

Snow chains and tyres for severe weather cycling.

By Steve Muir, September 2011

I have been curious about snow chains on bikes for many years, following a failed attempt to ride up Jollies Pass Road in Hanmer Springs in a snowstorm, and conversations with an Austrian friend who worked as a cycle courier in Austria for several winters. He used Swedish-made snow chains for several months of the year to cope with permanent snow and ice on the roads. There was a subtle suggestion that New Zealand cyclists were a little bit soft in comparison, many being put off cycling by a few centimetres of snow on the roads.

This year has been the ideal season to redeem the good name of the rugged New Zealand cyclist, and keep transporting adults and kids around despite thick snow on the roads. A bit of internet research revealed several options:

1. Import custom made snow tyres with carbide studs at huge expense.
2. Make my own snow chains for a few dollars.
3. Make my own snow tyres using bolts or screws for a few dollars.

I opted for 2 & 3. I had a good stock of 6x20 mm bolts and nuts around, so began making a snow tyre for my three-wheeler "tadpole" which has a large bin at the front and is great for transporting kids who were off school and had to be taken to friends houses so we didn't suffer so much cabin fever. The big advantage of the three-wheeler is it can't fall over, but it does require a large amount of traction to make it go. I drilled holes through a knobbly tyre at approximately 8 cm intervals, alternating the bolts slightly either side of the centre line, and fitted the bolts with washers either side to prevent the bolts pulling through. I found another old slick tyre with a dodgy side wall and cut the side wall off and used it as a liner to prevent the bolt heads puncturing the tube. The initial test ride on the footpath in powdery snow was a little on the bumpy side but once I got onto icy compacted snow on the road it provided excellent traction and was quite smooth. The three wheeler did work up quite a sweat because of the awkward wheel spacing left from cars on the road, meaning one wheel was always in deep snow. I only got bogged down once on a quiet side street where the snow had drifted to over 25cm, but mostly it performed very well. The mild steel bolts started to wear surprisingly quickly when the snow melted and I had to bike home on the straight tar-seal. Around 5mm of bolt was worn away over a few kilometers. Stainless bolts would be harder wearing but cost a bit more to buy.



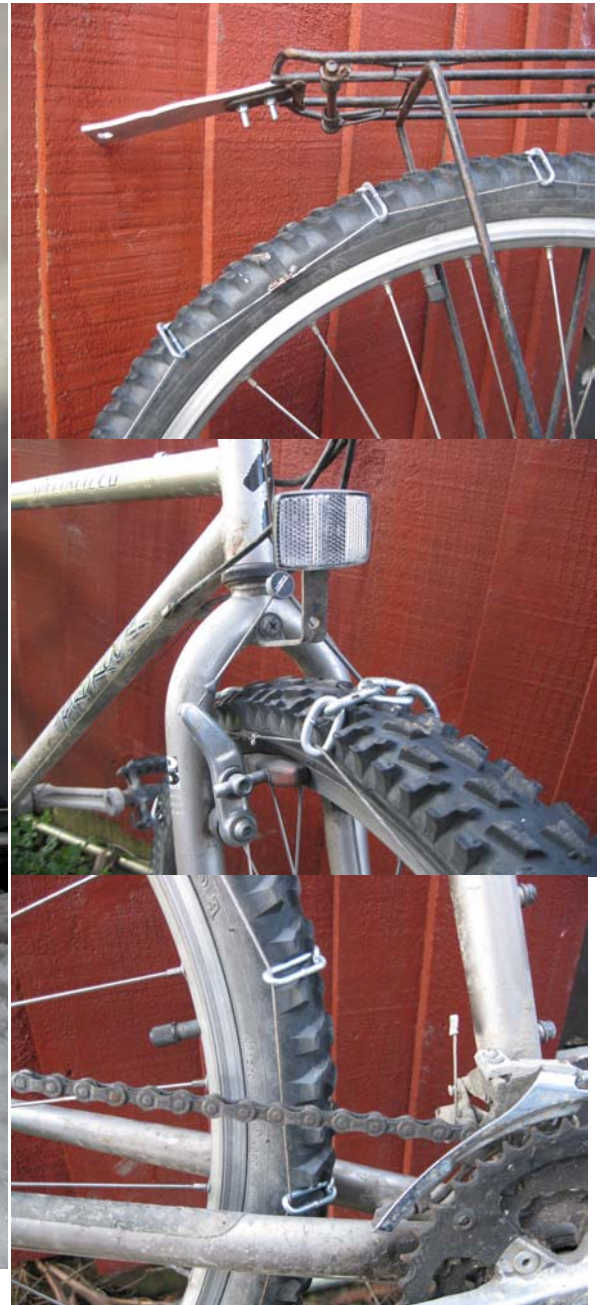
Tadpole with snow tyre on the rear



Snow tyre with worn-down bolts

On my own standard mountain bike I used to get to work, I decided to fit chains which would be more durable and give a smoother ride. I made the chains with some old welded-link chain I had lying around and old brake cables. I had several prototypes, but found the easiest and best solution is to have around 18 short lengths of chain with a loop of wire 194cm long either side of the 26x1.95" knobbly tyre. The chains are a bit fiddly to get on with the tyre deflated, but once in place and the tyre inflated, they stay put very nicely. The side wires are held in place with two crimp links on each side, and the wire doubled back through the link so it can't pull out easily. I used crimp links from Gourock fishing supplies, who also supply 2mm stainless wire if you don't have a supply of old cables. The side wire was sufficiently high to clear my brake callipers & pads to keep the brakes intact. I used smaller chain links on the back tyre than the front as there was less clearance on the frame.

I also added an aluminium bracket at the rear of the carrier so I could easily mount a spare wheel on the carrier that was not fitted with chains, should I no longer require the extra grip. The quick release skewer on the wheel goes through a hole at the end of the aluminium and a bungy or strap on the carrier secures the rim nice and easily.



About Steve Muir...

Steve Muir is always keen to replace any car journey possible with a bike journey. Load carrying is one of the few times keen cyclists have to resort to taking cars, and so Steve makes load-carrying bike trailers of various sizes and shapes to enable yet more journeys to be made by bike. He pays for the bike trailer habit by working at Christchurch Hospital as a Biomedical Engineer and is often seen transporting some or all of his four kids around central Christchurch on various wacky pedal powered contraptions. He has also written a book called PROSACC - Profound Revelations Of Sunday Afternoon Cycling Church (cyclingchurch.org.nz). Contact 021 0619296 email steve@cycletrailers.co.nz