

Eyeball 2012 Mobile Shootout Results

Wow! This year's Shootout revealed one overshadowing fact: the people that participate in our Shootouts are getting it. Let me explain. The smallest spread from first place to last place before this year happened in 2005 in Minnesota when last place was only 3.4dB down from the Top Gun. This year the difference was only 2.96dB – less than half an S-Unit.

New this year was an attempt to normalize test conditions by transmitting a signal periodically from my vehicle, recording that signal and using it to extrapolate a normalized score of the mobiles being tested immediately before and immediately after the test signal. I got this idea from W8JI who sat with me at last year's W0DXCC banquet in Leavenworth, KS. It makes a lot of sense considering that conditions always vary during any Shootout due to changes in humidity, and ground dew. I believe we will stay with this method for the foreseeable future.

Special thanks this year go out to Doug, W0WSP who did all of the score recording at the receive site. I'd also like to thank Jim, N5OHL for taking the pictures as well as Phil, K9ZK and Dean, N7XG who I stole a couple of photos from for this report.

Next year's Shootout may be the most valid one we've ever held in that Wyoming has some mountains we may be able to utilize enabling us to measure – according to the some pundits – a take-off angle of 25 to 27 degrees as well as the far field, that is, a path of more than five wavelengths. We may not test everyone that way, just enough to determine if it makes any significant difference in the final score order. I have my doubts, but the only way to move a theory to reality is to prove or disprove it with an action. The Wyoming mountains will help us with that action. I hope there are a few of you who will show up a day early to help test the theory.

The 2012 Shootout was held at the Mahoney State Park near Ashland, NE on a frequency of 7.178 MHz. The receive site was approximately two wavelengths from the transmitting site.

I think everyone had a good time – I know I did and am already looking forward to next year.

73 Everyone,
Lon, K0WJ



1st Place and Top Gun: Carl, W9OO.

Carl utilized a 112” mast with an N9UCW modified Hustler Resonator which was mounted at the very top of the mast at a right angle providing some capacitive top loading. Out of the resonator was a 4+ foot whip providing some additional capacitance.

Please note what I have been saying all along, and bears repeating here: the mast radiates most of the signal in a center loaded vertical antenna, so the longer the mast, the greater the efficiency.

						Antenna			dB Down
Finish	Test			Whip/Cap Hat		Mounting	Measured	Adjusted	From
Order	Order	Call	Antenna	Configuration	Vehicle	Position	Signal (mv)	Signal (mv)	Top Gun
1st	14th	W9OO	W9UCW Modified Hustler Resonator	112” Mast w/Resonator at top at right angle to mast +4' whip	Honda Civic	Beneath Rear Bumper	1025	909	0



2nd Place and Big Gun: Keith - KS9WI

Keith Had basically the same setup as last year when his setup also came in second, although the award went to his wife. Keith's mobile installation consisted of a Hamstick main radiator along with one Hamstick counterpoise. I'd like to see what would happen if he added at least one more resonant Hamstick counterpoise. Keith was only .2205 dB down from Carl's winning entry. I like his willingness to try something like this – experimentation is the essence of Ham Radio.

						Antenna			dB Down
Finish	Test			Whip/Cap Hat		Mounting	Measured	Adjusted	From
Order	Order	Call	Antenna	Configuration	Vehicle	Position	Signal (mv)	Signal (mv)	Top Gun
2nd	3rd	KS9WI	Hamstick	Hamstick on mount approx. 18" above roof with a 40 Meter Hamstick counterpoise	Buick Sedan	Elevated Hitch	902	864	0.22050



3rd Place and Big Gun: Cal - KC0CL

If you didn't see Cal's unique mount, you missed out. Cal homebrewed a mount with a linear actuator which allows him to park his SUV in a standard garage by lowering his Scorpion antenna to a horizontal position.

I've always stated that mounting an antenna is an exercise in compromise, but Cal has managed to minimize those compromises as much as possible and still maintain a top-notch mobile system. How many of you were able to work him on the Four Corners after the Eyeball on a night when band conditions were FAR from ideal? I heard there were many.

						Antenna			dB Down
Finish	Test			Whip/Cap Hat		Mounting	Measured	Adjusted	From
Order	Order	Call	Antenna	Configuration	Vehicle	Position	Signal (mv)	Signal (mv)	Top Gun
3rd	5th	KC0CL	Scorpion SA680	Home Brewed mount with antenna base at 4 feet using a Scorpion Cap Hat	Ford Escape	Left Rear	839	791	0.60387



4th Place and Big Gun: Charles - AE5XL

Charles' Scorpion antenna was mounted such that the coil was well above the roof line and he ended up less than 1 dB down from the Top Gun – that's less than a quarter of an S-Unit in your receiver.

						Antenna			dB Down
Finish	Test			Whip/Cap Hat		Mounting	Measured	Adjusted	From
Order	Order	Call	Antenna	Configuration	Vehicle	Position	Signal (mv)	Signal (mv)	Top Gun
4th	6th	AE5XL	Scorpion SA680	Standard Scorpion 6 foot whip	Dodge RAM 2500	Center Behind Cab	816	770	0.72073

5th Place: Glen - WT0A



Our most excellent Eyeball Commander had a trick up his sleeve or should I say up his truck's rear end? Glen had a contraption mounted to his receiver hitch that extended both under his truck bed as well as out behind the truck. This seems to have caused additional coupling of his truck body to ground. To check out Glen's "Capacitive Boot" for effectiveness, he removed it and tested again. His second test was down 73 mv from his first test and would have dropped him one place in the standings. Let's see if Glen adds a similar setup to the front and maybe both sides for the Wyoming Shootout!!!

						Antenna			dB Down
Finish	Test			Whip/Cap Hat		Mounting	Measured	Adjusted	From
Order	Order	Call	Antenna	Configuration	Vehicle	Position	Signal (mv)	Signal (mv)	Top Gun
5th	13th	WT0A	Homebrew	130" Mast with coil at top at right angle + 18" Whip in addition, Glen used a "Capacitance Boot" (See Pix)	Chevy Silverado	Mid Bed	840	745	0.86407



6th Place: John - WK7K

The potential Eyeball Host for 2013, John came in 6th place this year with his Scorpion antenna mounted on his flat bed pickup with the coil well above the cab roof and included a Scorpion Cap Hat.

						Antenna			dB Down
Finish	Test			Whip/Cap Hat		Mounting	Measured	Adjusted	From
Order	Order	Call	Antenna	Configuration	Vehicle	Position	Signal (mv)	Signal (mv)	Top Gun
6 th	8 th	WK7K	Scorpion SA680	Scorpion Cap Hat	Chevy Silverado Flat Bed	Mid Bed	794	729	0.95836



7th Place: Pete - NJ9T

Pete with his 3 inch in diameter Predator Screwdriver finished in seventh place. Pete bought a DX Engineering Cap Hat Hub, which sells under the name "Hot Rodz" and smartly replaced the DXE spokes with eighth inch Stainless Steel rods and arranged them to greatly increase the Cap Hat value over the DXE standard arrangement. Check out the pictures.

						Antenna			dB Down
Finish	Test			Whip/Cap Hat		Mounting	Measured	Adjusted	From
Order	Order	Call	Antenna	Configuration	Vehicle	Position	Signal (mv)	Signal (mv)	Top Gun
7 th	7 th	NJ9T	Predator	DX Engineering hub w/72" x 1/8" SS to form 3-leaf clover hat approx. 3' in diam. And 3+ ft above main coil	Ford Escape	Hitch Receiver	725	684	1.23507

9th Place: Tim - W0YV

Tim placed ninth with his Hi-Q antenna equipped with an Eggbeater style Cap Hat. Getting the Cap Hat farther away from the main coil would have improved his score. Mounting position on a van is always a difficult issue, but Tim's mount is about as good as possible. I'm sure he manages many contacts with his fine mobile setup.



Finish	Test	Call	Antenna	Whip/Cap Hat Configuration	Vehicle	Antenna Mounting Position	Measured Signal (mv)	Adjusted Signal (mv)	dB Down From Top Gun
9th	1st	W0YV	Hi-Q	Eggbeater Hat 1' above main coil	Chevy Express	Receiver Hitch	621	621	1.65472



10th Place: Larry - KC9NCS

Larry finished tenth with a Hamstick and proved that eight dollars and a mount can put you on the air and be less than half an S-Unit down from the Top Gun.

Finish	Test	Call	Antenna	Whip/Cap Hat Configuration	Vehicle	Antenna Mounting Position	Measured Signal (mv)	Adjusted Signal (mv)	dB Down From Top Gun
10th	12th	KC9NCS	Hamstick	None	GMC Envoy	Rear Hatch Right Side	680	603	1.78246



11th Place: Mick - AC0TP

In eleventh place was Mick, AC0TP with a Hustler resonator on a 54" mast. In an email to me, Mick states, "My goal was to not come in last, and I've learned I have some more things to do for the 2013 shootout! Hopefully most everyone else is thinking the same way as there is ALWAYS something that can be done to improve one's mobile setup."

						Antenna			dB Down
Finish	Test			Whip/Cap Hat		Mounting	Measured	Adjusted	From
Order	Order	Call	Antenna	Configuration	Vehicle	Position	Signal (mv)	Signal (mv)	Top Gun
11th	2nd	AC0TP	Hustler	54" Mast, Resonator and 24" Whip	GMC Sierra	Right Rear	628	601	1.7968

12th Place: RJ - NA0L

Twelfth place was claimed by RJ – NA0L with a Tarheel 400A. Lots of Capacitive top loading was provided by a tall whip and a Cap Hat at the very top, which is EXACTLY where a Cap Hat should be.



Finish	Test	Call	Antenna	Whip/Cap Hat Configuration	Vehicle	Antenna Mounting Position	Measured Signal (mv)	Adjusted Signal (mv)	dB Down From Top Gun
12th	4th	NA0L	Tarheel 400A	6' Mast atop the Main Coil w/8 Spoke Cap, 2' dia. at the top	Ford Ranger	Rear Side	627	601	1.79689



13th Place: Paul - NN5G

In thirteenth place was Paul, NN5G. His Hamstick was only 1.84 dB down from the Top Gun which is less than half an S-Unit.

Finish	Test	Call	Antenna	Whip/Cap Hat Configuration	Vehicle	Antenna Mounting Position	Measured Signal (mv)	Adjusted Signal (mv)	dB Down From Top Gun
13th	9th	NN5G	Hamstick	None	4Runner	Mid Roof	648	595	1.8404

Eyeball 2012 Shootout Summary

Finish	Test			Whip/Cap Hat		Mounting	Measured	Adjusted	From
Order	Order	Call	Antenna	Configuration	Vehicle	Position	Signal (mv)	Signal (mv)	Top Gun
1st	14th	W9OO	W9UCW Modified Hustler Resonator	112" Mast w/Resonator at top at right angle to mast +4' whip	Honda Civic	Beneath Rear Bumper	1025	909	0
2nd	3rd	KS9WI	Hamstick	Hamstick on mount approx. 18" above roof with a 40 Meter Hamstick counterpoise	Buick Sedan	Elevated Hitch	902	864	0.2205014
3rd	5th	KC0CL	Scorpion SA680	Home Brewed mount with antenna base at 4 feet using a Scorpion Cap Hat	Ford Escape	Left Rear	839	791	0.6038739
4th	6th	AE5XL	Scorpion SA680	Standard Scorpion 6 foot whip	Dodge RAM 2500	Center Behind Cab	816	770	0.7207315
5th	13th	WT0A	Homebrew	130" Mast with coil at top at right angle + 18" Whip in addition, Glen used a "Capacitance Boot" (See Pix)	Chevy Silverado	Mid Bed	840	745	0.8640761
6th	8th	WK7K	Scorpion SA680	Scorpion Cap Hat	Chevy Silverado Flat Bed	Mid Bed	794	729	0.9583635
7th	7	NJ9T	Predator	DX Engineering hub w/72" x 1/8" SS to form 3-leaf clover hat approx. 3' in diam. And 3+ ft above main coil	Ford Escape	Hitch Receiver	725	684	1.235077
8th	11th	N5OHL	Hamstick	None	Lincoln	Mid Roof Mag Mnt.	739	655	1.4232258
9th	1st	W0YV	Hi-Q	Eggbeater Hat 1' above main coil	Chevy Express	Receiver Hitch	621	621	1.6547228
10th	12th	KC9NCS	Hamstick	None	GMC Envoy	Rear Hatch Right Side	680	603	1.7824657
11th	2nd	AC0TP	Hustler	54" Mast, Resonator and 24" Whip	GMC Sierra	Right Rear	628	601	1.7968941
12th	4th	NA0L	Tarheel 400A	6' Mast atop the Main Coil w/8 Spoke Cap, 2' dia. at the top	Ford Ranger	Rear Side	627	601	1.7968941
13th	9th	NN5G	Hamstick	None	4Runner	Mid Roof	648	595	1.840469
14th	10th	N0PUI	Hustler	None	Dodge Charger	Right Rear	500	459	2.967511