

Care and Maintenance for your Repaired and Refurbished Canoes

By Christopher P. Knight, February, 2021

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(Note: Due to the complexities surrounding construction materials utilization, specialized tool requirements, and methods for repairs and maintenance, aluminium and canvas-covered canoes are not specifically highlighted in this document, however some topics discussed within may still apply for these types of canoes).

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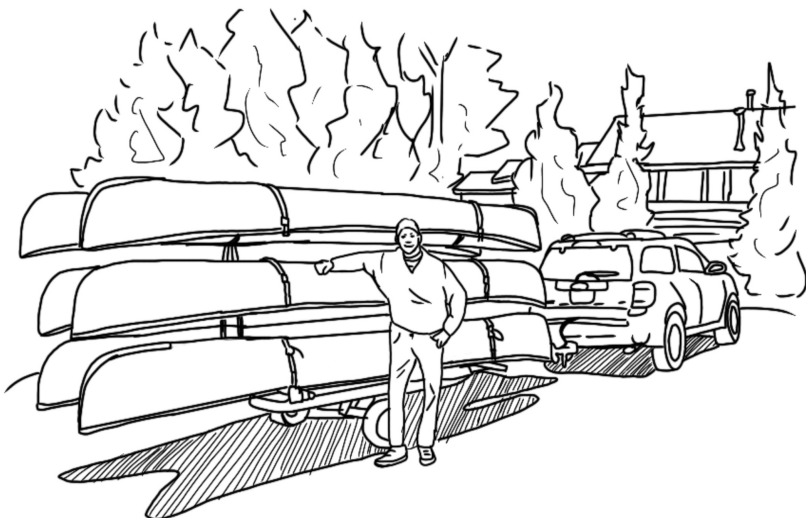
1 Introduction: If canoes could talk

Rarely does one get feedback from an inanimate object reminiscing on its life exploits and adventures, however as a company dedicated to maintaining small watercraft we frequently experience old and worn out boats telling us their amazing stories. The canoes our clients ask us to rebuild, refurbish, restore, beautify (pick your lingo) often come to us as fiberglass, Kevlar or cedar strip boats in various degrees of rough-and-tumble shape. Yet these boats all share something in common; unique and astonishing testament of their individual history, and the events leading to their current state of affairs.



We hear of watercraft of all types tossed aside due to damage sustained during their lifetime, and their inability to stay afloat or more importantly, remain safe. This harkens back to our youth when one-hundred or more young campers would be recruited to enjoy the canoe relay races. As much fun as it provided, these boats took a beating and, due to tight camp budgets (and lack of skilled repair help), would have jury-rigged field repairs from bits of hockey sticks bound with duct-tape, twisted metal, wire, rope and string, all equating to an unsafe environment for the users. Same can be said for watercraft made available to patrons of resort hotels. Canoes, kayaks, paddleboards and dinghies employed at lakefront resorts take constant, careless abuse, and the staff who are required to keep these boats afloat often have no idea how to properly repair them.

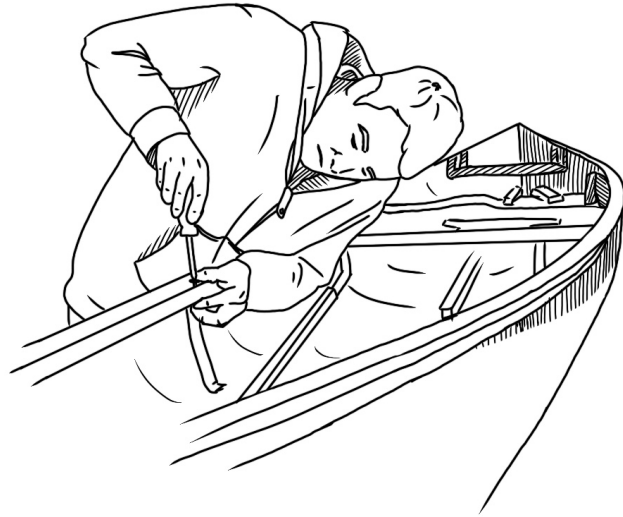
Recognizing an enormous demand in the recreational watercraft services marketplace, **BOATFIX.CA** was created to provide these services to extremely active and high-demand communities as well as the general public at large. Smalls boats such as canoes, kayaks and rowboats, along with paddleboards and sailing dinghies are the mainstay of repair work **BOATFIX.CA** facilitates. The service is designed to provide rapid, yet quality repairs with affordable price-points for budget conscious clients, while observing a mandate to keeping their boats looking refreshed, in the water and more importantly, safe.



Consider this parting thought. Small boats are quite romantic being at the very heart of cottage life and the lake-district community landscape. Keeping your small boats maintained and serviced with care and love will furnish continued good looks (while retaining their value), provide years of safe use and endless enjoyment, and in some cases can later be heirloomed to future generations. For more information on transforming your small boat visit the **BOATFIX.CA** website.

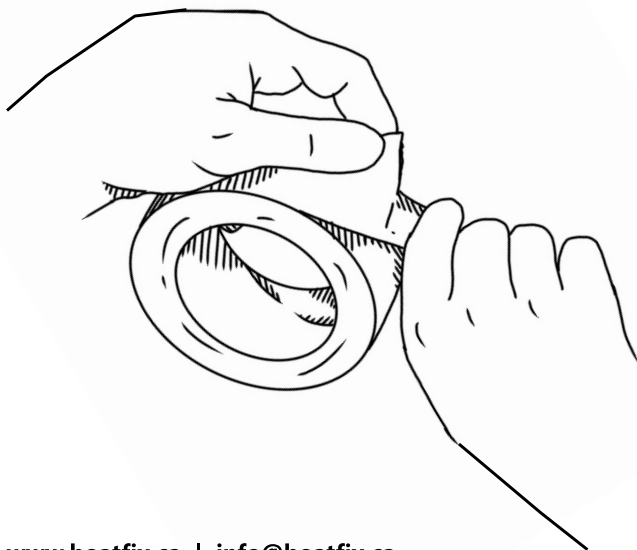
Your canoe has been assessed by a **BOATFIX.CA** representative and has made recommendations to you on what can be done to bring your boat to a safe and aesthetically functional state. Once the canoe has been repaired and refurbished to the requirements of the assessment, the boat is brought back to your personal care. Consider first why your canoe required a repair or restoration process. The answer should be, to ensure the boat is safe so the users can be safe. The canoe's general aesthetics are second in importance to how safe the boat is. The following sections offers some guidance of the canoe's components, how wear and damage affects them, and what can be done to extend the canoes life with some preventative maintenance and care on your part.

Consider the reality that during its useful lifespan a canoe's surfaces will get scratched, gouged and torn through dings off rocks and docks, dragged across gravel and sand, scuff marks from transport straps, smacked hard due to natural forces, and even collide with obstructions in the very water it is paddled. This is all part of a normal and accepted, daily unavoidable existence for all watercraft, regardless of its construction. Gelcoat, epoxy, plastic, painted and varnished surfaces will all endure routine wear and tear, and just as any new item you purchase gains personal distinction with age (personality), so will your boat. How quickly your canoe ages all comes down to how careful you are at avoiding problems and maintaining it during its lifetime.



Holes and tears in the hull

Canoe hulls can be fabricated of wood, fiberglass, Kevlar, plastics and other composite materials, all of which take damage in their own unique way. Holes and tears created in any hull are often due to traumatic forces from collisions with rocks, logs, docks, other watercraft, being dragged over rough terrain, falling from trailers and car tops, collisions from falling trees, and high wind debris collisions. While not all situations can be



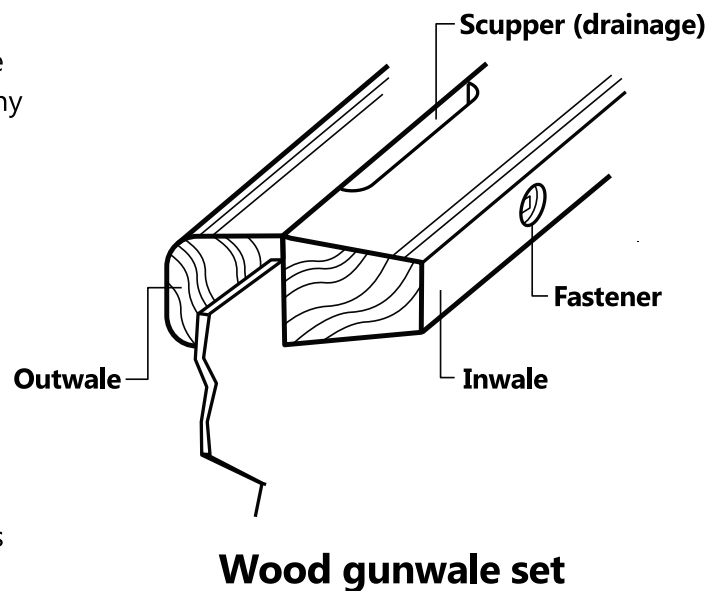
avoided, many can be prevented with a keen awareness of your canoe's surroundings and the conditions it is currently enduring. A hole or tear in your canoes hull is the last thing you want miles from camp especially when you least expect it. It is highly recommended to bring a roll of black, heavy-duty **Gorilla™** brand tape along for emergency repairs. Duct tape can also be an option, except that not all duct tapes have the same adhesive qualities and strengths, where **Gorilla™** brand tape is predictable to seal and mend when applied correctly. Inside and outside hull surfaces must be completely dry and dirt-free. Lengths of **Gorilla™** brand tape are applied

over the hole or tear both inside and out and burnished well. A canoe's keel(s) can benefit well with the use of **Gorilla™** brand tape applied to the exterior of the canoe prior to adventuring into questionable and shallow waters. Apply the tape centered along the full length of the keel(s) and burnish it down prior to trekking. This tape will present a membrane layer that is extremely resilient to abrasion and could well save the bottom of your boat. Before using your canoe ALWAYS inspect for areas that might leak, especially around patches that were previously installed. If a potential weak area in the hull is a concern or a hole, tear or loose patch becomes apparent, have the boat repaired by a **BOATFIX.CA** service agent. Professional patchwork is the ONLY recourse to solve these problems.

4 Gunwale Care

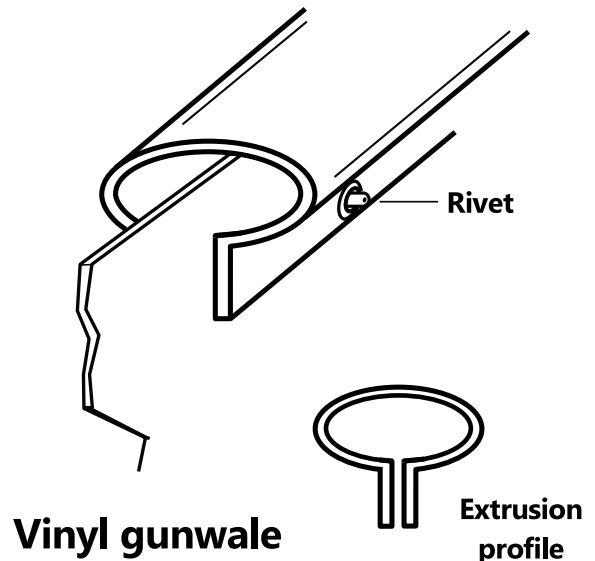
Gunwales are support structures that run the full-length of the canoe from bow to stern and are located at the sheer (top-line) of the canoe. Gunwales are solidly integrated into the canoe, providing a number of purposes which include; strengthening and protecting the top-line of the canoe, creating a rigid structure to hang seats (with the added objective of creating a solid transmission system between the paddler and the canoe), provides bumper protection from internal and external blows and collisions, and finally giving the canoe aesthetic appeal. Gunwales are offered in several styles and manufactured with differing materials and by different processes, as follows:

Wood gunwales and trim are most popular, typically of ash, cherry and cedar, and occasionally of maple, oak and other wood species. Wood gunwales provide the most aesthetic appeal of all the available choices as they really make the canoe stand out. They are also the most demanding of any gunwale type to maintain. Also known as 'brightwork' in the yachting community, well maintained oiled and varnished woodwork gives the canoe heart, soul and unmatched beauty. The key to longevity of any wood component in a canoe (or any boat) is through the maintenance program one should regularly undertake to stay on top of rot, sun-bleaching, damage and wear while also providing UV protection from the sun and resilience to saltwater. Many wood gunwale sets include scuppered (hollowed sections) inwales which serves to drain water when the canoe is resting inverted or leaning on its side. Pay special attention to clearing scuppers along these areas. Too often rot appears at these locations due to water pooling and eventually deteriorates the gunwales.



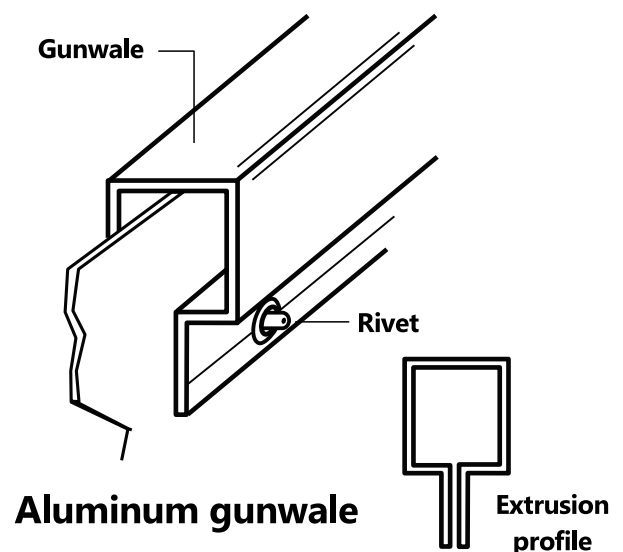
Refer to **Section 8** on maintaining, oiling and varnishing canoe woodwork.

Vinyl or other plastic gunwales are cheaply produced as an extruded product. They look great and wear well provided the canoe is winterized properly. If the canoe has any water in the gunwales and is left on its side for the winter, the water trapped at the gunwales lowest point will freeze and shatter the plastic. Vinyl gunwales are normally riveted to the hull and tied together with plastic end caps at the bow and stern. As for general care, plastic gunwales are very low maintenance, while using soap and water with a soft cloth, this simple method will remove most dirt and grime.



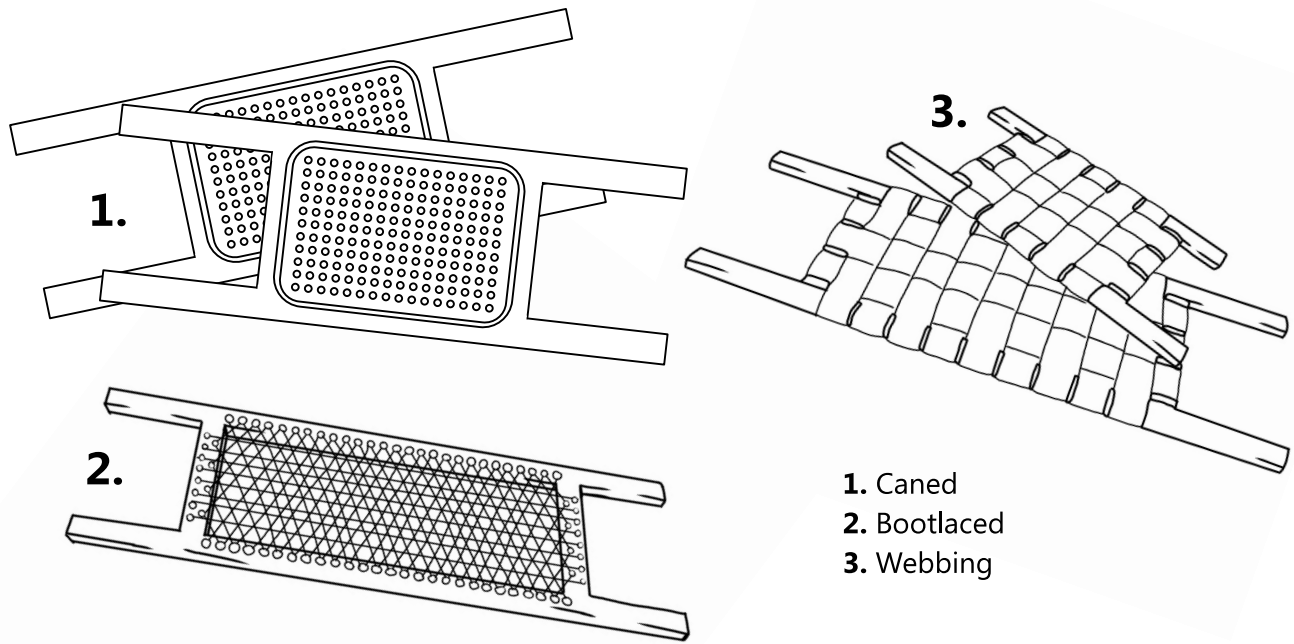
Aluminum gunwales are an extruded product which may come in clear (or natural color), or anodized color finishes and are very resilient, often outlasting the hull of the canoe. One major drawback of the aluminum gunwale is they don't resist hard impacts without bending and are expensive to replace. Depending on the degree of bend, some shallow bends can be brought back to right with some physical persuasion, however BOATFIX.CA can usually correct these issues even in extreme cases.

Aluminum gunwales are always fastened to the hull with rivets. If the canoe has any water in the gunwales and is left on its side for the winter, the water trapped at the gunwales lowest point will freeze and split the aluminum extrusion. As for general care, aluminum gunwales are low maintenance, by using soap and water with a soft cloth, this simple method will remove most dirt and grime.



5 Seats and hangers

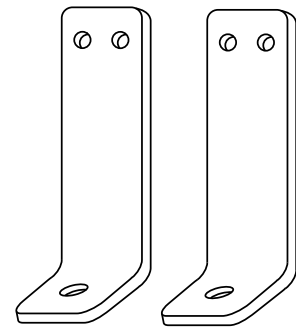
Seats types in canoes vary from wooden open framework with cane weaving, sinew and bootlace lacing, or polypropylene webbing to solid wood planks and wood slat arrangements. Aluminium seats and other non-traditional styles of seating are also available. All seating should be examined closely prior to any outing as it is typical for seats to breakdown at some point. Wooden frames can show signs of fatigue at the joints and breakage will often occur. Webbing, lacing and weaving are also candidates for failure and should be checked at the same time. Aluminium seats (as frequently seen in early Scott canoes) are typically fastened with rivets to the gunwales and are prone to metal fatigue over time and should be examined before use. If seats of any style require replacement or refitting, **BOATFIX.CA** may install new seats of similar design and replace any broken fasteners.



- 1. Caned
- 2. Bootlaced
- 3. Webbing

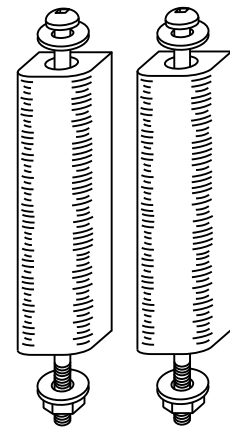
Seat hangers are necessary to mount the seats into the canoe although this can be done in a variety of ways and depending on the manufacturer. Wood or plastic blocks may be found mounted inside the hull, at the bow and stern positions for which the seats are fastened. Similarly some manufacturers employ wood blocks encapsulated in fiberglass or other materials, pre-formed during the manufacturing process and are completely maintenance free.

For canoes with aluminium or plastic gunwales, hangers are usually metal or aluminium 'L' brackets fastened to the inner gunwale with rivets. Seats are fastened to the metal bracket with the aid of stainless steel fasteners. These brackets mounted at the gunwales can often come loose from fatigue due to the forces of body weight shifting on the seat. The rivets can shear off the gunwales at these points especially when least expected causing the integrity of the seat to immediately collapse, and therefore should be examined closely prior to any outing.



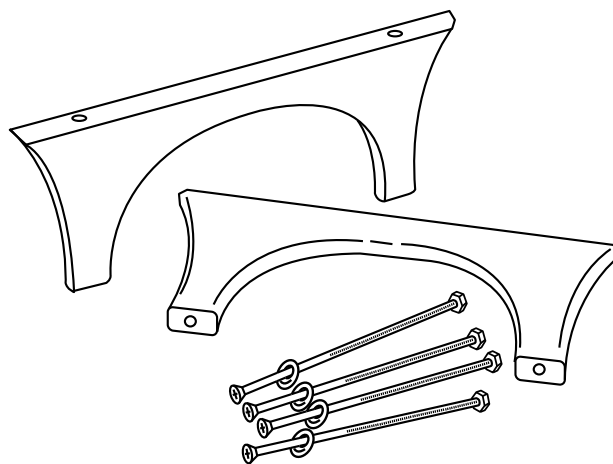
Aluminium hangers

Individual wood seat blocks can be found on canoes with aluminium or wood gunwales, and are slung below the gunwales to support the seat. There are typically four blocks per seat and are held in place with fastener sets for each block. The fasteners have a tendency of coming loose due to the rocking motion of the paddler over time, and should be tightened with the appropriate wrench for the nut size. Seat blocks of this nature can be prone to rot and wear if not regularly oiled or varnished.



Wood blocks

Conjoined (bridged) solid wood seat blocks can often be found on canoes with wood gunwales (typically the same wood species), and mounted just underneath them. Blocks of this type hold the seat in place by two long threaded bolts on the port side and the starboard side. The bolts pass through the inner gunwales, through the blocks and then through the seat, and are finally locked into place with a lock washer and a nut. As there are only two blocks per seat, this seat hanging system supports the seat very well, creating a solid connection between the paddler and the canoe (also referred to as the transmission system). Although generally maintenance free, seat blocks of this nature can be prone to rot if not regularly oiled or varnished.

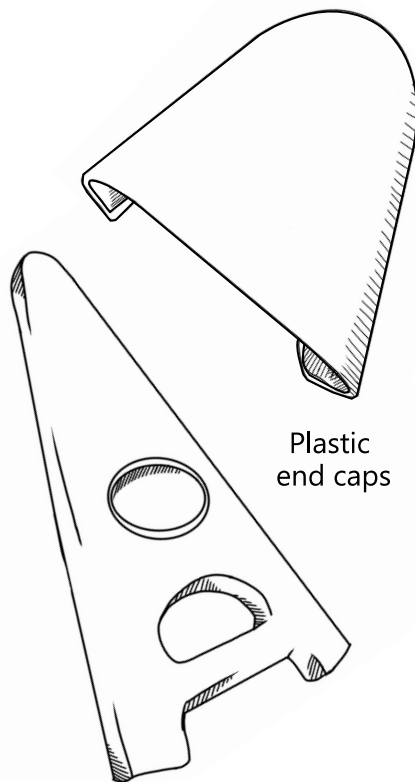


Conjoined (bridged) seat hangers and fastener sets

6 Decks, deck plates and end caps

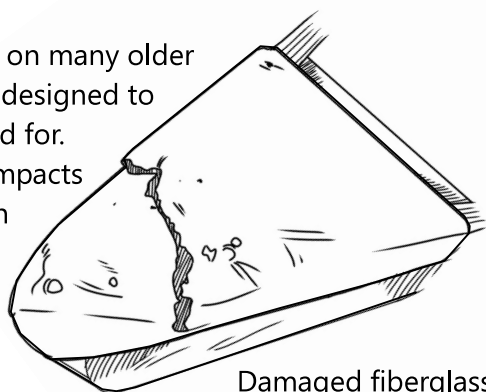
These components are the top-most portion of the canoe where the gunwales intersect at the bow and stern. Serving several functions, deck plates add rigidity to the ends of the canoe and tie the hull and gunwales together. Typically deck plates would be a key lash-down point while transporting at bow and stern and often with eye-bolts installed. The bow may also have a painter line with a hitch or other knot tied in place for docking and mooring. Some deck plates are designed with integrated carry handles. Deck plates come in a wide range of materials, styles and mounting methods and largely depending on the type of gunwales and manufacturers price-point.

Plastic end caps are mass-produced by vacuforming ABS, styrene, polycarbonates, and other soft plastics. The final product is relatively thin and not very resilient to impacts, however they are cheaply manufactured and readily available for a wide variety of canoes. Care must be taken not to bang these fragile plastic end caps as they will typically split. Not all end caps fit on all canoes so be forewarned of this if you are looking for replacements. This type of end cap are normally fastened to vinyl or aluminum gunwales with rivets, and are rarely seen on canoes with wood gunwales.



Plastic end caps

Fiberglass deck plates are seen on many older model canoes and generally are designed to fit only the model it was intended for. They are somewhat resilient to impacts and other damage, however with the trade-off of being heavy and somewhat visually ungainly.

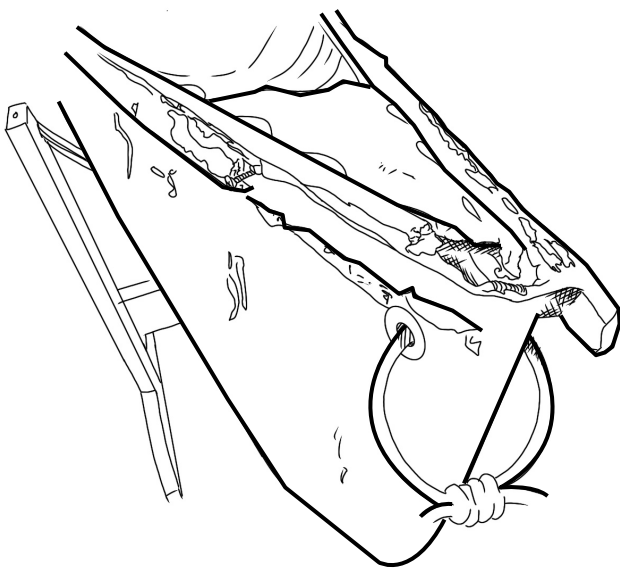


Damaged fiberglass deck plate

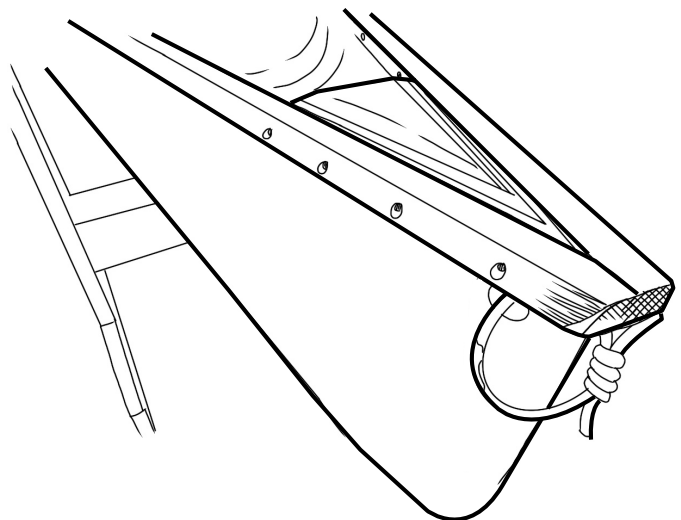
Fiberglass deck plates can be repaired much like the hull of any canoe, as the manufacturing process is virtually the same. Should fiberglass deck plates be destroyed beyond repair, they are near impossible to find exact replacements, however several commercially available options may be available via the internet to retrofit your canoe.

Aluminum end caps are cast components being virtually unbreakable and often used with canoes sporting aluminum gunwales. Often these end caps have a carry handle incorporated into them. End caps of this nature are often riveted into the gunwales and create a very strong mechanical assembly to the hull. They are easily cleaned using soap and water with a scrub brush to help loosen dirt within the crags and textures residual from the casting process.

Wood deck plates are the most appealing of what could be installed on a canoe, and most typical are canoes with wood gunwales. Wood trim on any canoe can add curb appeal and a depth one would rarely find in other material choices. Wood deck plates can be functional and artistically crafted, tying all the wood components together and giving the canoe a very individual character. Canoes with aluminum gunwales normally fit with plastic end caps or aluminum deck plates can benefit with custom wood decks, adding an extra level of visual appeal to their boats. Wood deck plates are normally fastened to the gunwales and hull with stainless steel screws. Wood decks of this nature deserve the same maintenance attention gunwales, or other wood components get as they are equally prone to rot and sun-bleaching if not regularly oiled or varnished. Also keep in mind when a canoe is stored resting on its gunwales (on a trestle or saw horses etc.), especially after a day on the water, the inside of the bow and stern deck plate area can have residual water which doesn't drain, and should be removed with a sponge, dry absorbent rags or paper towels. Pay special attention to clearing any drainage holes and scuppers along these sensitive wooden components. Too often rot appears at these locations due to water pooling and deteriorates the gunwales and the deck plates. Should this be the case, expensive gunwale and deck plate replacement is imminent.



Rotted deck plates
and gunwales



Newly replaced deck
plates and gunwales

7 Cleaning your canoe

Cleaning and caring for canoes of all makes, models and material types should be a very satisfying process, however the longevity of your canoe also depends on it. The effort you put into maintaining your canoe is directly proportional to the satisfaction you receive from it during its useful lifetime. For those who own cedar strip canoes or have fiberglass canoes with wood gunwales and wood interior appointments, the level of care will be much more demanding than for fiberglass or polyethylene canoes sporting aluminium and plastic components. Regardless of the type you own, cleaning the canoe inside and out is critical and should be done with diligence as dirt, sand, road dust, tree sap and residues from the water you paddle in are invasive and can accumulate to unmanageable proportions. You may find this step tedious at first, yet you will in fact be creating a preferred system for cleaning the canoe, and as you become more proficient, it will take less time.

Some things you will require to wash a canoe includes a bucket with mild dish soap and water, sponges, soft washcloths, Scotchbrite pad, small scrub brush, a medium-soft toothbrush, outdoor garden hose and spray nozzle, two saw horses (trestles) or off-ground supports for the canoe to rest while being cleaned. It is highly recommended by **BOATFIX.CA** to resist using high-velocity power washers as these machines will permanently damage your canoe.

As you will undoubtedly be washing your canoe outdoors, pick a day that is warm and sunny. Position the saw horses or supports near your outdoor water supply. Carefully rest the canoe on its gunwales on top of the supports and rinse the interior of the canoe by spraying from underneath. What you want to achieve at this stage is to rinse out any loose dirt, sand and other debris, paying special attention to hard-to-reach areas, especially around inwales, under and over seats, yoke, thwarts, decks etc. Rotate the canoe to its upright position and begin washing under the decks and gunwales. You may find the toothbrush works well for getting under these difficult spots to scrub away dirt in tight corners.

Work around the seat hangers with a soft cloth and then sponge down the tops and bottoms of the seats as well as the seat frames. The yoke and thwarts will be the easiest task when using a sponge or washcloth, and be sure to get under the edges with a toothbrush where they are mounted under the inwales. Wash the tops and sides of the gunwales down with a sponge or soft cloth then proceed to the interior sides of the canoe using the small scrub brush. If your canoe has scuppered inwales pay attention to clearing these small drainage areas as they can easily clog with debris. Many canoes have a textured interior from the weave of the fiberglass or Kevlar cloth so dirt will find itself in these small crags and the scrub brush works best here.

When you are satisfied with the cleanliness of your canoe's interior, flip it over to rest on its gunwales once again and rinse it out thoroughly from underneath using the garden hose and spray nozzle. Now you will proceed with cleaning the exterior of the canoe, preferably with soft washcloths and sponges, and again using a toothbrush to get into the corners where outwales meet the sides of the canoe. **DO NOT USE ABRASIVE PADS OR SOLVENTS ON THE EXTERIOR OF YOUR PAINTED CANOE!** Give the canoe a final rinse on the outside and another quick one just underneath and then let it dry well. If your canoe has wooden gunwales and other wood appointments, let it dry for a couple of days (preferably with some airflow around it) without coming in contact of rain or other moisture so you can oil or varnish them. It is imperative all wood is very dry prior to oiling or varnishing.

8 Maintaining, oiling and varnishing your canoe woodwork

The key to longevity of any wood component in a canoe (or any boat) is through the maintenance program one should regularly undertake to stay on top of rot, sun bleaching, damage and wear while also providing UV protection from the sun and resilience to saltwater. When **BOATFIX.CA** performs wood gunwales, decks, and interior wood appointment replacements on your canoe, we apply several coats of oil or varnish (as required) to these areas in advance of the canoe leaving our workshop. It is up to **YOU** to continue the applications of oil or varnish (as required) which are periodically applied to upkeep the beauty of your gunwales and woodwork.

Applying oil on your canoe's woodwork is easy. First use a dry soft cloth to remove any dirt and dust from the gunwales and other wood parts on the canoe. Follow with an even application of **Watco teak oil™** or **Minwax tung oil™** using a dry soft cloth. Allow the oil to penetrate for about ten minutes, and then wipe off the excess oil with another dry soft cloth. Successive coats of oil can be applied in the same manner.

For applying varnish to your canoe's woodwork is, first lightly abrade the original varnish with some 140-160 grit sandpaper. This will help clean off any grunge and impurities from the surface of the wood, and prepares a 'tooth' to the surface of the original varnish for the new varnish application to adhere to. It is imperative that all dust and dirt is removed prior to the application of varnish as impurities will be trapped in the drying process. At **BOATFIX.CA** our first consideration here would be to choose a quality marine grade gloss spar varnish or gloss spar urethane varnish. Application for either type is similar, using a 1" foam brush to lay down a thin, even coat of varnish starting with the internal woodwork (seats, hangers, rails etc.) and finishing with the gunwales and decks, methodically working from one end of the canoe to the other. Following the instructions on the product label, allow to dry to the recommended time prior to applying further coats of varnish. Application of any varnish for marine use should be done methodically when surfaces become dull or raw wood has become exposed.

It is recommended to pursue some canoe and boating forums and videos on the internet which will help you with instructions and advice for caring for your small boat's woodwork.

9 Understanding your canoe's newly applied paint finishes

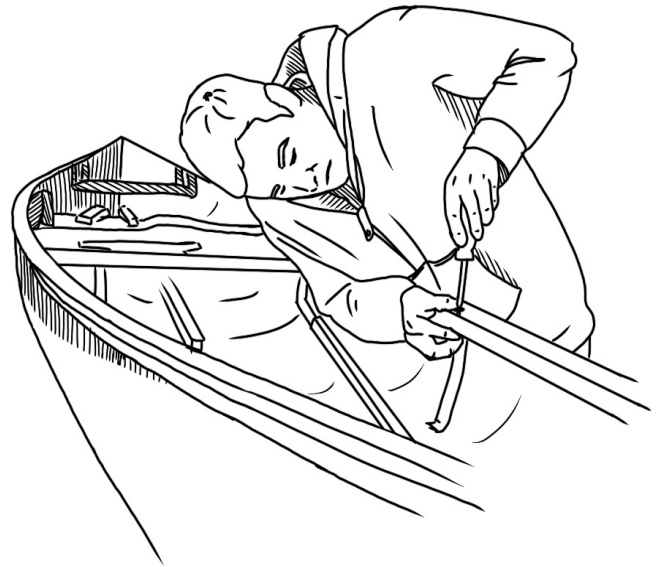
When **BOATFIX.CA** provides a service to the customer and paint finishes will be applied we must first understand why this is required. With the ever rising popularity of paddling sports comes proportionally increased cost for a new canoe, which unfortunately are outside the financial reach of many individuals. This conundrum provides older, heirloomed, used, broken-down and derelict canoes as the only option to them, yet they still require professional attention to getting them back onto the water. Often canoes come to us as 'project boats' showing their scars of age and damage due to a plethora of reasons, but typically require complete overhauls to make them water worthy but a greater emphasis on safety. The service **BOATFIX.CA** offers is designed to provide rapid, yet quality repairs with affordable price-points for budget conscious clients and upholding the mantra, *'we can take your once outstanding small boats and make the necessary repairs to get them water worthy, safe, and looking their best'*.

Bodywork on canoes

In 'cliff-note' fashion let's examine the process a typical canoe will undergo to get to the final finish. Where bodywork is required on composite hulls, the process of patching holes, mending cracks, and filling gouges requires the application of epoxy or polyester-based resins embedding layers of glass or Kevlar cloth patches. Following this, two-part marine fillers are applied to fair the area smooth with the rest of the hull. There is much sanding involved using various grades of abrasive paper to make things smooth. As necessary as this procedure is an unattractive sight remains in its wake, and must be finished with paint. However, to get to that point in the process a resilient epoxy-based primer coat is applied which forms a unified bond with the substrate below it, creating a stable surface which our paint can adhere to.

Paint finishes

The type of paints we use in our shop are specially formulated for the marine industry as single-part polyurethane based paints, or two-part linear polyurethane paint finishes. These are extremely resilient finishes which adhere remarkably well to primer-prepped surfaces of epoxy and polyester based composites like fiberglass or Kevlar. The method of application we use for these paint finishes are not done with conventional spraying equipment, but utilize a 'roll and tip' method which is superior for our needs. Our first coat of paint is the scratch coat, meaning the surface which will bind to the primer coat beneath, then other coats are applied to create the skin. The canoe and its newly applied finish is left to cure and harden for a period of time before it can be shipped back to its owner. When it arrives the canoe looks great and the owner is very pleased to see their boat, effectively ready to go into the water to start its new life.



Our first coat of paint is the scratch coat, meaning the surface which will bind to the primer coat beneath, then other coats are applied to create the skin. The canoe and its newly applied finish is left to cure and harden for a period of time before it can be shipped back to its owner. When it arrives the canoe looks great and the owner is very pleased to see their boat, effectively ready to go into the water to start its new life. This is in fact the whole point of having the boat repaired and refinished, however there are some things to be stressed to the proud owner the moment the canoe arrives, and before it even touches the ground:

- Paint finishes of the type we apply to your canoe must take time to harden through an air-drying process and will continue to get harder during the course of time
- New or refinished canoes should not remain in water for extended periods of time (docked or moored and seasonally living in water)
- New or refinished canoes should be stored inverted on its gunwales when not in use, and not right-side-up sitting in direct contact to the ground
- Enjoy your canoe the day you get it back from **BOATFIX.CA**, however be careful around stones, rocks, sand and obstacles as these may abrade or scar the finish of the canoe
- Your canoe will eventually take on scratches, gouges and other abrasions as a new canoe would
- Do not use abrasive pads or solvents on the interior or exterior of your painted canoe.
- **BOATFIX.CA** does not warranty paint or varnish finishes, however your canoe can be affordably repaired and repainted at any time

Durability of paint

At **BOATFIX.CA** we are often asked what the longevity of a painted finish on a boat might be, yet several factors must be considered to accurately provide an answer to this. When a brand new canoe has been purchased by an individual it comes with the obvious realization that it will be scratched and gouged through time. Canoes after all are very thin-walled structures, and it is nearly impossible to protect a brand new, factory-fresh gelcoat finish from wear-and-tear. Many of the scratches and gouges it will see early in its life begin under the canoe, and often the gelcoat is scored completely to the fabric, yet the integrity of the canoe's structure usually remains unchanged. The canoe may still be a safe watercraft to use regardless. Some wear-and-tear is completely unavoidable, however through careful management of the owner the canoe can survive a long and healthy lifetime.

A painted finish is not a barrier to safeguard acceptable wear-and-tear, moreover it is a surface treatment to aid in covering blemishes and previous repairs, overcoat badly faded gelcoat, filled gouges and scars, and add a fresh look to what may have been an abused or derelict boat in a previous life. To answer the question, the longevity of the paint finish largely depends on you, and how you respect and maintain your boat.

10 Ultraviolet Light (UV) and your canoe

Ultraviolet light is a damaging source of natural radiation emitted from the sun which will deteriorate clear epoxy finishes on cedar strip canoes, gelcoat finishes on fiberglass and Kevlar canoes, and many paint and finishes. UV light has a profound and damaging effect on exposed wood, causing it to turn gray and should be meticulously maintained to prevent this from happening. Not unlike our own sensitive skin in full sunlight can result in a sunburn, the reaction of sunlight on a canoe's hull will over time break down the outer surfaces at the molecular level, causing these exposed surfaces to oxidize. Eventually a hazy chalk-like residue on the canoe's outer skin will form and also change its surface color to become greatly subdued. For composite canoes properties may be affected through intense UV exposure over time such as loss of tensile strength leading to premature cracking, punctures and deterioration of the resins in the fabric which makes up the canoe's form. Just as we apply sunblock products to our skin to avoid sunburn, periodic applications of wax to the canoes hull forms a barrier to inhibit ultraviolet breakdown.

Many excellent liquid waxes such as **3M™ Liquid Wax with UV inhibitors** are specially formulated specifically for the boating community, and it is recommended to use these products on composite canoes with gelcoat surfaces. Following the directions and application methods on the product label is key to prolonging your canoe's life. 3M™ brand also offers restorative cleaners and compounds that will also help remove the haze build-up from UV exposure when applied in the appropriate manner and followed by applications of liquid wax with built-in UV inhibitors.

UV and painted surfaces

Ultraviolet light can be just as damaging to painted surfaces just as gelcoat finishes do. To keep your canoe looking its best commercial wax treatments with UV inhibitors are formulated specifically for painted surfaces and should be considered if your canoe has been over-coated with a quality marine paint. The application methods of these waxes are very specific and the product instructions should be adhered to rigidly or surface damage may occur. Marine paint and varnish finishes are generally compatible with

marine waxes, however always test an area of your canoe with a small amount of product prior to committing to a large area. It is the highest recommendation by BOATFIX.CA that hand waxing and polishing with a soft cloth is performed rather than machine applications, as painted surfaces are quite thin and can be worn down if buffed too aggressively.

11 Transporting your canoe

The topic of properly transporting a canoe is one that should be read, absorbed, and carried out with absolute diligence, as the safety of your canoe, personal property, and people in your proximity, can be directly affected by improper transport methods.

Be forewarned; YOU are on the hook for all damages caused by your flying canoe!

BOATFIX.CA does repairs on all forms of watercraft, however the greatest number of repairs we encounter are those that suffer spontaneous cases of Flying Canoe Syndrome. Ponder on the term 'cause-and-effect' and how this may relate to the subject at hand. If your canoe isn't attached properly to your vehicle or trailer (cause), it will become airborne (effect). However this needn't ever be the unfortunate outcome for a diligent canoe owner, provided some instruction on proper canoe transport is adhered to.

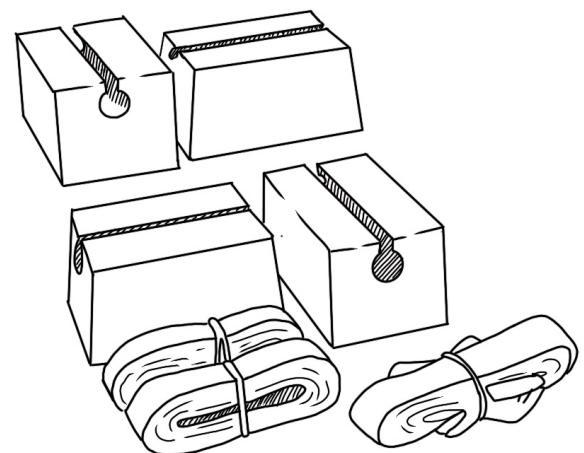
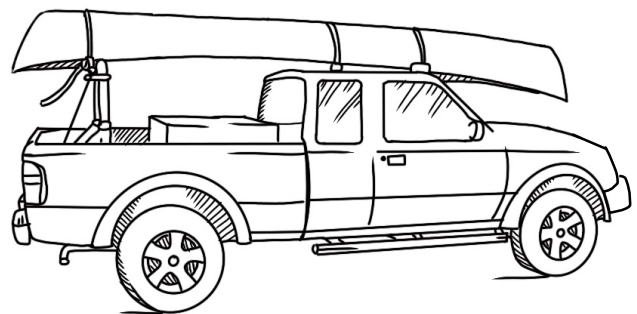
Car topping your canoe

For those wanting to transport their canoes on the top of a vehicle, there are only two reliable choices available; 1) roof rack systems, or 2) foam blocks systems. **There should be no other options.**

Roof racks are available for most vehicles (including trucks) that don't already have them installed.

Most have the provisions for roof rack systems built-in (raised side rails, flush side rails, and roofs with tracks) should you wish to add them to your vehicle. Should you be regularly transporting a canoe on your vehicle, it is highly recommended that you invest in a quality roof rack system. **Thule™**, **Yakima™**, and **Rhino-Rack™** racks are excellent cargo management systems and available for most vehicles. They are designed to effectively transfer weighted loads directly to the vehicle, and aid in stabilizing wind-affected roof-carried objects such as canoes, kayaks and paddleboards.

Direct-to-roof foam blocks are an ethylene-vinyl acetate (EVA) extrusion product which provide excellent conformal, flexibility and weight distribution properties for vehicles with flat, unobstructed roofs. This roof carrier system protects both the vehicle and the canoe being carried, making it an excellent option for occasional canoe enthusiasts, or those with budget restraints. Many quality and reliable roof kits are available such as, **Malone™ Standard Foam Block Universal Car Top Canoe Carrier Kit**, and **Pelican™ Sport Canoe Car Roof Top Carrier Rack**, both come complete with foam

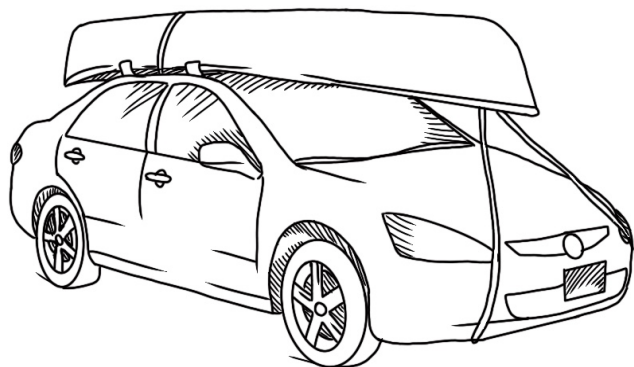
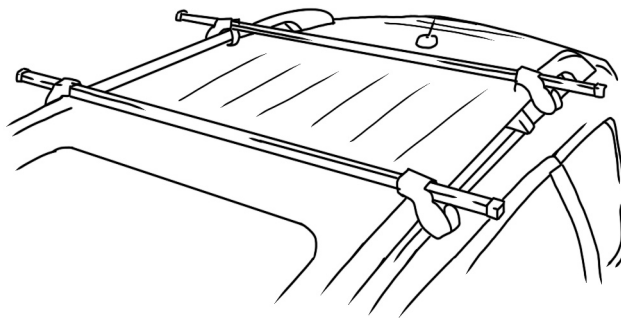


blocks, straps with metal hooks, straps with spring-loaded cam-buckles, and instructions. You can find these great, reasonably priced products at hardware stores, sporting shops, and online stores.

Please follow the manufacturer's guidelines as these products will vary from brand to brand as will the instructions for lashing a canoe down to your vehicle's roof top.

Items you will require to lash down your canoe:

- Nylon straps will be required to anchor your canoe to your vehicle's roof rack. Two nylon straps with spring-loaded cam buckles are required, and are available in various lengths including 12' straps (for canoes up to 14' long), and 15' straps (for canoes up to 16' long) will be sufficient for tying a single canoe to the roof racks.
- Bow and stern lines or straps will be required to anchor your canoe to your vehicle's front and back. There are several ways to anchor the bow and stern to your vehicle, however the safest and most respected method by paddlers is an inverted 'V', therefore two lengths of rope lines or straps will be required for the task (one for bow, one for stern), and approximately 24' each (varies on vehicle length). Should you elect to purchase nylon straps for this purpose, there are many choices available which include spring-loaded cam buckles and hooks, and even ratchet style, easy-tighten, no-slip straps are available from most sporting stores.
- Steel hooks are recommended if tying your bow and stern to bumpers, grills, and other areas where hooks can be solidly and reliably secured. These are generally sold individually (for use with ropes, cord etc.) or attached to straps, purposely designed for transporting canoes on vehicles.
- Foam blocks for roof racks, designed to accommodate transport of canoes, attach to the gunwales of the canoe and integrate with the roof carrier bars. These foam blocks will prevent your canoe's gunwales from being marked and scratched during transport as well as preventing your canoe from slipping side-to-side.



Loading and tying down the canoe

Do not attempt to load a canoe in windy weather or it could become airborne! Common sense should dictate what a manageable breeze for loading is. Unless you are a seasoned paddler (and transporting a canoe is second nature to you) loading a canoe onto a car top should be a two-person job!

There are a number of ways people have lashed their canoes to their vehicle's roof, some great and others with unfortunate results while in transit.

The following is a method which has worked well for

many in the past, and although the exact procedure may be varied depending on the individual's needs, the premise and result is somewhat the same.

The canoe should be placed on the roof racks inverted, on its gunwales with foam blocks attached. Position the canoe to balance equally at its mid-section on the racks, and also positioned down the middle of the car, front-to-back. The straps which go around the canoes mid-section at each crossbar of the rack are the important anchor points. These are nylon straps with spring-loaded cam buckles and can be tightened around the canoes mid-section and the roof rack with a reasonable force. Secure the loose ends of the straps by tying them off, ensuring they will not flap in the wind while the automobile is in motion (flapping straps continually beating on the canoe and the automobile may leave permanent scars).

Following this we want to attach 'V' lines or straps to the front and back of the vehicle. Most canoes we are aware of have a carry handle or a deck plate with an eye bolt, both at the bow and stern of the canoe. These will make good anchor points to stabilize the canoe to the vehicle. Find the mid-section of the rope line and divide it, then secure it to the carry handle or eye bolt on the deck by way of a Lark's Head Hitch. The procedure is as follows: pass the divided line around the carry handle or into the eye of the bolt a couple of inches (creating a dangling loop), then pull the two divided lines through the dangling loop evenly. Once the entire rope line or strap has been pulled through completely, pull it tight. The result is two separate rope lines leading from the bow and stern anchor points of the canoe.

Next, find the points under the front and back bumpers at both sides of the vehicle (passenger and driver side), for which to secure the rope lines to. These should be stable and rigid points which will not move or flex while the vehicle is in motion. You will want to pass the rope lines through the eye of each hook and attach them to the anchor points under the bumpers, bringing the rope lines back up the front and back of the vehicle, wrapping the line around itself (to prevent 'beating' during transit) on its way back to the carry handle or eye bolt. Secure these lines in a fashion which can be adjusted so that the lines have even tension on them. These lines should be snugged tight only, as their purpose is to keep the canoe aligned into the wind when the vehicle is in motion, and not so tight as to bend the canoe. Be certain the lines are tied adequately as to not come loose during transit.

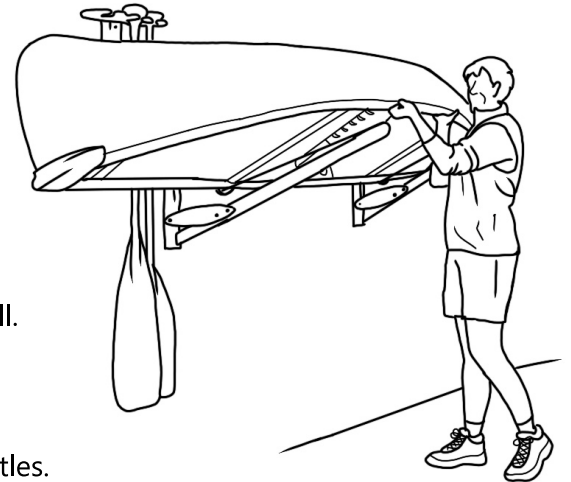
As the vehicle is in motion the canoe will settle in for the ride, and straps and lines will loosen slightly. After a short distance of a kilometer or two, drive the vehicle to a safe place off the road so you can retighten straps and lines. This procedure may be performed routinely along the way especially if traveling on bumpy and unassumed roads, driving long-distance trips, or on high-speed roadways and highways.

12 Storing your canoe

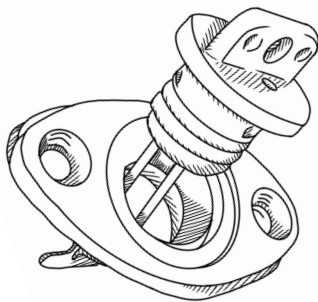
We all want to get the most out of our canoes, and proper storage (while not in the water) is a great way of prolonging its useful lifetime. Other than unexpected damage a canoe might sustain through collisions and regular wear-and-tear, a canoe's worst enemy is improper storage and exposure to the elements. Many canoe owners feel it is perfectly normal to lean a canoe against a building or other outdoor prop, and for the short term this is acceptable. If this is to be the case it would be advised to bolster the gunwale with some logs or wood blocks to raise it off the ground enough to protect the gunwale from dirt and moisture. This will also help to drain any residual moisture from inside the canoe at the gunwale.

Wood gunwales are at particular risk as they will endure destruction at the ground level through abrasion, rot from continual moisture buildup, difficult stains from mud, sand, dirt and grasses, and the intrusion of wood-boring insects, slugs, spiders and the like. Aluminium and vinyl gunwales scratch easily and run the risk of damage especially through abrasion with the ground and that which the canoe is leaning on.

Regardless of the season, canoes typically should be stored several feet off the ground, preferably on a pair of trestles or a rack which can support the canoe, inverted and on its gunwales, keeping the natural elements at bay and risk of abrasion at a bare minimum. If stored outdoors, aim to have the canoe stored in the shade and away from prevailing winds, on the leeward side of a building, shed or other obstruction while considering windswept or falling tree branches. Under a roof overhang may prove ideal for optimum outdoor protection from the elements during the spring, summer and fall. It is highly advised however that long-term storage of canoes be indoors (boathouse, garage, basement or storage area) away from harsh elements, especially from freezing rain, snow, and ice, and stored inverted and on its gunwales resting on trestles.



Flotation tank plugs



If your canoe has flotation tank plugs (found at the bow and stern of the canoe) undo the plugs when temporarily not in use, or stored for any length of time. The air inside the flotation tanks will expand in the heat of the sun, building great pressure inside and may force the seams to give way or rupture. Inversely in very cold weather the air inside flotation tanks may contract, forcing the flotation tank walls inward which may cause deformities over time. Before any trek on the water, close or tighten the plug to prevent moisture intruding into the tank.

13 Disclaimer

BOATFIX.CA regularly performs repairs to small watercraft of all ages, types, makes and models, materials, and construction methods. We have repaired some of the worst damage imaginable including reconstruction of structural reinforcements and straightening twisted metal gunwales. We beautify with cosmetic surgeries, custom paint finishes, and applications of custom vinyl graphics. We also outfit your canoes with our own custom line of wood gunwales and wooden interior appointments, like seats, yokes, thwarts and decks. While choosing **BOATFIX.CA** to perform repairs and updates to your small boat, it should be stressed that we are not miracle workers by any stretch, and while repairing your small boat, perfection is not our aim. Our mantra, *'we can take your once outstanding small boats and make the necessary repairs to get them water worthy, safe, and looking their best'*, literally exemplifies the **BOATFIX.CA** mission statement. As a company, we do our utmost to provide you with quality service and an outstanding end product, however as small boats are prone to everyday wear-and-tear, unavoidable circumstances and abuse, **BOATFIX.CA** does not warranty paint or varnish finishes, epoxy or other surface treatments, wood components and coatings, metal hardware and fasteners unless through obvious manufacturing malfunctions. **BOATFIX.CA** will claim no responsibility to failed repair work due to personal negligence nor through natural or man-made causes.

