

## 2CV ROOF RACK

By Graeme Dennes

Revision 3

### Background

The writer had been searching for a roof rack for his Raid 2CV so the spare (sixth) wheel could be carried on the roof rack instead of inside the vehicle, taking up wine space! A very strong 2-bar roof rack designed *specifically* for the 2CV was located and purchased. True!! It's made in Sweden (this is also true!) by Thule (Too-lay!) and sold by ARB 4x4 Accessories. (It may be sold elsewhere.) The rack was in stock. (Can you believe that...??!!) It was collected four days after the order was placed.

The rack consists of two packages. One package, Thule code 391000, has two ProBar Evo 135 extruded aluminium bars, while the other package, Thule code 951200, has four Gutter Foot steel mounts. The components are beautifully engineered and manufactured. The materials are exceptionally strong yet light in weight. We may not be able to lift the 2CV off the ground by the rack, but we'd go close!



**Photo 1** on the left shows the general style of the Thule two-bar roof rack. (This is not a 2CV rack. This is not a 2CV!)



**Photo 2** on the left shows the 2CV roof rack parts supplied with the kit, which includes two bars and four feet. Each steel foot has a protective rubber sleeve (not shown) which fits over the foot to protect the paintwork. Photos 1 and 2 drawn from the Thule website with acknowledgement and grateful appreciation.

Here's the link to the 2CV roof rack on the manufacturer's website: [Thule 2CV ROOF RACK](#)



**Photo 3** above shows one end of a rubber-sleeved steel foot sitting in the rain gutter, hard against the bottom of the gutter where it normally travels. The foot can't move sideways once locked in place and the rubber sleeve ensures the steel foot does not damage the vehicle's paintwork.



**Photo 4** above shows the adjustable clamp of the foot firmly wrapped underneath the gutter. This locks the gutter solidly between the upper foot and the lower clamp, holding the steel foot "welded" in place on the vehicle.

The design of the clamp mechanism ensures the outer clamp cannot move once the large nut (shown) is tightened by hand (only by hand!). Once secured in place, the four feet cannot move unless the steel gutters are ripped away from the vehicle! It is indeed rock-solid. The roof rack can be fitted or removed in just a couple of minutes.

### Spacing of Roof Rack Bars

The writer positioned the bars of the roof rack at **400 mm between centres**. This allows the 600 mm diameter spare wheel to lie across the two bars with around 100 mm overlap on each bar to ensure good support and stability – most important for a vehicle which can travel at such blinding speeds!

### Roof Rack Horizontal

Position the feet of the roof rack such that when a spirit level is rested across the top of the two bars, the spirit level is horizontal. This will ensure there is minimum drag from the spare wheel and minimum paint damage to the rim from dirt and stones. We want the spare wheel to be dead level when secured to the rack.

### Spare Wheel Security

The writer purchased two 2-metre long, 25 mm wide webbing tie-down straps of 250 Kg load securing capacity and with quick-release fittings. Perfect! Run one strap around the bar at front left to around the bar at rear right and the other strap around the bar at front right to around the bar at rear left, i.e., the straps running diagonally across the wheel, with both runs of each strap passing over the top of the wheel. Position the straps so their quick-release locks are sitting on top of the wheel for easy access and for maximum integrity of the locks. You'll find the wheel cannot move yet is instantly accessible.

### Impact on UHF CB Radio Antenna



Prior to buying the roof rack, the writer's UHF CB radio antenna was mounted to a metal bracket and MBC fitting so the fitting is at the highest point of the vehicle, similar to the writer's green 2CV in **photo 5** at left.

The antenna rod itself screws onto the threaded section of the MBC fitting. Whenever the antenna rod is removed from the vehicle, always fit the supplied plastic cap to the MBC fitting to prevent entry of water and dirt.

## Antenna Shielding

As a result of fitting the roof rack and the spare wheel, the steel rim of the spare wheel and any steel belting in the tyre would interfere with the rearward signal transmission and reception from the antenna because of radio frequency shielding caused by the steel materials.

To overcome this issue, the writer built a small 200 mm high, 60 mm wide, four-sided aluminium mount per **photos 6 and 7** below which locks sideways into an extruded channel in the front bar on the left side of the vehicle *to raise the height of the **base** of the antenna to above the highest point of the spare wheel*. This allows the antenna to have an unobstructed 360 degree “view” (radio coverage) when the spare wheel is sitting in place on the roof rack. Also, as the antenna is mounted higher than normal, i.e., further away from the ground, the communications range (slant range to the horizon) is extended as a bonus. The photo below shows the antenna rod screwed onto the MBC fitting at the top of the metal mount, where the antenna base is raised above the highest point of the spare wheel (not shown).



The threaded section of the MBC fitting extends up through a hole in the top face of the mount, held in place by a locking ring. More follows. The antenna screws onto the threaded section. Fit a small nylon cable clamp, held by a stainless screw and nylock nut and washer (shown) to prevent movement of the cable and subsequent cable damage. You **don't** want the cable moving in the wind or it will eventually fatigue and need to be replaced.



**Photo 7** above shows the four-sided antenna mount secured to the rear face of the front bar of the roof rack, held by the two stainless bolts shown and two hidden “nuts”. Shows the form of the aluminium mount and the cable clamp. Do not make the cable bend radius too tight where it exits the MBC fitting or else cable damage will occur over time.

#### **Use a second coaxial cables and fittings**

The writer bought a separate coaxial cable with the MBC fitting attached, then cut the cable to the correct length for the longer run to the CB radio in the vehicle, then fitted a crimped PL259 plug to the cut end of the cable to attach to the radio's antenna socket. The writer will use the shorter coaxial cable and fittings when the roof rack is not fitted, or use the longer cable and fittings when it is. **Coaxial cables should always be adequately supported so there is absolutely no movement of the cable from wind or vehicle vibration.**

**Don't attempt to use joiner cables and connectors to extend coaxial cables.** You can't weather-proof them against water, moisture and dirt ingress, so corrosion, resistance and signal loss become the norm and the curse of your installation. You definitely don't want these weaknesses in your radio system if you wish to ensure maximum reliability and range of your vehicle's radio for your safety in emergencies – should it ever be needed.

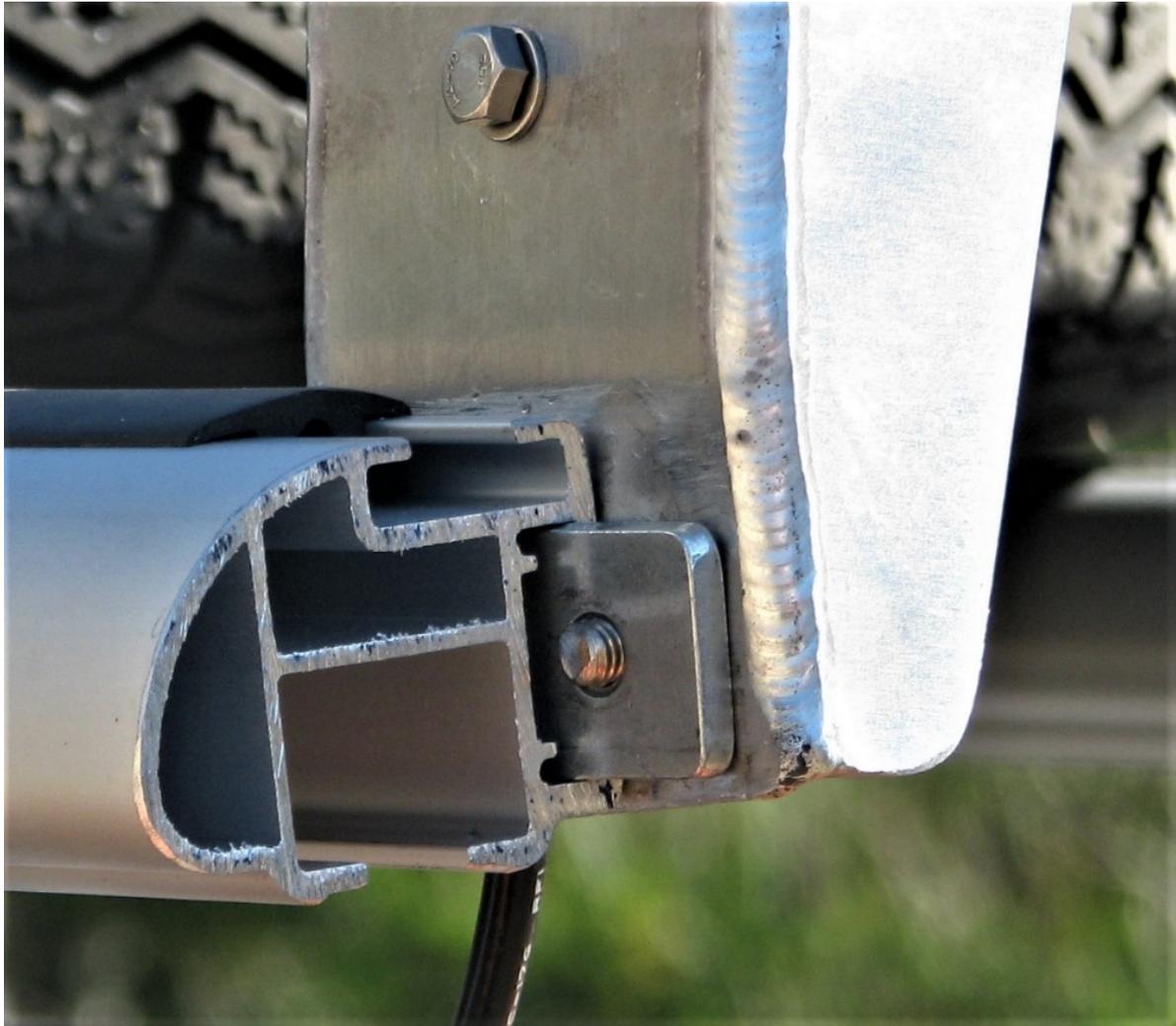


**Photo 8** above shows another view of the *manufacturer-fitted* MBC fitting on the cable. It is secured into the top face of the metal mount with the locking ring shown. The MBC fitting with 5 metres of 50-ohm RG-58 coaxial cable may be purchased from UHF CB radio suppliers.

Only ever **hand-tighten** the antenna rod to the MBC fitting! Don't damage the antenna rod and MBC fitting by making it *tight*! Remember to purchase the crimped PL259 plug for fitting to the other end of the cable after it has been cut to length for your vehicle. For maximum life and reliability, **do not** use the soldered type of PL259 plug. Use the crimped type. UHF CB radio suppliers can usually supply and fit the PL259 crimped plug to the cable for you.

### **Antenna at True Vertical**

With the roof rack bars fitted at 400 mm centres and the spare wheel sitting dead horizontal on the bars, then when the antenna rod is screwed onto the MBC fitting on the metal mount, **we need the antenna rod to be at true vertical** – front/back and left/right when the vehicle is sitting on level ground. In other words, we need the top mounting face which holds the MBC fitting to be dead horizontal, to maximise transmission range. You'll have a small angle of perhaps up to 10 degrees to include in the mount design because the rear face of the front bar may not be at true vertical. You can get a sense of the small angle needed from Photo 10 below. The metal mount needs to be angled slightly rearwards to achieve a true vertical positioning of the antenna. (Alternatively, the mounting face which holds the MBC fitting could be angled downwards by that angle.) However you choose to accommodate the angle, ensure the antenna rod ends up at true vertical in its mounted position on the vehicle. Walk around the vehicle and ensure vertical is vertical. The importance of this cannot be overstated. The metal mount, being a four-sided box, acts as a protector for the coaxial cable and the MBC fitting by shielding them against damage from dust, dirt, stones, etc.



**Photo 9** above is a close-up of the left end of the front bar and shows one of the two antenna mount securing bolts and “nuts”. (The black plastic protective cover on the end of the bar has been removed.) The visible “nut” is partially inserted into the extrusion channel in the rear edge of the roof rack bar. ARB was able to supply the two stainless bolts and the two “nuts” of the correct size for the extruded channel. You need the two “nuts” to be as large as possible but still able to slide freely inside the channel with the bolts loosened.

#### **Correct Bar Orientation**

Per the manufacturer’s roof rack mounting instructions, mount the **two** bars with the curved metal section of each bar, shown at the left in Photo 9 above and Photo 10 below, facing *forward*, with the antenna mount secured to the flat *rear* face of the front bar as shown.



**Photo 10** above is another view of the end of the bar, showing the slotted extrusion channel. It also shows the outer-most “nut” positioned in the channel. Ensure the two mounting bolts are not too long so where they bind against the inner face of the channel when tightened.

Note the extent that the rear (flat) face of the bar is leaning slightly forward, i.e., a few degrees forward from true vertical. This small angle has to be accommodated, in some manner, in the building of the metal mount to ensure the antenna rod is at true vertical when in position on the vehicle as already noted. (Ignore the tyre angle. It was being separately supported at the time the photo was taken.)

### **Antenna Mount Rigidity**

The antenna mount shown in this article is the Mk. II version. Initially, the writer made up a plain, folded metal bracket as the antenna mount, mounted in the same manner as described here. However, while travelling in the car with the antenna in place, there was too much springiness in the installation. The metal bracket and antenna were constantly in a state of vibration from wind buffeting. Not good for the life of the antenna or coaxial cable.

The solution was to build the much more rigid four-sided metal mount shown in this article. No more antenna vibrations. Rock steady.



**Photo 11** above shows the finished installation on the writer's Raid 2CV. It shows the roof rack, the spare wheel, the metal mount and the antenna, and shows the antenna base being higher than the spare wheel. Job done!

Now, I must remember, I must remember –  
the tie-down straps, the tie-down straps!!!  
(Apologies to Larson)

## **UHF CB Antenna**

The UHF CB antenna presented in this article is made by RFI Technology Solutions and is the model **CD63-71-53**. There is no better *all-round* UHF CB vehicle antenna on the planet in regard to design, manufacture and performance.

The manufacturer's details for the model CD63-71-53 antenna may be found at:

<https://www.rfi.com.au/CD63-71-53>

## **Further Information**

For further information on the antenna and its mounting to the vehicle, the reader is referred to the writer's article **Better UHF CB Car Radio Performance** for everything you need to know to ensure *maximum* performance from your vehicle's UHF CB radio. The article applies to all vehicles.

## **Safety Warning 1**

Always observe the roof rack manufacturer's mounting instructions and load limits. Treat these fundamental specifications very seriously.

## **Safety Warning 2**

In the interest of personal safety, the writer shortened the bars by 200 mm to ensure the outer ends of the bars did not create an injury hazard by projecting outwards past the locking knobs on the feet of the roof rack. Refer to Photo 11.

## **Disclaimer:**

This article is not intended as a sales promotion for a commercial product. It is about providing advice on the availability of a roof rack for our 30+ year old 2CVs. There may be similar products available but the writer did not locate them.

This document may be updated in the future and assigned a new revision number.

The writer would appreciate your advice of errors or suggestions for improvements.

Please forward to: [gdennes@gmail.com](mailto:gdennes@gmail.com)

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