



REPEATERS VK3RGV 2m  
& VK3RGV 70cm  
CLUB CALL SIGN VK3SOL

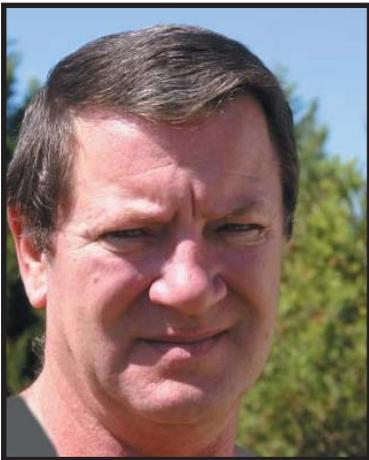
# SHEPPARTON & DISTRICT AMATEUR RADIO CLUB Inc

Incorporation No. A6677  
P.O Box 692 Shepparton 3632 [www.sadarc.org](http://www.sadarc.org)

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## PRESIDENTS REPORT



well prepared presentation. At our next meeting Pat VK3OV is going to talk about the Stock Whip Antenna, don't know what that is, better come along and have a listen.

Our next meeting is on Saturday 8th April 2006, please make a note of the change in date, also up for discussion is moving the start time forward a half an hour to an hour, with much going on at our meetings we are not getting finished until around 5.00pm or later, have a think about this and lets discuss it at our next meeting.

From my observation it appears that maybe some members are not reading the newsletter, it is important that you read the newsletter and listen to the weekly broadcast to bring yourselves up to speed with what is going on, at our club meetings some issues are being raised that have been dealt with at previous meetings, this happens if you miss a meeting and don't read the minutes from the previous meeting, these minutes are

always provided in the monthly newsletter.

The Comms day is going to be held at the usual place in Shepparton and not at our new club rooms, Max raised some important issues on holding the venue at our normal location in Shepparton, these issues were discussed at the last meeting and everyone agreed with Max's submission to keep the Comms day at Shepparton for 2006, this will be reviewed at a later date to hold the 2007 Comms day at Mooroopna.

Enclosed in the newsletter is the roster for the 80m Club Net, this roster has been set to the end of the year 2006, if your name is not on the current list it is because you are on the 2007 Roster, the new start time as from the 5th April 2006 is 7.00pm Local Time, the frequency is 3.620mhz, now if you cannot make the set date you need to contact Les VK3TEX, and arrange to see if Les can fill in for you, this is your responsibility to make sure the net is covered with an operator, not the Clubs, I have also included a log sheet, you need to complete this log sheet whenever you are using the Club Call Sign, VK3SOL, your location needs to be entered at the top of the log sheet, this completed log sheet then needs to be delivered to Max VK3DSF and entered into the official club register.

2 volunteers are needed for Tuesday 30th May 2006 at 6.00pm, the Venue our Club Rooms, the Cubs are looking forward to having 2 members from our club give a discussion/demonstration on Radio, now you can set your own agenda for this date, but please let me know what it is you are going to be doing, I would prefer 2 members local to Shepparton/Mooroopna to volunteer, please let me know ASAP if you are available.

Thanks to our Technical Team and all involved in the refurbishment of the Repeater VK3RGV, it appears to be running 100% better than ever, well done, and thanks to Neil VK3KAL for giving the Club an informative discussion on the goings on with the refurbishment on the hill, and also the operation of the 123hz Tone.

We have had good support from our members with our various nets, the latest Club net is our 40mts Sunday Morning WIA Broadcast, and this is held at 10.00am Local time on 7.153 MHz, have a listen and check in after the Broadcast, Danny VK3FDTH is a regular supporter of the 40m net.

Special thanks go to VK3KVC Ross for his donation of an antenna balun and dipole, Ed VK3BG has this antenna in his possession for installation at the club rooms, hopefully at the next meeting.

LED Light Modulation Experiment is well underway, Jim VK2TWY has completed the light boxes, I am planning a visit later in the week to inspect Jim's hard work, we are also going to discuss the mounting of these light boxes on tripods, if anyone has an old surveyors wooden tripod could you let us know, we need two, we feel the old wooden tripods are better to fit the light boxes on, much more robust than the aluminium camera tripods, also thankyou to Rob ex VK3KBV (he has a new call sign) for donating 2 telescopic rifle sights for the project, Daryl has made the circuit boards, these are ready for populating.

73s Roger VK2RO

Hi to all our Members, We have certainly been busy, as usual, we had a great turnout at our last club meeting, Rodney VK3UG gave a very informative discussion and demonstration on mobile radio operation and installation, all members benefited from Rodney's discussion, thanks again Rodney for your

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# Mobile Amateur Radio

By Rodney VK3UG

The history of "mobile" radio communications in Australia dates back to the early 1920s when the likes of the mobile squads of the police forces in Melbourne and Sydney installed two way radio. The transmitters were around 2 Kw in the MF band around 1600 to 1655 kHz. The "mobiles" could only make contact with the base when stationary. It is not 100% clear but it would appear the base was able to transmit with voice as well as morse code, whilst I believe the mobiles only communicated by morse code. We've come a long way since then.

Mobile amateur radio communications would have commenced in the 1930s, but portable operation was more the go, as it was so much more likely to be successful. In the late 1940s ex-service radio equipment was available and a few amateurs were experimenting with mobile operation, but portable operation was still more common. In the 1950s mobile HF communications was starting to take off with many amateurs slinging their HF transceivers under the dashboard of the FE Holden or similar vehicle. 12-volt electrical systems made it much easier to do when compared to the 6-volt electrical systems on earlier vehicles. The antennas were usually 12' centre loaded whips and the output power of the sets was in the region of 10 watts AM, sometimes-even CW was used. The performance of these installations using the crude – by today's standard – equipment and the sparse antenna tuning gear was remarkably good.

The equipment was large and often took nearly all the passengers leg room under the dashboard, the power supply may have been in the engine compartment as short leads were needed to alleviate voltage drop on the battery to power supply leads. It was often

single band or at the most around three bands, and often crystal controlled. The antenna was a centre loaded whip usually mounted on the back of the vehicle but sometimes on the front bumper. The antenna was tuned by using a grid dip oscillator (GDO) at the base of the antenna. The coaxial cable was disconnected and a small loop of wire wired between the base of the antenna and the earth/frame at the antenna base. The GDO was coupled to the loop and the resonant frequency found. The antenna length was then adjusted until the dip occurred on the designed frequency. In some other instances a field strength meter (a glorified crystal set with a short antenna and a meter in the output) was used to tune for best performance. In this case the transmitter was used and the field strength meter was set up 10 metres away (approximately and the TX tuned. The antenna then adjusted for a better reading on the field strength meter. This was repeated quite a few times until satisfied that the tuning was right. These methods are still applicable, although we do have more sophisticated methods available to us today which take into consideration not only the tuning but the matching of the antenna to the 50 ohm cable and hence the transceiver.

Vehicle ignition noise was a very real problem, which we amateurs hadn't fully got a handle on. We put a resistor in the coil to distributor lead and a bypass capacitor across the DC feed to the coil. These items helped, but noise limiters in the mobile receivers were often necessary as well.

## Today

Things have changed for amateurs in the area of mobile communications. Today's talk is mostly about HF radio communication, as it is a bit harder to get right than VHF and UHF instal-

lations.

## Selecting a Band(s) for Operation

The decision must be made as to which band or bands are going to be operated on and that will dictate to some extent the physical layout of the station. The Q of an efficient antenna is quite high as much as 300 which means that the 3dB effectiveness points of an antenna may be as little as 6 kHz on some lower frequency bands. So the antennas will need to be tuned to the section of the band to be used, or the antenna will need loading coil tapings for various sections of a band to be worked.

The communications range desired is also related to 1. Above, but also relates to how much trouble you are prepared to go to, to make the station effective on the bands of interest. Examples:- a low power transceiver on a small antenna in a compromise position on the vehicle or alternatively, a high power transceiver on the largest legal antenna located at the most efficient location on the vehicle. The best location is in the centre of the roof and using the roof as the ground plane. However, this is rarely practical for HF use.

## Modes of Operation

SSB is used by around 95% of amateurs for best efficiency of communications. FM is sometimes used on the 10 metres band. Morse and other digital modes are rarely used mobile.

## Safety and Convenience of Operation

The installation must be placed in the vehicle where the operator, usually the driver, can access it easily. Installing sets these days is difficult as there is rarely space to fit a normal sized set although they are much smaller than the sets of the 1950s and 60s. The most appropriate method is to use a remote control head on the transceiver. The remote head is

located in the operating position and the main body of the transceiver is located under a seat or at the rear of the vehicle. A multi conductor cable then connects the two units. DO NOT install any radio equipment over the location of the airbag; as in an accident instead of being protected by the airbag you will wear your radio gear in your face!!!

For safety reasons, the head location/set location must be placed so that in an accident the occupants of the vehicle will be unlikely to strike the set, and the set is unlikely to be dislodged and hit an occupant. There must be no sharp edges pointing into the vehicle. A secure mounting with cables dressed out of the way is a necessity. You don't want to be strangled by the cables – you don't want them around your feet as in an emergency you may not be able to use a control which could spell curtains for you.

The road rules frown on the operation of mobile phones, etc whilst on the move by the driver when using hand held microphones etc. A headset with boom microphone may be a much more suitable alternative with a TX on/off switch incorporated in the connecting cable. (See Roger Conway's installation). This has the additional advantage of clearest audio in a noisy environment. If a headset is not used a remote loudspeaker can be mounted near the rear vision mirror that provides good quality audio to the operator. Having a loudspeaker down around your feet is the worst possible installation for audio clarity.

Overall don't rush it. Look at it and think about it before drilling holes etc.

*Continued on page 6*

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# CLASSIFIEDS

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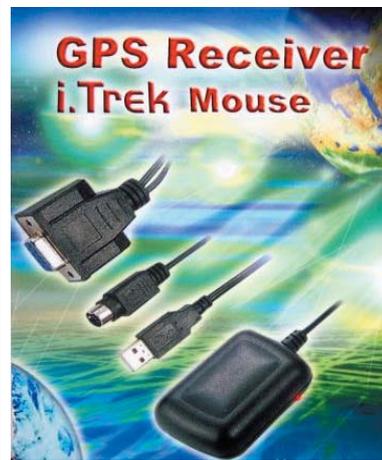
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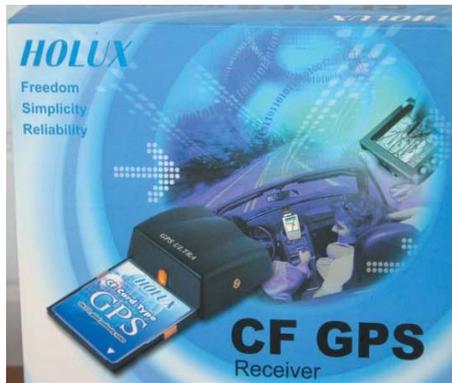


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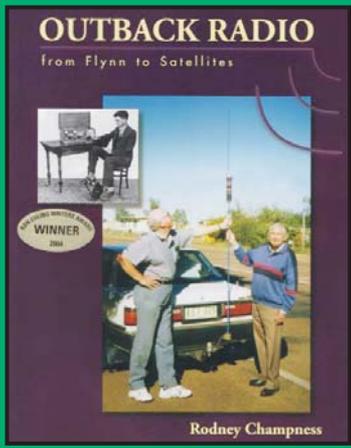
# DID YOU KNOW?

That the Cobram Urban Fire Brigade has been serving the Cobram & District community since 1907. They are pleased to announce that in 2007 they will be 100 years old. Preparations are now being made to contact past members and affiliates of the Brigade and are also looking for any memorabilia from the Cobram CFA. If you were once a member, or know of someone who was involved with the Brigade then please let the Brigade know by calling them on either: **0358722538**  
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**Or visit the website**  
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# OUTBACK RADIO

From Flynn to Satellites  
 By Rodney Champness  
 (VK3UG)



Outback Radio is a 186 page A4 size book complete with a total of 92 diagrams, pictures and circuits. Up until now there has been no book published which has traced the history of the development of communications (particularly radio communications) in outback Australia. The book shows the social, educational, medical and business uses to which radio communications have been put to in the outback. The story describes how the equipment came to be developed by Traeger and others to meet the impossible technical requirements of the 1920s. Radio was in its infancy at that time. The progressive improvements in radio equipment design and capabilities are explored through the book and end up with the use of satellite phone communications. The author has been involved in radio communications all his adult life and writes professionally the column Vintage Radio for Silicon Chip.

The book is available from the author at:-  
 6 Mundoona Court, Mooroopna, 3629  
 for \$39.95 per copy, plus \$8 for post in Australia for up to two copies. Three or more copies post free in Australia.

# Minutes of previous meeting

Meeting held on 11/3/06 at the Mooroopna Community Hall, Echuca Road Mooroopna.

Shepparton and District Amateur Radio Club Inc. A6677s

Meeting opened by President Roger VK2RO at 1420 hrs.

Present: Tibor Nemeth, Les 3TEX, Bill Crocker, Rod 3UG, Les George, 3KBV, John 3PXJ, Danny 3FDTH, Terry 3FTHS, Bill 3DWG, Pat 3OV, Duncan Cameron, Ed 3BG, Daryl 3KLN, Roger 2RO, Allan 3AYD, Ross 3UCR, Jack 3TJS, Neil 3KAL, Angela McCallum.

Apologies Ray 3RW, Brian 3HBW, Max 3DSF, Jan 3ALF, Barrie 3KBY

Moved John 3PXJ, Seconded Terry 3FTHS, carried.

Minutes

Moved Jack 3TJS, Seconded Les 3TEX, carried.

Business Arising Jack 3TJS delivered club badges for new members.

Treasurers Report Allan 3AYD presented report on club finances. Invoices received for items used in repeater upgrade work and club project.

Moved Rod 3UG, Seconded Ed 3BG, carried.

Correspondence Inward:

"Amateur Radio" and newsletters from EMDRC and Midlands clubs.

Max 3DSF concerning the venue for the Comms day and listing the advantages in holding it at the St Augustine's Hall as in previous years. These included access the day prior for setting up, catering, trestle tables

included in hire, power points and parking.

Jan 3ALF concerning his support for the St Augustine's Hall venue and a provisional booking made and paid for by him.

Moved Ross 3UCR, Seconded Rod 3UG, carried.

General Business Comms day 2006. In light of the points raised in Max 3DSF letter that the club should hold its Comms day at St Augustine's Hall as in previous years and that secretary send a letter of thanks to Jan 3ALF for booking the hall.

Moved Ross 3UCR, Seconded Pat 3OV, carried.

Repeater report from Neil 3KAL. Installation of the new antenna and bulkhead static and EMP protection measures completed. In light of the interference experienced with 3RGV and in view of ACMA moves towards ctcss repeater control a 123Hz control tone has been incorporated in the upgrade. With no tone present the repeater receiver squelch is set to a sensitivity of 0.5 microvolts, effectively blocking interference signals from opening the repeater, but necessitating a stronger signal to access the repeater. The new antenna with its higher gain offsets this. Presence of the 123Hz sub-audible tone sets the squelch wide open and sensitivity to 0.18 microvolts. 828 and FM900 transceivers can be modified to take advantage of this higher sensitivity with the installation of a ctcss encoder module. Mast guying, installation earth runs and earth staking are completed. There remains some mast

work and coax runs to be tidied. The repeater hut roof has some cracking which will be addressed by cutting a groove into the concrete and chaulking with a flexible mastic.

LED Project. A bbq was held for the projects committee at Roger 2RO qth last weekend. Telescopic rifle sights have been provided by Rob 3KBV for aiming the LED transceivers. Jim 2TWY has undertaken the construction of the boxes and more schematics have been received from Mike 7MJ. The Tasmanian distance record stands at 103 miles, from Mt Wellington to Mt Barrow. The American record is 123 miles for one way transmission. Both these successful attempts represent the longest line of sight path available. Our first choice of locations betters both of these distances and further research has revealed the possibility of 3 longer paths and more importantly these each have one end in the club's neighbourhood. As has been mentioned previously atmospheric conditions, in particular dust particles and moisture content are critical to light communication success. The best conditions exist in autumn, in the clear air 3 days after rain.

Terry 3FTHS showed a 1/4 wave 2 metre whip antenna he has constructed and has plans for a 5/8 wave as his next antenna project.

BPL. ABC radio recently aired an interview that verged on "infomercial" for a self professed expert on BPL. The club has a copy

of this interview for the information of members. The assertions, assumptions and some contestable "facts" expressed in it should be of real concern to all club members. As amateurs we need to keep abreast of developments via the WIA website and make sure our concerns are aired locally.

Terry 3FTHS has arranged for Roger 2RO to do an amateur radio promotion over Wangaratta's AM station 3NE. This will publicize the hobby and the club as well as detailing the contributions made by the amateur radio fraternity. There could well be some comments on the BPL debate.

Foundation Licences. Ed 3BG reported that another 3 foundation licence assessments have been successfully completed, with a further 5 definite starters. Foundation licence course recommendations from the WIA have been emailed to those who volunteered as instructors.

VK3SOL 80 metre log sheets have been prepared for the weekly net.

WIA VK3 News on 40 metres Last Sunday at 10am on 7.153 MHz VK3SOL/portable aired its first hf rebroadcast of these news programs. A total of 10 checkins were received from VK2, VK4, VK5 and VK7. Due to propagation conditions the rebroadcast was not received locally. The WIA was pleased with the 10 checkins since similar rebroadcasts in other states have so far only netted 3 to 6. Checkins after the rebroadcast count towards the Wombat Award with the opportunity for working further club members and gaining more points afterwards.

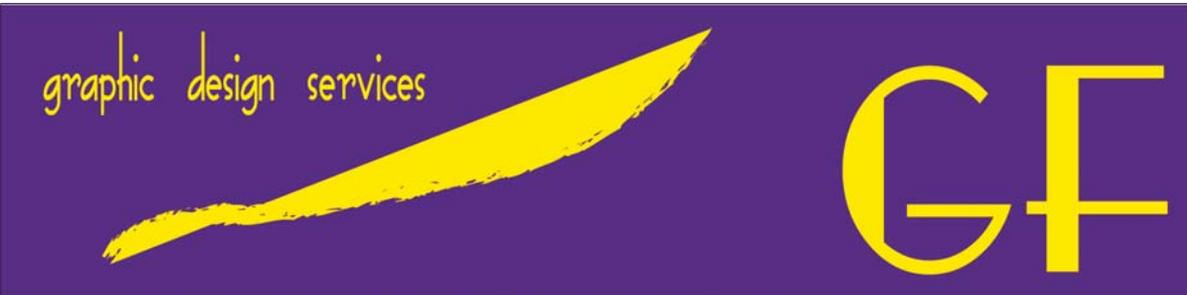
Ross 3KVC has donated a dipole for erection at the new club premises. A letter of thanks will be sent.

Ed 3BG reported that the 1296 MHz beacon is on air with a 45 second repeat, soon to be joined by the 70 cm beacon using an FM747 with a pic controlled keying board.

Memorial service for Alan VK4SKL/portable VK3 was attended by club representatives at Seymour.

Meeting was adjourned for a cuppa followed by a presentation from Rod 3UG on mobile radio installation ably assisted by Roger 2RO.

Meeting closed 1745 hrs.



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Bruce Plowman	VK3QC
Ray Wales	VK3RW
Rod Champness	VK3UG
Trevor Pitman	VK3VG
Warren Heywood	VK3WH
Peter O'Keefe	VK3YF
Hilton Younger	VK3AHY
Bob Knaggs	VK3AJN
Jan VanKerkwijk	VK3ALF
David Waring	VK3ANP
Fred Kent	VK3APA
Allan Dobson	VK3AYD
Muriel Plowman	VK3BJO
Len Hearnnes	VK3BMY
Ernie Harrison	VK3BSD
Max Johnston	VK3DSF
Bill Griffiths	VK3DWG
Graham Tremellen	VK3GPT
Robbie Moore	VK3HGC
Brian Webb	VK3HBW
Toby Corbett	VK3HIV
Mark Bennett	VK3HMB
Ian Sturman	VK3JNC
Dave Duff	VK3JRA
Neil Webster	VK3KAL
Rob George	VK3KBV
Barrie Halliday	VK3KBY
David Leonard	VK3KDL
Daryl Hitchcock	VK3KLN
John Waters	VK3PXJ
Les Tatar	VK3TEX
Jacek Szczurek	VK3TJS
Ross Smith	VK3UCR
David Harms	VK3XDJ
Neil Watt	VK3XNW
Wayne Collyer	VK3XQA
Ray Gardiner	VK3YNV
Greg Halley	VK3ZKV
Danny Hender	VK3FDTH
Cameron Grambau	VK3FMCG
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David Lydford	VK3FDGL
Nandor Barabas	SWL
Max Berry	SWL
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John Ellis	SWL
Norma Forbes	SWL
Max Matthey	SWL
Norma Matthey	SWL
Margaret Tingay	SWL
Neil Tingay	SWL
Carol Tremellen	SWL

## S.A.D.A.R.C CALLSIGN VK3SOL ROSTER for 80m

<u>Name</u>	<u>Callsign</u>	<u>E_mail</u>	<u>Club WIA</u>
Roger Conway	VK2RO	plus10@optusnet.com.au	5th APRIL
Jim Day	VK2TWY	jde1@bigpond.com	12th APRIL
Ray Hughes	VK2ZOR	rayhughes@dvd-cad.com.au	19th APRIL
Ed Roache	VK3BG	vk3bg@bigpond.com	26th APRIL
George Francis	VK3HV	vk3hv@bigpond.net.au	3rd MAY
Pat O'Shannessy	VK3OV	patbarb@mcmedia.com.au	10th MAY
Bruce Plowman	VK3QC	bplowman@westnet.com.au	
Ray Wales	VK3RW		17th MAY
Rod Champness	VK3UG	rodlynn@dodo.com.au	24th MAY
Trevor Pitman	VK3VG	jantree@satlink.com.au	31st MAY
Warren Heywood	VK3WH		7th JUNE
Peter O'Keefe	VK3YF	peter@solarcom.com.au	14th JUNE
Hilton Younger	VK3AHY	notlih@younger.id.au	21st JUNE
Bob Knaggs	VK3AJN		28th JUNE
Jan VanKerkwijk	VK3ALF	jkerkwijk@bigpond.com	5th JULY
David Waring	VK3ANP	waringbd@netc.net.au	12th JULY
Fred Kent	VK3APA	fred40@mcmedia.com.au	19th JULY
Allan Dobson	VK3AYD	radobson@mcmedia.com.au	26th JULY
Muriel Plowman	VK3BJO	mplowman@westnet.com.au	
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Ernie Harrison	VK3BSD	ernbe@bigpond.com	9th AUG
Max Johnston	VK3DSF		16th AUG
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Graham Tremellen	VK3GPT	vk3gpt@dodo.com.au	30th AUG
Robbie Moore	VK3HGC	robwendy@dodo.com.au	6th SEPT
Brian Webb	VK3HBW		13th SEPT
Toby Corbett	VK3HIV	vk3hiv@dragnet.com.au	20th SEPT
Mark Bennett	VK3HMB		27th SEPT
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Neil Webster	VK3KAL	kalnet@austarnet.com.au	18th OCT
Rob George	VK3KBV	rrgeorge@bigpond.com	25th OCT
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David Leonard	VK3KDL	vk3kdl@hotmail.com	8th NOV
Daryl Hitchcock	VK3KLN	vk3kln@netspace.net.au	15th NOV
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Ross Smith	VK3UCR	rossgs@netc.net.au	6th DEC
Danny Hender	VK3FDTH	danhender@bigpond.net.au	13th DEC
Cameron Grambau	VK3FMCG	cg495@hotmail.com	20th DEC



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# Mobile Amateur Radio

*Continued from page 2*

## Installation

A HF mobile may draw 20 amps or more, so a heavy 12-volt+ lead is needed from the battery. Tapping off other places is not recommended, as the gauge of wire used in vehicle is often too small resulting in excessive voltage drop. Use cable of about the diameter of a pencil, with not too much insulation. You want a voltage drop of no more than around 0.5 volts over its length at 20 amps. Some of the cable used by the vehicle audio (boom-boom) types is certainly ideal. The 1Farad capacitors mounted near the set will smooth out any momentary dips in voltage due to the syllabic nature of SSB transmissions. They are expensive. I believe heavy cable is a better solution in 90% of cases. The longer the cable, the heavier it needs to be. It is unnecessary to use a negative cable back to the battery. The metal frame of the vehicle is a very LARGE conductor with little voltage drop. A circuit breaker, a heavy-duty fuse or a thermal link is needed in the line near the battery. Check

the voltage drop across these at 20 amps. It should be almost zero but if a fault develops this may not be so. The cable should be run along with other low-tension cables and come through one of the rubber grommets in the firewall. Keep it away from ignition cables. If the cable is going to the rear of the vehicle run it under the doorsills to make sure it isn't damaged. A tidy installation is always to be aimed for. If you have one available, an 18-volt varistor is not a bad idea to incorporate across the 12-volt line to suppress any spikes on the line. I use the heavy duty 2 pin polarised plugs and sockets for supplying power to the transceiver(s) (available from electrical wholesalers). Check with others the conventional wiring or a set may be damaged due to reversed polarity.

## Mounting the Antenna

The location of the antenna is regrettably a compromise on HF. Common locations are at the rear of the vehicle, on the front (remember driver vision), on a gutter, mudguard or in the centre

of the roof near the dome light. The coaxial cable to the front of the vehicle must be kept away from the ignition leads to minimise any pick through the coaxial cable braid. The most common braids do let some signal in and out. Don't have the cable running across the vehicle floor as it gets trodden on which doesn't do it much good. Tidiness is most desirable, for looks and safety. A tidy professional installation is more likely to impress people favourably, particularly if you wish to impress them to become an amateur.

The antenna base must be firmly attached to strong metalwork on the vehicle. Don't pick a location where the vehicle strength is low when aiming to use a big HF antenna. Make sure the location of the antenna does not obstruct lights, doors or any function of the vehicle. The base should not protrude beyond the profile of the vehicle – front, rear or sides. I have had mounts made up to go onto the tow bar at the rear and onto metal brackets around the front of the vehicle. Make them so

that they can be easily removed if needed. It is very important to make sure that all connections onto the frame of the vehicle make good contact, and not just at one point. Bad connections mean poor mobile performance. It is desirable to bond the frame of the vehicle to the body of the vehicle in many places. Monocoupe construction, like most vehicles are these days, is easier to bond to for an effective earth. You may end up with a number of short bonding straps.

Mount the antenna as clear of the vehicle structure as possible. The rear bumper of a sedan is better than the rear bumper of a station wagon for antenna efficiency. The highest field strength is achieved across the vehicle away from the antenna. A rear mount will have best performance ahead of the vehicle.

*Continued next month with Antenna Tuning and Faults*

## UP THE HILL

Well, as everybody probably knows, IT'S UP!! (as of 11th February 2006) and is working very well according to reports that keep flowing in.

The 6db Polar Collinear array has been up for 6 weeks and has had no signs of teething problems. There were some other problems associated with guy wire tails and earthing of the tower itself which have been fixed. Heavy cable has been run directly from the tower to the hut keeping in mind the straightest path lightning may take during a strike. Keeping all earthy points bonded to the same potential and direction, is essential for a good hill top repeater installation. More ground radial earths around the tower would be an advantage for this kind of structure and we hope to install these as time and availability of heavy cable is possible.

We have installed an Earthing Bulkhead with EMP (Electro-Magenetic-Pause) protectors for each run of co-ax which enters the Hut, thus having a common earth point eliminating many different earthing and

interference problems. Lightning being one of our main enemies, will hopefully be kept to a minimum when it comes to sensitive receiver front-ends.

The CTCSS sub audible tone access has been very successful so far at eliminating the intermod problem we've had in the past five or

the CTCSS access (which is detectable as low as .15uV at VK3RGV) to open the mute completely allowing very weak wanted signals to be repeated.

Most, if not all modern Transceivers have the ability to encode their Tx signal with CTCSS tone 123Hz, but some older rigs may need to

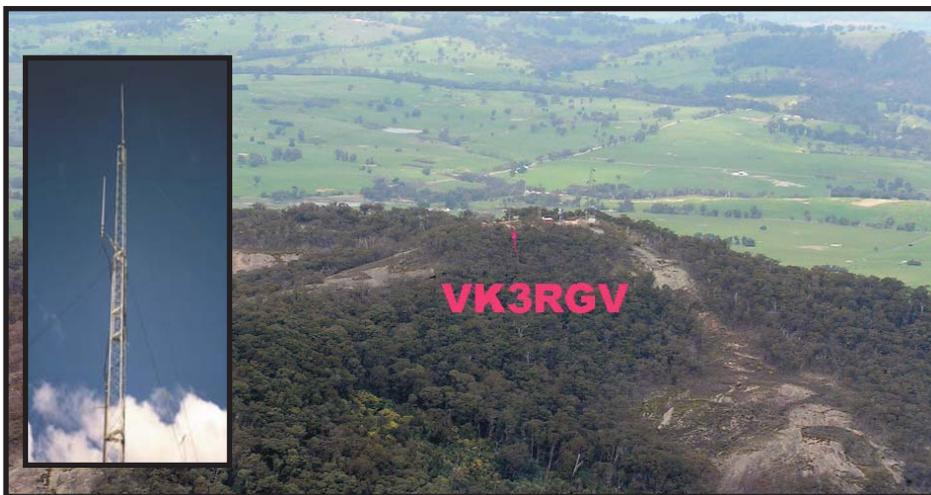
CTCSS, or you won't hear any signals at all. CTCSS is only required to access the repeater at low levels. After setting up your CTCSS, key VK3RGV and listen for a short "white noise" burst as you let the button go. This is a sure indication you have set it up correctly. Some reports have told us

mobile, this is a clear indication that you require CTCSS encoding on your VK3RGV uplink signal.

Information on CTCSS is widely available on the 'World Wide Web' or if need be, by contacting Ray (VK3RW) and Neil (VK3KAL) for any further help on this matter, weather installing or obtaining a CTCSS encoder board for your older model rig.

Work is still in progress up on Wombat, with still some minor tidying up to do making the hole area safe and reliable for many years to come. Costs also have been kept to a minimum thanks to some members and nonmember's donating some costly items very cheap to the club.

We would hope to think it be easily maintained on a yearly basis, perhaps the club having a social day up on the hill, learning about repeaters and what goes on for those who are interested in this area, at the same time bring there gardening tools to keep Bracken and other weeds that make it fire hazardous during the summer to a minimum. MG&RH



so years. How it works is by keeping a high level mute setting (about .5uV, this level may be raised if required in the future) squelching out the intermod and other unwanted interference like pagers etc. and at the same time having

have a separate after market encoder installed if they are to be going mobile or are in a lower than 0.5uV access area.

If you are setting your rig up to encode at 123Hz, be sure you disable the Receive

that "Even with the tone disabled on my rig while mobile, I am getting in better than I have ever before!"

If you are experiencing reports of high level mute dropout or chopping (picket fencing as some call it) while