

Anchoring Cross Country Relocatable Fences

Prepared by
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The content of this presentation is compilation of my experience and others over the years of involvement with this great sport.



To ensure that both horse & rider have the safest & best experiences on the various tracks as they progress through this discipline.



**Anchoring
of
Relocatable
Fences:
this is why**



**The cause of the
an issue can be
as simple as
hanging a leg**



This fence was heavily impacted by the horse's leg. Fortunately, the fence was anchored (with star pickets).



Relocatable fence anchors



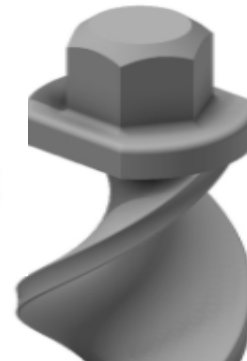
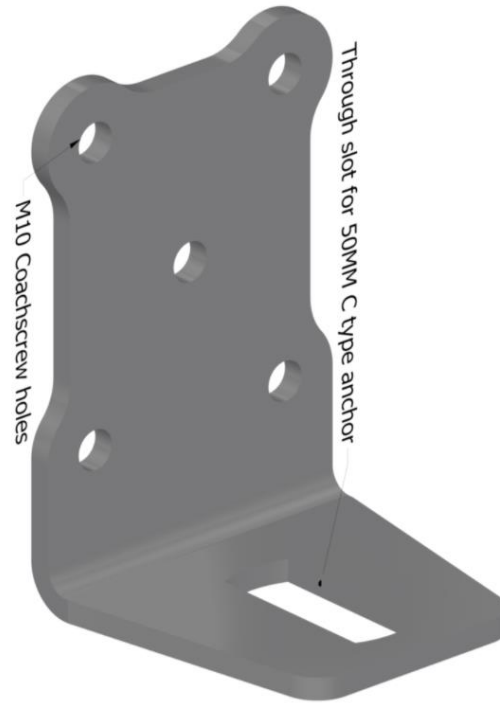
50 x 660 Erdanker® Low Profile Safety Ground Anchor

Diameter: 50mm
Approximate length: 660mm
Min anchor strength: 4000kg



50 x 460 Erdanker® Low Profile Safety Ground Anchor

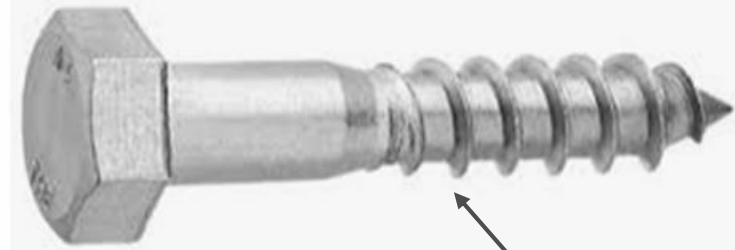
Diameter: 50mm
Approximate length: 460mm
Min anchor strength: 4000kg



Weight class of star picket is 2kg/m.
Ease the existing hole to accept a M8
galvanized coach screw, 2 screws
is the preferred engagement with
the fence



Anchor fasteners



M8 X 90 316 STAINLESS STEEL HEX HEAD

Minimum fastener sizes to secure anchor brackets to the fence:

Use a 8mm bolt or hex head coach galvanized screws (3 or 4), not less than 50mm long OR

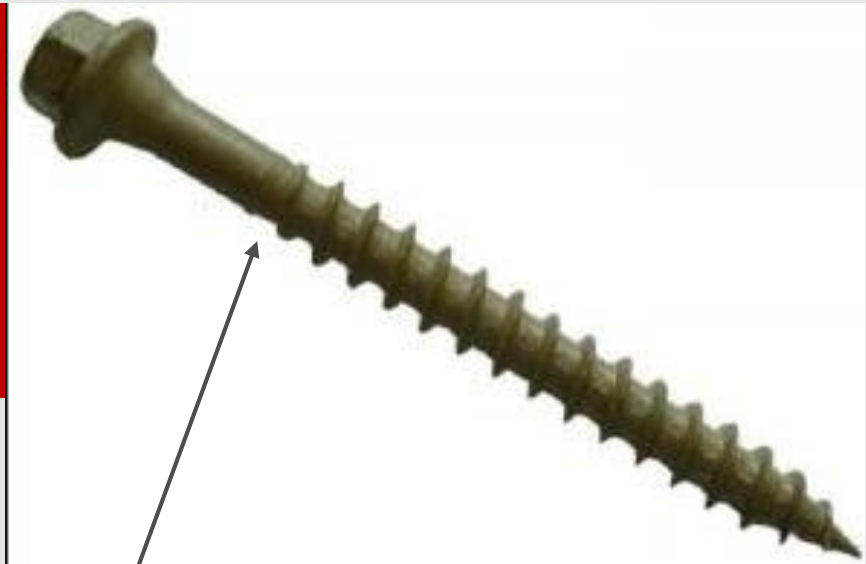
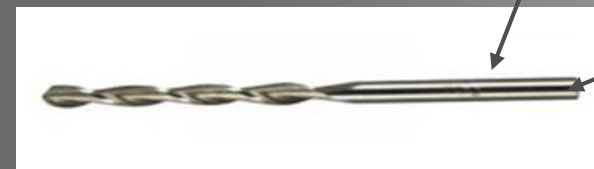
14 gauge batten galvanized screws (4 or 5) not less than 50mm long.

Always use a clearance drill to suit the gauge of the fastener being used (long series drill).



14g (6.30mm)
Galvanised Bugle...

Timber construction Lag screws to be a minimum of 16 gauge (same # of screws as galvanized) need to be pilot drilled to avoid splitting the timber



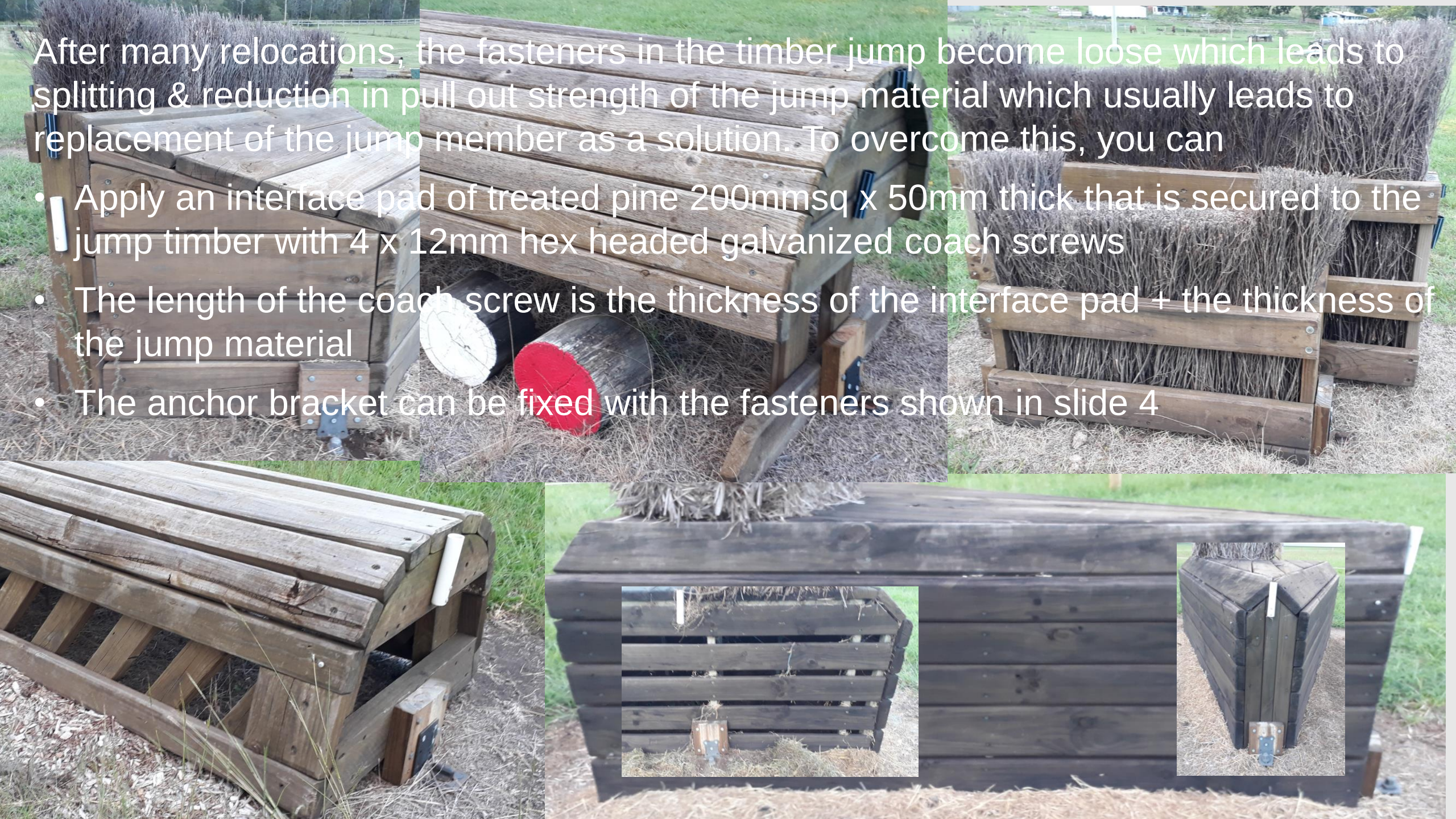
Where to locate the anchor



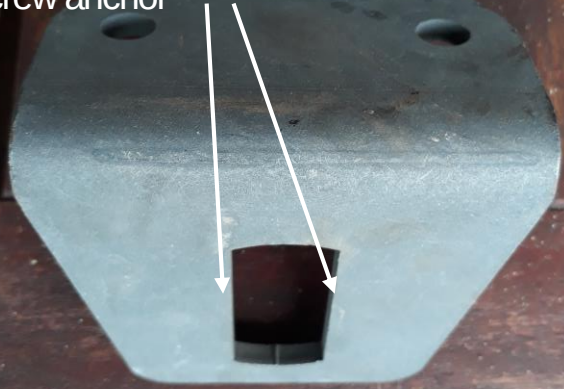
All of these anchor brackets are direct connection to the fence

After many relocations, the fasteners in the timber jump become loose which leads to splitting & reduction in pull out strength of the jump material which usually leads to replacement of the jump member as a solution. To overcome this, you can

- Apply an interface pad of treated pine 200mmsq x 50mm thick that is secured to the jump timber with 4 x 12mm hex headed galvanized coach screws
- The length of the coach screw is the thickness of the interface pad + the thickness of the jump material
- The anchor bracket can be fixed with the fasteners shown in slide 4



When installing the imperial screw anchor, it binds on the underside of the metric bracket: place a 1mm chamfer reduces the binding effect during installation & removal of the screw anchor



Tools to secure the anchor & bracket



Tools that I use to install and remove the ground anchor - the hard way:

- 2kg lump hammer
- 300mm shifter

• The easy way:

- 20mm square drive rattle gun
- Impact 28mm socket
- Impact 1 3/4" modified socket to suit block head



Imperial screw with a metric bracket



ANCHORING CROSS COUNTRY RELOCATABLE FENCES

(John Hughes)

Notes:

Slide 2:

Relocatable fences must always be anchored!

All height classes must be anchored, be it with a ground anchor or a star picket.

The experience or inexperience of the rider for that level of the course, be it training or competition, is no excuse for not anchoring a fence.

This can happen to any one!

Slide 3:

As in the above

The simplest thing may cause an issue that leads to an undesirable situation.

Upon inspection the only damage to be rectified was the artificial face of the fence

Slide 4:

These types of anchors are available from

- https://www.spirafix.com/products/50mm-ground-anchors/anchor---spirafix-50mm-c-type/?Page_ID=3610&refpid=21732&id=44400
- <https://groundbolt.co.uk/low-head-saftey-anchors.html>

Ground bolt anchors after being embedded for long periods (my experience 4 years) in certain soils will require re-coating to reduce corrosion with a tar based sticky paint.

Slide 5:

These fasteners are available from-

- <https://www.tileimporter.com.au/wp-content/uploads/Bremick-FixConn-Brochure.pdf>
- <https://www.buildex.com.au/images/documents/03125-PDS-new.pdf>
- <http://www.5startimbers.com.au/downloads/timberjointdesign2.pdf>

The coating on the screws vary manufacturer to manufacturer. The key point is that they are galvanized or a recommended coating suitable for hardwood or H4 treated pine.

Long series drills should be the root diameter(bottom of the thread) of the fastener being used: I have found that this reduces the likelihood of splitting.

Slide 6:

If using **star pickets**, they need to be placed to get the maximum pull out resistance-

- Not located along the face of the fence
- Should be 900mm long
- It's preferable to locate the bracket on the leading edge sides in the direction of the jump
- Always cap the picket with a safety cap
- Star pickets should be screwed to the thickest part of the material forming the jump structure (preferably) or the thickest part of the carcass.
- Place the star picket in the direction of the horse's jump at not less than 15 degrees to the vertical.

- Fasteners should be placed in the leg of the star picket, on top with the two legs of the picket on the underside of the fastener to give the maximum area to resistance.

If using **ground anchors** –

- Not located along the face of the fence
- Its preferable to locate the bracket on the leading edge sides in the direction of the jump
- Where jumps are used in either direction it is preferable to locate them in the center.

The weakest part of the fastener connection is the timber-

- The more that the fastening bolts or coach/batten screws are moved and tightened, the more the timber around the screw flights deteriorates.

Slide 7:

Where fences are relocated for the various competitions, my experience to overcome failing fastener connections to the jump-

- An interface pad of H4 treated pine 200mmsq x 50mm thick is secured to the jump structural member or carcass
- 4 x 12mm hex headed galvanized coach screws or bolt
- The length of the coach screw is the thickness of the interface pad + the thickness of the jump structural member or carcass.
- Making every effort to have an edge distance in the jump material of 30mm to the interface pad fastening bolt /screw.
- The anchor bracket can fixed with the options shown on slide 4
- Counter boring the screws or bolt allows the mounting bracket to be moved around with in the area of the interface pad.

Locating the anchor bracket is

- Not located along the face of the fence
- Its preferable to locate the bracket on the leading edge sides in the direction of the jump
- Where jumps are used in either direction it is preferable to locate them in the center.

Slide 8:

There are many ways to install the bracket-

- The easiest being a battery powered drill with the appropriate sized long series drill
- A 6mm driver rattle gun & the appropriate driver.

There many ways to install the ground anchor screw-

I always find it easier to start the ground screw with a few (very few) blows with the lump hammer.

The hard way :

- Manually by driving it home with a lump hammer, then undoing it with a large shifter OR

The easy way:

- Use the equipment as depicted (20mm square drive rattle gun and impact socket)