DRIVING THE VW TRANSPORTER SYNCRO OFF ROAD

AN 80-90 ROUGH GUIDE

Introduction

There have been lots of things written about how the Syncro needs diff-locks to get about off road, but driving off the road isn't just about locking up the axles and driving where you want. The Syncro is substantially modified to help it get around, but that is just the beginning. Off road driving conditions are extremely varied by nature – that's what makes driving off road great fun. There are also quite a number of special techniques and tricks that will help you get a lot further much safer.

Before venturing off road, remember what you are doing is only legal in a very few places, is considered anti-social by many. Please get land owner's permission where needed before you drive off road and if you want to go green-laning, go to the local planning office and check your route using the Definitive Map. Also check for TRO's and any other restrictions on your route. If in doubt don't drive it.

Technical Stuff

For starters let's review a few modifications that were made to the Syncro to help it get around off road.

Increased length springs

The longer springs improve the Syncro's ground clearance and allows the wheels to move further, to maintain contact with the ground (a bit more). Where the Syncro has independent suspension at each corner (unlike many traditional 4x4's which often have 'dead beam' axles) it can maintain traction over rougher terrain, as the wheels drop down into holes. This is especially true on the back. Many trucks have solid axles with leaf springs on the back as they are considered stronger, but they give a very uncomfortable ride, as anyone who's driven a Toyota Hilux, Ford Ranger etc will know. This is very different to the Syncro, which has a pillowy soft ride – why else do you think the BBC use them as camera cars !

4x4 and the Viscous Coupling (VC)

There's lots of information about the VC. It basically gives the Syncro a lock between front and back drive when off road. It acts like a central transfer box in a Suzuki, or the centre differential lock in newer Land Rovers and Range Rovers etc.

With the VC 4x4 is always there in potential, hence there are no 'transfer box' gear levers. If you are brave or stupid enough to sling a Syncro into a wet roundabout and boot the throttle the action of the VC is clearly demonstrated: the rear starts to let go and swing round, as it will with any rear engined vehicle, but the VC picks up on the difference and brings in the front drive. This actually pulls the Syncro out of the tail-slide and back to your intended path. A neat trick, but please don't try this at home !

The 'G' Gear

Growler, Gelander or whatever. The Syncro is made far more useable off road by the ultra-low first gear. The 'soft' roaders such as the Freelander, RAV4 et al don't have anything like this feature, which puts them at (another) disadvantage versus the Syncro. The only occasion G would be used on road is when starting on an uphill slope where a trailer is in tow. This will allow a lot less clutch slippage, especially with a 1.6TD.

Any off roading should generally be conducted at below 10mph to ensure good control over the vehicle. Using G will increase this control as it's possible to use the engine's rev range more effectively. In particular there will be far more effective engine braking when going downhill, rather than using the brakes themselves, which could result in a slide. On climbs the G gear enables the Syncro to claw up far steeper slopes than would be possible in the Transporter's normal first gear.

Bash plates, slider bars and front bash plate

These are extremely strong and provide comprehensive protection to the more vulnerable mechanical parts on the belly of the Syncro.

Front bash plate

This bash plate provides a smooth sliding surface that means the vehicle will push its way through deep and thick mud a lot better than if the front suspension was the first contact point. This plate also stops mud, dust and filth being thrown up at the radiator fan and gear linkage, prolonging their life.

Please be aware the one killer blow to the Syncro's off roading abilities is its inability to traverse situations where there is a drop sharply followed by a climb – the front over hang is greater than most off roaders and the Syncro will simply embed itself in the rise out of the ditch. YOU WILL NOT GET OUT OF THIS SITUATION BY TRYING TO GO FORWARDS ! Accept defeat gracefully, reverse out and try another attack if possible, probably by angling the vehicle at 45 degrees to the obstacle as this places a front wheel uphill, so the Syncro will be able to pull itself across the dip.

Slider bars

These protect the prop shaft and are secured to the front and rear sub frames. They are made from sturdy box section steel and will support the weight of the vehicle, allowing it to be pushed or pulled out of a 'high-centred' situation where there is insufficient 'breakover' clearance under the middle of the truck.

Engine under tray

The key function performed by this is to protect the Syncro's precious engine sump and gearbox. Like the sliders this component is very durable and heavy duty (as anyone who's taken one off under a ramp will know !). The Syncro is clearly a derivative of a road vehicle, as such the engine is low mounted to lower the centre of gravity and keep the handling sensible. It is especially important that the diesel's sump is protected by this guard as it is made of brittle aluminium and would get cracked pretty quickly without the tray under it. The rear of the tray also provides protection for the belts on the engine, keeping it running smoothly.

Whether the side sections of the engine protection should be kept on is a moot point if you are going to be off roading your Syncro. I've taken mine off as they aren't very strong, impede access to the engine when working on it and will also stop water and mud etc draining out if you drive

through deep water etc. On road they will reduce engine noise and help to insulate the engine bay.

Tyres

I could probably write a substantial article on tyre choice for the Syncro, I'll try and keep it brief here. There are two Syncros when it comes to tyres: The 14" wheeled version and the 16" wheeler. The 14 has one key disadvantage: there are very few 'proper' tyre choices available in 14" diameter. For off roading the best thing to do with a Syncro 14 is replace the wheels with suitable 15" ones and buy some open tread tyres. By buying one of the off road magazines you will probably get the best deal on these.

For the UK (where muddy conditions are prevalent) 'mud terrain' types will be best. As the size of the tyre is increased the pressure can be reduced, I run 30/36psi front/rear on road and 20/26psi off road. I'm currently running 15 235/75's and believe this to be the largest size possible to run on a Syncro 14 without making substantial modifications (such as FastFoward's replacement swingarms etc). The additional height of the tyre 'section' (the 75 bit in the designation, if you're interested) increases the ride height and ground clearance substantially. This yields very noticeable improvements in off road performance and I can recommend it as THE BEST modification to a Syncro 14 that will be used off road. The downsides to this change are slightly less stability on road and an increase in the overall gearing. This means your speedometer will under read the road speed, so be careful out there !

The back diff-lock

This is essential to using the Syncro off road. There's far less articulation at the back, as the suspension uses swing arms instead of the front wishbones. If it isn't in when you wave a wheel in the air you'll soon come to a halt. Really work the system – have it in on climbs and on straight muddy sections, knock it out as soon as you start turning and have some grip. With good tyres a Syncro will get a good long way without it.

The front diff-lock

I've only ever had trouble with my front locker. It takes a long time to lock in and even longer to come back out (and some times won't, especially if the mechanism's a bit sticky). Very few people will use it enough to keep it in good working order. Generally by the time you think "maybe the front locker will help" you're stuck anyway – get yourself recovered and don't bother putting it in. Remember you will not be able to steer with it in and if you use it on a downhill slope it will increase the chances of a roll-over considerably, as the wheels can't rotate at different speeds as they normally would.

The reason it can take so long to come out is that as soon as there's a difference in speeds of the front wheels (e.g. as soon as you turn the wheels) there's tension on the locking pin. The pin will be very reluctant to let go unless that tension comes off and you're going to need a proper slippery surface to take that tension off.

A few words about weight

A Syncro is a well built beastie and heavy with it. The unfortunate result is that it will sink in to soft terrain a lot quicker than, say a Suzuki SJ. To counter this, attack soft sections of ground with the aim to keep moving as fast as possible (preserve your momentum) – match the speed of the wheels to the ground speed, if they start spinning you will probably sink and grind to a halt.

A lot of the Syncros are also campers, which will add considerably more weight to the vehicle.

When loading a camper that will be used off road the usual rules apply, but become more important:

- Load the vehicle evenly
- Make sure the heavy items are at the bottom and well secured.

Keep the weight low down to keep the centre of gravity low. This will improve the angle of side slopes that can be safely driven (see side slopes) and reduce the likelihood of a rollover (which is pretty unlikely in most situations anyway, but see the side slopes section).

Off roading will throw the vehicle around a lot more, which is why it is essential that as much as possible is secured – no-one likes being hit by flying objects !

As a road vehicle and one designed to carry large loads the Syncro naturally has a very low centre of gravity in comparison to many off roaders. This will help you a lot off road as the vehicle will be far more stable.

So you really want to drive off road ?

Now are you sure about this ? Bear in mind that you will be putting a lot of stress on the Syncro's expensive mechanicals and probably covering them in a grinding paste of watery grit (let's call it mud, cos that's what it is !), this will take you hours to wash off.

Driving off road WILL shorten the life of your mechanicals considerably and it won't just be the bits you expect. Dust will trash alternator bushes - I'm on my fourth alternator and when I got my starter motor rebuilt the guy wanted to know how it could have been filled with sand.

The flip side of this is that it's a lot of fun and the Syncro is built tougher than many off road vehicles that are advertised as 'built tough'. If you're just starting out your bottle will run out a long time before the Syncro's will. What do you need to know to start driving ? The best way to find out how to drive off road is to learn through experience, but here are some pointers that will save you making dumb mistakes and may just save some embarrassing (and expensive) situations.

Seatbelts

Safety first people. Always wear your belt off road. There are all sorts of nasties waiting to bite you. Although 10mph doesn't seem very fast on road it can seem far too fast in some situations off road and you may not have time to put your belt on when you've started driving. Also inertia-reel belts lock up a lot easier when you're not on the level, so you probably won't be able to even pull the belt out if you think you might need it.

Driving uphill

FACT: Most Syncros are under powered. To counter this, use plenty of revs and attack slopes square on with a good run up where possible. Momentum is your friend here and will get you up many slopes, provided they are attacked quickly enough. Engage the rear diff-lock at the bottom of the climb, but not the front one – you're going to need to steer at the top of this hill and the front locker will stop you from doing this pretty much completely.

Should you make a failed attempt at a hill climb and stop or, even worse stall stay where you are. DO NOT under any circumstances dip the clutch and let the vehicle run downhill. This is uncontrolled and will probably end in badness of some sort or other. Hold the truck on it's brakes and engage reverse. Back down the same route you have driven up, DO NOT try turning on a

steep slope (more about this later). Reverse the vehicle down to the bottom slowly (see driving downhill) and either have another go, or find another route.

Driving downhill

ANOTHER FACT: Petrol engines will give 'engine braking' off throttle, diesels will not. Bear this in mind when you take your vehicle down a slope. Momentum is your enemy here. The best guidance when going down a steep bank or hill is go straight down it in G, don't drive 'across' the slope (see slide slopes) and keep both of your feet OFF the pedals. DO NOT dip the clutch – you lose control of forward speed of the vehicle. TRY NOT to brake – you will probably lock the wheels and slide and lose control. The engine is at the back, remember – if you start sliding down a hill it will try to get to the bottom before you (again, see side slopes).

With your feet off the pedals you can concentrate on steering and choosing the best line – this is important, you don't want any unexpected holes dropping the front of the vehicle and increasing the chances of a roll. The engine in a petrol will slow the truck right down. A diesel engined Syncro will race, but you will not kill the engine doing this (remember the governor on the pump is what limits engine speed, not the mechanicals), if you do need to apply the brakes (far more likely in a diesel) then make sure you are very smooth and progressive. Again, DO NOT DIP THE CLUTCH

Side slopes

YET ANOTHER FACT: This is bloody dangerous, try not to do it. Almost all roll-overs are in situations where someone has tried turning on a slope, to avoid an obstacle or if the climb has failed. Keep your vehicle pointing straight up or straight down and you are very unlikely to roll it. If you must drive across a side slope find the flattest possible area to do it and do it slowly – you will be able to feel the weight of the vehicle shifting to the lower side. If this gets too worrying, don't try to complete the turn quickly (you will almost invariably roll) – turn uphill and try to get up the hill, or back down your previous route as straight as possible. In fact just don't drive across side slopes unless you've driven your Syncro off road a lot and really know it well, even then please don't do it, you're making me nervous just thinking about it ! The guy in the picture made 1½ complete rotations when he tried turning on a side slope. He's an experienced off roader and

made a simple mistake. Fortunately his vehicle had a strong rollcage. Your Syncro doesn't have that as standard, rolling it will probably hurt you and seriously damage the resale value of your vehicle.

Ruts

Ruts aren't nice – they will often take you places you don't want to go because you can't get out of the damned things. The Syncro is quite a lot wider than many off roaders, use this to your advantage by straddling the ruts if you can. If you can't manage this try driving with only one wheel in the ruts, this will stop the middle of the vehicle grounding, if this happens you will normally be stuck and that's never good, when dropping a wheel in a rut, try to do this so the lean is into the slope (see side slopes again).

Because Syncros have independent suspension there is less chance of grounding the vehicle in ruts as you don't have the differentials hanging down in the middle of the axle, this is a real boon, although if you have a tow hitch it will make like a ground anchor in the middle of very deep ruts and will probably be the thing that helps to stop you every time.

If you're slowing down through lack of grip in some ruts try 'sawing' on the wheel – this means turning the tyres from side to side by about half a turn of the steering wheel, by doing this you're grabbing either side of the ruts, which is where the ground's driest and will afford you the most grip. Another technique is to pulse the accelerator when you're losing grip, this will chuck the mud out and (hopefully) find you some more grip.

Mud and Snow (M+S) tyres won't get you out of ruts. I recommended proper mud terrains and this is where they will really help. The open lugs on the side of them will claw up the side of the ruts and as they're so open all but the thickest mud will fall out, leaving them ready to grab their way out of the next situation. M+S tyres have the lugs too close together for serious mud and will just fill up and become what are often referred to as 'Teflon tyres'… oh look, you're stuck again aren't you ?

Wading

This is always one of the most exciting bits of off roading – the opportunity to go driving around in really deep water or mud. How deep can your Syncro go ?

Before you take the plunge I'd recommend extensively checking in your engine compartment: Is the plastic plug in the bell housing in and secure ? Is the metal cover at the back of the engine enclosing the clutch in good condition and fully bolted together ? If your vehicle's a petrol what are the seals on the distributor cap like ? Where's the ignition unit on petrols ? Is it sealed. Get checking or you may wind up sitting in a large puddle with a stalled engine, looking a bit silly.

If you're a sensible person, or someone who has carpets to look after don't take your van any further than the door bottoms. However good you think your door seals are they won't be water tight. The locker behind the passenger cabin on my doka actually has the ends of the seals at the bottom of the doors, as a result there's always a bit of silt in the bottom of this !

If you're a bit foolish and don't have to worry about carpets (I've got nice rubber matting in my cab) then the limit depends on two things: your skills and fortune in the water and technically the engine air intake and gearbox breather.

The air intake and gearbox breather are at the top of the engine bay, so the best advice is don't wade any deeper than the top of the wheels.

When the red mist comes down though many of these things can get thrown to the wind, especially when there's a baying crowd goading you on to deeper water. Hang on a minute. Get some other fool to drive the water first if possible would be my advice – dammit they've probably got a Land Rover specced to the gills with wading gear. The last thing you want to do is hit some big rock and stop. Keeping moving is essential in the water. If you dive in and then slow up a bit then what you will create is a nice big bow wave that you can push along. This means you have a big Syncro shaped hole behind that bow wave, so keep your speed steady, maybe slip the clutch a bit to keep your engine revs up and keep pushing the water ahead of you – your engine at the back probably won't even get wet !

I've used this 'bow wave' technique to drive a Montego through about 18" of water on a flooded road before now, with now ill effects.

Stopping in water is the worst possible thing that can happen – the water washes in and swamps you. (see picture, yes that's me and that's one seriously wet mod-trialer !) If you're in deep water and you've stopped because the engine stalled, DO NOT restart, get someone to pull you out if possible. There's a good chance you may have gulped some water into your air intake – this is VERY bad. If you restart your engine may take a big gulp of water. Water, being a liquid can't be compressed like air, when you try to compress what's in the cylinders the engine will object and bend your conrods. It's known as 'hydraulicing' an engine and you're looking at a very expensive rebuild if you do it. Once you're pulled out, get the air filter off and check for water in it, let everything drain out and dry out before you try to restart. If you're in a petrol vehicle you're probably going to need to whip the distributor cap off, too and hose that out with WD-40 or the engine won't fire.

Bear in mind that if you do get water in the cabin (even a little bit) it will make a filthy mess and you're going to have a big job clearing up all the fine silt and filth that you didn't realise got in the vehicle with what just looked like some water.

Recovery and towing points

Be very very careful and think about all you do. Recoveries are dangerous situations: you're putting strain on many different things, from the wheels, that may be being held by suction of the seal around them, through the recovery points where you've secured the cable on the stuck vehicle. The cable is under extreme tension right through to the tow hitch it's connected to. The whole situation is an explosion just looking for the weakest link.

Recovery Equipment

Strops & Ropes

Before venturing off road make sure you have a good quality rope and some short strops with eyes in the ends. Buy a really good quality shackle, too. You're probably going to need it. The best place to start looking is in the 4x4 magazines again.

Please DO NOT go off road with some of that awful cheap blue nylon rope, if you use it, you'll break it, then you'll break it again, then you'll wish you'd spent some money on a half decent rope. The definition of 'a half decent rope' does not include a Kinetic Energy Recovery Rope by the way. These are best left to idiots and the army (am I splitting hairs here ?). If you don't know how to use one you'll have someone's eye out (at least). Please don't use them, you're making me almost as nervous as someone turning on a side slope.

Other kit

You could spend a fortune on equipment, but probably the most useful bits of equipment you can take with you are a spade and some gloves. The gloves should be nice thick suede ones, to protect your hands on recoveries, and the shovel ? When all else fails, dig yourself out of the hole you've just made yourself.

Front Tow point

I've already said that the Syncro is built tough. The front recovery point is an example: it's a very nice piece of work, go on, go have a look at it. While you're there check it thoroughly for rust and cracks etc make sure you check the steel around it, too. If you're being recovered from the front it's probably going to be the only thing keeping a very effective missile fixed to your vehicle.

What's this missile ? It's a steel shackle that will allow attachment of a rope thick enough to pull your Syncro out. Buy your own. Check it before you use it, clean it after you've used it and spray it with oil to protect it. I've seen shackles break and fire through the tow vehicle's rear window, punch through a dog guard and embed themselves in a dashboard. That could be the head of your mate, who's recovering you.

Rear Tow Point

All of a sudden the tow hitch that's been dragging in the ground starts to look very useful. Before you use it though, make sure all of the securing bolts are in good condition. All you need to do is hook the eye of the rope over the tow hitch, give it a good push down to make sure it's secure. If

you're being recovered by a vehicle higher than you make sure the rope is hooked right around the back or it might come off and then we're back into missiles and I'm getting nervous again.

Cleaning Down

Well, once you've made a mess you've got to clean it up, right ? And if you've been driving about off road you've probably made a right mess.

Broom Broom... where to wash it all off ?

I've probably recommended enough kit that it would take you to your weight limit already, but if you're going to use a public jet wash, take a broom with you as you're probably going to leave a mess. The amount of mud that will fall off a well cleaned Syncro after it's been at play will provide enough top soil to make a nice suburban garden. It's not very nice to leave a garage owner to clear all that up and may get you banned from using the jet wash again (trust me, it's happened), so sweep up after yourself and chuck it somewhere discrete and everyone's happy.

When using a jetwash it's important to be careful how you aim it, these things are pretty powerful. Try to wash across seals rather than at them, by doing this you won't force all that muck into your cv joints, or split the seals. The same applies for any of the rubber seals when you are cleaning down, try and work across or away from them. It's very tempting to go back at them just to get the last of the mud off the driveshafts etc, but don't do it - you pay for the parts and labour, remember !

It may be better just to use a normal garden hose if you can, with a squirty gun on the end - the amount of pressure means you can be a lot more liberal with where it's aimed and you can clean down at home and at your own speed..... and then apply the mud to your garden too !

Top Down

When dealing with lots of mud make sure you spray the whole problem area (probably all of the van, if we're honest) liberally first. Wet mud will come off a lot easier than dry mud, which is an incentive to get the cleaning done on the day. Try to start from the top and work your way down - hosing the wheels off is very attractive, but they'll soon get covered by the filth that falls out of the wheel arches, so do them first etc etc.

Where to concentrate on ?

There are a number of areas that deserve special mention when you're cleaning and I'll start with the less obvious ones - the radiator might seem like it's well protected by that plastic grill, this is not the case though, especially if you've been wading.

Certain types of sand and silt hang in suspension in water until they get thrown at a nice hot radiator. When they hit the rad they then convert back to.... well, sandstone. The only way to get this out is to get it thoroughly wet again - GENTLY though, especially if you're using a jet wash, or you'll blast all the fins out of the rad, too. It's very important to get this stuff out of the rad, otherwise you'll wind up with cooling problems as 1. Sandstone's nowhere near as conductive of heat as steel 2. A wall of sandstone won't let any nice cooling air through.

Around the fan belt area seems to attract filth and the under tray allows stuff to stay there too - I've pulled a couple of really big rocks and baked clay lumps out from around mine previously, so open up the engine bay and have a sweep round with your eyes, then the hose. Be very careful in a petrol engined van with the hose in the engine bay - remember you don't want to drown the

ignition. With diesels it's pretty much open season in there - I generally hose it down with the engine running- that way the electrics (that which there is) stays warm and water evaporates off.

The really dirty parts are those that have been closest to the mud - the suspension, driveshafts and brakes. The brakes are especially important, for obvious reasons. When you're hosing them off, work through them in stages - clean what you can see (both sides of the discs, yes you may have to lie down in the muck) and then move the truck forward half a wheel turn, now that which was under the pads is exposed. Make sure the pads are well hosed off. Again, mud doesn't disperse heat as well as a nice set of air cooled pads !

The drums should be ok, but it's worth having them off from time to time just to find out what you've got lodged in there that's gouging big lines into the drum surfaces - again this is more unexpected wear, but it's bound to happen.

The suspension will take ages to clean off properly, you need to invest time here though - stones can and will get lodged everywhere and will take out cv boots and can easily damage driveshafts etc. In particular make sure you hose out the front of the swing arms well, not only is this a pivot point but it is also somewhere mud can sit and start the dreaded rot.

Other common-sense things to make sure are clean and working are the lights. Again if you've been wading, make sure there isn't any water trapped in the indicators or rear clusters, if there is get it out and hose the internals out with some WD40.

The time spent cleaning thoroughly is time well spent, not only will you get a clean van, but you'll also find early warning signs of problems, as you have the opportunity to inspect bits of the van that would normally go unchecked for months. Dust will highlight any slight oil and fluid leaks and you can normally see where diesel is leaking from as clear as day.