

# Introduction

We want you to have an enjoyable experience operating your hovercraft in various weather and terrains. Please read this manual carefully and follow all recommendations. You should take weather conditions into consideration when planning to operate the craft. If you have any additional questions, please call Flight Training to give you a full explanation or to arrange craft orientation and complete flight training.

Your warranty card should be filled out and mailed to us for documentation. This card must be filled out and received or your warranty could be denied. We will be choosing some of the cards to be rewarded with accessories from our Dealer Flight & Sports Line, as well as Advanced Flight Training Seminars. The information collected helps us better serve you and our other clients.

Record your serial numbers of the engine and craft in case they are needed for parts orders, craft registration or craft theft. These numbers identify your engine and craft. Keep a copy of these numbers in a safe place.

Be sure to check your state and local regulation concerning operation of hovercraft or boats. You should follow these rules as they are the law in your area. We suggest each pilot take the U.S. Coast Guard Auxiliary Boating Course to make sure that they know the "Rules of the Road". This will help you safely operate your hovercraft.

## Safety Precautions and Warnings

### Training

You should learn how to fly with Flight Training or an authorized dealership. The dealer has been trained to operate the craft in a safe manner and can give you "hands on" instruction. Once you have properly shown the trainer that you are capable to fly, they will tell you to take the craft out "Solo".

Before operating the craft by yourself, be sure to read the operators manual and have a flight lesson. By taking these important steps, you will have more confidence and operate the craft in a safer manner.

### Safe Speed

Although your craft will go over 40 mph, the pilot should critically evaluate the terrain and weather they are operating to decide what is a safe speed. Your car will go 100 mph, but a safe operator would limit themselves due to conditions and only go the speed limit.

## **Pilots Qualifications**

Each pilot must have a valid motor vehicle drivers license. No one under the age of 18 should fly this craft. A hovercraft requires considerable skill and maturity to operate safely. This craft can be dangerous if operated improperly. **Hovercraft Concepts, Inc.** offers Flight Training courses to owners and potential owners.

## **Carrying a Passenger**

The pilot should have more than 25 hours Solo before operating the craft with passengers. This is for the safety of both parties.

## **Personal Flotation Device (This is very important!)**

Each person in the craft must have a life vest. We suggest the full vest type flotation device for best results. Check local regulations to see what type of life preserver may be required. You should use the vest on all terrains to help protect you from injury. Make sure the Personal Flotation Device is **U.S. Coast Guard Approved**.

## **Wear Headgear**

Wear a protective helmet, with mouth guard, such as the ones used by motorcycle riders. This is required of both pilot and passenger. This will reduce the possibility of serious injury resulting from any collisions or plough-ins.

## **Wear Ear Protection (This is very important!)**

Always wear some kind of ear protection when operating a hovercraft. Continued exposure to the high noise levels in the hovercraft could cause damage to unprotected ears. We recommend ear protection which offers at least 25 DbA of attenuation be worn at all times by anyone operating or riding as a passenger in the hovercraft.

## **Wear Eye Protection (This is very important!)**

Always wear eye protection when flying your craft. This will reduce the possibility of eye injury.

## **Fire and First Aid**

Each craft should have an approved marine fire extinguisher and first aid kit in case of emergency. Your dealer will install these items for you on request.

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## Health Precautions

Operating your hovercraft is enjoyable, but does require a certain amount of strength and control. For this reason we do not recommend the use of our products to **anyone** with:

*Heart Disease*

*Back problems or injury*

*Who might be Pregnant*

*Neck problems or injury*

*Head problems or injury*

*Problems with muscle or balance control*

*Any physical or mental disabilities*

*Any physical problem that can be aggravated by riding the craft.*

## Warnings:

1. The **Aerocruiser™** Owner's Manual and warning labels contain important information on safe operation of this watercraft. You must read and fully understand the Owner's Manual and warning labels before operating this watercraft.
2. The **Aerocruiser™** hovercraft is not a toy; it is a high performance power boat. Underage operators may be hazardous to themselves and others. You must know and observe your state's minimum boating age regulations. **Hovercraft Concepts, Inc.** does not recommend operation of this watercraft by persons under the age of 18 or that required for a driver's license.
3. Riders of hovercraft can fall into the water and experience exposure. Operator and passenger must be competent swimmers and never travel farther from shore than they can swim.

## Warnings:

4. Boating laws and navigation rules are for the safety of everyone sharing the waterways. You must know and observe all local, state, and federal boating laws. **Hovercraft Concepts, Inc.** recommends that all operators complete an approved boating safety course.
5. Drowning Hazard: a personal flotation device (PFD) must be worn by operator and passenger. recommends that operator and passenger wear a vest-type PFD (type 1,2, or 3) at all times.

6. Overloading this watercraft can adversely affect handling and stability which can lead to an accident. Never exceed the capacity load limit of 450 lbs or allow more than two persons to ride this hovercraft at one time.
7. Malfunctioning controls can cause an accident. Check throttle control plus steering for proper operation before starting engine.
8. Starting, turning, and accelerating without checking for other boats and objects in your path can cause an accident. Always look carefully around you for other boats and objects before starting and making quick maneuvers.
9. Quick turns or acceleration can cause passenger to lose balance and be injured.
10. Alcohol and drugs impair reaction time and judgement. Never drink and ride.
11. In some circumstances water spray can momentarily interfere with vision. Wear suitable eye protection while operating this watercraft.
12. Releasing the throttle completely reduces the ability to steer. This can cause you to hit an object you are trying to avoid. You must have thrust to turn.
13. This watercraft will not self-right if capsized. Operators must know the proper righting procedure or they can be stranded. Avoid abrupt maneuvers and unequal weight distribution. Know the righting procedure explained during training.
14. Objects hidden underwater may injure your feet. Operator and passenger should wear foot protection at all times.
15. Riders of hovercraft may suffer injury due to the forceful injection of water into body cavities either by falling into the water. **Hovercraft Concepts, Inc.** recommends that the operator and passenger of hovercraft wear protective swimwear such as wetsuit bottoms.
16. High speed operation in choppy or rough water may cause back injuries. Slow down before crossing waves. Do not ride if you have a back condition.

## LIMITED WARRANTY

**Hovercraft Concepts, Inc.** extends a limited warranty to the original retail purchaser of this product against defects and workmanship with respect to the items and for the periods specified below. This warranty does not extend to rental or commercial users.

## ENGINE LIMITED WARRANTY

The engine is warranted for six months from the date of purchase. This warranty covers manufacturer's defects & workmanship only. It does not cover engine failures due to: accidents, improper operation, blade rpm set higher than factory recommended limits, lack of proper oil/gas mixture, submersion in water, or any other type of misuse or neglect. All engine and blade parts must be dealer installed in order to maintain factory warranties. Parts are available from your authorized **Hovercraft Concepts, Inc.** dealer.

The following are not covered by the limited warranty:

1. Piston burning or piston seizure
2. Spark plugs, ignition points or condensers or recoil ropes

## CRAFT LIMITED WARRANTY

The Aerocruiser™ carries a conditional one year limited warranty covering workmanship and defects. This warranty does not cover any damage due to misuse, accidents, neglect or submersion in water.

The following are expressly **excluded** by the limited warranty:

1. Skirt systems and hardware
2. Fan blades
3. GEL KOTE cracks
4. Ruptured bottoms
5. Damage to the craft due to accidents

**FAILURE BY THE PURCHASER TO COMPLETE AND MAIL THE WARRANTY REGISTRATION CARD(S), WITH THE PURCHASE INVOICE ATTACHED, TO HOVERCRAFT CONCEPTS, INC. WITHIN THIRTY (30) DAYS OF PURCHASE VOIDS THE LIMITED WARRANTIES.**

## **DESCRIPTION OF LIMITED WARRANTY RIGHTS**

From the date of purchase through the applicable warranty period, Hovercraft Concepts, Inc. will replace, without charge to the original retail purchaser for labor and/or replacement parts, any part of any warranted item which is found to be defective. During the applicable warranty period wherein **Hovercraft Concepts, Inc.** will replace defective parts without charge for labor or replacement parts, the craft shall have been regularly maintained and serviced in accordance with the manufacturer's service manual and all warranty inspections and repairs must be performed by a **Hovercraft Concepts, Inc.** authorized service dealer or by a **Hovercraft Concepts, Inc.** service center. During the applicable warranty period wherein Hovercraft Concepts, Inc. will replace defective parts without charge for labor or replacement parts, this vehicle shall not have been used for racing and shall have been subjected only to proper use normal for this type vehicle. Further, this vehicle shall not have been operated in any way which, in the sole judgement of Hovercraft Concepts, Inc. , affects the performance, stability or capability of the craft to meet it's normal design function. Rental operations are strictly and explicitly excluded from warranty coverage. Any craft which has had any of its serial numbers altered, defaced or removed will not be covered under this warranty.

REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. IN NO EVENT SHALL HOVERCRAFT CONCEPTS, INC. BE LIABLE FOR ANY LOSS, INCONVENIENCE OR DAMAGE WHETHER DIRECT, INCIDENTAL, CONSEQUENTIAL OR OTHERWISE RESULTING FROM BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, ARE LIMITED IN DURATION TO THE DURATION OF THE APPLICABLE EXPRESS WARRANTY SET FORTH ABOVE. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OF LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

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## **IMPORTANT:**

As the owner of this craft, **you are required** to make sure that your dealer fills out the warranty card included in your craft completion kit **and that it is received by the factory** for documentation. You are also responsible to notify the factory if you move so that they can send you any updates or changes in important information.

## **Never fly after consuming alcohol or drugs**

Never, under any circumstances, fly a hovercraft while under the influence of alcohol or drugs, including medications prescribed by a doctor or over the counter drugs. Alcohol and drugs can impair your ability to safely operate this craft and can result in injury or death.

## **Do not attempt stunt maneuvers**

Never attempt to jump your craft over the wakes of passing boats. Never fly your craft off a jump ramp or off a pier.

## **Ride in smooth areas**

Always ride your craft in smooth open areas. Riding the craft on rough terrain or with major obstacles in your flight path is extremely dangerous for any rider.

## **Make a Flight Plan**

You should operate your craft in a predetermined area that is known to someone at home. This should include where you will be flying and when you plan to return. Make sure someone who would be concerned and responsible gets a copy of this plan in case of emergency.

## **Do not fly at night**

Never operate your hovercraft after dark. The craft is not equipped with running lights. Even with lights, operation can be dangerous and difficult due to unseen obstacles.

## **Courtesy and Caution**

A hovercraft is a unique vehicle that has the ability to travel on land and water at equal speeds. You know this, but a lot of people do not. Therefore, exercise extreme caution when approaching a crowded beach, shore or other area. Ride only in open, flat areas, never near people or other vehicles. At all times you must be aware of your obligation to others, to operate your craft in a responsible manner without causing offense by way of noise or speed or by endangering the safety of others or yourself. Never turn the air thrust from the hovercraft directly toward people or cars.

## **Do not lend your craft to anyone**

Lending your hovercraft to an inexperienced, untrained flier can result in their injury or death causing a potential lawsuit against you, the owner.



# How your hovercraft works

## **History**

Hovercraft technology has existed for forty years. In commercial applications, they are used in multi-ton ferries which can carry automobiles and passengers. Military, patrol and rescue applications are some of the uses for large or "heavy" hovercraft. Your craft utilizes most of the same engineering principles as these larger, commercial craft. This hovercraft is an "integrated" hovercraft, which means it utilizes one engine and one fan to provide both static pressure (lift) and dynamic pressure (thrust).

## **Principles**

In order for you to become a competent and safe hovercraft pilot, it is necessary that you understand some of the basic principles that make it work.

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# GLOSSARY OF TERMS

## **Air Bubble**

Correctly described as the air cushion beneath the hovercraft created by ducting fan generated air beneath the craft.

## **Gel Kote**

The coloring substance which is chemically impregnated into the Fiberglass parts of each craft.

## **Hover Height**

The distance between the surface being traversed and the hull bottom of the craft. Also described as the difference in height between the craft at rest and the craft on hover.

## **Hump**

When traveling over water, the ducted air passing through the skirts creates a depression in the water. This depression will move along with the craft seemingly causing the craft to drag slightly. As the craft picks up speed, at approximately 11 mph this depression disappears. This is called getting over the "hump".

## **Integrated System**

In hovercraft technology, a propulsion and lift system which utilizes one engine and one fan to provide lift and thrust.

## **Lift Air**

The fan generated air that is ducted beneath the craft. This air circulates through the skirting system exiting through holes at the lower portion of the skirts.

## **Bag Skirt**

A doughnut shaped skirt located around the perimeter of the craft causing the ducted lift air to be trapped under the craft, giving levitation to the craft for forward thrust ability.

## **Craft Trim**

Position on attitude of the hovercraft when at hover height. Trim position may be bow-up, bow-down, or leaning left or right. The ideal trim position is level or slightly bow-up.

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## **Swimming Ability:**

### **WARNING**

Riders of personal watercraft can fall into the water and experience exposure. Operator and passenger must be competent swimmers and never travel farther from shore than they can swim. Drowning Hazard: a personal flotation device (PFD) must be worn by the operator and passenger. **Hovercraft Concepts, Inc.** recommends that the operator and passenger wear a vest-type PFD (type 1,2 or 3) at all times.

## **Turns**

You must have thrust to turn. Releasing the throttle completely reduces the ability to steer and the hovercraft can hit an object you are trying to avoid.

## **Nighttime use prohibited**

Never operate the hovercraft after dark. It was not designed for such use, and has no lighting equipment.

## **Spark Plug**

The standard spark plug is NGK B8ES set to a 0.7 - 0.8 mm (0.028 - 0.032 inch) gap. Since the engine is water-cooled and is generally operated at a constant throttle opening, cylinder head temperature is relatively stable. For this reason, if the engine is in good condition and properly tuned, and the oil pump is operating properly, it should not be necessary to use a spark plug of a different heat range. Since a spark plug of the wrong heat range can cause extensive engine damage, only the standard spark plug is recommended.

## **Spark Plug Inspection and Replacement**

Remove the spark plugs and inspect the ceramic insulators. The appearance of the insulators reflects the efficiency of the combustion process. When the engine is operating properly, the plug insulators should be clean and show a light brown color. If the insulators look glazed or very white, if the electrodes appear overheated, or if there are gray metallic deposits on the plugs, combustion chamber temperatures are too high. Refer to the TROUBLESHOOTING GUIDE.

## CAUTION

As excessive operating temperature can cause serious engine damage, the cause should be located and corrected immediately. A dry, sooty black deposit on the insulators indicates an overly rich fuel/air mixture. Check for correct carburetor adjustment. If the black deposits are wet and oily, an improper oil type or an excessive oil pump output may be the cause.

Clean the electrodes and the ceramic insulators around the center electrode by scraping off any deposits or by using a sand blasting device. Make sure that all abrasive particles are removed from the plug and clean the plug in a high flash-point solvent. If the gap has widened, reset it to the standard 0.7 - 0.8 mm (0.028 - 0.032 inch) gap. If the electrodes are badly worn or burned, replace the plug. The spark plug must also be replaced any time there is visible damage such as cracked ceramic or damaged threads.

## Battery

In accordance with the Periodic Maintenance Chart, inspect the battery electrolyte level and clean the terminals.

### WARNING

Heed the battery safety label shown here.

### DANGER

### EXPLOSIVE GASES

Cigarettes, flames or sparks could cause battery to explode. Always shield eyes and face from battery. Do not charge without proper instruction and training. Connect cables to the proper terminals securely. Check vent tube to avoid any crimping or obstruction to the tube.

### KEEP FILLING PLUGS TIGHT AND LEVEL

### POISON

### CAUSES SEVERE BURNS

Contains sulfuric acid. Avoid contact with skin, eyes, or clothing. In event of accident flush with water and call a physician immediately.

### KEEP OUT OF REACH OF CHILDREN

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## **Jumpstarting Your Engine**

Connect the jumper cable lead to the positive battery terminal and then connect it to the positive terminal of the power source. Connect the remaining jumper cable to the negative power source terminal and the other end of the remaining jumper cable to the engine frame.

### **WARNING**

Do not make this last connection at the carburetor or battery. Take care that you do not short the cables together, and do not lean over the battery when making this last connection. Do not jump start a frozen battery. It could explode.

### **CAUTION**

Do not operate the starter continuously for more than 5 seconds or the starter will overheat. Wait 15 seconds between each operation of the starter to let it cool.

Start the hovercraft engine following the standard engine starting procedure and then disconnect the jumper cables in the reverse of the sequence just described.

Dispose of the cloth covering the booster battery and reinstall the filler caps.

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# **OPERATING INSTRUCTIONS**

## **Normal stopping:**

### **WARNING**

Never directly approach any moving or stationary object closer than 100 m (330 feet) when traveling at top speed. Always throttle down before approaching your intended stopping area.

This hovercraft is topped by using natural water drag to bring the craft to a halt.

1. Release the throttle before you reach your intended stopping area.
2. Coast towards the stopping area with the engine idling.
3. Turn off the ignition or pull the lanyard key off the stop button to come to a complete stop.

Releasing the throttle slows forward motion but the engine will still be running, so you can steer the boat after reapplying the throttle. In the manner you can turn and move away from any obstacles.

### **WARNING**

Releasing the throttle completely reduces the ability to steer. This can cause you to hit an object you are trying to avoid. You must have thrust to turn, so keep the throttle on or apply throttle as needed to maintain thrust at the rudders.

### **WARNING**

Do not stop the engine if you may need to reapply throttle to quickly steer the watercraft. You have no directional control when the engine is stopped.

## **Engine overheating:**

### **CAUTION**

If engine overheats, the water temperature gauge will read 200 degrees. Return to shore immediately. To prevent engine damage, do not operate the craft until the cause of overheating is corrected.

## **Transporting**

When transporting the watercraft on a trailer, observe the trailer laws and regulations in your area. Be sure the trailer matches with the craft's weight and hull design.

Securely fasten the hovercraft to prevent movement between the craft and trailer.

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# Cold Weather Operation

## Cold Weather Operating Precautions

Check for any ice and snow build-up in and around the engine area. Clear away the ice and snow completely and wipe down the area with a dry cloth. Be careful not to track snow, rocks or stones into the craft from your clothing and/or your footwear.

Always check all passage ways, engine compartment, inner hull cockpit, your clothing and footwear for any foreign objects and remove them before you start the engine. When operating your craft in near or below freezing temperatures, shut down your engine at least once every twenty minutes and go through the above safety steps, to make sure no ice has accumulated anywhere on the craft.

Always operate your craft at a safe speed whether on land, ice or water. If your craft is stored in an unheated area the engine and cockpit areas should be covered to prevent ice build-up. This hovercraft is not recommended for use on any frozen bodies of water incapable of withstanding the weight of the craft.

## No Loose objects in the craft

Never have any un-secured or loose objects in the craft or on your person during your flights. Small loose objects in the craft can be pulled into the fan and propelled outward at high speeds or can cause a blade failure which can be dangerous. In addition, unsecured objects can move forward in the craft, upsetting your balance.

## Do not leave your engine running

Always shut your engine off after setting the craft down. Leaving your craft running while it is unoccupied can attract other people, particularly small children, and entice them into placing their hands in the revolving fan. Never fly with damaged skirts or bottom. Always repair any ripped sections of the skirt or damaged bottoms immediately. Flying with damaged skirt or bottom can result in the craft performing improperly. Damaged bottoms can catch the surface, resulting in sudden, unexpected stops and extensive damage.

## Never fly without a fan guard

Never fly the craft without the fan guard installed properly in the craft and securely fastened.

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# OPERATOR PREPARATION

## WORD TO ALL HOVERCRAFT OPERATORS

Regardless of previous experience in operating an automobile, motorcycle, or motorboat, everyone is a beginner the first time he sits behind the controls of a hovercraft. Every sport requires skill and judgement on the part of the participant. If the required skill and judgement are deficient, a normal acceptable risk element can be magnified to an unacceptable danger element. The skills and judgement necessary to keep hovercrafting risks well within acceptable boundaries **must** be developed by the operator. Variable conditions, light, ice, snow, terrain, weather, and temperature, and their effects on hovercraft operation and the operator **must** be learned. How to balance the hovercraft under varying terrain conditions and speeds **must** be learned by the operator. How to compensate for other vehicles or activities when hovercrafting **must also** be learned. It is highly recommended to participate in a Hovercraft Training Course before operating a snowmobile.

## PROPER DRESS

Hovercrafting and related winter sports require wearing warm clothing. Many times, however, in an effort to keep warm, a person will overdress and end up getting chilled. A basic theory in keeping warm is: If dressed properly, the clothing will keep out cold air and will allow moisture to evaporate from your body.

Windchill, the temperature your body feels as a result of the temperature and combined wind/snowmobile speed, provides the biggest exposure problem when snowmobiling. Notice in the windchill chart that as the wind/snowmobile speed is increased, the danger of freezing is also increased. When dressing for snowmobiling, it is important to dress according to the coldest anticipated windchill factor, the length of your exposure, and the anticipated weather conditions. It is often not enough to dress according to the current temperature and conditions.

Good quality one or two-piece snowmobile suites with water-resistant covering and lightweight, high insulating linings should be worn by all hovercrafters. The type and amount of clothing worn underneath the snowmobile suit depends on the weather conditions of the day. Thermal underwear next to the skin provides an important layer of air space necessary for proper insulation.

Approved helmets, which provide warmth and protection, should always be worn

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with the chin strap buckled at all times. Helmets should be of the full-coverage variety with a plastic protective shield and a durable chin strap. If the helmet is not equipped with the protective plastic shield, protective eye goggles must be worn. Either goggles or a face shield is important attire not only for the protection they provide to the eyes but also for the increased visibility they provide under varying light conditions. Suggested are gray or dark green lenses (on bright days) and amber or yellow lenses (on dark days or late afternoons) as they tend to increase visibility during these conditions. The preference of the operator should determine the appropriate colored lens for each condition, but colored lenses must be removed at night. Clear lenses (which are suitable for all conditions) must be used at night.

In addition to the helmet and eye protection goggles/shield, in extremely cold weather a face mask is advised to reduce the possibility of frostbite.

Hands must be protected by a pair of well insulated snowmobile gloves or mittens that will permit unhampered use of the thumbs and fingers for operation of the controls. Ordinary gloves made with straight-cut fingers are not very efficient in keeping hands warm during hovercraft operation.

1. Clothing that ventilates as well as insulates is a necessity.
2. Dress in layers which do not limit mobility. Layers of clothing function better than a single heavy layer: i.e. an inner layer with a ventilating weave (thermal underwear), a second layer of a durable, utility nature (wool shirt and sturdy pants), and a third insulating layer (snowmobile suite).
3. Remember when purchasing snowmobile clothing that COMFORTABLE and PROPERLY-FITTED clothing is essential for warmth.
4. Keep insulating clothing dry, as it loses its insulating effectiveness when wet. Keep snow out of clothing. To cool off, open clothing at the collar. Allow clothing to dry after use.
5. Hand and foot warmth is dependent on movement. Do not wear too many pairs of socks or gloves. One pair of wool or thermal socks and one pair of snowmobile gloves with glove liners are adequate for most winter conditions.
6. Cover all exposed skin to prevent frostbite.
7. NEVER wear long scarves or loose clothing that could get drawn into or caught by moving parts of the hovercraft.
8. Dress appropriately; never overdress or underdress.

# PHYSICAL AND MENTAL FITNESS

Hovercrafting requires physical and mental preparation. Physically, hovercrafting requires physical exertion. In order to enjoy hovercrafting to its fullest, good physical pre-conditioning is required to be able to handle the hovercraft with the required “muscle” and reduce the “morning after” stiff muscles and aching arms. Also, in difficult situations such as becoming stuck in deep snow, the hovercrafter in good physical condition will find the hovercraft much easier to free.

Mental preparation for hovercrafting is extremely important. Not being mentally prepared and mental fatigue, caused by hovercrafting conditions, can be hazardous as it can lead to poor judgement and an unacceptable, unsafe operating performance. Prompt reactions and expert judgements are required at all times by hovercraft operators. Unless an operator is prepared to face a possible emergency with instant reaction and knowledge, he is not prepared to operate a hovercraft. Never operate any motorized vehicle under the influence of drugs, alcohol, or medication which may impair your judgement or reactions.

## RESPONSIBILITIES

Federal, state, provincial, and many local governments have enacted laws and regulations pertaining to the use and operation of hovercraft. It is the responsibility of the owner **and** operator to learn and obey these laws and regulations. Also, the owner and operator must be aware of the liability, property damage, and insurance laws relating to hovercraft operations.

Respect other people’s privacy and property at all times. Always obtain the property owner’s consent **before** hovercrafting on his property. Check with the proper officials before riding on public lands and drive slowly in residential areas.

If you are a parent, **you** must be the judge of your child’s capability to understand, operate and control the hovercraft safely. It is the parent’s responsibility to determine how involved the child should be in the sport of hovercrafting. Never under any circumstances let children operate hovercraft. They must be 18 or older to hovercraft. To reduce the chance of unauthorized usage, always remove the key from the ignition switch after each use.

## REGISTRATION AND PERMITS

Most states and provinces require by law that new and used hovercraft be registered with the governing body having jurisdiction over hovercraft use. Hovercraft registration has two purposes: it allows the state or province to maintain records of existing hovercraft and the owner/operator who registers a hovercraft has a reasonable chance for recovery **if** the hovercraft is ever lost. To obtain all necessary permits before operating the hovercraft

# CODE OF ETHICS

1. I will be a good sportsman. I recognize that people judge all hovercrafters by my actions. I will use my influence with other hovercrafters to promote sportsmanlike conduct.
2. I will not litter any trails or camping areas, nor will I pollute streams or lakes. I will carry out what I carry in.
3. I will not damage trees, shrubs, or other natural features.
4. I will respect other people's property and rights.
5. I will lend a helping hand when I see someone in distress.
6. I will make myself and my vehicle available to assist in search and rescue operations.
7. I will not interfere with the activities of other winter sportsmen. I will respect their right to enjoy their recreational activity and facility.
8. I will know and obey all federal, state, (or provincial), and local rules regulating the speed and operation of hovercraft in areas where I hovercraft.
9. I will not harass wildlife.
10. I will not snowmobile where prohibited.
11. I will not operate a hovercraft under the influence of drugs, alcohol, or medications.

## SAFE OPERATING INSTRUCTIONS

### **A. Before the hovercraft engine is started:**

1. Check weather forecasts for possible dangerous weather conditions.
2. Dress properly. A helmet, adequate ear protection, an eye protection device, and adequate clothing, based on current and forecasted weather conditions, are a must. Never wear long or loose scarves, shoelaces, etc., which could get caught in a moving part of the hovercraft.

3. Inform someone as to where you are going and when you plan to return.

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4. Arrange to ride with friends using the “buddy system.” Never ride alone.
5. Equip the hovercraft with a survival kit and all necessary supplies. A flashlight, critical spare parts, and the tool kit should be carried with the hovercraft at all times. It is also a good idea to carry personal identification, change for a telephone, matches, knife, compass, paper, and a writing instrument.
6. Complete the Pre-Ride/Start Inspection of the s hovercraft.
7. Make sure the hovercraft is headed away from people and obstacles when starting.
8. Forbid new or inexperienced drivers to operate the hovercraft without proper instruction. Carefully supervise and control these individuals over flat, predetermined courses. Observe federal, state, provincial, and local requirements regarding minimum-age licensing, and operation. Read the **Operators Manual** thoroughly; understand and follow all recommendations.
9. Obtain permission from the owner or tenant before crossing private property.
10. Never operate the hovercraft while under the influence of alcohol, drugs, or medications which may impair your judgement or reactions.

### **WARNING**

Do not operate the hovercraft if the kill switch lanyard does not function properly.

### **WARNING**

If the throttle lever does not return quickly and completely, the throttle system must be repaired or damaged components replaced before the hovercraft is operated.

## **PRE-MIXING FUEL**

When mixing fuel:

1. NEVER smoke or light any matches.
2. NEVER mix near an idling engine.
3. NEVER mix near a furnace, gas water heater, or any open flame.

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When adding fuel to the hovercraft:

1. NEVER smoke or light any matches
2. NEVER add fuel while the snowmobile engine is running.
3. NEVER over-fill the gas tank.
4. NEVER spill fuel during fueling.

## **IF A HOVERCRAFT GETS STUCK**

It is always better to prevent a hovercraft from becoming stuck than to exert oneself in attempting to free a stuck hovercraft. Two points to remember will greatly reduce the possibility of becoming stuck in snow. First, in deep fresh snow, stop the hovercraft in an area that has already been traveled and thus packed. This can be accomplished by making a complete circle before stopping and then stopping on the circumference of the circle. Second, never stop the hovercraft facing uphill.

## **TERRAIN/RIDING VARIATIONS**

### **Deep Snow Conditions**

You can expect the hovercraft to perform differently in deep “powder” snow from performance in snow six inches deep. Turns are harder, the risk of becoming stuck is greater, and the hovercraft can begin to “bog” down in deep “powder” snow. A higher rate of speed will be required to negotiate a turn and turns should be wide and sweeping. Be sure to always stop on a previously traveled track with the hovercraft facing an open area or downhill.

### **Ice or Hard Packed Snow**

Always use extreme caution on hard packed snow or ice. The sitting position will give the operator the best control. The hovercraft can pick up considerable speed and lose some control over hard, slick surfaces.

If at all possible, avoid waterways; traveling on frozen lakes and rivers can be fatal. Consult local authorities concerning the ice conditions if there is any question or doubt as to the thickness or strength of the ice or if you are unfamiliar with the area. Also, be familiar with or ask about inlets, outlets, springs, fast moving currents, or any other hazard which may determine the thickness of the ice. NEVER ride on ice you **THINK** is thick enough.

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## **Uphill**

Depending on the angle of the incline, climbing a hill can be accomplished by either of two methods. The DIRECT CLIMB method should be approached with caution.

## **Downhill**

It is important to have full control of the hovercraft at all times when riding downhill. Keep a low center of gravity and maintain slight throttle pressure allowing the hovercraft to run downhill with the engine operating. Speed should be held to a minimum. It is possible to use the air thrust from the craft to reduce the forward speed of the hovercraft by coming down a smooth hill backwards, using the throttle to keep your speed low. This should only be considered by an operator with many hours of experience.

## **Sidehill**

The use of the hovercraft for travel on sidehills, as done by experienced snowmobilers is not recommended due to the nature of the craft on the cushion of air. The hovercraft will not track properly for this type of maneuver. The pilot of the hovercraft should find alternative paths to make their way.

## **HAZARDS**

### **Fences and Posts**

Fences and posts may be covered either partially or completely by snow. Care should be taken to locate fences before riding. If unfamiliar with terrain, proceed with caution. Newly found fences should be marked with a flag or reflective device. Do not drive over small snow mounds that may be a fence or a rock pile.

### **Wires**

Always be on the lookout for hidden wires. Fence wires, guy wires, and chains or wires used as road closures are all hazards that should be avoided. Care should be taken to route trails a safe distance from guy wires. Trails should not be cut between a pole and a guy wire. Reflective devices should be attached to guy wires and fences for easy recognition by night snowmobilers. Do not operate in unfamiliar territory at night as wires are extremely difficult to detect.

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## **Unfamiliar Territory**

Always operate the hovercraft with extreme caution in an unfamiliar area, even when following existing tracks. Proceed slowly enough to recognize potential hazards and obstacles which could shorten your ride and enjoyment. Even hitting a small rock or stump could throw the hovercraft out of control and cause severe injury to the operator or passenger. Be safety conscious, slow down, and enjoy the scenery of unfamiliar territory.

With fog or heavy snow, even a very familiar trail becomes unfamiliar and hazardous. If you must proceed into the fog or heavy snow, do so slowly and watch intently for hazards. **DO NOT PROCEED** if not sure of what is ahead!

## **EMERGENCIES**

### **Frostbite**

Frostbite, the crystallization, either superficially or deeply, of the fluids and underlying soft tissues of the skin, is the most common cold weather injury. The nose, cheeks, ears, fingers, and toes are the areas most commonly affected by frostbite. Often the victim is not aware of the frostbite until told by someone else. As frostbite develops the symptoms follow this order:

### **Frostbite(cont.)**

1. The affected skin may be slightly flushed.
2. The skin changes to white or grayish-yellow in appearance.
3. Pain (often there is no pain) is sometimes felt early but subsides later.
4. Blisters may appear.
5. The affected part feels intensely cold and numb.
6. Mental confusion and impairment of judgement set in.
7. The victim staggers.
8. Eyesight fails.
9. The victim falls and may become unconscious.
10. Shock is evident.
11. Breathing may cease.

### **Hypothermia**

Hypothermia, the state when the body is losing heat faster than it can produce it, drains valuable energy from the body. As hypothermia develops, the symptoms follow this order:

1. Uncontrolled shivering and fumbling hands.
2. Numbness and memory lapses.
3. A dangerously low body temperature.
4. Stupor, frequent stumbling, and a lurching walk.
5. Vague slow speech, drowsiness, and apparent exhaustion.
6. The victim collapses.

## **Snowblindness**

Snowblindness is a condition snowmobilers may experience during medium-bright to intense sunshine days. The symptoms are:

1. Severe headache
2. Dizziness
3. Sensitivity to light and seeing stars

The recommended treatment is immediate removal to a totally dark area. Snowblindness can be prevented by wearing the properly-lensed goggles or properly-colored face shield.

## **EMERGENCY SITUATIONS**

All hovercrafters are advised to be prepared for emergency situations at all times. Informing someone of your intended journey and time of expected return is good insurance for your safety. If, while riding a hovercraft, an accident is encountered or if the hovercraft breaks down and can not be fixed, **YOU** are involved in an emergency situation! If confronted with an emergency situation, three things to remember are to stay calm, dry, and warm. Panic and exhaustion can lead to needless changes that can result in injury or death. Plan actions and do not attempt to walk through extremely deep snow as it could take two or three days to cover the area traveled by a hovercraft or snowmobile in 10 or 20 minutes.



## **SUGGESTED EXTRA EQUIPMENT**

space blanket	rope
candy bars	pocketknife
operator's manual	friction tape
waterproof matches	extra starter cord
flashlight	tool kit
extra spark plugs	fuel de-icer
first aid kit	shovel
snow shoes	axe
extra mittens, socks, and boot liners	flares
extra drive belt	metal cup or kettle
compass	tarp or plastic sheet
area map	

**NOTE:** A single hovercraft could not possibly carry all of this equipment by itself. That is one reason why it is necessary to take extended trips with other snowmobilers or hovercraft and to divide the load among the group.

## **SURVIVAL**

There are several steps which will make a survival situation easier. It is imperative to remember that the best tool of survival is your brain. Be sure to use this tool in a survival situation. The following steps will help save a life, **POSSIBLY YOURS!**

1. Do not panic
2. Plan a course of action
3. Stay together
4. Conserve energy and warmth
5. Make an adequate shelter
6. Build a fire
7. Melt clean snow for water
8. Signal for help

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# Trailer and Trailering Operation

Access to many hovercrafting areas can only be obtained by trailering the hovercraft. Single, two-place, and four-place trailers have made hovercrafting more “mobile” than ever before. When trailering a hovercraft, always drive with care, maintain ample stopping distances, and avoid sudden stops. Carry a spare tire, tire wrench, and jack for the trailer at all times.

The procedure for loading a tilt-bed trailer should include the following steps:

1. Be certain the trailer is registered and meets all state or provincial safety requirements; that the hitch and safety chains are secure; and the brake, turn indicators, taillights, and clearance lights all function properly. Make sure the hitch ball and trailer coupler are matched in size.
2. Check to be sure that the tires are properly inflated and that all lug nuts are tightened to specifications.
3. Drive the hovercraft to the rear of the trailer, approaching with caution.
4. Leave the hovercraft engine on; then tilt the bed of the trailer.
5. Using the trailer winch, hook the winch cable to the hovercraft and winch the hovercraft onto the trailer.

## **WARNING**

Never under any circumstances, drive the hovercraft onto or off of the trailer; severe personal injury may result.

6. Tilt the bed of the trailer back to the transport position; then secure the trailer bed in the transport position.
7. Cover the hovercraft with a Hovercover.
8. Anchor the front and rear of the hovercraft securely to the trailer with tie down straps, or hold down bars making sure approximately 60% of the load weight is positioned in front of the trailer axle.

The procedure for unloading a tilt bed trailer should include the following steps:

1. Remove the anchors securing the snowmobile to the trailer.
2. Remove the hovercraft cover.
3. Tilt the bed of the trailer up by using the lift jack at the front.
4. Advance the idle of the hovercraft above the trigger throttle, pull the car forward  
to clear the trailer.