

# **INTRODUCING OPAR.**

## **The One Person Antenna Raiser**

**by John Reisenauer Jr, KL7JR**

**Like to operate portable? Do you have trouble finding help for antenna raising at your QTH? This may just be the answer for you.**

**You can drive a vehicle on the base for portable operations or mount permanently at your QTH by bolting base to concrete inserts. Slip the mast in the base of OPAR (short pipe section tilts), mount your antenna and hoist up all alone. Mast easily secures in place with moveable locking bolt and large spanner nut. Guying methods should also be employed for heavier antennas. I've used OPAR to lift small beams, verticals, rigid dipoles and various wire antennas to heights of 20-30 feet with minimal effort all by myself!**



**OPAR shown above set up ready to accept antenna mast.  
Simply insert mast end in to OPAR pipe stub, install antenna and raise.**



**OPAR shown above with antenna raised and mast locked in place.**

Although OPAR is designed for "one-person operation" using small to medium sized antennas, it's always good safety practice to have help on hand. OPAR as pictured is considered "medium-duty" use. Several variations (use your imagination for your own particular use!) exist (ie-length of vertical or horizontal members, etc.) depending on your specific use. A flexible design is what makes OPAR more "user friendly" compared to the commercially made models. For larger antennas or operating in the Arctic, I'd recommend adding a second vertical brace higher up on the vertical section and adding at least another 12 inches or more to the overall height (36 to 48 inches plus). If you are not an experienced welder, it's best to have a professional welder do the welding (the number of "good welds" is directly proportional to the length of time the antenna and mast stays in the air!). My OPAR

cost about \$340 to make locally. Raising a tri-bander alone is not easy especially for the inexperienced Ham, but it is possible if done correctly. Remember to have help on hand if at all possible. I wished I had OPAR many years ago! Good luck with your antenna projects.

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### ***MATERIALS LIST (medium duty OPAR)***

- vertical support 36 inches tall by 9 inches wide w/support braces every 6 to 8 inches.
- horizontal support (drive-on) same as above.
- 1 inch OD square tube steel used (approx. 20 feet total required) for strength vs. round stock.
- 1/2 inch x 3 inch long bolt with welded spanner nut (optional).
- 3/8 inch by 2" wide plate used to secure mast to top of vertical support.

### ***Some economical mast materials used by KL7JR:***

1. **Light-duty use:** Chain link fence "top rail" pipe or EMT conduit for smaller light weight antennas.
2. **Medium to Heavy-duty use:** IMC threaded conduit or galvanized threaded water pipe (1-1/4" size works great).

### ***Suggested use of masting and antenna types:***

The tallest mast I used was 25 feet, unguyed with an A99 Solarcon vertical or Shakespeare 2010 vertical, or various wired antennas (dipoles, G5RV's etc.). Anything over 25 ft becomes unmanageable and must be guyed. I've used small beams up to 20 feet without guys. On lighter wire antennas I used light weight conduit (EMT or IMC threaded 1 1/4") or chain link fence top rail pipe 1" diameter.

For the verticals or beams, 1 1/4" IMC or galvanized water pipe worked great. The antennas go up fast and easy, but you must do it fast to gain momentum, or the antenna becomes very heavy midway the push up and then you'll struggle with it.



**Pictured is my A-99 vertical at 24 feet.**

**The antenna withstood some strong Yukon windstorms in Nov. and Dec. for several days!**

**No...that's not a TV antenna mounted on the mast...it is on the building in the background!**

**Oh, I added a 2nd down brace from the top of the raiser that clips to the mast to the bottom of the raiser for heavier antennas like I used.**

**The photo below shows the additional brace I added (later) from**

**the top to the bottom of OPAR to accommodate heavier antennas. Also see closeup photo.**



**Check out that "backup" satellite TV dish "moose rack" above the door on the cabin at Beaver, Creek, Yukon.**



**I kid you not, and I highly recommend you do a couple trial "hoists" without an antenna to get the swing of things, this baby is slick! You don't have to be parallel with the vehicle either when you drive on the base. Sometimes I've had to go up at an angle less than and more than 90 degrees. Round pipe would also work. Square tubing was on hand. You can also play with the height and width of the support depending on what you want to hoist up.**

**I based my design on heavy pipe and heavy antennas. I've been using my OPAR for about 10 years now and it's been a life saver for me hoisting up antennas by myself.**

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**New Updated Compact LIGHTER Version!**



**I've been kicking this simple design above around for some time. It's smaller and lighter than my original OPAR (one person antenna raiser) at the beginning of this article, and only cost \$50 (2009 prices), for a welding shop to make for me.**

Quarter-inch plate and 1/4"x4"x3" angle. Modify it to your own design as you wish!

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**Update 11-2010**

Well I just wouldn't let it be. I just had to make a lighter version but hopefully just as sturdy. Allow me to introduce my latest brainchild, hi hi!



**Latest Aluminum version.  
Front view on right, backside view on left in photos above.**

The older and heavier designs in the earlier (top) part of this article were Yukon tested (the purple one is the original design and the black is the lighter version and the aluminum is the 3rd design you see above.....phew! After using the lighter



version on 4 setups over a 3 week period, I know I had to try to go lighter yet....( I ain't getting any younger! )

## **The Aluminum OPAR - Redefining a proven design!**

Although the latest design of OPAR worked well for me on my 2010 VY1RST/VE8RST trip, I wanted an even lighter antenna raiser. Would an aluminum version work in the harsh arctic or just end up a brittle mass of scrap metal when 40 below zero? It worked just fine on a couple of outings from KL7 and VY1!

This design uses 4"x 4" aluminum angle (2 at 30 inches tall) and a 1/4 inch aluminum plate (8"x 20"). The bolts are 7/16 inch and I will probably replace with eye bolts which are easier to grab with gloves on.

Construction is similar to the lighter version OPAR but the weight is now cut down to a mere 16 pounds! Four-inch angle should handle large heavy antennas such as a tri bander, and 2.5 inch or 3-inch angle would easily handle smaller lighter antennas. I have \$200 invested (aluminum costs more in material and welding labor than steel) in this beauty.

**DISCLAIMER** Feel free to copy or modify this design at your own risk. Neither USI, NCDXA nor KL7JR claim any responsibility.

73 de Yukon John, KL7JR