



# Fox Hunting - VK6 Style

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for Hills Amateur Radio Group  
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- Download this Powerpoint from:
- <http://www.hamradio.org.au/docs>



# Fox Hunting - Introduction

- What is Fox Hunting?
- The VK6 Fox transmitter – “The Fox”.
- The Fox Hunters Toolbox – Necessary & Desired Equipment.
- The Rules.
- Techniques for locating The Fox.
- Demonstration
- Questions?



# Fox Hunting – What is it

- Radio Sport. More than just Radio Direction Finding.
- Locating a hidden amateur radio transmitter in the quickest time (and least amount of distance).
- Can use HF, VHF or UHF amateur bands.
- Done on foot or by vehicle.
- Single or multiple transmitters.





# Fox Hunting – “The Fox” Transmitter

- Homebrew transmitter powered by 12V battery.
- Approx 5 watts power output. Carrier modulated with single tone.
- Mix of AM & FM so can be heard on AM/FM/SSB receivers and simple crystal/diode receivers.
- Multiple harmonics.
- Callsign VK6VF sent in CW every 2 mins





# Fox Hunting – “The Fox” Transmitter





# Fox Hunting – The Fox Hunters Toolbox

- Necessary Equipment:
  - 2M Receiver. FM OK, SSB/CW better. Dual/wide band better. Yes a handheld is OK.
  - Directional Antenna. Yagi, Quad.
  - Transport. Car definitely! Mount directional antenna on car is better. Make sure it isn't dangerous or likely draw unnecessary attention.
  - Map book/GPS/online maps.
  - 2M transceiver for check-ins (and directions if lost).
  - Torch.
  - Refreshments.



# Fox Hunting – The Fox Hunters Toolbox

- Desired Equipment:
  - Stepped attenuator. Easy to homebrew.
  - Handheld/portable yagi. (Tape measure antenna, 70cm yagi)
  - Snoop Loop or sniffer receiver. (Crystal/diode detector receiver mounted on yagi)
  - Standby 2M receiver
  
- TDOA (Time difference of arrival) and Doppler Systems.
- iPhone App.





# Fox Hunting – The Rules

- Starting point Women's Memorial Fountain in Kings Park. Liaison frequency usually 146.750MHz or 146.800MHz repeater.
- The Fox must be no more than 50kms from the Kings Park and receivable from the Start Point.
- The Fox must not be placed on private property and no more than 400 metres from a public road. We don't want anyone being accused of trespassing or giving AR a bad public image.
- The Fox must be accessible to fox hunters travelling on foot.
- The Fox transmitter must not move. Note this doesn't apply to the antenna!
- Scoring Formula: Minutes Taken to Locate Fox \* Kilometres Travelled. Lowest total wins. Honour system. The winner gets to set the next fox.



# Fox Hunting – Hunting Techniques

- From the start point:
  - Triangulation Method
  - Straight Line Method
  - 90 degree method
- Don't be in a hurry to exit Kings Park. Checking that The Fox isn't hidden within Kings Park or surrounds.
- Use attenuation or off frequency technique to keep average signal strengths low. Directivity is more obvious.
- Be aware in areas adjacent to the river. Pick the wrong side and you could lose valuable time and have a long drive.



# Fox Hunting – Hunting Techniques

- When approaching to the fox:
  - Beam heading may change rapidly, be strong in all directions or giving conflicting direction headings – The zone of confusion!
  - Check Fox signal with antenna off your receiver and on the harmonic frequencies. If it is strong you know you are close - Time to park the car and get out on foot.
  - Use of snoop loop, antenna close to the ground, 70cm receiver & yagi, receiver with no antenna against body establishing a reliable direction. You need as much attenuation as you can provide & carry.
  - Stick together & work as a team. Don't try second guessing where the fox might be hidden. Trust & follow your equipment.



# Fox Hunting – Hunting Techniques

- Look for the radiating antenna – Beware of decoy antennas, coax cables and other distractions designed to put you off “the scent”.
- Look around vegetation, in bins, under playground equipment, any number of hiding places.
- Follow the cable from the antenna to The Fox.
- Be conscious of other teams also looking for The Fox.



# Fox Hunting – Some Setups



VK6ZCK Charlie with  
VK6AD Phil



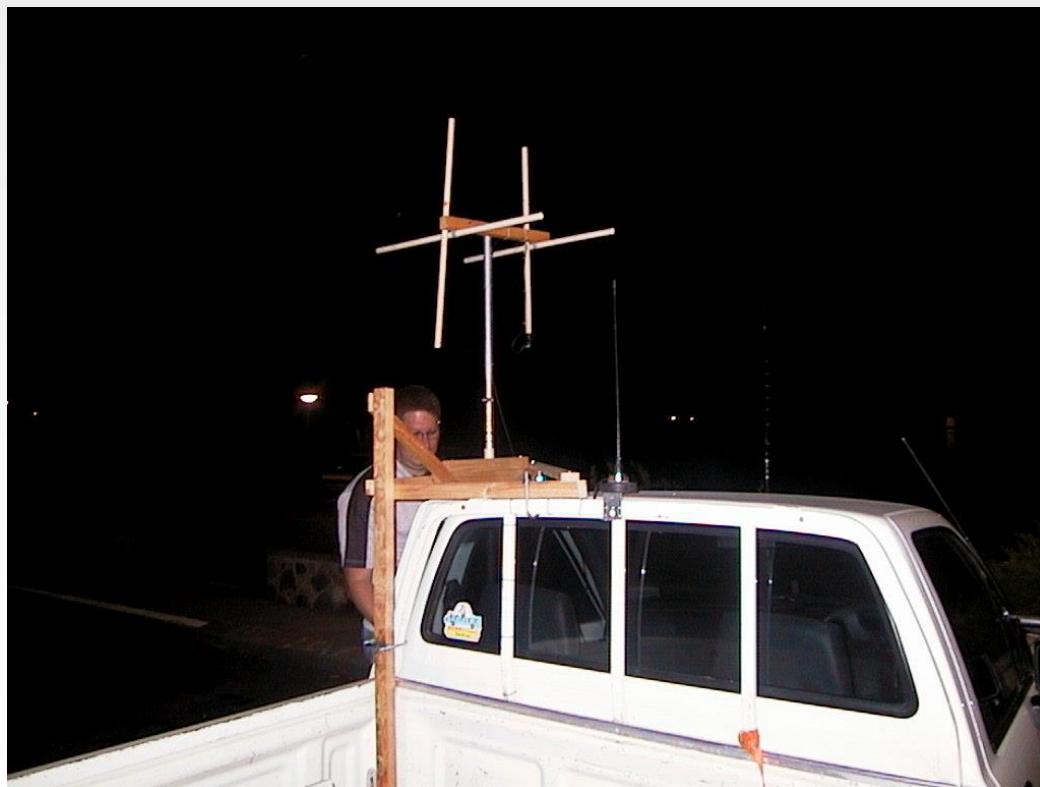
# Fox Hunting – Some Setups



VK6BK - Aaron



# Fox Hunting – Some Setups



VK6LD - Rob



# Fox Hunting – Some Setups



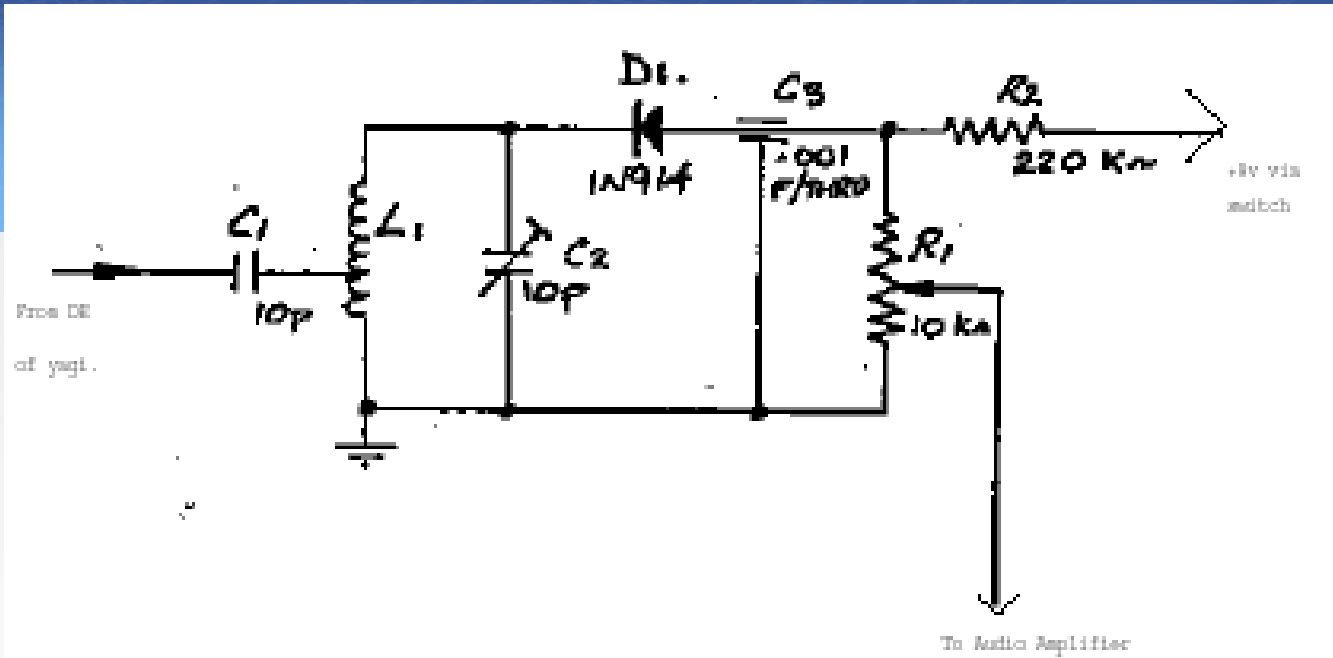
VK6TQ – Kim





# Fox Hunting – Internet Links

- 2M Tape Measure Yagi: <http://www.open-circuit.co.uk/tape.php>
- 2M Quad Antenna: <http://www.hamuniverse.com/k4mmg2mquad.html>
- Attenuator: <http://www.open-circuit.co.uk/tape.php>
- Ramsey Doppler Kit: <http://www.ramseyelectronics.com/cgi-bin/commerce.exe?preadd=action&key=DDF1>
- VK3YNG Sniffer: <http://www.foxhunt.com.au/>



L1 - 6 turns #18 tinned copper wire 6mm dia.  
10mm long. Tap at 1 turn from earth end.

D1 - For improved performance use a schottky diode  
(HP 5082-2851) in place of 1N914.

