/SAR GROUPS

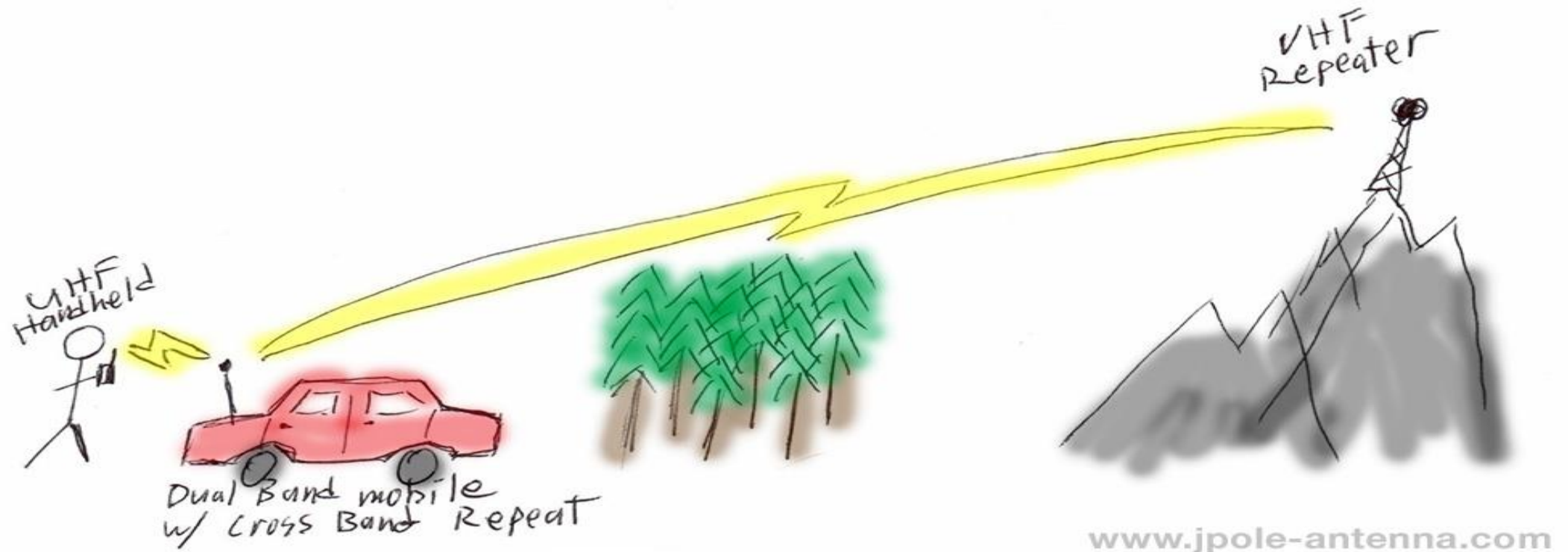
- May 25, 2021 by HarryK5HLH



Cross Band Radios Gives Improved Coverage on Mountains when teams are out on foot trying to make contact back to base stations and or repeaters.



To your vehicle using the power of your mobile radio 50 to 75 watts vs your 5 watt HT



Why does it never work when I need it to???

You must have a radio that will CROSS BAND! Note the two left and right frequencies screens.



Some Handhelds will do the job at 10watts TYT TH-UV8000D less than 75 dollars! Note the two frequencies in the window screen.



So what's the BIG SECRET???

- Once the cross banding radio is set up it becomes just that, a cross band radio relay unit from vhf to uhf or uhf back to vhf.
- If this is the only radio you have it can not be used for anything else, you will have to use another mobile or handheld to talk with while using a radio for cross banding.
- If you using a mobile rig to cross band it goes many miles on flat level ground, if you park the vehicle on a high mountain top it could go for hundreds of miles.
- If you use the 10 HT to cross band on level ground it may be no better than your 5 watt HT unless you move it to a higher location.

How do I set up a CROSS BAND RADIO?

- You must choose wisely, setting aside a vhf & uhf simplex frequencies for both ham and public safety to cross band on inside the radio or HT your going to crossband with.
- A ham radio operator would select something like UHF 446.600 pl 88.5 on both TX & RX, and VHF 146.600 PL 67.0 TX & RX on another channel.
- All crossband mobiles and HT's will have a A & B screen up or down or a left and right screen allowing to see and monitor two channels at the same time.
- Frist tune your crossband radio to a near by repeater you can hit with your crossband radio on one screen.

Step 2 setting up.

- So your radio is hitting a mountain top repeater several miles away giving you communication to other hams who might be at home listening in on a local repeater.
- Make contact with them, chances are they have phone service at there location and could relay messages for you via the internet or phone services.
- At any rate your cross band radio is hitting the repeater, if planned ahead of time many hams given some short notice would be happy to help out.

Mountain top repeater.



Step 3 selecting your simplex frequency.

- Once you have set one side of your cross band radio to the desired repeater, set the other side to a simplex channel you want the radio cross band to.
- Select the simplex channel on your HT that is the same as the simplex channel on the main cross band radio, remember to put the same pl tones on both sides.



SAR Base Camp in NM uses SAR F-1 as a rule
uses SAR F-1 VHF 155.160 no tones.



Now switch your CROSS BAND RADIO ON!

- NEVER CROSS BAND TWO REPEATERS!
- ALWAYS CROSS BAND FROM UHF TO VHF or VHF TO UHF!
- ALWAYS USE A SIMPLEX FREQUENCY ON ONE SIDE OF THE CROSS BAND.
- NEVER CROSS BAND HAM TO PUBLIC SAFETY SAR OR PUBLIC SAFETY SAR TO HAM!
- ALWAYS PUT PL TONES ON BOTH TX & RX ON YOUR CROSBAND SIMPLEX FREQUENCIES TO PREVEN ACCIDENATAL USE BY OTHERS ON THE SAME FREQUENCY.
- MONITOR YOUR CROSS BAND RADIO AND BE ABLE TO SHUT IT OFF IF IT CAUSES PROBLEMS

Homer who????



Examples!

- VHF repeater 146.940- pl 100.0 cross banded to UHF Simplex 446.600 pl 88.5 TX & RX.
- UHF repeater 444.950+ pl 100.0 cross banded to VHF Simplex 146.600 pl 67.0 TX & RX.
- VHF simplex 155.160 SAR-1 cross banded to UHF UTAC 43 Simplex 453.8625 pl 156.7 TX & RX.

Are you getting base camp yet?



"A ham - pod?"

SAR CROSS BANDING MAY REQUIRE PERMISSION BY FIELD COORDINATOR AT SAR INCIDENT SCENE.

- Portable/Mobile Cross Band Repeaters
- •Used for local searches sometimes –positioned as needed and possible
- •Can provide better coverage than directly from incident base –better line of sight
- •Typically, field teams use SAR1 (155.16 MHz VHF) as always, IB/Comms uses USAR1 (460.250 MHz UHF)
- Use UHF Simplex UTAC 43 453.8625 pl 156.7 both sides Simplex UHF for crossband to SAR F-1 VHF when in doubt.
- –Slight repeater delays require short pause before speaking to avoid loss of first words

Problems to Watch out for?

- Ping Ponging cross banding radio getting stuck back and forth, two repeaters connected together, SHUT IT OFF!
- Change to another repeater or simplex frequency, change pl tones on simplex frequency both sides.
- Dead mobile battery, radio left on too long on high power it's a long walk home!
- HT being used to cross band same issue runs car battery down or battery pack short lived on HT no spare, no way to charge it back up in the field.
- Reduce power on cross band mobile or HT if they can reach the repeater or base camp on low power.
- Limit on time air check ins by the ½ or hour to save battery life on all radios.

How do program this darn thing, I left the owners manual at HOME!



Programming Everybody????

- Only one person needs to have a cross band radio at any one incident.
- The simplex frequency to be used MUST be agreed upon a head of time for both HAM/SAR frequencies for all team members!
- K5HLH 2000 Red Dodge 4x4 Pick-up Kenwood TK790 VHF 100 watts
155.160 SARF-1 no pl cross band repeats to Kenwood TK890 UHF
UTAC 43 SIMPLEX 453.8625 pl 156.7 TX & RX 50 watts.
- Programming the UTAC 43 simplex channel if near this vehicle in the field a must!

Tactical Antennas for HT's increase the range!



Practice and test before use!

- Waiting until something happens to try and do this is a problem at best.
- If you have a ham license you should consider testing this out and looking for in-expensive equipment that will crossband. Even if its just a HT.
- Club meetings for HAM/SAR are a good place and times to practice these skills.

Call me at 505-290-7599 or email me at hhallcosd@yahoo.com for more help 73's.

