

CHAPTER TWO Hub Centric Steering - 'Take One'

Okay folks, now we've got a grasp of the challenges of steering an outfit let's look at the issues involved with 'HUB CENTRIC' set ups.

Firstly, why choose hub-centric over leading links? Because I'd ridden links in the past, yet when I rode Jean-Louis' GSX/Sport outfit up the mountain road near Annecy, the steering was oh-so-perfect. No wobble, not too heavy, steady in the bends and totally reassuring from a pilot's point of view. And it looks well...engineered!. Boy! You so want good steering on any vehicle, but even more so on an asymmetric vehicle. Felt so, so good!



That's me in the Arai. I rode the blue Suzuki later, seen just beyond the Triumph.

Naturally, the subject is a favourite among high performance sidecar owners and there are, and have been, a great many takes on how Hub Centre/Centric should be done. And t'boot, let's not get into the whole 'Hub Centre' vs. 'Hub Centric' semantics. I stated my view in Chapter One.

So here's a quick look at some of the designs that can be seen on the web.

Here are some, what I call SIDECAR INTEGRAL steering systems.



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Here are a few SINGLE ARM or STUB AXLE steering systems.



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© Richard NL 2009 (Martin Preston UK)



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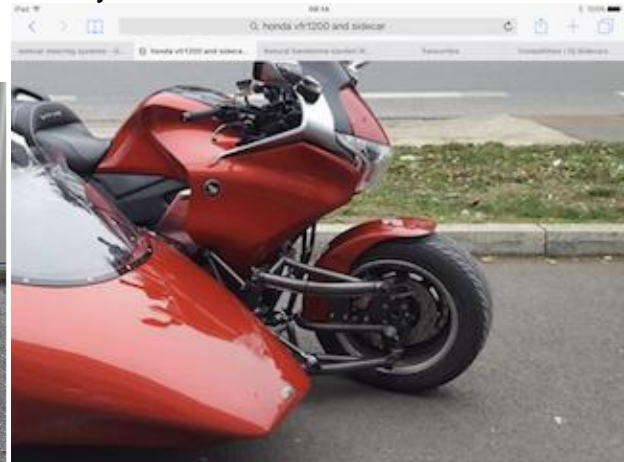


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I refer to this style as 'TWIN WISHBONE' layout.



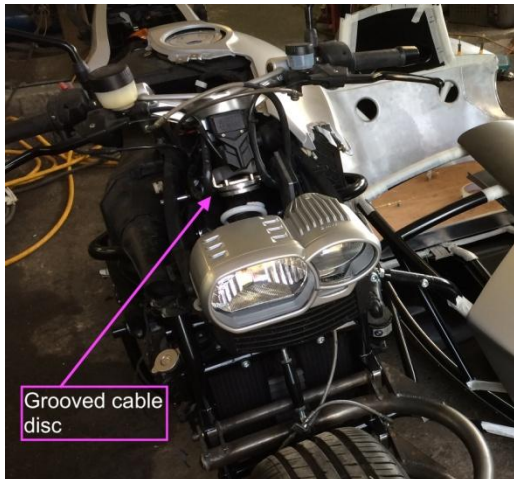
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Okay, by now you will have grasped that this is potentially a minefield. What stares you in the face is that NONE of these approaches use cables for steering. Now it might sound obvious to any sidecar rider that cables are unlikely to work, but that is what my first engineer was determined to try and....let's not deny it....against my advice.

He made a beautiful billet aluminium hub and after junking flimsy 'pull only' cables worked by a grooved disc under the steering head (see image below), he fitted stout 'push/pull' cables. This to address my concern i.e. a 1960's deeply brain embedded loathing of sudden and catastrophic nipple failure, *guaranteed* to strike at a critical moment! Why did he go this route? Because the central shock was in the way blocking fabrication of a steering column and my suggestion to move said shock to the side didn't wash.

It has to be said that the engineer fabricated a most clever way of attaching the cables to the inner ends of the handlebars with incredible, solid milled fixing and support brackets. To say he gave it his best shot would be correct.



'Pull only' cables, worked by grooved disc. Risk of failure too awful to contemplate. You can just see the lower front shock mount above the ride height adjuster.



Heavy duty 'Push-Pull' cables. Ingenious, neat, well made? Oh yes! Effective? No.

Now my French mentor Jean-Louis of DJ Construction told me in no uncertain terms to ditch the idea. He said it sounds good on paper but won't work. Well, the first problem was the *total impossibility* of turning the front wheel at a standstill. Not a chance even if you're built like Schwarzy. That's not going to help manoeuvring the rig, is it! (rhetorical). Next, on the first test day it was found to be impossible to put petrol in the tank due to the cables being routed centrally over the tank and in turn preventing the fuel cap opening, which is offset, as you well know (see image below). That didn't play well with me!



To cut to the chase, the engineer and I went our separate ways when, after two separate tests on a private road, the outfit's steering wobbled so viciously in the bends it was like gripping the thrashing tail of an angry alligator with nothing tasty to eat in the lagoon.... but me!

So, based on my (reluctantly acquired) experience, my advice is don't fit cable steering to sidecar rigs!! I bundled the whole rig under a cover in my garage and set about enjoying Christmas 2018.

7 months later....

...I took my copious research and 'unrideable' outfit to Paul Lumley of Lumley Engineering and showed him Jean-Louis' approach. With Jean-Louis supporting us by means of detailed photographs, we set about building a twin wishbone linkage system. A first for Paul, whose experience is considerable with F2 racing sidecars and leading link systems.



Note steering 'drag links' above wheel, twin 'wishbones', side shock, trail adjustment, twin callipers. And finished job.

Suffice to say, the moment I rode it down the slip road at Castle Combe, on a private hire track day, I knew we had it right! I had a ball that day.



Next time, we'll look at trail, caster, wheel offset, ball joints, bump steer, spring rate and matters a touch more technical.