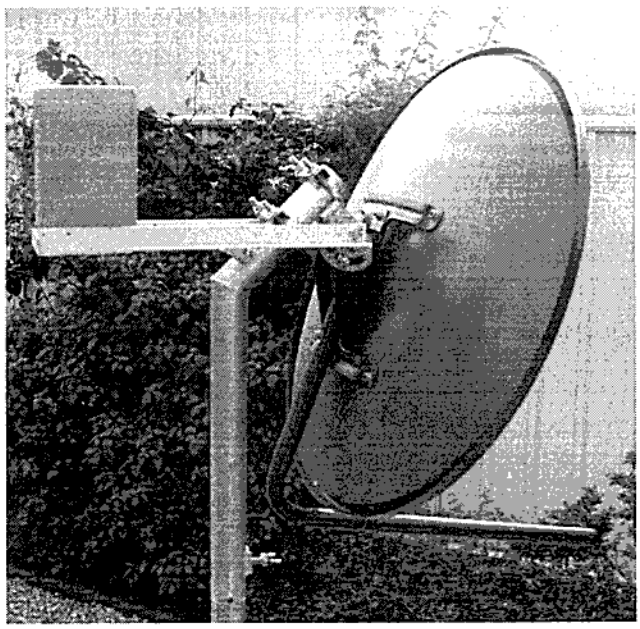
WA VHF GROUP

ACTIVITY NOVEMBER 28th 2016

OFF-SET SATELLITE DISH ANTENNAS

Satellite dishes turn up everywhere in the Perth suburbs from council verge pickup to scrap metal yards. For the amateur radio enthusiast they are a perfect source of efficient high gain antenna. The off-set dish antenna gains its efficiency from the fact that the pickup head is situated at a position that does not interfere with the incoming or outgoing signal



Having acquired a suitable dish to change its operation from satellite use to terrestrial (horizontal use) requires mounting the dish at an angle of approx. 67.6 degrees to archive a horizontal beam and allows the dish to avoid colliding with the mounting upright.

Fig - 1

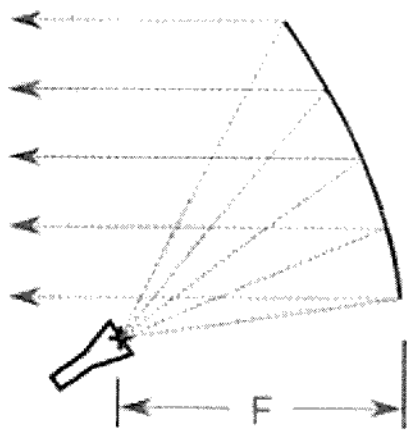
Fig - 2

Another attempt overcome the problem is to assemble at a 180 degrees from the original.

Setting up the focal point can be complicated or simple. The simple way

Is to attach small reflecting tabs to the surface of the dish and point it at a light source and introduce a sheet of paper in the vicinity of the projected focus point and note the position when the reflecting strips become one image.

The technical method can be more exact, check out the sites mentioned below



Off set dish calculator-1

http://www.satellite-calculations.com/Satellite/Offsetreflector.htm

Off set dish calculator-2

http://www.electronicecircuits.com/electronic-software/parabola-calculator-for-satellite-dish-antenna-design

Beam Width calculator

http://www.tracking-antenna.de/antennas/beam-width-calculator/

Parabolic calculator

http://www.rfwireless-world.com/calculators/parabolic-dish-antenna-calculator.html

On line calculator

http://educypedia.karadimov.info/electronics/electroniccalculatorsatellite.htm

Super 3G antenna

http://whirlpool.net.au/wiki/nextg_3g_satellite_dish_antenna

General antenna formula

http://user.engineering.uiowa.edu/~ece195/2006/docs/AntennaFormulas.pdf

Off set & asymmetrical antenna

https://www.youtube.com/watch?v=pNg82yZZjqw

W1GHZ Microwave Antenna Handbook

http://www.w1ghz.org/

VK5ZD 10 GHz tx/rx on top of satellite dish