http://www.ukdiving.co.uk/equipment/articles/dpvs.htm

# Fast forward
# A special DIVE report into DPVs and scooters

Are they just expensive toys, or are there some good reasons for using diver propulsion vehicles? **Matt Crowther** looks at the superbikes of the ocean

Let's be honest, most of us like playing with fancy kit, and taking a scooter for a spin is about as good as it gets! This is your chance to become James Bond.

Diver propulsion vehicles (DPVs) have been used by military and commercial divers for years. Although their advantages have long been recognised by technical divers, they are only just starting to catch the interest of recreational divers.

Most DPVs, or 'scooters', come in two styles. 'Tow behinds', as the name suggests, are designed so the diver holds on to a bar or handle, and is towed behind the vehicle. They're fine for shorter dives but can become painful to use after a while – the drag created by the bulk of your BCD and other equipment puts a strain on your arms. Some units have a bridle, so you can clip the scooter to your BCD. The other main style of DPV is designed so the diver sits astride it. These units are usually larger and more expensive, but they're more comfortable to use over long dives and often have a longer running time. Other styles include a small unit that clips to your diving cylinder, offering hands-free propulsion.

DPVs are battery-powered, usually by between two and four 12-volt rechargeable packs. The life of the battery is measured as range (distance) or burn time (battery life). A good charge will run some DPVs for anything up to five miles (not all manufacturers supply a charger with their unit, so it's worth finding out before you spend any money). The batteries power a motor, which in turn powers the propeller. All this sits inside a rigid plastic or aluminium casing, and that's pretty much it. Some DPVs also have variable speeds, so you don't have to travel full-out – unless you want to! An average maximum speed is about 3mph, which sounds slow but underwater 3mph does feel pretty fast.

If you're going to hang out with other DPV users you'll need to know some of the language. When you use a scooter you are a 'pilot' and you 'fly' your machine. Some sad people even give their machines names – about as stylish as giving your car a name!

## INSIDE A SCOOTER


## Diving tips

Just because you're using a DPV doesn't mean your diving is allowed ro be any less streamlined. Reduce drag by configuring your equipment close to your body and adopt a good flying position – it will increase your speed, the distances you can cover and the battery life. Loose and dangling equipment should always be avoided. When flying a DPV you risk damaging yourself, your equipment and your vehicle – remember you've got a propeller on these things! Correct weighting is important – if you have to put lots of air in your BCD you'll increase the drag factor dramatically. Never rely on your DPV to stop you sinking like a stone. Equally, don't load half your weight belt on to your unit. Finally, carry a lift-bag. If you flood your DPV or want to leave it for any reason this will allow you to do so and recover it later.

## Advantages

Diving with a DPV requires minimal effort. This is totally relaxing diving. Some might say that it's lazy diving, but there are real benefits:

Your air supply will last considerably longer – as much as 50 per cent.

There's less chance of nitrogen narcosis and of suffering from decompression sickness.

If you're making effortless dives you can concentrate on breathing patterns. Breathing slowly and deeply helps flush out carbon dioxide – carbon dioxide poisoning (hypercapnia – an increased partial pressure of carbon dioxide in the bloodstream) is a threat often overlooked by divers.

For shore diving you can use a DPV to make more interesting dives and travel further out than would otherwise be possible.

If you've ever been caught in a strong current perhaps you'll understand the difference a DPV would have made.

## But remember.....

It's important to be properly trained before using one for the first time – speak to your local dive centre or branch. A course should set you up with the basic skills, but failure to stick to certain rules can create unnecessary problems.

DPVs are an additional area of equipment that must be correctly prepared before every dive. Read the manufacturer's instructions and follow a few simple steps.

It’s easy to forget yourself and just fly, ignoring maximum depth restrictions and possibly increasing decompression stop times. Remember that if you do fly up and down your buoyancy will change. Expanding air in your BCD as you ascend might even force you into an uncontrolled ascent unless you dump it.

Collisions and lung expansion injuries are also a strong possibility.

Just because you’re on a DPV, don’t dive ‘saw-tooth’ profiles. Descend to the deepest depth first and work your way back up.

Consider the battery life of any unit you use. Perhaps applying the rule of thirds to your battery would avoid your machine ‘running out of gas’.

If you make penetration dives with scooters remember that if the machine does lose power or totally cut out, you must have enough breathing gas to swim back.

Think about your buddy. If they have a scooter, is it the same? If not, it may be slower or have a shorter battery life. It may be possible for two divers to use one DPV.

## Choosing your DPV

If you’ve made up your mind to take the plunge and go for one of these machines you will want to know how to pick the right one. As you’ll know from choosing other items of dive kit, every manufacturer claims to make the best. There are good points to most items of kit available for today’s recreational and technical divers. DPVs are no exception, so to get it right you should consider what is most important to you. l If you want to make long leisurely dives, comfort and battery life are most important. Perhaps a seated DPV would be best. l If you want to use the vehicle to travel short distances and perhaps don’t intend to use it for the whole dive, speed should be the greatest determining factor in your choice. l If you plan to penetrate wrecks or caves, choose a small system. You should also look at small, lightweight units if you plan to travel. Probably a tow-behind would be the best choice. l Whatever you choose, it’s worth considering a unit that allows easy control of speed from the flying/riding position and shows the amount of battery power remaining. Of course, the best way to decide which DPV is right for you is to take some for a test drive!

## WHAT'S ON OFFER

**K-10 Hydrospeeder**
**Type** Sit-on
**Top speed** 6.3mph
**Thrust** 80kg
**Number of speeds** variable
**Maximum depth** 65m
**Range/burn time** 2 hours
**Dimensions** height 46cm, length 208cm, width127cm
**Total weight** 122kg
**Price** From £6,120

**Dream machine for lottery winners.** The unit has been designed to carry on-board scuba, and has a comprehensive instrument panel. An adjustable buoyancy system is fitted as standard. Optional features include a road trailer and camera mount.
Contact T-N-T Leasing in Florida on tel: + 1 954 764 1110.

**Scubapro Sea Glider**
**Type** Tow-behind
**Top speed** 2.2mph
**Number of speeds** 1
**Maximum depth** 70m
**Range/burn time** 50mins
**Dimensions** height 51cm, length 57cm, width 45cm
**Total weight** 21.2kg
**Price** £899

**A marine stealth plane.** A patented design feature places the propeller below the main body, allowing it to be used on the surface as well as underwater. It has an instrument panel and optional light fittings. Scubapro also offer a rigid carry-case with wheels for the scooter, for £110.
Contact Scubapro on 01256 812636.

**Oceanic Mako**
**Type** Tow-behind
**Top speed** 2.7mph
**Thrust** 23kg|
**Number of speeds** 9
**Maximum depth** 54.9m
**Range/burn time** 120 mins
**Dimensions** height 37cm, length 65cm, width 44.5cm
**Total weight** 24.5kg
**Price** £1,600

**A high scorer in test reviews.** The Mako has a variety of of speed settings. You can synchronise speed with other scooters. You can set it to achieve the best speed and range for every dive. Power triggers on both grips mean you can alternate if one hand gets tired.
Contact Oceanic on tel: 01404 891819.

**Torpedo Company 2000-20 and 2000-25**
**Type** Tow-behind
**Top speed** 2.5mph
**Thrust** 9kg
**Number of speeds** 1
**Maximum depth** 52m
**Range/burn time** 55mins
**Dimensions** length 79cm
**Total Weight** 21kg
**Price** £610

**Good value for money.** The Torpedo is operated in a unique way – a switch inside the hand grip is triggered by a magnet that straps to your hand. This ensures the unit will cut out should you loose contact with it. It also means you have to release one hand to stop.
Contact Torpedo in Florida on tel:
+ 1 800 489 6774.


**Breathing Observation Bubble (BOB)**
**Type** Sit-on
**Top speed** 2.8mph
**Number of speeds** 2
**Maximum depth** 12.2m
**Range/burn time** 1 hour+
**Dimensions** height 135cm, length 79cm, width 71cm
**Total weight** 43.5kg
**Price** £9,500 +VAT


**What can we say, it's different, it's expensive!** It has a combined steering wheel and instrument panel that includes a decompression computer. The glass bubble is continuously fed with air from the tank. However, the user has to compensate for changes in pressure. Light fittings are included, making night dives easier. Spymaster also makes a small tow-behind. Contact Spymaster on 0171 486 3885.

**Aquazepp LST 14-24**
**Type** Sit-on
**Top speed** 3.7mph
**Thrust** 40kg
**Number of speeds** 4
**Maximum depth** 90m
**Range/burn time** 4 hours
**Dimensions** length 125cm
**Total weight** 35kg
**Prices** from £1,100

**Built with German precision, popular with tekkies.** Aquazepp makes 13 models, including a twin version. Letters and numbers are used to denote certain specifications, making it easy to pick the features you most need. This model has a light, super motor, dry battery.
Contact Aquazepp in Germany on
tel:+ 49 8978582487.


**Farallon MK7**
**Type** Sit-on
**Top speed** 2.75 mph
**Number of speeds** 1
**Maximum depth** 122m
**Range/burn time** 3,200m
**Dimensions length** 107cm
**Total weight** 36kg
**Prices from** £1,559


**The choice of US special forces.** The MK7 is available in two other versions. The MK7-E comes with a variable speed control. The MK7-ER is fitted with optional silver zinc batteries, extending the range of the DPV by up to three times.
Contact Farallon USA on tel:+ 1 770 414 0550.

**Gavin**
**Type** Tow-behind
**Top Speed** 2.3+mph
**Thrust** 24kg
**Number of speeds** variable
**Maximum depth** 100+m
**Range/burn time** 50–150 minutes
**Dimensions** height 25cm, length 79cm
**Total weight** 100kg
**Price** £2,343

**A firm favourite among some of the world's best cave divers!** The Gavin has been designed to take up to eight 12 volt batteries. This unit has two. It's simple, just what you want at 100m. Probably the best tow-behind for technical diving.
Contact e-mail kirvine@safari.net

**Maxx Stealth**
**Type** Tow-behind
**Top speed** 3.25mph
**Number of speeds** 2
**Maximum depth** 99m
**Range/burn time** 55mins
**Dimensions** height 56cm, length 51cm, width 47cm
**Total weight** 23.6kg
**Price** £1,559


**Great depth-rating for a recreational unit.** A tough outer housing that should withstand most heavy knocks. It is one of the few units that has a speed control located next to the power trigger, making it easy to change speeds without stopping.
Contact Mode Industries in Florida on tel: + 1 800 226 0767.

**Apollo AV-1**
**Type** Tow-behind
**Top speed** 2.4 mph
**Thrust** 18kg
**Number of speeds** 3
**Maximum depth** 50m
**Range/burn time** 1 hour
**Dimensions** 34 by 61cm
**Total weight** 18kg
**Price** £1,295

**Tried and tested for more than 15 years. Probably one of the best known recreational scooters.** Features include a power switch located on the hand grip for easy operation and an optional wrap-around buoyancy vest.
Phone Forward Diving on 01202 677128.