

A decorative graphic consisting of blue circuit lines with circular nodes, extending horizontally from the left and right sides of the central black box.

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INTRODUCING RADIO DIRECTION FINDING AND HAM RADIO FOX HUNTING

DISCOVER THE POSSIBILITIES



AGENDA ITEMS

- Introduction
- Brief history of Radio direction finding
- HAM Radio Fox hunting
- Questions

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RADIO DIRECTION FINDING

PRINCIPLES OF RADIO DIRECTION FINDING



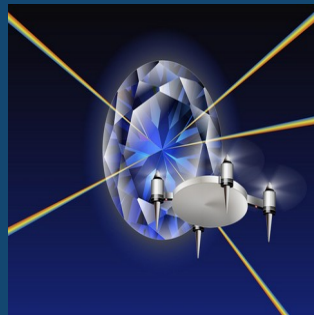
Angle of Arrival

Radio Direction Finding measures the angle of arrival of radio waves to determine the direction of the signal source.



Signal Strength & Time of Arrival

By analyzing the strength of the detected signals at multiple antennas, operators can enhance position accuracy.



Triangulation Technique

Operators utilize triangulation techniques to pinpoint the exact location of the transmitting source based on received data.

HISTORICAL USES OF RADIO DIRECTION FINDING

Early uses

RDF began as early as radio itself, early uses for aircraft navigation. By the 1940s it was highly used by militaries around the world.

Maritime & Aviation Navigation

In maritime & aviation, Radio Direction Finding enhances navigation by helping determine the location of vessels and aircraft. It has also replaced the traditional Lighthouse.

Search and Rescue Operations

Radio Direction Finding is vital in search and rescue missions by locating emergency signals from distress beacons. This has mostly been replaced by distress beacons with GPS.

Wildlife Tracking

In wildlife management, RDF aids in tracking animals fitted with radio collars for research and conservation efforts. Again this has been replaced by GPS.

THE BIGGEST FAIL OF RADIO DIRECTION FINDING



Amelia Earhart – attempted to use radio direction finding to locate two ships as she crossed the pacific ocean. She failed in this attempt and never located the island that was her refueling stop.

She was using a direction finding loop antenna with a separate sense antenna.

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INTRODUCTION TO HAM RADIO FOX HUNTING

CONCEPT AND OBJECTIVES OF FOX HUNTING

Types of Fox Hunts

On Foot – small scale pedestrian hunting.

Mobile – Large area, usually stationary fox.

Large Area – Large area, possibly multiple foxes.

Fox on the Move – Pedestrian or Mobile, the fox moves.

Main Objective

The primary goal of fox hunting is to locate one or more hidden transmitters, sometimes within a set time frame.

Skill Development

Fox hunting encourages the development of essential skills such as navigation, teamwork, and effective radio direction finding.

Community Engagement

Encourages cooperation and friendly competition for HAM radio operators. Skills developed can on rare occasion aid in SAR.



EQUIPMENT AND TOOLS USED IN FOX HUNTING

Handheld Radios

Handheld radios are commonly used with directional antennas, as they are portable and battery powered.

Directional Antennas

Directional antennas help participants narrow down the location of the transmitter, and can be used for triangulation of a stationary transmitter. These include Yagi-uda, shielded loop, and phased arrays

RDF Receivers

RDF (Radio Direction Finding) receivers are special receivers dedicated to RDF, and sometimes use time of arrival measurements.

Navigation Tools

Maps and compasses if it is a large area of operation.



A top-down view of various outdoor and survival items laid out on a rustic wooden plank surface. The items include a black thermos with a silver top, a pair of black binoculars, a pair of tan work gloves, a grey baseball cap, a pair of grey hiking boots, a pair of dark socks, and a long black antenna with a blue connector. Some green leaves are scattered among the items. A semi-transparent dark blue rectangle with a light blue border and corner decorations is overlaid on the image, containing the text.

BASIC OPERATION & TIPS

Hidden Transmitter - The hidden transmitter, commonly called the fox, will transmit at specific time intervals on a specific frequency.

Hunters - Hunters trying to find the fox will listen for the transmissions and attempt to locate the fox.

TIPS and Tricks:

Ability to attenuate received signals is key!

Triangulation technique using antennas with very sharp nulls.

UPCOMING EVENT
JULY 19TH – MOBILE FOX HUNT NW
QUADRANT OF HOUSTON, TX
&
QUESTIONS