

Amateur Radio Direction Finding

Now in Technicolor!

What is ARDF?

Finding transmitters with Amateur Radio

Why Fox Hunt?

- Stuck Transmitters
- Lost hikers
- Malicious Radio Operators
- Animal Tracking
- RFI
- Fun!

Types of Fox Hunts

- Local
 - Intra-building, Campus, Hamfest
- Mobile
 - Dallas County?
- “Monster”
 - HF

What Equipment is Required?

- What information is required?
 - Signal Strength
 - Heading

What Equipment is Required?

Essential:

- Receiver
- Antenna

Very Helpful:

- Attenuator
- Maps
- Gut feeling (sometimes)

Typical ARDF Equipment

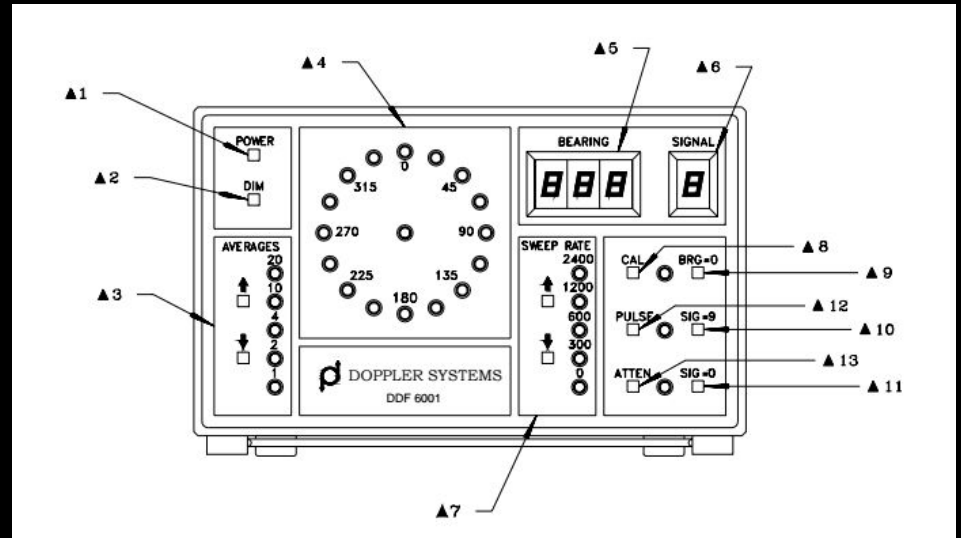
- Handheld radio
- “Body Null” technique

Typical ARDF Equipment

- Directional Antenna
 - Yagi
 - Quad
 - Loop
- Attenuator
 - (think Camera Aperture)

Atypical ARDF Equipment

- Doppler DF Unit
 - “Pseudo Doppler”
 - 4 omni antennas



Attenuators

- Antenna Removal (body-null technique)
 - Remove antenna; make measurement
- Harmonics
 - 2nd/3rd harmonic of transmitter
 - $144.34\text{MHz} * 3 = 433.02\text{MHz}$
 - Great isolation

Attenuators

- Stepped Attenuator
 - Passive
 - Susceptible to being overloaded
- Offset Attenuator
 - Active
 - RF Mixer
 - Mixes signal to different frequency
 - Can provide >90dB attenuation

Finding the Fox

- Find bearing
- Adjust
- Repeat
- Beware of Reflections!

