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Issued 12-1-08

Subject

Hovercraft Buyers Guide

This guide has been designed to help you select the best small hovercraft to suit your requirements. There are a number of points to consider when purchasing a small hovercraft. This guide focuses on suitability for marine leisure and cruising. This guide has been created to enable customers to make wise decisions based upon meaningful comparisons. Decisions based on cost comparisons alone are not recommended, as serious safety factors need to be taken into consideration. The last page has a checklist to remind you what to look out for during demonstrations, to ensure your passenger safety and value for money.

Small hovercraft can be classified as race craft, kit-build or leisure.

1. Race craft focus on speed, so need to be lightweight.
2. Self-build focus on low cost, so occasionally compromise safety.
3. Leisure craft focus on safety and reliability, for salt-water use.

Consider:

Cost versus Performance, Safety and Reliability.

For **Race craft**, speed is the key objective, so weight is reduced wherever possible. For example, to reduce weight, craft have very thin GRP, so safety can be compromised. Race craft are often designed for land rather than use on sea. Thin GRP is needed for racing but not in leisure use as any impact causes expensive damage. Safety features such as the fan cage may restrict airflow, so safety is often compromised by speed. The Hov Pod is designed for safety rather than speed.

Self-build folk favour the low cost approach; this often can affect quality, safety and performance. People spend considerable number of hours building hovercraft, only to experience major disappointment on the first outing. The Hov Pod has taken years of development to eliminate the pitfalls associated with hovercraft design and manufacture. Too much work and not enough play can make Jack a dull boy!

The third type of craft appeal to people who just want to have fun. **Leisure hovercraft** demand safety, reliability, and ease of use. The Hov Pod may not be the fastest craft in town, but we do like our customers to have fun in safety. We don't scrimp on quality either. Check out the build quality and many benefits such as stainless steel fittings to combat salt-water use, or the high spec electrical components, for trouble free operation. Not all leisure craft are the same, the components on some craft mean that they should not go near water let alone salt water. Some manufacturers sell new hovercraft with second-hand engines, purchased from a local salvage yard. Or craft that dig the nose into water and stop suddenly, throwing passengers over the handlebars. Craft that do not contain enough buoyancy and sink! Craft that don't restart on water (a paddle could be useful) One-piece skirts that cost megabucks to repair. Hulls that crack and let in water, craft you can't steer without throwing your weight violently into the corners! Craft missing essential safety equipment such as a rear guard. One manufacturer we know fits fuel and battery in the same compartment, amateur builders often ignore basic safety common sense.

Engine type The Hov Pod uses highly reliable new engines that we supply with full manufacturer's warranties, proven by many years use in the snowmobile and microlight industries. The uniquely designed engine cover system offers excellent protection from the elements yet is very quick and easy to remove. The Hov Pod engines have been put through their paces for hundreds of hours in very harsh marine conditions & in climates such as Africa, and the Middle East. We fit air intake silencers and exhaust mufflers to keep noise to a minimum. Highly reliable 2-stroke and 4-stroke engines (from Rotax, Kohler & Weber) available to suit all applications, leisure or commercial. Many people have unfortunately found out the hard way by choosing a cheaper engine from a small engine supplier, it is only when they need the parts and support that suddenly they wish they purchased Rotax, Kohler or Weber. We do not use modified engines made to run at higher powers or RPM above the manufacturers recommended speed or power. The reason for this is simple, the engine manufacturer has fully tested the engine at the maximum safe power and RPM and running it in excess of these parameters will place excessive stresses on parts leading to failure or much reduced service life.

One engine or two? Many hovercraft use two engines, one for thrust, one for lift. Hov Pods have only one engine for lift and thrust; it is easier and far safer to use one set of controls, easier to service one engine, plus you get less noise from one engine. Of course we only use new engines, whereas many new hovercraft have been sold with reconditioned engines, without warranty. Lift engines are often placed in front of the driver - yuck, all those fumes and noise coming at you, and the first wave that hits you may swamp the engine, causing lift failure. Front-sited engines can make the hovercraft nose heavy, and more prone to ploughing-in (sudden stopping on water, causing rapid passenger disembarkation).

We deliberately designed the Hov Pod without a gearbox assembly, this allows us to site the engine much lower in the craft, providing **lower centre of gravity**. The low C of G greatly reduces the tendency to roll providing much greater ease of control (we have seen video of craft with a high engine simply rolling right over). It also means the engines are covered to reduce noise and protect against salt water. We also place the engine low down to ensure no airflow disturbance to the fan; clear airflow results in greater efficiency, this affects fuel consumption, and noise levels.

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Stopping on land. Hovercraft should be considered as land-based vehicles as well as water-based; stopping on a small rock shouldn't cause the floor to crack, since cracks let-in water. Most hovercraft have a single glass fibre floor, whereas the Hov Pod has a thick High Density PE floor, protected by additional aluminium runners, shock pads and wear bolts to protect the craft from the inevitable knocks that occasionally occur.

Stopping on water? Some customers panic when we stop the Hov Pod on water, because other manufacturers have told them to avoid doing this fearing that their Hovercraft may take on water, even in calm conditions. Walk to the wrong end of some hovercraft, and you'll need sandals, they take on water. Many hovercraft have a problem with starting on water, and you will sometimes hear the expression "getting over the hump", that describes the problem in getting back up onto the cushion of air to start moving again. The Hov Pod is designed to lift a payload of between 160 to 375 kilos depending on engine. Other craft also have a very severe tendency to spin and throw occupants when stopped quickly on water; the Hov Pod has been designed to quickly yet safely and smoothly stop in a controlled straight line.

Buoyancy. Many hovercraft have poor buoyancy characteristics and can actually sink if swamped, whereas the Hov Pod has full buoyancy, tested to hold over a ton in weight before water ingression into the cockpit. Not only will the Hov Pod stop quite happily on water but it has also been independently tested for flooded buoyancy approval. Buying a professional designed and manufactured craft helps to overcome regulatory restrictions, where they apply. Many craft claim good buoyancy but in fact take a look, ask to work out the buoyancy volume for the weight of the craft and the payload it will carry. Most craft simply do not have enough area volume to float the craft let alone the passengers also.

Skirts! Occasionally, hovercraft skirts may get damaged so you need to know how to replace a skirt, and how difficult the job will be. The Hov Pod has 65 different segments, (for damage limitation) so rather than having to replace the whole skirt if damaged, at great cost, you just replace the damaged segment. Naturally you will wish to go exploring with your hovercraft, but need to get home safely, so having a few spare skirt segments handy is a good idea, only takes a minute to change each segment; far easier than trying to recover a hovercraft with a damaged one-piece skirt. Hov Pods use a Polyurethane /Nylon material for excellent wear, UV and salt-water protection (we have yet to find anyone able to rip our light but strong heavy duty skirt fabric (even if we use sharp scissors to start the rip). The Hov Pod has operated in tests with up to 25% of the skirts missing. The careful design of the skirts also means that in normal use unlike nearly every other hovercraft the Hov Pod generates virtually no spray and the driver and passenger can stay virtually dry.

The Hov Pod is the first production hovercraft to be made from **High Density PE (HDPE)**, used previously in applications such as F1 Crash barriers. Wack it with a bat and we won't be offended, even jump on it!. This material is very strong and lightweight, one day, perhaps all small hovercraft will be made from this material. It is also inherently buoyant as it contains the foam buoyancy in the wall. Hov Pods are designed to withstand accidents when they occur, not only is it protected by HDPE but it is also protected by an aluminium plus rubber bumper strip to minimise damage to the craft. Vehicles manufactured from glass fibre suffer far greater damage during impact. Very few hovercraft have such protection, despite the fact that cracked GRP damage can be difficult and quite costly to repair. We also fit aluminium impact sheets, wear bolts and aluminium runners on the underside of the Hov Pod for durability whilst coming to rest on firm ground. We have seen other hovercraft fall apart after hitting a wave or taking a very minor knock.

'Ploughing in' is a term to describe a problem where a hovercraft suddenly stops, due to the nose of the craft dipping into water - as anyone knows, sudden stopping or deceleration will cause passengers and driver to part company with a vehicle, so we have designed the Hov Pod to overcome this problem. The Hov Pod has never ploughed in, though we continue to hear of incidents where many other people have suffered this problem, sometimes with quite serious consequences. The IAPS System (Integrated Anti Plough In Skirt System) means that a potentially lethal situation is avoided by attention to safety and good design, we take our customer's safety seriously.

Transporting. The Hov Pod can be supplied with a fully galvanized custom designed trailer made by an approved trailer manufacturer. For safety and ease of use this trailer is designed for single person operation. Many cheaper trailers are available but require either two three or four people to lift the craft off and on the trailer. The Hov Pod trailer utilizes 4 rubber coated rollers (to protect the hull and stop that annoying banging when trailering) and a simple winch mechanism to gently unload or reload the Hov Pod in about a minute. See http://www.youtube.com/watch?v=sXWjM2ig-2c

Good **safety design** is no accident; extensive development has gone into designing the Hov Pod. Safety is a very important aspect of design for the leisure market, and our designers have considered many factors not found on other craft. For example, we fit a front and rear guard to the fan assembly - who in their right mind wouldn't? (Actually, the majority of hovercraft don't). Consider heavy duty sealed batteries for starting even on the coldest morning and ventilated fuel tank spaces for example. Some craft put the electrics and fuel in same compartment! Some use simple open electrical connections. Some have even fitted their own fuel tank without any official safety approval! We utilize CAD design and CNC billet manufacture to ensure parts are of a repeatable design, high quality and strong in use. Again the Hov Pod has gone through full independent governmental engineering, safety and operation certification.

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Glass fibre construction. Check craft quality, is the craft constructed of GRP?
A whack with a mallet shouldn't offend. GRP when new nearly always looks great but if not made by experts in a controlled environment it will soon suffer from many hidden problems. GRP craft are only light if made thin, this is cheap but means that the hull is not strong, it can easily break up with quite low impacts or even sitting in the wrong place! Ask to see an older model to check the quality of the GRP, which can crack and delaminate after 6 months. An immaculate looking craft on day one can, after 6 months, can look very forlorn. GRP repairs are costly. Does the craft have a really solid bumper protection system? Can you give the impact areas on the side and bottom of the craft good hard whacks with a mallet or hammer? Can you sit or stand on the side quite happily without breaking it? The Hov Pod SPX is manufactured from High Density PE. (Structural Polyethylene) All terrain vehicles need to be strong to be safe, the Hov Pod is in a class of it's own.

Ease of use. On Water - can the craft be used in the conditions you intend to use? On water, sit on the side, climb in, climb out, will it topple over? Does it plough in? Will it float? What weight can it lift in on water-starts? Has any government provided safety certification? Do an emergency stop; can you keep control? Does the craft travel in a straight line? The Hov Pod only requires fingertip control; do you have to throw your weight when cornering? Many craft will not turn unless you move your weight to the side of the craft? Is driving instinctive to use, with handlebars and throttle? Many craft incorporate complex joysticks and elevator controls and/or reversing mechanisms that takes away the fun element and makes safe operation far more confusing. Our design philosophy was to keep it as simple as possible for operators to use the craft. By paying particular attention to the design, operation, feel and responsiveness of the Hov Pod, these extra controls are not needed. In terms of manoeuvring the Hov Pod it can be used to undertake long graceful turns or make tight turns in confined waterways or marinas. The balance and set up of the Hov Pod means that you can turn it on the spot on both land and water.

Value for money. Stretching the dollar is important for everyone, but so too is value for money, no one wants to spend thousands on a vehicle that is unsafe or difficult to repair.

Hov Pods are extremely **easy to drive**, and fantastic fun. The **WOW Factor** comes as standard. In demonstrations, we can usually hand over the controls to a person after 15 minutes tuition; they spend the next week with a smile on their face. Hov Pods were specifically designed for marine leisure and commercial use, and have many features that you will not find on other hovercraft. Hov Pods are designed to be easy to use, easy to service, safe to operate, reliable, durable and fun. We hope you will soon arrange a demo so that we can show you the superior features of the Hov Pod so that you can see for yourself, why it remains probably the best leisure hovercraft available, miles of smiles for everyone.

See demo checklist next page

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Hovercraft Demo Checklist

Coming for a demo soon? These are the questions to ask your Hov Pod or other hovercraft manufacturer's representative.

	Questions to ask	Response
☐	Has this hovercraft ever ploughed in? Hov Pod has never ploughed in. Ask to go at full speed and test it....but take care on other craft.	
☐	How strong is the hull, will it withstand the sort of treatment dished out in all-terrain use? Ask to hit it with a mallet all over. On the sides ask to use a heavy-duty hammer to hit it, does it crack or break? Ask to jump on it, yes we jump on the Hov Pod hull with 100kg (220lbs) weight.	
☐	If the hull is made from GRP. GRP is a heavy material to use in construction of hovercraft, it is basically glass and unless made very thick is not strong. Ask to see the laminators trade certificates to prove a skilled operative is making your craft. If made in cold, damp uncontrolled conditions it will soon suffer problems.	
☐	Does the hovercraft float if fully flooded? Ask to see a cross section of the hull, will it float, ask to see independent test reports from a government agency.	
☐	If you move all your weight to the to the front or rear of the hovercraft when stopped in choppy water, does water come in if you rock from side to side? Ask to stop and find out for yourself.	
☐	How strong is the skirt material? Take a section of skirt material & cut it with scissors, then try and rip it, does the cut continue easily, or does the weave prevent further ripping? Hov Pod skirt will not continue the rip.	
☐	Is the skirt made from polyurethane for excellent wear, UV and salt-water properties? Beware cheap neoprene and thin skirts that wear out. Many suppliers claim to use Hypalon or polyurethane (but do not) and after 6 months UV will have seriously deteriorated the fabric.	
☐	Is the skirt segmented, or a one-piece skirt? If one piece skirt, it can rip right through? How easy is it to change the skirt? Are special skills required to change the skirt?	
☐	Is the bottom of the craft protected by easy change runners and impact wear protection plates?	
☐	Are the controls simple and easy to use (One throttle & handlebar control is all you need in a well designed craft)? Do you feel confident to operate in 10 minutes?	
☐	Can you turn corners without moving your weight from side to side.	
☐	Is the hull inflatable? If inflatable, will it stand up to use over, sharp objects & debris without ripping and sinking!	
☐	Does the operator need to control trim manually with trim levers, to overcome ploughing problems?	
☐	What engine is fitted? Is it offered new with full warranty and technical and parts manuals in English on CD? Are engine parts easily available in your country? We have learnt from experience and only recommend Rotax, Kohler & Weber as these are massive international companies. Most engine suppliers are actually too small to operate an effective, technically competent & dedicated team of dealers with full parts holding for every engine variant.	
☐	Has the engine been modified to run at higher RPM &/or power than manufacturers standard recommendations to increase performance, if so, this will affect engine life, parts availability & warranty?	
☐	Are hovercraft parts designed using CAD, and are the parts manufactured using CNC processes from solid metal?	
☐	Does the craft supplier have an extensive spares holding?	
☐	Are engines situated high in the craft & prone to water ingress, noise emissions and causing it to roll excessively?	
☐	Does the hovercraft use a lift engine at the front, risking wave swamping, ploughing-in, noise, fumes?	
☐	Is seating comfortable, is it padded? Many craft position the driver low down (you have to kneel down) because they are narrow and if the driver is high up this is unstable. Trying sitting in the craft comfortably so you can operate the craft correctly, are your legs tucked up, are your knees resting on the floor, if so this is uncomfortable, especially for anything over 5 minutes use. Are gauges protected from water?	
☐	Are electrical connections and wiring protected (IP66) and sealed to protect against short circuits & salt-water corrosion? If you see terminal blocks and open connections this is not advisable.	
☐	Is the craft designed for salt water use? Are parts made from aluminium and stainless steel for salt-water use?	
☐	Does engine cover keep engine dry and protected? Hov Pod cover keeps engine and electrics fully covered for peace of mind.	
☐	Is the fuel tank home made, or professionally designed to meet international specifications?	
☐	Is the fuel tank housed separately from electrical battery and connections?	
☐	Is a rear guard fitted to duct? If not can you put your arm in and touch the blades, if so this is very dangerous & illegal.	
☐	Is the trailer supplied and one-man operation, do you have to lift the craft on & off?	
☐	Is the engine exhaust and intake system silenced?	
☐	Is the fan at least 1m (3 feet) diameter to maximize efficiency and reduce noise?	

Forget the rest, buy the best