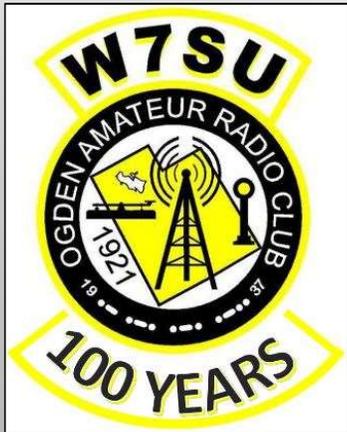


# ***MOBILE ANTENNAS***

Presented To the Ogden Amateur Radio Club

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## TOPICS

- WHY OPERATE MOBILE?
- MOBILE ETIQUETTE & LOGGING
- TYPES OF MOBILE ANTENNAS WHICH IS BEST?
- MOBILE ANTENNA PERFORMANCE BEST PRACTICES
- MOBILE INSTALLATION CONSIDERATIONS
- WORK SHOP – ANTENNA MEASUREMENT TESTING



## WHY OPERATE MOBILE

- GATHER ROAD CONDITIONS
- STAY IN TOUCH WITH FAMILY & FRIENDS
- STAY IN TOUCH WITH OTHER HAMS (BEEHIVE NET, HIGH NOON NET, HAM & EGGS NET)
- EMERGENCY PREPAREDNESS!
- AND IT'S FUN!



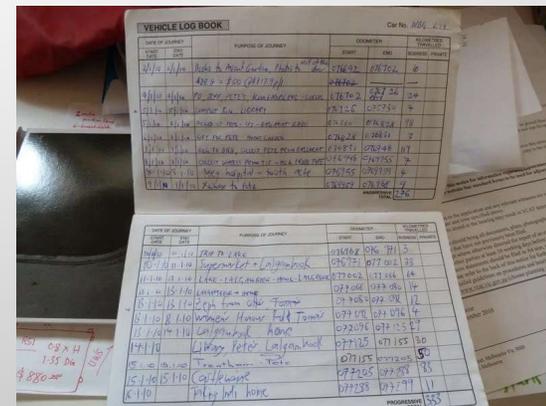
# MOBILE ETIQUETTE & LOGGING

- PAY ATTENTION TO THE ROAD!
- IS IT LEGAL TO TALK ON THE RADIO WHILE MOBILE? LAWS VARY – See:
  - [HTTP://WWW.ARRL.ORG/FILES/FILE/REGULATORY/MOBILE%20ARS%20POLICY%202014%20OCTOBER.PDF](http://www.arrl.org/files/file/regulatory/mobile%20ars%20policy%202014%20october.pdf)”
- WHEN OPERATING HF MOBILE IDENTIFY YOURSELF AS OPERATING “MOBILE” IF MOVING OR “PORTABLE” IF STATIONARY (WB7RLX/PORTABLE) WE TYPICALLY DON’T DO THIS WHEN OPERATING ON UHF/VHF FREQUENCIES
- PAY ATTENTION TO THE ROAD!
- GIVE MOBILE HF STATIONS PRIORITY
- DID I MENTION PAY ATTENTION TO THE ROAD!

# LOGGING

- SHOULD I LOG MY QSO'S – IT'S REALLY UP TO YOU?
- IF YOU DO LOG YOU NEED TO RECORD THE FOLLOWING INFORMATION:

1. CALL SIGN
2. UTC - TIME AND DATE OF QSO
3. FREQUENCY
4. SIGNAL REPORTS (RST)
5. MODE (SSB, CW, DIGITAL?)



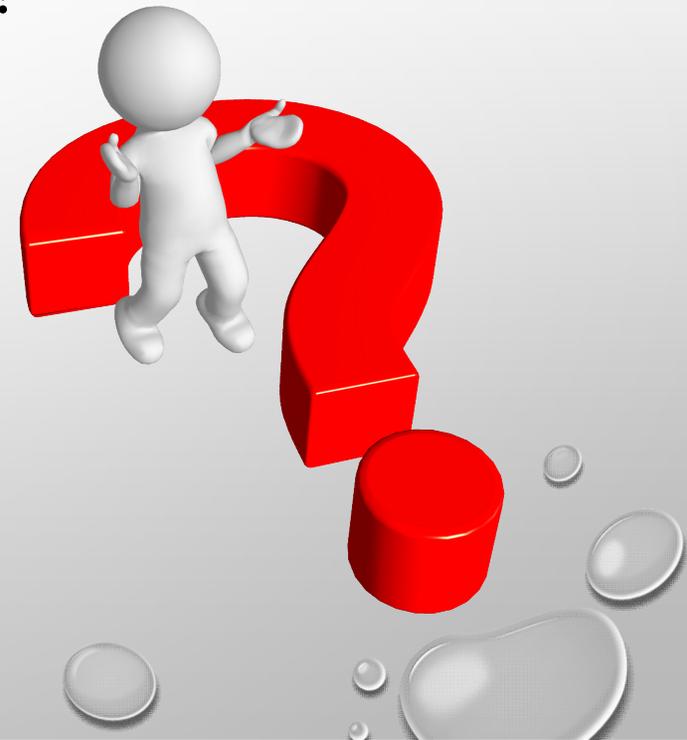
# TYPES OF MOBILE ANTENNAS – WHICH IS THE RIGHT ONE FOR YOU?

- THERE ARE ALL KINDS OF MOBILE ANTENNAS TODAY – LOOK AT ANY OF THE CATALOGS FROM HRO OR DX ENGINEERING!
- THERE'S BASE LOADED, TOP LOADED, CENTER LOADED, SHORT ANTENNA'S, LONG ANTENNAS, STILL LONGER ANTENNA'S. THERE'S TUNABLE ANTENNA'S SUCH AS THE SCREWDRIVER VARIETY OR THE ANTENNA'S WITH TAP'S LIKE THE OUTBACKER. THE VARIETY SEEMS ENDLESS AND CONFUSING! TAKE COMFORT – IT IS!



# WHICH IS THE ~~BEST~~ RIGHT ONE (FOR YOU)?

- DEFINE YOUR OPERATING PRIORITIES:
  - PERFORMANCE
  - EMERGENCY
  - HF
  - UHF/VHF
  - GMRS, MURS



# WHICH IS THE ~~BEST~~ RIGHT ONE (FOR YOU)?

- IDENTIFY YOUR CONSTRAINTS:

- FINANCIAL
- PHYSICAL
- AESTHETICS
- OTHER?



# WHICH IS THE ~~BEST~~ RIGHT ONE (FOR YOU)?

- RESIST ANECDOTAL PERFORMANCE CLAIMS –  
MAKE BUYING DECISIONS BASED ON ACTUAL  
DATA:
  - CONSIDER GAIN INFORMATION WHEN AVAILABLE  
FOR UHF/VHF ANTENNAS
  - CONSIDER THE ANTENNA'S PHYSICAL PROPERTIES  
AND HOW THEY MAP TO PERFORMANCE BEST  
PRACTICES



# MOBILE ANTENNA PERFORMANCE BEST PRACTICES

- LONGER IS BETTER
- COILS AND TRAPS REDUCE EFFICIENCY
- IF YOU MUST USE A SHORTING TECHNIQUE: TOP LOADING OR CENTER LOADING IS USUALLY BETTER THAN BASE LOADING
- FOR UHF/VHF HIGHER IS BETTER
- SEE QST ARTICLE “A COMPARISON OF HF MOBILE ANTENNA DESIGNS” (QST Nov, 2007, Page 30)



# MOBILE INSTALLATION CONSIDERATIONS

- A SOLID GROUND TO THE VEHICLE FRAME OR BODY – DON'T ASSUME TEST IT!  
(MAG MOUNTS EXCLUDED)
- PROTECT COAXIAL CABLE FROM CHAFFING
- USE DIELECTRIC GREASE IN ALL EXTERNAL COAXIAL FITTINGS
- SEAL ALL EXTERNAL COAXIAL FITTINGS WITH VULCANIZING (RUBBERIZED) TAPE  
THEN WRAP WITH GOOD QUALITY VINYL ELECTRICAL TAPE
- FOR UHF/VHF ANTENNAS, MOUNT YOUR ANTENNA AS HIGH AS YOU CAN
- MAKE SURE YOU RUN THE RIGHT SIZE WIRE FOR YOUR RADIO. #10 IS  
RECOMMENDED FOR 100 WATT RADIOS.

# SHOULD I USE AN ANTENNA TUNER FOR MY HF ANTENNA?

- ANSWER: IT DEPENDS ON YOUR OPERATING PRIORITIES AND YOUR ANTENNA (The answer is NO for UHF/VHF Antennas)
- HF MOBILE ANTENNAS TEND TO BE VERY NARROW BANDED. A TUNER DOES PROVIDE MORE OPERATING FLEXIBILITY.





## MOBILE ANTENNA MOUNTS

NMO MOUNT SET IN RACK  
OR MIRROR MOUNT  
BRACKET

Typically used for UHF/VHF Antennas



## MOBILE ANTENNA MOUNTS

BALL MOUNT WITH 3/8  
ANTENNA STUD MOUNT

Typically used for HF Antennas



## MOBILE ANTENNA MOUNTS

UHF MOUNT SET IN A  
BRACKET FOR DODGE RAM

Typically used for HF, UHF/VHF Antennas



## MOBILE ANTENNA MOUNTS

3/8 STUD MOUNT

Typically used for HF Antennas



## MOBILE ANTENNA MOUNTS

LIP MOUNT WITH A UHF  
ANTENNA MOUNT. ALSO  
AVAILABLE WITH NMO ANTENNA  
MOUNT

Typically used for UHF/VHF Antennas



## MOBILE ANTENNA MOUNTS

TRIPLE MAGNET MOUNT WITH  
A 3/8" ANTENNA STUD  
MOUNT. ALSO AVAILABLE  
WITH NMO OR UHF MOUNT

Typically used for larger Antennas both HF and  
UHF/VHF



## MOBILE ANTENNA MOUNTS

### THRU GLASS MOUNT

Typically used for UHF/VHF & Cell Phone  
Antennas

# MOBILE ANTENNA WORK SHOP

- **GOAL:** WE WILL ATTEMPT TO MEASURE THE FIELD STRENGTH OF SEVERAL ANTENNAS AT A FIXED POWER OUTPUT OF 10 WATTS AT A FIX DISTANCE FROM THE REFERENCE ANTENNA.
- **METHODOLOGY:** WE WILL SET UP A FIELD STRENGTH METER A FIXED DISTANCE FROM A DESIGNATED PARKING STALL. WE WILL USE A REFERENCE ANTENNA AND SET THE FS METER TO 50% SCALE WHILE TRANSMITTING A 10 WATT SIGNAL.
- WE WILL HAVE EACH PARTICIPANT PARK THEIR VEHICLE IN THE DESIGNATED PARKING SPOT AND SET THEIR RADIO TO 10 WATTS AND TRANSMIT ON 28.385 AM WHILE WE MEASURE THE ANTENNA'S RESPECTIVE FIELD STRENGTH.
- WE WILL PROVIDE THE RESULTS IN THE APRIL NEWS LETTER.