

Foreword

All sailboats are really nothing more than "selected groupings of compromises" assembled into a single entity that hopefully meets the needs of a sailor. For production boat builders, there is great risk associated with making the compromises too great, or conversely, refusing to compromise at all. When viewed in this manner, it becomes clear that no production boat can be universally accepted as "perfect". However, there are boats that seem to capture our imagination and perform well enough in a variety of ways that we are eventually drawn to them. Such is the case with my Precision 18, *Alert*.

In some respects, choosing a boat is like choosing a spouse – and when you find that "best match," it can be magic. But, pick the wrong one, and it can be tragic. The key to selecting the best boat for you is to first and foremost be bluntly honest with yourself. While I can longingly imagine myself at the helm of a beautifully maintained Hinckley Bermuda 40, the truth is – no matter how much I try to rationalize it – the B-40 would not be the ideal boat for me. First of all my last name isn't *Rockefeller* – meaning: I can't afford to spend anywhere near the amount of money required to maintain such a beautiful boat at a level it deserves! Next, like many "married with children" sailors, my family does not share my level of enthusiasm for sailing. Yet, they do accept it - and willingly support my "outside passion" - for which I am *very* grateful. Since my family comes first, it wouldn't be fair for me to spend a large amount of what limited money we do have on something that is singularly mine. Also, for many years my chosen profession involved frequent moves to different areas around the country, and prolonged stays overseas. So, when I was searching for *the* boat many years ago, something small and trailerable seemed to be what I needed to focus on. Such a boat would have to be eminently portable, easy to store, and comparatively inexpensive to maintain, if only as a result of its diminutive size. It would necessarily have to be capable of being easily trailered, rigged, launched, sailed, retrieved, and returned back home by me - alone. Ease of accomplishing those tasks would be paramount because I knew from experience and observation that if the boat were too big, too complex, or too difficult to handle – my enthusiasm for using it would dwindle over time.

There were additional factors I had to truthfully acknowledge as well before my search could begin in earnest. First, life is too short to sail an ugly boat. It was important to me that my chosen boat be attractive to my eye. No matter what laundry list of features, details, "value", or options a given boat might offer – if it didn't make my heart smile just to look at, it simply didn't make my list. Next, I had to acknowledge that it might indeed be possible (and this *was* exactly as it turned out) that my family wouldn't "take" to sailing. A probable implication of my family's disinterest would likely be that whatever boat I bought just might be

mine for a long, long, *long* time. Therefore, quality of build was extremely important. I wasn't overly worried about small hardware, fittings, and accessories that would eventually need replacement anyway – I *was* concerned about basic structure and design, and things I couldn't readily improve on later on. Also, the boat had to sail exceptionally well because - again - life is too short to put up with excessive weather helm, poor balance, poor performance upwind, and squirrely behavior when pressed hard. So, my search parameters were framed to an under 20-something foot boat. And, to my way of thinking, the smallest boat that would meet my needs should likely be "the best".

In the fall of 1986, I found myself at the Atlanta Boat Show and almost literally stumbled across a Precision 18 stuffed in the corner and surrounded by motorboats. The Precision 18 hadn't made my list of boats to consider simply because I was completely unaware of its existence (production had only begun the previous year). I had previously looked at the Starwind 19 (same designer; similar concept; different builder). But, the P-18 looked to be a more compact version that seemed to be of a slightly better build quality, and even handier. I liked the solid feel of the deck under my feet, and I liked the way the boat was put together. I spent several hours on and around the boat, and talked to the dealer about various things I'd noticed and wondered about as I studied the boat. I left the boat show favorably impressed. Later that weekend, my wife and I somehow found ourselves out at Lake Lanier, and we watched a P-18 scooting by quite briskly under sail. It appeared well-balanced and fast. The couple sailing it was all smiles as they waved to the boats they passed. The next weekend, I returned to the dealer and further examined the boat outside the "hubbub" of the boat show. I liked what I saw, and eventually entered into purchase negotiations – *with my wife!* Once those negotiations were complete, the dealer and I got together and hammered out a mutually acceptable deal.

I picked up *Alert* on October 11th, 1986 – and that was the beginning of what has grown to be nearly two decades of continuous change, improvements, joy, laughter, frustration, and thrills - with no end yet in sight. Over the years, I have elected to continuously upgrade, modify, or equip my boat to better meet my changing needs, rather than abandon it for another. This has only been practical because: 1) The basic boat was fairly well built – meaning the important things are done "right", and 2) I have maintained a disciplined and steady flow of both money and effort directed towards keeping the boat in top shape – it has *never* suffered from neglect. I have always attempted to replace things before failure, and I strive to accomplish all tasks in the best possible manner with an eye for the long term. When it came time to replace certain items, I always considered that there might be a better way. Ultimately, my boat has evolved into a representation of my sailing philosophy and personality – and it meets my needs exceptionally well. I'm often asked: "When will you get another (presumably

larger) boat?" – and my answer is: "When my Precision 18 quits meeting my needs." Fact is (at age 43), I would not use a larger boat any more frequently or differently (with the exception of racing) than I do my current one - while the costs associated with purchasing and maintaining a larger boat would go up exponentially. I do like to race, and fortunately I live in an area where I can satisfy that need by sailing on other people's boats. My P-18 is too small to be issued a PHRF rating for the West Coast of Florida. So, racing opportunities are extremely limited. Still, on those occasions when I have had an opportunity to race the boat, it has performed very well.

The Precision 18 has been my continuing boat of choice for all these many years. There is any number of boats that might subjectively out rate it in any one "category" – for the P-18 is *not* a vessel of extremes. Instead, this is a boat that blends and marries the best of what a small, trailerable; "family-style" boat *can* be into a package that meets the needs of a great many sailors. My P-18 is essentially a composite of compromise that has allowed me to feel as though I have given up nothing.

This guide is intended to describe some of the attributes, characteristics, possibilities, and limitations of the Precision 18. For those of you who own one, it may provide you with ideas and suggestions for adapting your boat to better meet your needs. For those of you considering buying a P-18, it may provide you with a better idea of the capabilities and compromises associated with these fine boats. For those of you merely interested in small boat sailing, it may provide a look at how a small boat was adapted to meet one's changing needs and provide some insight into the thoughts behind those adaptations. Invariably, there are often many different answers to various questions facing small boat sailors. I can't declare anything I describe here "as the only answer", but I can assure you that what I will describe has worked for me. As always, your results may vary! Hopefully, this guide will spur on discussion and thought as to what your boat is, what it can be, and how to make it more precisely meet *your* needs.

Tom Scott - Precision 18 #129, *Alert*

A handwritten signature in black ink, appearing to read "Tom Scott". The signature is written in a cursive, flowing style.

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I THE PRECISION 18

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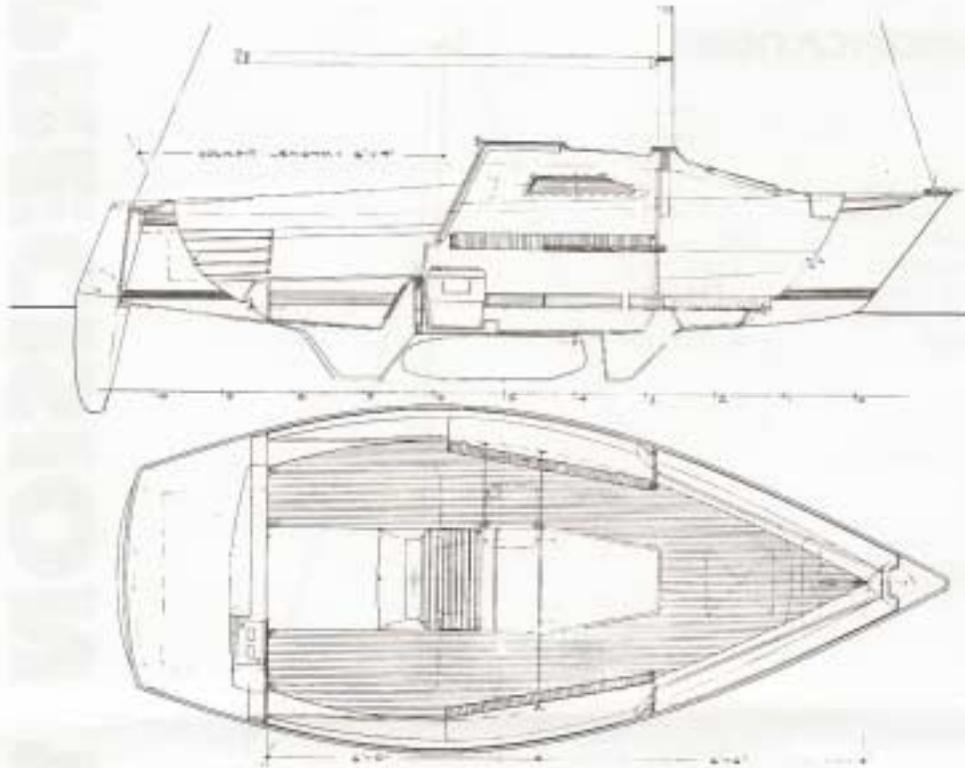
Fax: (941) 722-4517

www.precisionboatworks.com

a. Profile, Sail Plan, and Specifications (sales brochure circa 1986)



b. Interior Accommodation Plan and Profile



STANDARD EQUIPMENT

- | | |
|--|---|
| HAND LAID FIBERGLASS HULL & DECK | HINGED MAST STEP |
| SHOAL DRAFT KEEL W/ FIBERGLASS CENTERBOARD | "HARD COAT" BLACK ANODIZED MAST & BOOM |
| LEAD BALLAST | STAINLESS STEEL STANDING RIGGING |
| KICK UP FIBERGLASS RUDDER | SPLIT BACK STAY |
| SOLID ASH TILLER | CHROMED BRONZE OPEN BODY TURNBUCKLES W/ TOGGLES |
| MOLDED IN NON SKID DECK SURFACE | DACRON RUNNING RIGGING |
| 61" SELF BAILING COCKPIT | "HARKEN" BALL BEARING BLOCKS |
| FUEL TANK LOCKER | MOLDED FIBERGLASS HULL LINER |
| COCKPIT SEAT LOCKER | BERTHS FOR 4 ADULTS |
| ON DECK ANCHOR LOCKER | DELUXE 3" FABRIC CUSHIONS |
| SLIDING COMPANIONWAY HATCH | BACKREST CUSHIONS |
| MOLDED IN TOERAIL W/ DRAINS | UPHOLSTERED CABIN HEADLINER |
| OPENING FORWARD HATCH | MOLDED STORAGE LOCKER |
| 4-6" MOORING CLEATS | CABIN STORAGE SHELVES |
| SHEER STRIPE | 48 qt ICE CHEST W/ TEAK STEP |
| WATERLINE STRIPE | ELECTRICAL SYSTEM W/ NAVIGATION & CABIN LIGHTS |
| STAINLESS STEEL BOW PULPIT | MOLDED IN BATTERY BOX |
| STAINLESS STEEL KICK UP MOTOR MOUNT | SPACE FOR HEAD |
| STAINLESS STEEL BOW EYE | DACRON MAIN AND JIB SAILS |
| TEAK WOOD TRIM | LIMITED 1 YEAR WARRANTY |

c. Designer's Comments

DESIGN COMMENTS, DES. #58 PRECISION 18

 Yacht Designs
performance racing & cruising yachts

People go sailing because it is fun, pure and simple. The problem for today's sailors is that a combination of high interest rates and increasingly scarce mooring and marina space have in many instances made boat ownership a lot less simple, and its "fun" a lot less pure!

This office shares with PRECISION BOAT WORKS the firm belief that sailing should STILL be pure fun, and that the real key to the fun is in keeping it simple! Nowhere is it written that in order to enjoy a day on the water a sailor needs a boat that costs as much to buy as a house, even more to maintain, and that requires half a football team to sail properly; on the contrary, as the explosive growth in boardsailing has shown, the purest sailing fun can often best be delivered in very small, simple packages! It is just this "small and simple" concept that lies at the heart of the PRECISION 18 design requirements: a boat small enough to be easily trailered behind today's small cars, simple enough to be inexpensive, but big enough to sleep aboard (out of the weather) and stable enough to take along the family. And finally, a boat with the lively performance and good sea manners required to make sailing her fun!

In attempting to fulfill similar requirements, too many builders have simply taken a successful racing design and installed a "cruising" interior. Unfortunately, while the long fine bow and broad flat transom of this type hullform can be devastatingly fast when in the hands of a hot racing crew, it can also be dangerously unstable for a family boat, and is therefore completely unsuited to cruising applications. This office has recently developed four different trailerable cruising designs, with over 500 built in just the past three years. Each was drawn for a different builder and market target, but all share distinctly full sections above the waterline forward and only moderately full sections aft. The PRECISION 18 is our latest design to be developed from this basic hullform which our experience has proven to provide a reassuring margin of reserve buoyancy forward, improved ultimate stability, and especially forgiving handling characteristics, all essential elements of any good cruising design.

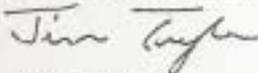
The long shallow keel, kick-up rudder, and non-corroding fiberglass centerboard of the PRECISION 18 are all high-lift NACA "wing sections." The keel allows the board to be housed completely below the cabin sole and gets the ballast down low for stability. The board itself weighs only 65 pounds so that it does not form a major portion of the total ballast, stability is not dangerously reduced when it is retracted, and it can be raised easily by a child with no need for a winch.

The simple fractional rig can be raised right on the trailer in minutes. The jib is of very high aspect ratio for maximum efficiency, but small enough to be readily trimmed by a young crew. The mainsail can be quickly "dpowered" in puffy conditions, and it is large enough to provide good performance without the jib when desired - a big advantage when in a crowded anchorage or when shorthanded. The cockpit is a full 6'4" long with coaming high enough to keep the crew securely inside. Both seats and coamings are precisely angled for maximum comfort, reflecting our years of careful ergonomic design development. There is a generous anchor locker forward, a fuel tank storage bin to port, and a full cockpit locker to starboard.

The PRECISION 18 is designed to be a lively, well-mannered sailboat rather than a floating vacation home, but the features below are noteworthy nonetheless. There is ample sitting headroom for 4 and a filler cushion that drops to form a 6'6" V-berth that is NOT broken up by the usual awkward mast support post. There are 6' quarter berths port and starboard, not to mention a 48 quart cooler, provision for a portable head, and 12-volt battery. A forward hatch provides ventilation and an emergency exit, and the large companionway and cabin windows contribute to the feeling of light and open space.

Carefully controlling construction weight is critical to both performance and to price, but it cannot be done at the expense of safety or structural integrity. Thus the hull liner of the PRECISION 18 is engineered as a structural grid, and tooled to mate precisely with the hand-laminated hull skin. The mast support beam and chainplate loads are carried by structural bulkheads and there are rugged full stringers to distribute the stresses imposed by trawling. The external hull/deck joint is bonded both chemically and mechanically, and the flange is protected with a vinyl rubrail.

The PRECISION 18 has been kept small in size and price, but remains big in both features and performance. She promises to deliver the fun, pure and simple!



JIM TAYLOR

d. My Comments

The Precision 18 closely meets the well-developed goals articulated in Jim Taylor's Design Comments. If what is spelled out on the previous page strikes a chord with you, then your Precision 18 can be enjoyed "right out of the box" (so to speak) with minimal additional equipment, or improvements. There is something strongly positive to be said for the value of "simplicity", and the boat as delivered is indeed quite simple. However, it is a testament to the design and construction of the boat that with only slight modifications and alterations, its range and magnitude of use can be somewhat expanded.

One must be perfectly clear from the outset that this is not a boat intended to sail across oceans. A challenge for those studying and evaluating small boats of this type is to avoid the trap of comparing design and construction details found in larger ocean cruising yachts to those found in smaller boats. In many regards, smaller vessels should *not* simply be scaled down versions of their larger cousins. Instead, the boats should be designed and built to meet their intended purpose – and in this regard the Precision 18 benefits from an exceptionally clear design philosophy, and a strong builder's commitment to uphold it.

The handling characteristics of the P-18 can best be described as easy, predictable, and well mannered. Furthermore, as a lightly ballasted, shoal draft, keel-centerboard boat, the Precision 18 certainly lives up to its "lively" billing. For experienced sailors this can be exciting; for novices it may be eye opening at times. This is a boat that will generously reward the proper sail trim and handling techniques demonstrated by experienced sailors, yet it's also a boat that safely and patiently teaches a novice how it wants to be sailed. It responds to good and bad handling in demonstrable ways – and ultimately it will take care of the crew. But, like any small boat, it does not suffer fools gladly. While the boat is typically self-righting, there are imaginable conditions and circumstances in which it could be overcome. The most important safety feature of any small boat is found between the skipper's ears. The Precision 18 will provide safe, lively, predictable, and exciting performance at a level that will keep experienced sailors interested, and novice sailors enthralled.

There are a handful of improvements or additions one may want to consider making to their P-18 entirely dependent upon one's intended use, sailing conditions, personal preference, or even whim. I'll certainly discuss those in the pages ahead, but an overriding point that should not be lost in this discussion is that very few of these changes are truly necessary in order to *enjoy* the boat. You have lots of choices to consider, and making a boat "your own" is simply part of the fun and privilege of ownership.

II SPECIFIC ITEMS TO INSPECT WHEN LOOKING AT A USED PRECISION 18

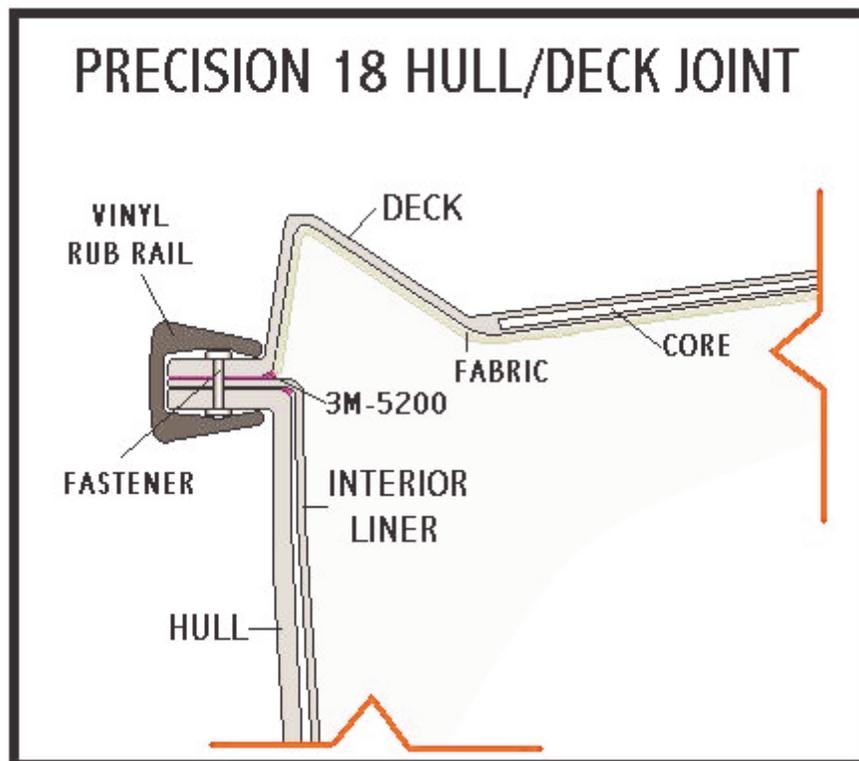
a. Overview of Basic Construction

The Precision 18 was built using high quality materials and components, all assembled with reasonable care. The hull is a solid fiberglass laminate of mat and roving, all hand-laid and squeegeed. Within the hull lies a fiberglass pan (or liner) that serves a variety of purposes. First, it adds a significant degree of structural rigidity to the boat. Second, it incorporates the foundation and form of the interior arrangement. Finally, it provides a smooth "finished" appearance to the interior leaving a surface that is easily cleaned and otherwise maintained. The liner is a one-piece unit, and has a rigid foam core throughout most of its horizontal surfaces. Additional foam is poured in place to add further stiffness, and the lower inboard edges of the berth moldings serve as longitudinal stiffeners. The deck is built using a rigid foam core that adds considerable stiffness while minimizing weight. In specific hi-load areas, foam core is replaced with plywood for greater resistance to compression caused by tightening the fasteners, and containing damage from the inevitable water intrusions. Mast compression loads are carried by a laminated beam made-up of multiple layers of plywood glassed into the deck, and further supported by cut-away bulkheads that transfer their load to the interior liner that mates precisely with the hull. The hull-deck joint is an external flange type, and it is secured by a combination of stainless rivets and through-bolts in early models, or all through-bolts on later models - all on approximately 5" centers. Additional fasteners are added at the stem head, chain plates, and transom resulting in fasteners spaced every 2 1/2" or so in the high load areas. The hull-deck joint also includes the outward turn of the interior liner, and the entire assembly is generously beaded with 3M-5200. The underside of the deck is sculpted with poured foam to soften and radius the edges, and then finished with a short nap upholstered fabric liner glued in place with contact cement. The companionway, cockpit, and anchor locker hatches are foam-cored fiberglass. The centerboard has an internal steel plate sandwiched between the two halves of foil shaped fiberglass pieces, the area between which is filled with high-density water resistant polyester filler. Total weight of the centerboard is around 65lbs. The rudder blade is of similar construction, but without the steel. The rudder cheeks are made of anodized aluminum plate with stainless fasteners and hardware. Spars are generously sized, and standing rigging is 1/8" 1 x 19 stainless steel wires. Chain plates are strong U-bolts with heavy aluminum backers tying them to the bulkheads. Backstay attachments points are integral to the aft-most stern rail bases, while the stem head is a standard small boat unit through-bolted to a reinforced deck.

b. Hull/Deck Joint

The hull/deck joint used on all Precisions is an "external flange" type. This is a type of joint that rightfully gets negative reviews on boats over 30 feet, but for small boats like Precisions, it makes a lot of sense. The reason one would not necessarily want this type of joint on a larger boat is that it is susceptible to impact damage while docking. Additionally, it's difficult to protect this style of joint with an adequate rub rail on larger boats. After repeated impacts with pilings and docks (...more likely on larger boats because of their greater mass and inertia) leaking is almost inevitable. However, this is an example of a building technique that is not only perfectly acceptable for smaller boats, but even has some advantages. When a fastener used to hold a hull/deck joint leaks (...and everything leaks eventually), water is just as likely to drip "through and out" with this style of joint, rather than *into* the boat. Also, at the "scale" these joints are fabricated to for small boats, they are quite strong. Then, accessibility to the joint for inspection or repair is unmatched by nearly any other design. The fasteners can be inspected, removed, or replaced by a single person standing comfortably outside the boat. On Precisions, the heavy vinyl rub rail is a "press fit" item that can be lifted off and moved aside in small sections for inspection of the joint without tools. After years of abuse, the entire rub rail *easily* can be replaced. For a small boat, this joint works exceptionally well. It also effectively deflects light spray when underway.

Diagram #1 – P-18 Hull/Deck Joint



If you're looking at a used P-18 – or simply inspecting your own boat – *do* take the time to simply pull off the rub rail near high stress areas (chain plates, lifeline stanchions, stem head fitting, transom) and any areas where the rub rail appears to have sustained a severe impact. If there is evidence of leakage from this joint observed from down below, there is no reason for dismay – it can be easily fixed. Even without damage, with time the joint will eventually need to be resealed.

When the time came to re-do my joint, I removed the rub rail completely. Next, I took a half-inch drill with a "floppy paint stripping wheel" attachment, and ground off all the exterior sealant. I then used a variety of "sharp pointy things" to remove any loose material within the joint. Finally, I filled any cavities created by my "probing and digging" with fresh 3M-5200, and followed that up by smoothly tooling a bead of 3M-5200 over the external edge of the joint. I elected to replace my rub rail with a new one purchased directly from the factory. This is something I'd expect to do every ten years or so, and this simple design makes the job straightforward.

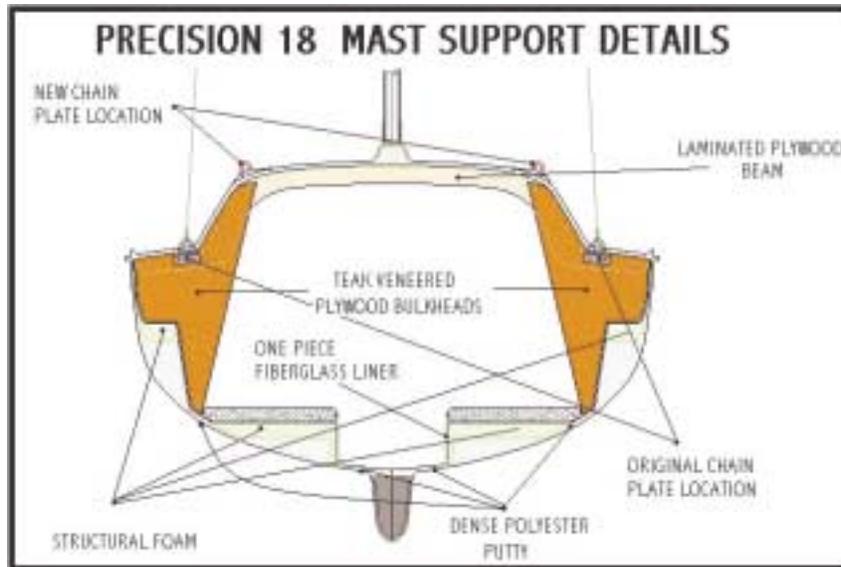
Finally, when you inspect this critical joint, look closely at the condition of the fasteners. If they appear corroded – or are otherwise suspect - by all means replace them. (It's certainly easy enough to do!) At this writing, some of the oldest P-18's are nearing 20 years old (including mine), and the structural integrity of the hull deck/joint has not been a cause for concern, or an item that's demanded a lot of attention by the owners of vintage boats. The precise fit of all three fiberglass components at the sheer results in a strong, reliable, and long-lived joint that is very easy to inspect and repair.

c. Mast Support Structure

The Precision 18 uses a laminated plywood beam in conjunction with cut away bulkheads to transmit rigging loads to the hull via the interior liner. Here, once again, is a construction technique that could be problematic on a boat 30 feet or larger - but for a small boat it makes tremendous sense. The entire structure is made of components that – when assembled – act as a single, sturdy unit. The advantage is an open interior that provides luxurious room down below for so small a boat. The drawback is that it costs more to build than a typical arrangement that uses a compression post directly under the mast step. Also, this is an arrangement that would be particularly intolerant of prolonged saturation with water. Therefore, it's important to inspect for leaking chain plates, and take corrective actions immediately anytime evidence of water leaking onto the bulkheads or laminated beam is noted. Individuals looking at used boats should look closely for any signs of water damage around the mast support structure and chain plates. If you own a Precision 18, do not turn a blind eye to

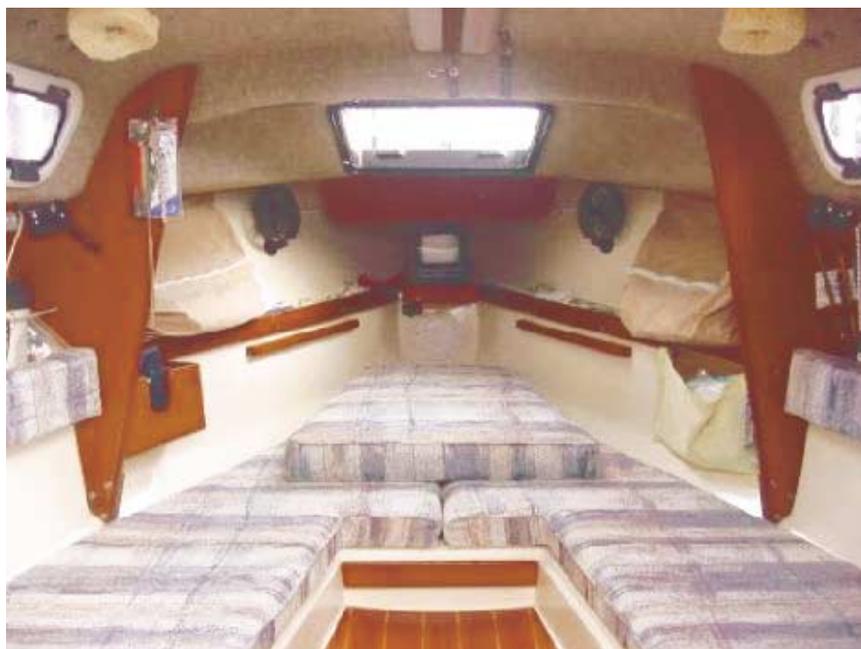
any leaks in this area. It would be good practice to periodically remove and re-bed the chain plates.

Diagram #2 – P-18 Mast Support Structure



The mast support structure is a key reason the interior of the boat feels remarkably open. This assembly is ruggedly constructed, and to date, no Precision 18 has experienced a failure of this key structural element. Routine inspection and prompt repair of any water damage to this structure should allow it to maintain its structural integrity for the life of the boat.

Picture #1 – An Open and Spacious Interior



d. Exterior Finish (top and bottom)

The exterior finish of all Precision 18s is a high quality ISO/NPT gel coat that resists water migration, and provides a long lasting and durable finish *if* cared for properly. It is not "*any*" maintenance, but it is "*low*" maintenance. So far, there have been two standard gel coat colors used by Precision Boat Works. Early boats had a "buff "or almost "beige" colored gel coat that was used on both hull and deck. This was exceptionally easy on the eyes (low glare), but difficult for amateurs to match when making small repairs. Newer boats are built using a "soft white" gel coat with a "gray" contrasting colored gel coat incorporated on non-skid surfaces. If kept covered and reasonably clean, these surfaces will maintain an acceptable finish for at least 20 years. Scratches that penetrate gel coat and expose bare fiberglass laminate below should be repaired promptly. All fiberglass boats can be expected to experience some spider cracks and other crazing around heavily loaded fittings as well as other locations as a result of age and hard use. Precisions – as a group – seem to experience these to a far lesser degree than other boats. Cracks and crazing are only a cause for concern, if: 1) there is evidence that they are allowing water to contact the laminate below, 2) if they are wide enough to leave a noticeable gap, or 3) if there is chipping along any portion of their length. There are numerous books and other sources describing how to repair these yourself, so I won't go into them here. Expect to see some spider cracking and crazing on *any* boat (even a new one), but a boat with excessive amounts of these is indicative of one that was poorly built, poorly maintained, sailed hard, suffered some sort of impact damage, is quite old, or any combination of these factors. Typically, the gel coat used on Precisions has held up as well or better than that found on many other production boats. So, if you are inspecting a P-18 that appears particularly weathered or badly worn, take that as a clear indicator of that particular boat having been subject to a prolonged period of neglect during its lifetime. Fortunately, exterior stripes are vinyl tape, and easily replaced – no painting!

The manufacturer recommends barrier coating any boat that is to be left in the water for extended periods. Here again there are numerous choices available, and a wealth of information can be found from a variety of sources. Regardless of the product chosen, adequate film thickness is universally required to make the barrier coat effective. Applying barrier coat is not a particularly fun job and it requires careful attention to detail in order to be successfully applied. This is not a job you'd want to do *twice*, so follow the instructions for your chosen product carefully. If buying a new Precision 18, consider having the factory or dealer accomplish this task for you. If looking at a used boat, you may consider one that has had this job properly accomplished to be more desirable than one that has not, *if* prolonged in-water storage is part of *your* expected usage.

Instances of osmotic blistering are quite rare among Precisions, but like all fiberglass boats, they *are* susceptible to the affliction. As for anti-fouling bottom paint, the best choice is the one that works in your particular waters – so walk the docks and discuss your options with others in your local area. (It is unlikely that any single paint would be the most appropriate or effective in Key West, Boston, *and* Lake Michigan.) Overall, even older Precision 18's might just surprise you with the shine and smoothness of their exterior finish. Regular cleaning and waxing goes a long way toward keeping the boat looking good and will postpone the need for more drastic restoration.

e. Rigging and Sailing Hardware

The mast on a Precision 18 is a Dwyer section DM-375, while the boom is a Dwyer section DM-275. Early models had a black anodized finish, while later models have a clear anodized finish. Dwyer produced most of the standard spar hardware. (tangs, spreader brackets, pad eyes, bails, masthead, etc.) Much of the hardware is attached with large rivets. Galvanic corrosion between stainless fittings and aluminum spar sections is possible. Also, look carefully at the spreader brackets for signs of deformation or cracks. (Boats with loose rigs that were sailed with their spreaders drooping are particularly susceptible to damage at the spreader brackets.) Check carefully for dents or deformations in the spar that are indicative of it having been dropped or mishandled. The standing rigging is 1/8" SS wire with open body turnbuckles. The side stays are led to a common single "U" bolt chain plate port and starboard that needs to be examined closely as well. When stepping the mast, it is possible for the toggles at the lower ends of the turnbuckles to be bent as a result of forcing the mast upward with the toggle "kinked". If the toggles are repeatedly bent, they can fail, resulting in the loss of the rig. Therefore, bent toggles should be replaced as soon as possible. I'll describe some steps to prevent bending toggles later. Wires should exit swages without sharp bends, and swages should be free of cracks and not heavily corroded. Pay particular attention to the backstay bridle and the point at which the wire exists the Nicopress fitting under the mainsheet attachment plate. The backstay bridle is particularly prone to damage or failure, and requires frequent inspection and even periodic replacement.

With only a few exceptions, the on-deck sailing hardware on Precisions is supplied by Harken, a manufacturer recognized by many as the producer of the highest quality small boat sailing gear. Check all blocks for deformation and free operation. Examine the jib halyard block closely. This block is highly loaded, *not* made by Harken, and readily deformed. The plastic sheave of this block is prone to wear and cracking. Many older boats have required replacement of this block, and a Harken Hi-Load Bullet Block - Model #183 is an *ideal* replacement. The remainder of the rig should be examined for signs of damage or wear. The rigs

of all trailerable boats are subject to damage as a result of frequent stepping, unstepping, and movement of the mast. They simply demand frequent and detailed inspection if you want to avoid surprises.

f. Cockpit Drains

There are two types of cockpit drains found on Precision 18s – those that leak, and those that have been fixed. The cockpit drains are made up of PVC pipe, and the joints are typically poorly sealed. They will invariably leak – in fact, you can count on it! Fortunately, the fix is easy. Some thickened epoxy slathered inside and outside each of the joints with a gloved finger will produce a simple and reliable repair – just make sure the joints are clean and dry before attempting the repair.

It is not uncommon for some water to backup through the drains when two or more people are seated well aft while the boat is moving slowly, *or* powering quickly. While this inflow may be annoying, it is of little consequence provided the drains are watertight. If the boat you're looking at has not been repaired, this will be a fix you can plan on accomplishing. The drains are small yet of adequate size to quickly evacuate water that might find it's way aboard over the side. Also, the centerboard tube at the forward end of the cockpit increases cockpit-draining capacity by nearly 50%, should serious amounts of water come aboard.

The anchor locker drain tube (forward) is of identical construction (PVC Pipe) to the cockpit drains, and will eventually require the same corrective attention.

g. Deck Hardware

The pulpit, stern rail, stanchions, and swim ladder (typically installed) are made of 7/8" stainless steel tubing, with all joints welded. Two styles of stanchions have been used on the boats - one style tapered at the top, the other without a taper. Recent boats have a different style of stern rail that incorporates elevated seating, as well as a different style of bow pulpit that doesn't significantly overhang the bow, allowing for a shorter overall length and less susceptibility to damage when docking. All pulpits have hollow base plates that readily allow for internal wiring to be run for desired accessories. They are through-bolted through the fiberglass deck and plywood backing. The stanchions, in particular, are subject to rough treatment and should be examined closely to see that the weld at their base is secure and that the deck is solid. Because of the abuse they can sustain, they are subject to leaking at their fasteners. So, check below for signs of water leakage. The plywood backer can be replaced, if necessary, and the stanchions themselves should be removed, cleaned, re-bedded, and reattached periodically.

The hinges used to attach the cockpit seat locker lids as well as the anchor locker lid are mediocre and will need replacement at some point. (When I replaced mine, I chose to use a continuous length of SS piano hinge, and through-bolted it on 2" centers.)

The main companionway hatch slides along the deck molding and is retained on the sides by teak runners on older boats, or white polymer runners on newer ones. The mast step limits forward movement of the hatch, while a molded lip on the deck molding limits aft movement. Check older teak runners for splits or wear.

The forward hatch was a plastic-framed model on older boats, and has been upgraded to a better aluminum-framed Lewmar/Bomar model on newer boats. Older boats may have hatch leaks that ultimately require complete hatch replacement. Frequent stepping or resting on the Lexan hatch cover may eventually cause leaking between the clear cover and frame. Check the rubber gasket for suppleness and absence of cuts or damage. Do not overtighten the dogging clamps, as doing so can result in leaks as well.

The motor bracket is a Garelick spring-loaded model. Older boats had a laminated plywood mount that was finished bright. Newer boats have black polymer mounts that are UV resistant and maintenance free. Older boats can easily be retrofitted with the newer polymer mounts (the holes do match up). Other plastic parts on the mount are subject to deterioration. Check the mount for smooth and easy operation.

The 6" dock line cleats are made of black nylon and secured with two bolts each. They are bolted through the deck and plywood backers using large washers and lock nuts below deck. These initially seemed somewhat marginal when my boat was new, but after nearly 20 years, they are *still* doing the job and have not failed. Still, some may prefer larger backing plates below them. Look for any signs of damage to the surrounding deck area near the cleats from above (as well as the adjacent hull/deck joint), and if you notice anything negative, check closely from below for signs of water leakage. Most boats that are typically trailered have no damage to their cleats. Many boats kept in a slip may show some wear, including visible chafe damage to the nylon cleat itself.

Older boats also may have additional deck hardware installed that should be looked at closely. Adding gear through foam-cored areas of the deck needs to be done with care. Specifically, the core needs to be well sealed with epoxy to prevent water migration into, and saturation of, the core. While the core is composed of closed cell rigid foam and resists water quite well, continuous

exposure to moisture will compromise its integrity over a period of time. If you are inspecting a boat with gear that was not properly installed, but the core nearby seems solid, you can (in all likelihood) simply re-install the gear properly and have no worries. However, if the core has become damp, soft, and weak – the fix can be more difficult. The full extent of any damage may be difficult to ascertain as well, so you may be best advised to consult with an expert for advice or repairs. Problems associated with the cored construction used on the Precision 18 are rare around any equipment or fittings that were original with the boat. Most problems in this area will be as a result of owner-installed equipment that was carelessly added. Therefore, take a particularly close look at any owner-installed gear, and use proper care when installing additional gear on your boat.

h. Centerboard and Rudder

The centerboard and rudder are made of two halves of fiberglass joined with high-density fillers. The result of this construction method is a smooth gel coated surface on each side of the foils.

The centerboard has a steel plate in it primarily for weight so that it will drop easily, even with the boat moving forward. The plate is small, well inboard from the edges, and is fully encapsulated by filler and fiberglass. The overall assembly is quite durable but susceptible to wear by dragging along the bottom – particularly along a roughened concrete boat ramp when one tries to retrieve the boat with the board down. Therefore, a careful inspection of the leading edge of the centerboard should be made periodically, as well as the entire lower tip. Simply crawl under the boat and look up at the board and sight along the entire leading edge. Any dings or nicks should be repaired periodically. I have had good results with a product called *Marine-Tex* for this purpose. While under the boat, also take a look at the internal forward edge of the centerboard trunk for signs of impact damage. If the centerboard was allowed to free fall to the full down position, and the pennant has not been adjusted properly to prevent it from striking the forward edge of the centerboard trunk, damage will typically be found there. Fortunately, in most cases, it can be fixed without having to lift the boat off the trailer, since there is enough room at the forward end of the trunk (with the centerboard raised) to inspect for - *and* repair - most damage. The centerboard pennant is the utmost of simplicity - a single line tied near the lower end of the board, and led through a tube up to the cockpit. No winches, pulleys, Delrin tubes, seals, etc. The "price" paid for this simplicity is drag created by the line when sailing with the board down. The line itself needs to be replaced periodically. The bracket holding the board up into the boat is a simple and robust assembly that can't be easily inspected. Therefore, it should be replaced on the order of every 15 to 20 years. I replaced mine at around the 15-year point, and it could have easily lasted longer. However, if a boat has been left in

the water (particularly salt water) for a large portion of its life, you may want to replace this bracket sooner – say around the ten-year point. If you're looking at (or own) an older boat, do consider that this is a task that *will* need to be undertaken at some point. When not sailing, the centerboard should be fully raised to reduce wear caused by it wobbling back and forth.

The rudder blade is built much like the centerboard, but without the steel plate. Look for damage at the lower tip caused by dragging along the ground or bottom – again usually easily repaired with Marine-Tex. The rudder head assembly is made of two anodized aluminum cheeks and stainless steel fasteners. Over time, this assembly is subject to corrosion, and it needs to be inspected regularly. Not only should the fasteners be checked for tightness, they should be replaced periodically as well. The gudgeons are machined from solid aluminum stock and are subject to wear as well. Most noticeably, the holes within the gudgeons will become elongated with use.

The pintles also need careful inspection, as they are prone to developing cracks. The welds on the pintles are purposely "minimal" so that they will serve, as a fuse should the rudder strike something hard while backing or grounding. If the pintles were made stronger, then far more expensive and difficult to repair damage could occur – so resist the urge to "improve" them. However, examine them closely and replace them as needed. To give you an idea of what to look for, here's what one of my pintles looked like after just a couple of years of admittedly *very* hard use. Look for torn steel, long cracks, and failing welds.

Picture #2 – Pintle Damage



i. Electrical System

The electrical system supplied with the boat is adequate, but not particularly wonderful. Some older P-18's (like mine) were wired with automotive grade wire rather than marine wire. However, newer boats are wired with properly tinned marine grade wire. Wire "runs" to many items like running lights, the cabin light, and mast light are made along the underside of the deck and installed in such a manner that they can't be inspected *or* removed. Navigation lights on earlier models were rather cheaply made, and subject to corrosion and lens discoloration as a result of exposure to UV rays. Newer models have better lights, and the bow light was eventually re-located to the bow pulpit for better visibility. While this location indeed improves the performance of the light in use, it is also makes the light more subject to impact damage from careless docking or handling. The standard electrical panel is adequate, but did not include a lot of room for adding additional circuits. The molded-in battery box is located on the aft starboard side at the back end of the quarter berth, and is capable of holding a Group 24-sized battery. Those of you looking at older boats should ultimately be resigned to the fact that some work on the electrical system is inevitably going to be required. Fortunately, a small and simple boat like the P-18 can be completely re-wired and upgraded comparatively easily. It's best that you be prepared for this eventuality; as this is a boat will clearly outlive its electrical system. Also, the electrical deck plug used to connect the wires leading to the steaming light on the mast is subject to abuse, corrosion, and failure - expect to address *that* annoying issue on any boat, if the previous owner hasn't done so already.

j. Trailer

Most P-18s that were ordered from the factory with a trailer (and that's most of them) came with a model PS-18 trailer made by Performance Trailers. This trailer weighs 400 lbs empty, has a rated load capacity of 1,500 lbs, and uses two 5.30X12 load range "C" tires with a load capacity of 1045 lbs each, at 80 PSI. The trailer has three keel rollers, and two bunks (left and right) to hold the boat upright – along with 2 keel guides. The bunks and keel guides are made of 2x4 lumber stock covered with exterior grade carpet. They are attached with short lag screws that should periodically be checked for adequate "bite" into the wood. The standard trailer did not include a tongue extension - which several owners have added - but did include a tilt mechanism, which most owners *don't* use. Lights and wiring as supplied are typically short-lived, and if you're looking at an older trailer they have likely either been replaced, or need to be replaced. The trailer winch that came as standard equipment on my trailer was undersized, and quickly deformed under load. (Most owners end up adding a more substantial winch to their trailers.) Trailer tire sidewalls will rot surprisingly fast if left

exposed to the weather and sun, so check them for deep cracks and crazing. Also, some owners may have replaced their load range "C" tires with load range "B" tires, because load range "C" tires in this size are less commonly stocked, and more expensive to acquire. Regardless, load range "C" tires are what *should* be installed. Check all welds for excessive corrosion, and pay particular attention to the welds at the base of the bow winch stand. Heavy breaking at highway speed can cause those welds to fail. Look closely at the single ¾" hinge bolt at the tilt mechanism – should this bolt show any extreme signs of wear, replace it as soon as possible. The leaf springs will inevitably have some rust and scale, but if they appear so badly rusted that you can't tell what color they were once painted, replace them. The "U" bolts and bracket plates used to attach the axle to the leaf springs should be inspected as well. Wheel bearings should be repacked annually, but when looking at a used boat check the inboard seal for signs of excessive grease leakage. If grease came *out*, water likely went *in*. Take the time to jack each wheel off the ground just enough so you can turn it. The wheel should turn easily without a loud or intermittent noise. Grab the wheel with both hands top and bottom and push and pull on it in line with the axle. Movement - if any - should be very slight. "Trailers" are both the best *and* worst thing about owning any trailerable boat. They give us mobility, ease of storage, and flexibility in use - yet they always seem to be in need of "something". In a salt-water environment, the trailer may actually demand more active maintenance from you than the boat will! Trailers aren't particularly fun to work on, are easy to neglect, and typically only receive attention when they break - or begin to fail. Make sure the trailer under any boat you're looking at is at least capable of getting you and the boat home safely. If the trailer you're looking at has "issues", the good news is that a rather complete rebuild of a P-18's trailer can be accomplished by the owner for under \$400.00 worth of parts and materials, and many trailers often require something substantially less than that amount of money.

k. Miscellaneous

Windows and frames on older models (made by Grey Marine) are subject to cracking with age. There are a variety of options for replacing them, but the original units are no longer available. Later models used an external piece of polycarbonate without an external frame that could be duplicated easily should replacement be required. Recent models have further upgraded to four Lewmar opening ports in lieu of the two fixed trapezoidal shaped windows. I recently saw an advertisement for a new 2004 P-18 that appeared to have yet a *different* style of opening port installed. So, windows vary, but at some point they will need replacement with whatever you choose - or create.

Sails and electronics vary widely from boat to boat, and I judge them to be "consumables". They aren't particularly long-lived (when used a lot) in a marine environment, and *all* will need periodic replacement over the life of the boat - regardless of their current condition, or quality. If the boat that you're considering has what you like, that's fine. If it doesn't, you can add or replace it later.

An outboard motor of 3 to 5 hp will be ideal for use on a P-18 in most conditions. Those sailing primarily on protected inland lakes can possibly get by with even less motor (say 2 hp - or perhaps even an electric motor.), while those sailing in even the most boisterous of locations will seldom benefit from more than 5 hp. An engine larger than 4hp won't efficiently provide more speed, but it will add considerably more weight and expense. If the boat you're considering has a 15 hp engine, that's probably *not* a good thing – more is not always better. Regardless of the engine you choose, a long shaft option is desirable for the P-18. The longevity of any engine is almost entirely dependent on the use and care it has received. Engines used in salt water will benefit from a fresh water flush after every use. A well cared for outboard should start on the first or second pull, idle without repeated stalling, and push the boat at hull speed (5.3 knots) in most conditions.

III Commissioning Your New (or new to you) P-18

I'm going to assume that nothing I've said so far has scared you off and that you went ahead and bought a P-18, or are still looking to buy one. Good for you! In this section, I will deal with the process of commissioning your boat – that is, getting it ready to *use*.

a. Trailering

Your first "new-owner" activity after you've purchased your boat is probably going to be getting it home on its trailer. Having convinced yourself that the trailer is road-worthy, you probably need to take care of a few other things. First, if you're one who prefers to have insurance – make sure your boat and trailer are adequately covered before you go anywhere. In many instances, boats as small as a P-18 may be covered under an existing homeowners policy. Also, specific and independent coverage for your boat and trailer can be obtained from a variety of sources. At a minimum, you'll probably want to make sure you have adequate liability coverage. Transporting boats over the road is *not* a risk-free proposition. I have had occasion to sail my P-18 offshore to the Dry Tortugas, and people have frequently asked me what the scariest part of that trip was. Without hesitation, I tell them it was the drive to and from Key West with the boat in tow!

The road weight of a fully laden P-18 (boat, gear, supplies, clothes, ice, trailer, motor, fuel, water, spares, etc.) is just under 2,000lbs – so you'll want to select a tow vehicle that can handle this modest load *plus* you, your family, and any other items you might need. Ideal tongue weight should be between 7% and 9% of the total weight, or under 180lbs. I tow my boat with a four-cylinder Toyota Tacoma pickup truck with an automatic transmission, and it performs very well in the flat lands of coastal Florida. So, you really don't *need* a gas-guzzling, heavy-duty, dedicated tow vehicle for this boat.

Next, you'll want to make sure you have functioning trailer lights. Most trailers for P-18s use a standard four-prong connector, but some owners choose different paths when they rewire their trailers. You're liable to find anything "out there". So, come prepared with the necessary tools, along with an assortment of electrical connectors, and a plug for the trailer that matches your tow vehicle. Once you have everything hooked up, check the lights for proper operation. If they appear dim, or don't work at all, check the ground. If you've checked the ground, and have convinced yourself that the ground is not the problem... check the ground *again*.

The coupler used on a standard P-18 trailer accepts a 1-7/8" ball. Have a means to lock or secure the coupler once it's closed. Lift up sharply on the coupler to make sure it is securely attached to the ball. Safety chains should be attached between the trailer and tow vehicle, and crossed as they pass below the tongue of the trailer.

A spare tire and wheel are always good insurance to have on hand. A spare hub including races and wheel bearings may be nice to have as well. Make sure you have a lug wrench that actually fits the lugs on the trailer wheels – the wrench that comes with your tow vehicle may or may *not* work. It's best to make certain you can break the lug nuts free. Applying light machine oil to the lug threads *now* can make loosening them later easier – or even possible. Also, make sure you have a jack that will fit under the axle of the boat trailer *when the tire is flat*. A scrap or two of lumber for use as jacking pads would be good to have, as are wheel chocks capable of restricting movement of the trailer or vehicle while either is jacked or parked on an incline. Make sure you have the tools needed to remove and replace a hub. These could include: ball-peen hammer, large screwdriver, small screwdriver, pliers, channel lock pliers, and anything else specific to your trailer along with a supply of wheel bearing grease, paper towels, rags, hand cleaner, and (if you're a neat-nick) coveralls & latex gloves.)

Do not depend on the trailer winch alone for keeping the bow secured to the winch stand – a safety chain, or additional restraint should be utilized. Tie downs between the trailer and boat should be strong, in good shape (not worn or

frayed), and snug. I use three ratchet style tie downs on my boat, one from the base of each aft stanchion base led to the aft corners of the trailer, and one from the bow eye led aft to the trailer frame to restrict forward movement should the winch stand fail. What I use should be considered an adequate *minimum*. Other people use additional straps completely around their boat forward, middle, and aft. Whatever method you use, the goal you're trying to achieve is one of making the boat and trailer behave as a single unit when on the road. You don't want any space or gaps to ever develop between the trailer and boat when bouncing along, nor do you want the boat to be capable of moving forward or aft on the trailer while traveling.

b. Driveway Sailing

One you've gotten the boat home, it's time to sort through all the "stuff" and get some hands-on experience with what's involved in setting it up. It's easy to become overwhelmed with all the things that seemingly need to be done in order to get a trailerable sailboat on the water, but the P-18 is not complicated. Also, all this "stuff" is actually part of the fun. So smile while you rig!

It's probably best that the *first* time you rig your boat for launching *not* be at a popular boat ramp on a crowded weekend. So, a couple of "practice riggings" may be in order – or "driveway sails" as they're sometimes called. (This is very popular with the neighbors, I can assure you!) I'll walk you through what's involved here, but understand that additional equipment or changes to your boat may necessitate additional steps, elimination of steps, or changes in what I'm about to describe.

First, you need to find a place suitable for "driveway sailing". Specifically, you want a location that allows at least 13' of clear space behind the boat, is relatively level, is not near power lines - or other overhead obstructions such as trees or phone lines - and is relatively out of the way such that you can occupy it for a few hours. If necessary, you can unhitch the boat from the trailer to reduce the length of the space you need to occupy. If you do this, make certain to chock the wheels, and place blocking under the aft end of the trailer frame to prevent inadvertent tipping of the trailer as you board and begin to rig. Once you've found your spot, you can begin to put "the puzzle" together.

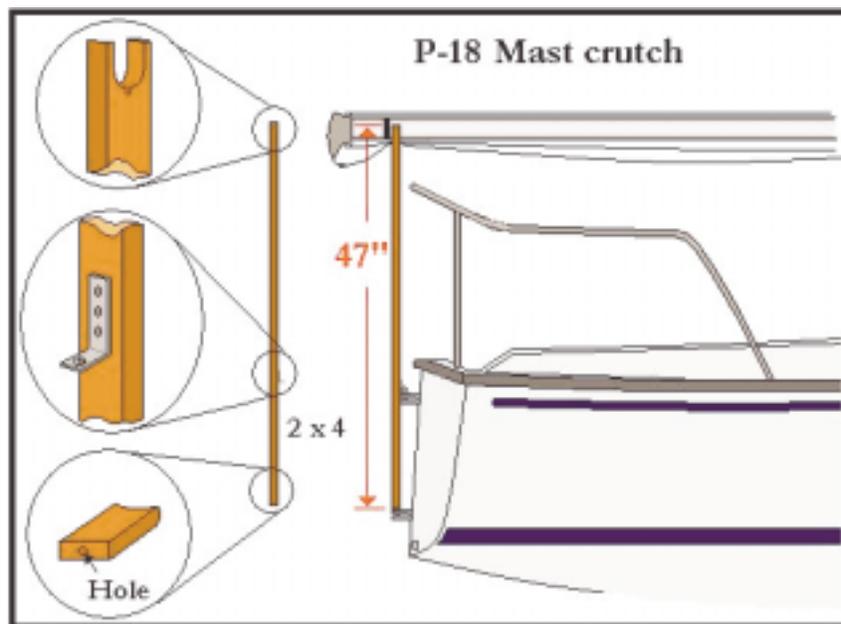
Now, let's imagine you're arriving at the ramp. First you want to look for a place to rig that doesn't block access for others who use the facility. A fellow with an aluminum skiff may only need three minutes to get ready - while you may need an hour or more (...at least while everything is new to you). As a Precision 18 owner, you are now an ambassador for *all* of us who own Precisions, and we'd like to be known as a group that is considerate of others. If it were windy, it

would be advisable to park so that the wind is coming over the stern if at all possible. (Wind over the stern makes controlling the mast in a breeze a *lot* easier.)

So, you've parked! The first thing you do is get out of the vehicle and walk completely around the boat and trailer looking for anything that may have shifted, slipped, broken, or fallen off. As you pass the wheels, bend down and grasp the hubs. Warm is ok; hot is not. Also take a peak at the grease seals at the inboard side of the hub for any changes in grease leakage. If your hubs are fitted with Bearing Buddies, a quick pump of grease may be in order -particularly if you notice that the cover plate has recessed deeply into the "buddy" and can't be wiggled or compressed by your thumb.

At this point, remove all straps used to secure the boat to the trailer, as well as the safety chain used between the bow eye and the winch stand. I choose not to trailer with either my rudder or outboard motor in place. I use an aft mounted mast crutch that rests on the pintles, so the rudder can't be installed until after the mast is up. A mast crutch can easily be fabricated using a common 2x4, and minimal shop skills.

Diagram #3 – Mast Crutch

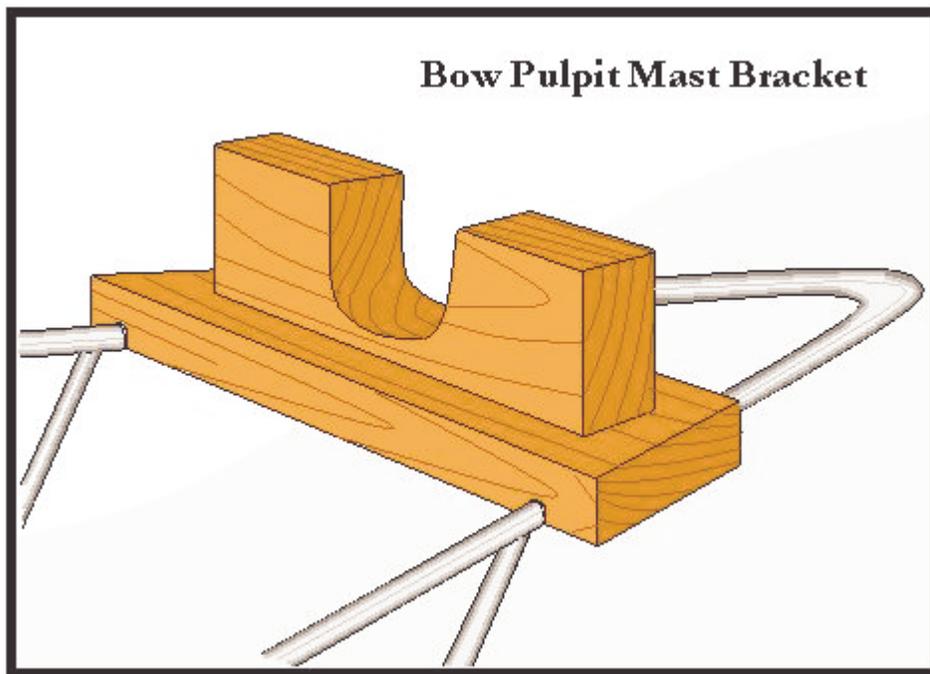


Now, go ahead and mount the outboard motor. I use a Nissan 3.5B Long shaft motor that weighs less than 30 lbs, so mounting it, or removing it, is *easy*. Make sure the motor clamps are tight. I have an added safety lanyard that further ties the outboard to the boat – just in case. My motor has an internal fuel tank, and I always store it with the tank full so I don't have to mess with fueling at the ramp.

It is now time to board the boat – but before I do, I wipe my feet on the doormat I carry in the back of my truck. Fiberglass decks don't appreciate grease, grime, oil, sand, dirt, and other items found on the ground around boat ramps. (And the round rungs of the boarding ladder aren't particularly kind to bare feet.)

When trailering the boat, I feel it's best to undo as little rigging as possible. So, the only wire that is removed is the forestay. The side stays and backstay remain attached, and the excess wire is neatly coiled and secured alongside the mast using short lengths of line. Next, I move forward and untie the butt of the mast at the bow pulpit where it rests. Some people may choose to make a mast support bracket for the bow pulpit like the one in diagram #4. I elected to pad my bow pulpit and haven't felt the need to utilize a bow support. Either way, the mast – or mast and bracket – are securely tied to the bow rail.

Diagram #4 – Mast Support for Bow Pulpit



Moving aft, the lines securing the side stays are removed next and then the lines securing the coiled forestay and backstay are removed. Finally, the line securing the aft end of the mast in its crutch and down toward the pulpit is removed. The forestay is led forward, and untwisted as necessary – its end is neatly laid across the foredeck. The backstay is laid out as well, and it is eased over the stern where hopefully, it won't catch on anything when the time comes to hoist the mast. (Not having the rudder installed eliminates *one* potential area for snags.)

Take a moment to look at all shrouds and stays, and make sure they have no kinks, twists, or appear set to snag on anything. Make sure all clevis pins are in place, and secure with either cotter pins or circlips. Pay attention to the toggles at the shrouds – these are subject to twisting and kinking when hoisting as the "T" portion of the toggle slides down into the jaws in which it rests. To reduce this likelihood, a short length of rigid plastic cable cover can be inserted around the threaded rod of the lower toggles to hold the "T" firmly in the jaws so twisting or kinking can't occur. If kinking does occur while stepping the mast, stop raising the spar, and clear the kink. Simply increasing the force and continuing the hoist *will* bend the toggles.

Picture #3 – Plastic Sleeves Installed Around Toggle Studs



Ok, so you think you're ready raise the mast? Nahhhh!!! - You aren't. Most sailors prefer to have a *Windex* or similar wind indicator at the top of their mast. People who trailer their boat with these installed on their masts seem to have to buy a lot of them. Therefore, I prefer to remove mine - so now it's time to *reinstall* it. Once the *Windex* has been installed, you can go ahead and raise the mast.

First, make sure the area behind you is clear of obstructions (again, for at least 13') and that nobody sneaked around to install power lines overhead while you were methodically rigging your boat. Next - if it's open - slide the main companionway hatch fully aft. Should you have to lower the mast momentarily

during the hoist, an open hatch can be easily damaged should the mast come in contact with it with the butt end still engaged in the tabernacle. (crunch!)

At this point there may be lots of different ways to proceed depending on how the previous owner set the boat up, or what type of mast raising "system" they developed. I bought my boat when I was twenty-something years old and at that age I simply picked up the mast, walked to the extreme back of the cockpit, inserted the butt end of the mast into tabernacle, and walked it up "a la Iwo Jima flag raising" style. With the mast standing vertical, the forestay was just hanging down along side it. I would grab the forestay and step smartly forward, then pin it. The mast was up! All I had to do was tighten the forestay (the other stays and shrouds were previously tuned, set, and pinned), and the "job" was done. This was fast! And it worked beautifully! Until I got old.

Now that I'm forty-something, my back isn't as strong, my reflexes aren't as fast, and I'm simply not as nimble running around the deck while balancing the spar with one hand and grabbing the forestay with another. So, I now use a halyard attached to another line that's led through a turning block at the bow and led aft to a jib cam-cleat to aid in easing the mast up, allowing me to stop midway to clear a fouled shroud or stay, and helping me keep things slow and manageable while lowering the mast back down again.

By the time I'm fifty-something I'll probably want a gin-pole led to a block and tackle to help step the spar... and after that, my grandkids can step it for me!

Whatever "system" you devise or adopt, make sure it works for you. The simplest system that requires the least setup time and allows you to safely handle the mast going up or down is the one you *need*. Which "system" best works for you depends upon your physical condition, personal desires, and level of anxiety. It can range from virtually "nothing", to an elaborate "mousetrap" with multiple gin-poles, and tackle. But, to put things in perspective, a fully rigged Precision 18 mast only weighs 37 pounds. (Spars with roller furling gear will weigh more –and if the jib remains installed on that gear, it will weigh a *lot* more.) Nevertheless, the mast is fairly easy to handle so try and lean toward "minimal and simple" rather than "extensive and complex" when developing your system.

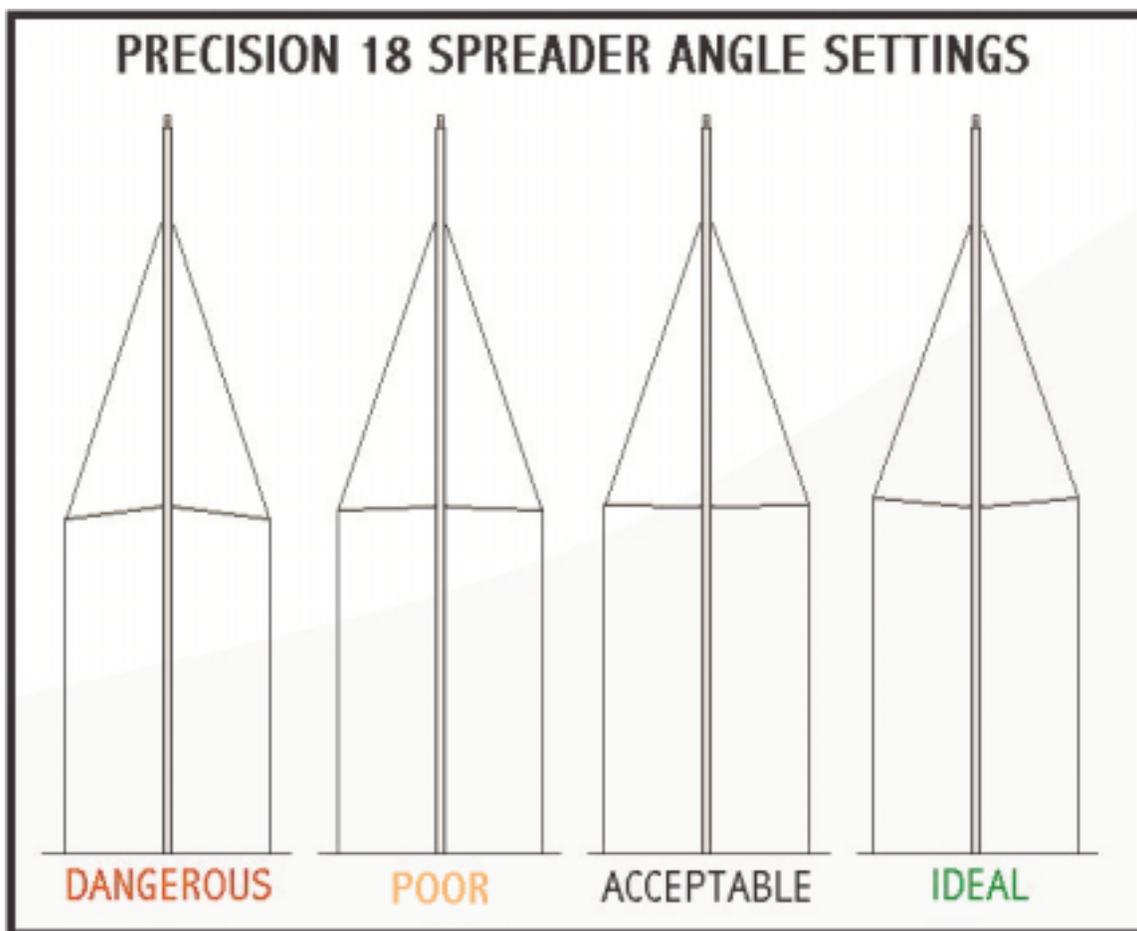
Congratulations! Somehow, I'm sure you got the mast up. The shrouds should feel fairly tight (we'll discuss tuning later), and the only turnbuckle you should need to fiddle with is the forestay turnbuckle – go ahead and snug it up until it feels fairly tight as well. This might be a good place to use a pair of pliers to prevent the upper stud from twisting while you tighten the barrel. (You want to *avoid* twisting the wire while tightening the turnbuckle).

When you initially attach the turnbuckle to the stem head fitting it should be nearly all the way open in order to provide enough slack in the rig to allow the clevis pin to be inserted. Therefore, make certain that when the time to tighten the forestay turnbuckle arrives, that you indeed turn it in the proper direction. Inadvertently turning it in the *wrong* direction can quickly back the stud out of the body of the turnbuckle and cause the mast to fall.

Inadvertently dropping the mast... is bad.

With the mast finally up, the next task is to set the proper angle to the spreaders. Pushing or pulling them into the proper position with a boat hook, notched paddle, or other handy item may be necessary to accomplish this.

Diagram #5 – Spreader Angles

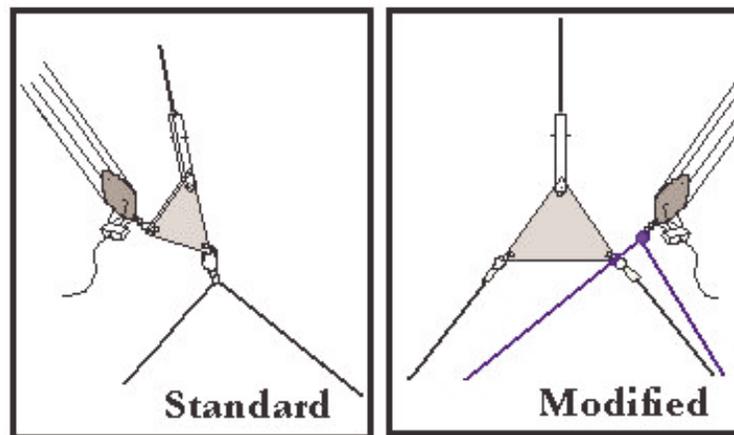


Under *no* circumstances should you sail your P-18 with the spreaders drooping downward. The ends of the spreaders can be covered with spreader boots for chafe protection if desired. By securing the spreader boots with twine lashings and rigging tape, enough friction can be created to hold the spreaders in their proper position.

I typically store the boom below decks. It will fit below if you push the gooseneck all the way into the extreme peak of the bow before you try and move the back end around inside the companionway. Once it's been wiggled below it can be moved aft to rest on a quarter berth. Use care not to gouge the teak trim panel at the aft the end of the coach roof when removing the boom, and also beware of hooking the trim panel on the aft side of the anchor locker. Move the boom slowly and deliberately.

Once on deck, rest the aft end of the boom over the lifelines and just forward of the stern rail. Then, slide the gooseneck fitting into the slot at the back of the mast and let it fall so it rests on the tube the downhaul cleat is fastened to within the slot. Do not tie off the downhaul line yet. Attach the mainsheet to the plate incorporated into the backstay bridle. There are a couple of different ways to accomplish this task, with many sailors electing to modify their mainsheet arrangement as indicated in Diagram #6.

Diagram #6 – Backstay Bridle/Mainsheet Attachment Methods



Some owners prefer to leave their mainsail on the boom. Others remove it completely for folding and bagging later. Assuming the sail is off the boom, begin the process of "bending it on" by rolling it out along the cabin top and finding the clew. Insert the clew into the slot on the boom and slide it back far enough to attach the outhaul line. With the outhaul line secured to the bail of a block at the end of the boom, lead it forward through the clew grommet (or a block attached to it) and then back aft again to the block at the end of the boom. If this seems confusing, look closely at picture #4 below. With the outhaul line led forward, pull on it as you feed the mainsail's foot into the slot at the front of the boom. Pin the tack of the mainsail with the fastpin at the gooseneck. With the tack secure, loosely tighten and tie off the outhaul line to the cleat on the port side of the boom.

Picture #4 – A Typical Outhaul Arrangement (block at clew optional)



Next, while standing on the starboard side of the boom and starting at the tack, flake the sail off to the port side keeping the boltrope parallel to the mast and facing forward allowing no twists as you go. Then, once you reach the head, begin loading the sail slugs into the slot at the aft end of the mast and pushing the loaded slugs (and the sail) *up* the mast as you go – again, loading from the top → up. Loading the last slugs may require that you lift the boom slightly with a knee, and on some boats, the lower slug or two may wind up below the opening in the slot. With all slugs loaded, close the slot in mast off with a luff gate (if fitted), or insert a sail stop, or insert a cotter pin through holes drilled either side of the slot – whichever your boat has been fitted with, or you wish to install.

Older boats have their halyards terminate at the mast. Newer boats have their halyards led aft. If your halyards are led aft, go ahead and reeve them through the blocks and on aft to their cleats. Regardless of which halyard arrangement you have, the main halyard should be led to the starboard side and the jib halyard to the port side. This places the main halyard on the same side as your reefing gear. Also, leading the main halyard to the starboard side will cause you to reef on starboard tack so that you won't be the burdened vessel if another sailboat crosses paths with you while you're messing around with the reefing.

With the mainsail in place, fold or roll it as necessary and tie it off to the boom using a few sail ties. Attach the main halyard to the headboard of the mainsail, and take out any slack. If reefing is a possible requirement today, go ahead and reeve the reefing line. Allow enough slack in the reefing line so that the leech of a fully hoisted mainsail is not pulled downward – yet not so much slack that the

reef line droops deeply between the cheek block at the aft starboard corner of the boom and the cleat forward.

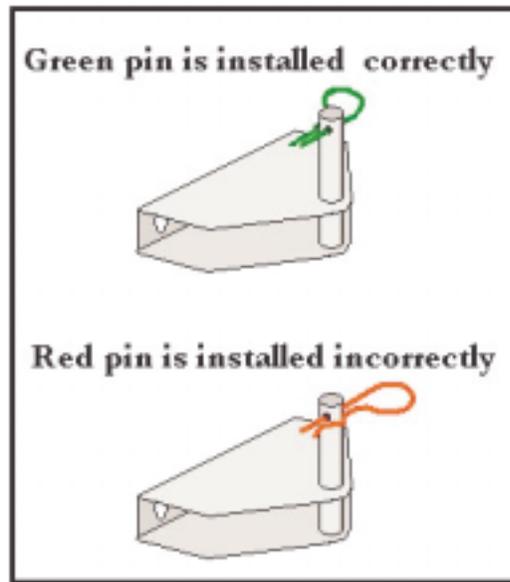
Picture #5 – A P-18 with Halyards Led Aft



Next, let's "bend on" the jib. Starting at the tack, connect the jib to the stem head fitting. Then, working from the bottom up, attach the piston hanks – all facing the same side – and without introducing twists into the sail. Attach the jib halyard (reeve it aft like the main halyard on the port side - if necessary), and take out any excess slack before cleating it off. If you have an older boat with chain plates attached at deck level, run the working jib sheets *between* the upper and lower shrouds enroute to the blocks on the cabin top, and on through the cam cleats. If you have a newer boat with chain plates mounted inboard on the cabin top, lead the sheets outside all shrouds. On all boats, the genoa sheets are led outside all shrouds. Tie a stopper knot in the end of each sheet.

Next, move aft and step down off the boat. Remove the mast crutch (if fitted) and mount the rudder. To mount the rudder, begin by extending the tiller to the full down position, and passing it through the triangle formed by the backstay bridle and transom. Move the assembly forward and place the rudder on the pintles. Once in place, attach the rudder-retaining clip on the upper pintle as shown in diagram # 7 on the following page.

Diagram #7 – Installation of Rudder Retention Clip

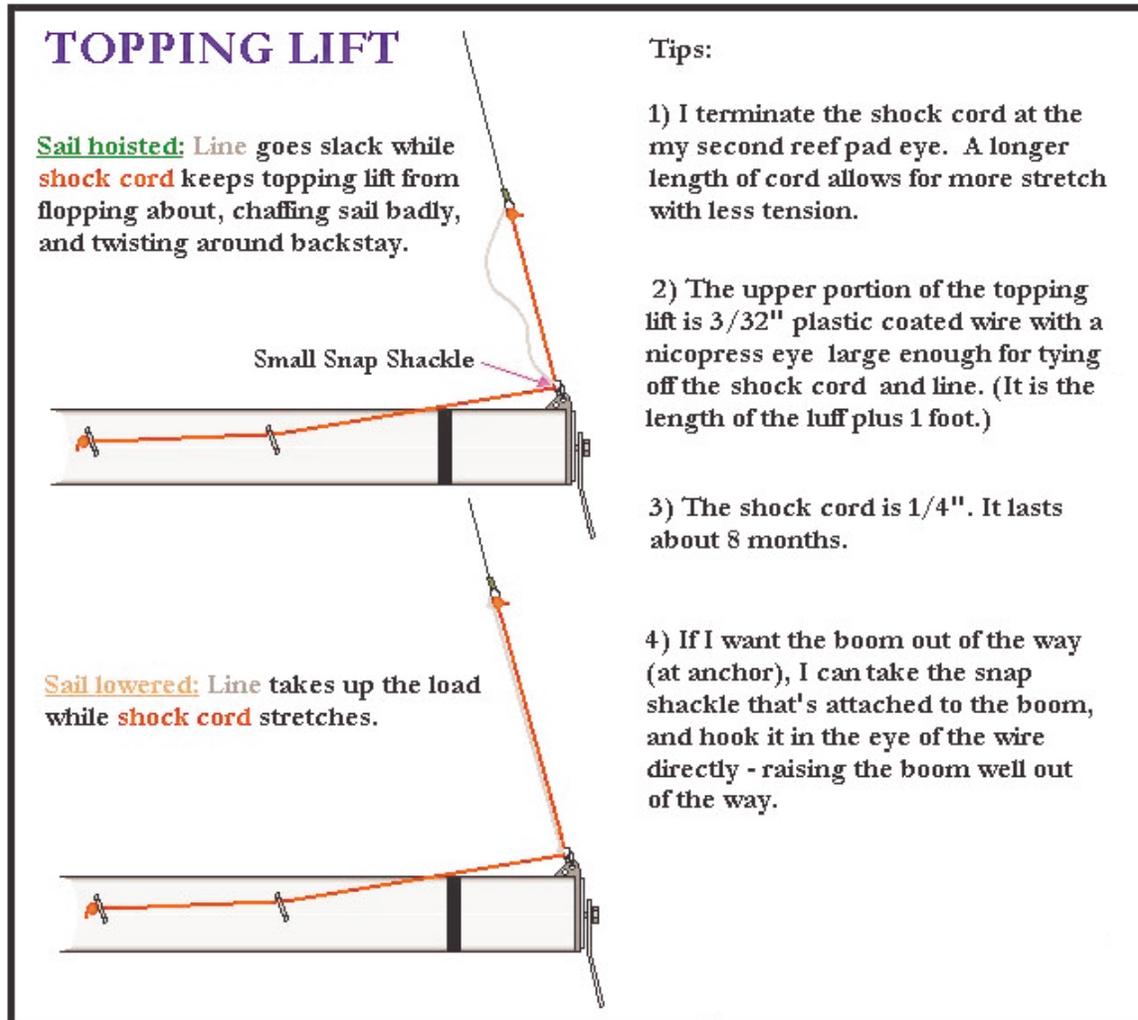


Note: Incorrect installation of the retention clip may allow it to become deformed by a hard-over rudder.

Finally, decide which side of the boat you will lay against your imaginary dock, and rig your fenders and dock lines accordingly, leaving any tails of the dock lines neatly flaked on the deck, ready to deploy. Congratulations! You have successfully rigged your P-18! It's considered un-seamanlike to leave the fenders hanging over the side once you leave the dock, so stow them before you go any further. It's also good practice to coil and stow all dock lines before hoisting sails. If the winds are calm or *very* light in your driveway, go ahead and hoist the sails. Before hoisting the mainsail, make sure the mainsheet and boom vang (if fitted) are loose.

Most sailors prefer to rig a topping lift to hold the end of the boom. If you have one of these, it is typically a length of line or wire led aft from the top of the mast and adjusted so that it holds the end of the boom up while the sail is lowered - but it goes slack when the sail is hoisted to preclude interference with sail trim. I have rigged up a slick topping lift arrangement on my boat that utilizes shock cord to keep the slackened wire from flopping about excessively when the sail is hoisted. A topping lift is particularly helpful when reefing, as it keeps the boom from falling into the cockpit and holds it safely above the crewmembers heads. Some owners elect to install a "pigtail" on their backstay. This is simply a short length of wire and a hook for connecting the end of the boom when not sailing. While a "pigtail" holds the boom at rest, it is not a good substitute for a proper topping lift.

Diagram #8 – A Modified Topping Lift Arrangement



When actually hoisting the mainsail, it's best to have the boat facing into the wind. Again, since you're hoisting it on your "driveway sail", winds should be at or near calm. Hoist the mainsail up so the head is even with the stripe at the top of the mast. Then, tighten the downhaul line just enough to remove any horizontal creases along the luff, but not so much that you induce vertical creases parallel to the luff. Snug up the outhaul line as desired, and (if fitted) tighten the boom vang.

Hoist the jib, taking care to apply enough halyard tension to remove any scallops along the luff of the sail. By now, the neighbors have gathered in swarms asking dozens of questions. It's probably time to take a break anyway. So, have a cool beverage, and give the neighbors a quick tour of your new pride and joy.

When you're done with your "driveway sail", think through all the steps required to return your boat to a roadworthy configuration, and accomplish them deliberately. Over time, you'll want to develop your own routine and manner of accomplishing things that work best for you. Your goal should be to create a standard, consistent, and routine manner of rigging and unrigging your boat. Doing so will greatly reduce the time required and reduce the likelihood of missing critical steps or perhaps even causing damage. The first time you rig your boat, it may take 90 minutes or more. After you've done it a dozen times or so, you'll likely have the rigging time down to just under an hour. I was once capable of launching my P-18 within 27 minutes of arriving at the ramp. Most recently, my time seems to average around 45 minutes. So, maybe a couple of "driveway sails" would be helpful before you head off to the ramp just to make sure you're comfortable with how everything goes together, and breaks back down again.

c. Safety Tips, Gear, and Responsibility

One of the great attractions of sailing small boats is the fact that you have the opportunity to become truly self-sufficient for brief periods, make (and live by) your *own* choices and decisions, exercise your *own* judgment, and continuously learn lessons that often result in tremendous humility. You also have a responsibility to yourself, your crew, your loved ones, and those whose calling or job it may be to eventually come rescue you, to be safe and prepared for whatever circumstances your own choices have created. Along with all the freedom you may experience as the skipper of your own boat, you should also be feeling a tremendous sense of responsibility for your own well-being. Safety *is* ultimately your responsibility.

Despite how capable your P-18 seems to be, do not venture out in weather conditions that are – or are predicted to be – outside your own "personal limits" as defined by your own judgment. For a new owner with very limited experience, 12 knots and a light chop might be an upper limit. Over time, you can gradually and incrementally expand your personal limits as your skills, judgment, and level of experience comfortably grows.

Use tremendous care when sailing in areas with commercial traffic. Large ships and barges are often extremely limited in their ability to maneuver – so learn where the shipping channels are and stay away from them. If you must cross a shipping channel: 1) keep a sharp lookout, 2) be prepared to motor, 3) cross perpendicular to the channel (to limit your time in it), and 4) keep your boat moving. Large ships at a distance can appear to be hardly moving at all when in fact they may be traveling at 15-20 knots. A distant ship can virtually be on top of you in minutes.

Picture #6 – *Alert* Crosses Paths with a Ship on Foggy Tampa Bay



Take the time to educate yourself. Learn the rules of the road, take a safe boating course, and obtain a recently updated copy of *Chapman's Piloting Seamanship and Small Boat Handling*. Study a chart of the area you intend to sail, and familiarize yourself with any hazards, obstructions or areas to avoid.

Make sure you have all required safety equipment on board – to include: 1) a Personal Flotation Device (PFD) of suitable size and capacity for *every* person on board, 2) at least one (approved for marine use) fire extinguisher located in an accessible location, 3) a horn capable of being heard for a distance of at least one mile, 4) a throwable cushion, and 5) at least three day/night flares which have not exceeded their expiration date.

I strongly encourage you to purchase, *wear*, and *maintain* an approved inflatable life vest. Many of these models are so unobtrusive to wear that you can often forget you have it on. If desired, they can be purchased with an integral harness which - when used in conjunction with a suitable tether - can be utilized when sailing in rough weather, sailing at night, or in any other circumstances you deem appropriate.

Valuable knowledge can be gained by occasionally visiting the US Coast Guard Auxiliary's web site for updated requirements, rules, and other information of interest to all recreational boaters. Go to:

<http://www.cgaux.org/cgauxweb/public/tbcme.htm>

Membership in an organization like BoatUS can provide you with many benefits, opportunities, information, and access to unique services. It will also provide you with a monthly magazine that covers topics of safety, policy, and regulations of interest to all boaters as well as articles on boats, and the boating industry.

Last, but not least, the practice of sailing can often place you in a position that is distantly removed from any type of medical assistance or care. There are a few additional steps you may consider taking as you further assume responsibility for your own well being. A VHF radio installation (or at least a handheld) will allow you to contact nearby boaters and responsible authorities for advice, advisories, or assistance. A cell-phone may come in handy as well, but should not be viewed as a substitute for a VHF radio. A medical kit, along with the basic knowledge of how to deal with the types of medical emergencies and traumas typically anticipated, can be a wise investment. Basic kits are available from a variety of sources, and you may want to personalize the kit by adding additional items specifically tailored to your personal needs, or the needs of your crew. (For example: taking a single aspirin has been suggested as an effective first response for an individual suspected of experiencing a heart attack or stroke. Therefore, adding a small bottle of aspirin to a medical kit may make sense for some sailors.) Remember, you may be placing yourself in a situation where help is many *hours* away, so take some time to consider all the possible ways you may be required to take care of *yourself*.

In my mind, anchors are as much a piece of safety gear as any other "traditional" safety item. For typical day sailing outings, I carry two anchors. The first is a large primary anchor, with a long length of chain (15'), and a long length of nylon rode (150'). The other anchor is a small, lightweight, stern rail mounted unit, with a short length of chain and modest rode. When cruising, I carry a third anchor and rode suitable for replacing my primary anchor. There are a variety of different styles, shapes, and qualities of anchors available on the market. You need to decide which one is best for you based upon the bottom conditions of the area you sail, and other factors you deem important. The Precision 18 has an anchor locker up forward that is ideally suited to storing a "Danforth style" twin-fluke anchor. This type of anchor also works well in sandy bottoms that are typical in and around the area in which I live and sail. If you wish (or need) to use a different style of anchor, you may have to adapt and modify your boat to accept it - or simply store it below decks.

Picture #7 - Anchor, Chain, and Rode in the P-18 Anchor Locker



d. The Outboard.

Before you trailer your boat down to the ramp, spend all the time to rig it, and then launch it – you'd ideally want to be confident that your outboard motor is going to operate smoothly. The best way to develop that necessary confidence with your "new-to-you" motor is to spend some time operating it at home, and getting a feel for its idiosyncrasies. With a few notable exceptions, most suitable outboards for the P-18 are water-cooled. To operate your motor at home, you will need to purchase (or fabricate) an engine stand, and obtain a barrel or trash can suitable for filling with water so you can submerge the lower unit of the motor for operation. Alternatively, you could operate the motor from the back of the boat with the motor secured to its engine mount. On occasion (flushing the motor at a distant ramp after a day's sailing), I have placed an inverted heavy-duty 5 gallon bucket on the ground under the motor to serve as a base for my 10 gallon trash can which I then filled with fresh water.

If your new motor has an internal tank, it's best to drain the tank of all existing fuel and add *fresh* fuel, as well as the proper ratio of oil if it is a two-cycle engine. I choose to use a fuel-stabilizing additive in all fuel used by my outboard motor. Stabilizer seems to extend the "shelf life" of fuel, and reduces some other fuel-related problems associated with storage.

Next, remove the spark plug(s). Clean it, and apply light machine oil to the threads before replacing it. Make sure the wire and boot assembly are firmly in place.

Check the lower unit gear oil level. If you have a four-cycle engine, check or replace the crankcase lubricating oil in accordance with the manufacturers recommendations.

Remove the prop and check the shear pin for integrity. Lightly grease the shaft before replacing the prop – and if the cotter pin used to retain the prop on the shaft is suspect, go ahead and replace it.

Check the condition of the starter cord by slowly pulling it out and examining it for wear.

With this accomplished, follow the manufacturer's (or previous owner's) instructions for starting the motor. If the motor does not start after a couple of pulls, check the following: 1) Adequate fuel, 2) Fuel petcock valve open, 3) Fuel vent cap open (internal tank), or fuel hose, primer bulb, and vent functioning properly (external tank), 4) Spark plug wire connected, 5) Throttle and choke settings appropriate for starting, and 6) Emergency kill switch clip properly installed (if fitted).

As soon as the motor starts, check for a steady stream of cooling water. If no cooling water is noted after a few seconds of operation, shut the motor down. In all likelihood, the impeller may need replacement, or the internal water passages have become clogged. If the stream is noticeably sputtering, advance the throttle slightly and see if that doesn't create a more solid stream of water. If the stream is sputtering at medium RPMs or above, the impeller may have one or more damaged vanes, internal water passages may be clogged, or both.

Check the kill switch for proper operation. Then, restart the motor and let it run for a few minutes. Momentarily run it in gear, taking care to prevent the water-holding barrel the lower unit is submerged within from upsetting. (You may need to add water at this point, as water will invariably be forced up and over the edge of your barrel.)

Finally, I prefer to run the fuel out of the motor as a means of stopping it. "A dry carburetor is a happy carburetor!" Doing this reduces the build-up of gums and varnishes in the carburetor that are a result of fuel evaporation, and age. Having no fuel resting in the carburetor seems to eliminate or greatly reduce many of the problems associated with operating small outboard motors. Fresh fuel, a clean

carburetor, and open water passages are the three most important factors leading toward dependable operation of your outboard motor.

By this point, you have either convinced yourself that your outboard is up to the task at hand, or you are now actively searching for a *new* motor. At any rate, it's best to figure all this out *before* you have launched your boat for the first time. With confidence in your choice of boat... and a basic understanding of how to put everything together and take it apart again... and a sound knowledge and understanding of how to operate your boat... and an appreciation for safety combined with proper preparations for the environment in which you will be "playing" ... and with modest confidence in your own *judgment*... you are *finally* ready to go sailing!

IV Your First Day Sailing

Now that you have learned so much about your boat - and you've undoubtedly developed the confidence and knowledge to head "out there" on your own - please don't misconstrue my next tidbit of advice. If the Precision 18 is your *first* sailboat, I recommend that you have an experienced sailor accompany you on your first sail. Someone who possesses solid sailing experience will strongly contribute toward the success and enjoyment of your first outing. If you're making this first outing with one or more family members who possess little to no previous experience under sail, just remember this: You only have one chance to make a first impression. Like you, *they* are gaining their sea legs and are probably only now beginning to get an idea of the depths of your insanity in having bought a sailboat. But I digress. That experienced sailor you invite along on your first outing should be better able to anticipate "happenings" and undoubtedly prevent some missteps on your part. Ultimately, he or she will greatly add to *your* enjoyment on that first sailing trip, and contribute toward a positive experience for *all* on board.

a. The Day Before the Big Day

One nice feature about small boat sailing, when compared to extended cruising, is that (most of the time) you don't *have* to go anywhere. So, take advantage of this aspect of small boat sailing to pick and choose your sailing days – particularly your first one on your new boat. If you have to seriously worry if conditions will be acceptable for you – they probably won't be. So, be patient, and pick *your* day. Keep an eye tuned to local weather forecasts, and occasionally look out the window yourself. (After you sail long enough, you'll likely become a *better* predictor of local sailing conditions than your local weatherman – and in some locales, you may *need* to be.)

Make sure everything on your boat is in order. If they prove helpful for you, use the checklists included later in this book as a tool to help you keep track of things. Regardless of how you choose to address it, you need to make sure your tow vehicle, trailer, boat, and you are all ready to roll. One thing to keep in mind is that sailing - as an activity - doesn't always blend well with rigid schedules. So, be flexible, patient, and prepared. Part of this preparation, for example, might be to store a small quantity of food and water below just in case a planned half-day sailing trip turns into a full day, or overnight "adventure". Accomplishing as many things as possible *prior* to the day of your anticipated outing will go a long way toward making things go smoothly.

b. Launching the P-18

The Precision 18 requires a fairly decent ramp to launch and retrieve. I tend to judge a ramp by the size and type of boats that I see using it. If I see 20+ foot deep-V motorboats, sailboats comparable to mine, or other boats I know that require a decent ramp using the ramp I want to use... Well, I'm quite confident I can launch and retrieve my P-18 at *that* ramp. Before you launch, try and ascertain how far back the ramp goes. Many power boaters choose to drive their boats up onto their roll-on trailers, and in doing so their prop-wash literally dredges large voids beyond the edge of the paved portion of ramp that your trailer can fall into. If it falls in, you're probably going to have to "go for swim" to lift it back up while somebody else drives your rig up the ramp. While this is going on, you're likely going to face the ire of fellow boaters whose time on the water has now been delayed – thanks to you. So, know where the ramp ends. In most instances, you won't get near it before the boat floats free, but low tides or lake levels can cause this issue to sneak up on you.

An "ideal ramp" is one in which a dock is alongside to make handling and securing the boat as it comes off the trailer easier. At ramps that are unfamiliar to me, I do not back down with rudder lowered. The negative consequences of striking an obstruction or encountering a sudden shift of pavement angle while backing with the rudder down can be very high. So, use care.

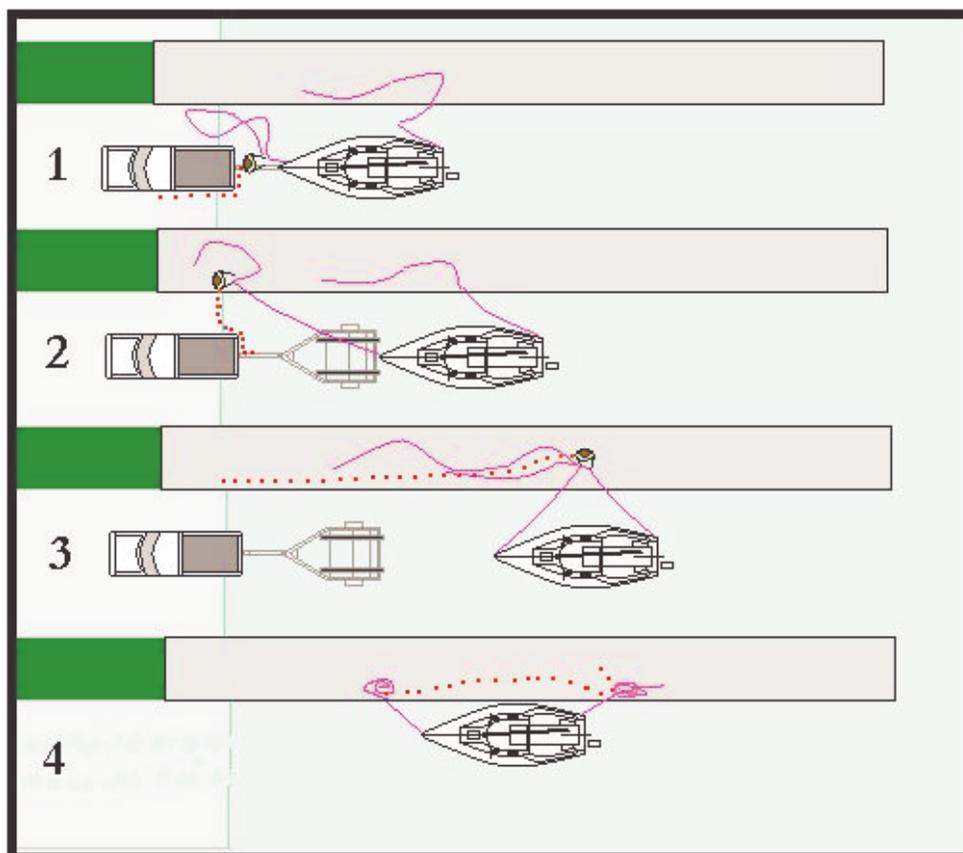
With all straps off, and the only tie to the trailer being the winch cable, back down the ramp until the aft bunks are submerged and the stern begins to float. Do not back down to the point that the back of your vehicle is submerged. There are a variety of different styles and techniques displayed at the ramp, which is probably why "ramp watching" is one of the favorite past times of people who live in or near boating communities.

Some people tie a long line between bow and trailer and launch their boat by backing fast, standing on the brakes, and literally sling-launching their boat into

the water. The line snaps tight, the boat spins any which way, and often bounces off the dock or other obstructions, or possibly recoils back into the trailer when the line stretches and contracts. The topside and rail of their boat often looks like they have been in a war zone.

I prefer a bit more "positive control" to *my* method, so again I back down until the stern begins to float. I'll often throw a stern line over onto the dock without tying it off just to have it handy. Properly set up, the majority of your P-18's weight should be resting on the keel rollers. When the stern begins to float, the friction of the bunks is greatly reduced. Typically, as I move toward the trailer winch and begin to release the cable, the boat will roll back over the rollers on its own - or perhaps need just a slight push to get started. Making sure I have a bow line in hand, I guide the boat back – walking along the trailer tongue if necessary. As the forward edge of the keel rolls off the last keel roller, the bow drops down and the boat floats back, now free of the trailer. Caution: Use care walking around ramps – the area in and around the water's edge can be coated with a slime that can be as slippery as ice.

Diagram # 9 – Illustrated Launching Sequence



I typically choose the specific ramp and dock I wish to utilize based on the wind. I prefer to have the wind blowing my boat *away* from the dock so that the

topsides are less likely to come in contact with the dock. With the boat tied off at the dock, I quickly move back to my tow vehicle and drive it and the trailer off to an appropriate parking location.

c. Ramp Etiquette

You will invariably see some outrageous behavior at boat ramps nowadays. As a fellow Precision owner, I hope you'll be a good example and role model to others – even when you find yourself surrounded by rude idiots at the ramp. Something about being near a ramp seems to bring out odd behavior in some boaters. Regardless, try to be polite, considerate, and helpful. DO take as much time as necessary to accomplish what you *need* to do at the boat ramp, but when the ramp area is crowded and congested, please don't appear to be taking your "own sweet time".

All of what I include here *may* just be common sense, because I've never actually seen it written down anywhere. Yet, if it really is "common" sense, it is painfully absent at many boat ramps around the country today.

- 1) Park and rig your boat in a location that creates the least possible interference to others. Do not line-up your boat and trailer with the ramp, and *then* start to rig.
- 2) Make sure you're completely ready to *launch* when you head for the ramp. Beware of power lines or other obstructions between your rigging location and the ramp
- 3) Minimize your time on the ramp.
- 4) Minimize your time at the dock adjacent to an active ramp.
- 5) If other people are waiting to launch behind you, move your boat aft along the dock (if possible) or perhaps elsewhere, to allow them an opportunity to launch
- 6) Boats hauling out should take priority over boats going in.
- 7) Take the time - and make the effort - to assist fellow boaters who are clearly experiencing difficulties. If they decline, leave them alone.
- 8) When someone violates one or more of these "unofficial rules" of etiquette, don't "blow your stack". Always remember that you are engaged in "pleasure boating" – this *is* all done for FUN. Getting "spun-up" over

someone else acting like an idiot at a boat ramp is pointless, and ultimately it makes you look like an idiot, too. (Of course the ramp watchers will *always* enjoy the show!)

9) Don't allow your children or pets to play on (or near) the ramp; people backing boats on trailers down a ramp have very restricted rearward visibility.

10) Some ramp facilities have a large doublewide ramp with a dock on either side. Don't take your half out of the middle. Doing so creates a needless wait and annoyance for others.

If the ramp is really congested, a good technique you can employ is to minimally accomplish whatever you need to do in order to get the boat rigged, launched, and *away*. Motor off toward open water and continue your rigging and preparations to sail once you're well away from the crowd comfortably drifting with the wind and tide.

d. Under Sail

Always attempt to have your P-18 facing into the wind when hoisting the mainsail. If you're hoisting sails at the dock, this may require that you turn the boat around or move it to a different location. If you intend to sail away from the dock, always begin by moving the boat FORWARD with enough force and momentum that you will immediately have steerage. Simply trimming the sails in with no forward momentum may create some anxious moments as the boat tries to build momentum. (Your rudder only works for steering when water is flowing across it.)

If you prefer to hoist the mainsail well away from the dock, motoring slowly into the wind while hoisting the mainsail is considered good practice.

With the mainsail hoisted and set, trim in the sheet and fall off on a close-hauled course. Turn off the fuel to the motor. Once it sputters to a stop, raise it, tilt it, and lock it in the "up" position. If it has an internal tank, make sure to close the vent cap or fuel may leak out with the motor tilted.

It's best to hoist the jib with the wind slightly off the bow while sailing close to the wind so that clew doesn't strike the mast, rigging, or you (if your halyards are at the mast) Neatly coil and store all halyards in a manner that will allow you to douse the sails quickly, should the need arise.

Haul both sails up tight enough so that the luff of each sail is free of scallops or wrinkles. You will need to increase luff tension as the wind builds, and reduce it as the wind lightens.

Teaching you "everything" about how to sail is well beyond the limited scope of this tome. (For one thing, I've only been sailing for 33 years so I don't know *everything* yet!) But, do take the time to get familiar with how your new boat handles under sail and power. Experiment with sitting in different locations (forward/aft, as well as windward/leeward). Observe how your body position affects performance, handling, and tracking. Tack, jibe, reach, run – do it all! Let your P-18 show you what she likes...and enjoy yourself! The key to good sailing in the P-18 is "balance". Nearly everything you do affects this, and the P-18 will drive that point home time and time again.

As a reference point, you should *never* have to maintain the tiller at large or extreme angles in an effort to try and keep the boat going straight. In such an instance, you have allowed an imbalance to develop. More than likely, an adjustment in sail trim is in order – something like easing the mainsail, or perhaps even reefing. Excessive heel angle, and improper weight distribution can also adversely affect "balance". If you find the boat "unbalanced", she's trying to tell you something.

Picture #8 – Your Goal: A Great Day Sailing Your Precision 18



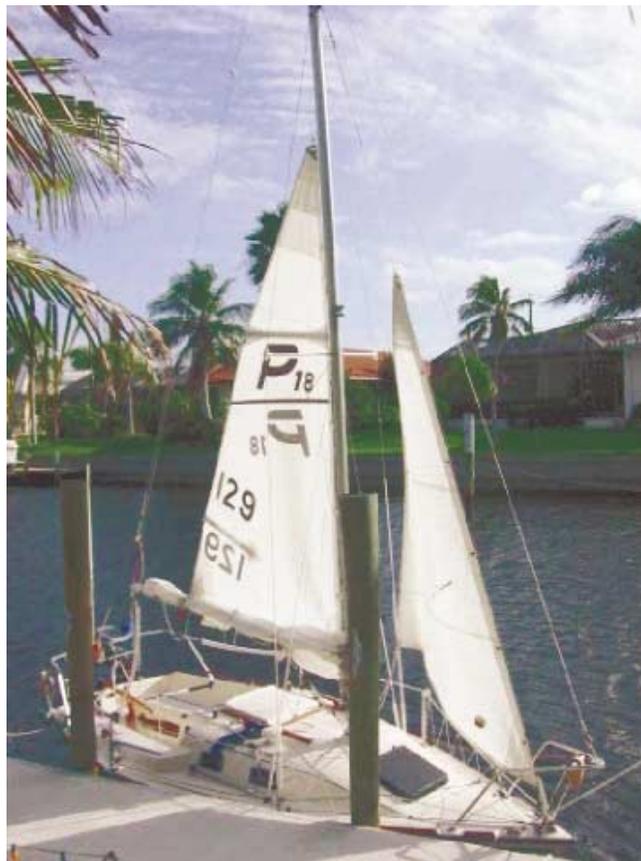
e. Practice Reefing

While embarked upon your very first "sailing adventure," you may want to take a few minutes to practice tucking a reef in the mainsail. If you elect not to practice this on your *first* day under sail, plan on practicing it sooner rather than later. It's best to become comfortable with the process of reefing your mainsail well before you find yourself in a situation where you *have* to reef.

The best time to reef is before you need to do it. If you think you might have to reef, it's far easier to tuck it in at the dock *before* you head out. If you realize you didn't need to reef because the winds are less than you anticipated - not to worry! It's quite easy to shake out a reef in lighter winds. However, if you find yourself in a position where you *need* to reef, the process becomes a much more challenging task in high winds, breaking seas, and with the boat bouncing like a bronco.

(Most P-18 skippers should begin to think about reefing as the winds approach 15 knots.)

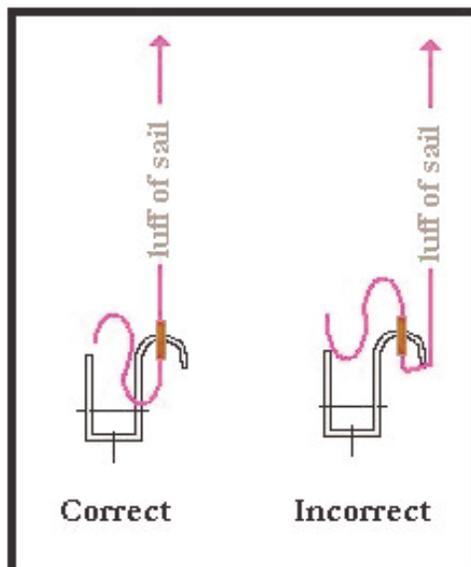
Picture #9 – Alert Sporting a Double Reefed Main at the Dock



Here are the six basic steps of quick and easy reefing the mainsail on your Precision 18 – assuming the mainsail has already been fully hoisted.

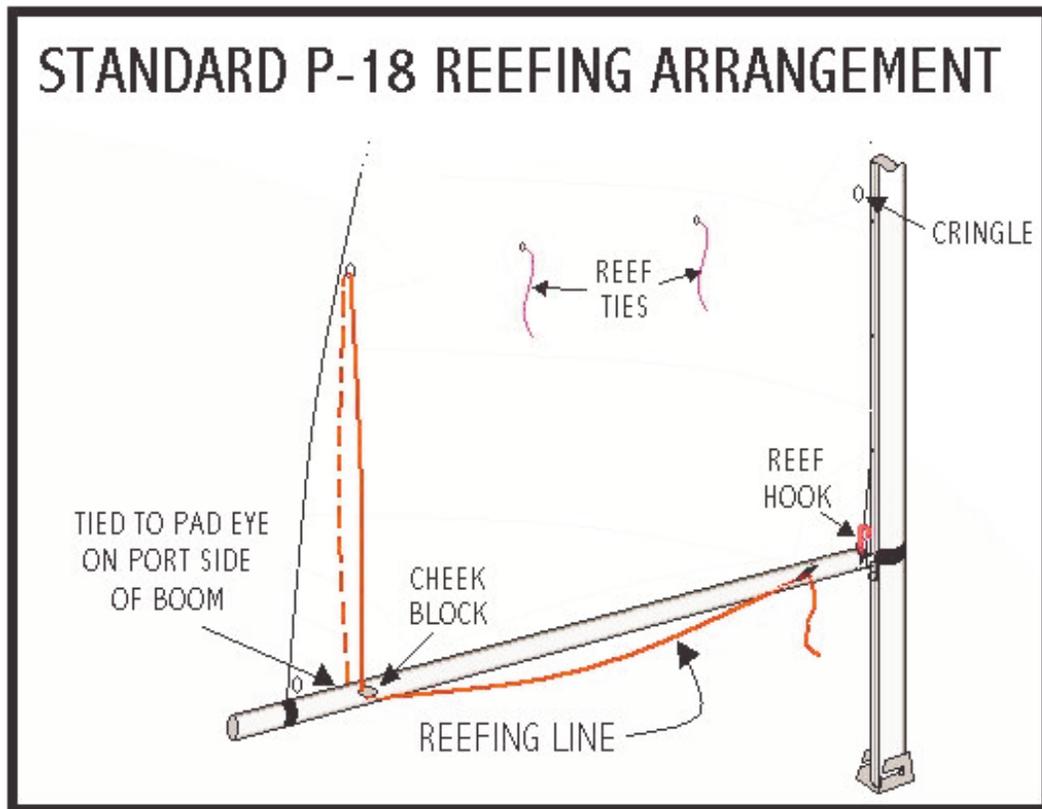
- 1) While sailing upwind, ease the mainsheet until the sail starts to luff. Release the boom vang as well (if one is fitted).
- 2) Release the main halyard, and lower the mainsail enough to engage the reefing cringle on the reef hook found on the right side of the gooseneck. (A properly fitted topping lift will support the boom during this procedure.)
- 3) With the mainsail's reef cringles properly set into the reef hook, re-hoist the mainsail and firmly tighten the halyard. (See diagram # 10 below). Coil and stow the halyard.
- 4) Haul in on the reefing line. Pull the reefed clew of the mainsail outward and downward toward the boom. (This line should be pulled on tight as well.) Cleat the reefing line off at the cleat located forward on the right side of the boom.
- 5) Re-tighten the boom vang, and trim the mainsheet – you are reefed!
- 6) With the reefed sail now drawing, gather up the reefed roll of sailcloth and secure it with the reef ties. Avoid tying the reef ties so snugly that creases appear in the reefed sail above. (They shouldn't carry a "load" – just gently contain the sail.)

Diagram #10 - Engaging the Reef Cringle on the Reef Hook



Marking the main halyard with ink or thread will allow you to lower the mainsail to a pre-determined point so that reefing can be accomplished faster and easier. With practice, you should eventually be able to tuck in a reef (or shake it back out again) in under one minute – *not* including gathering the sail and securing the sail ties. Practice makes perfect.

Diagram #11 – Typical Reefing Setup for the P-18



f. Docking

Sadly, at some point your first glorious day of sailing *is* going to come to an end – and you *will* have to return to the dock. There are almost an infinite number of docking methods and techniques that can be used, and they mostly differ based upon wind speed and wind direction relative to dock position. Watching others handle their boats is a great way to learn some effective techniques. With experience, docking will become second nature to you, but here are a few points to consider. First, develop a mental plan of what you want to make the boat do – don't just head toward the dock and "see what happens". Second, once you have a plan, prepare for it. Rig dock lines and fenders as required well in advance of your approach. Third, approach the dock at or near the minimum speed that will allow you to maintain steerage. This speed will vary based upon wind speed and direction relative to your chosen angle of approach. The distance your boat will carry (that is to continue moving after propulsive force –

be it motor or sails – is removed) will vary *considerably* depending on wind speed, wind direction, and sometimes current. Fourth, when approaching a dock, always try and leave yourself an "out". By this I mean: try not to get yourself into a position where your plan must be executed flawlessly - or damage is inevitable. Finally, never come into a dock so fast that reversing your outboard hard is the *only* way you can prevent a crushing impact. Your P-18 is a tough boat. A 12" diameter piling sunk several feet into hard muck is even *tougher*.

Generally, it is easier to control an approach to the dock with the wind on your nose, rather than at your back. Down wind landings are particularly challenging if the wind is strong. I prefer to approach a dock in a manner that – under the prevailing wind or current conditions - will allow my boat to hang *away* from the dock once I've arrived. When docking, avoid using the lifeline stanchions or lifelines themselves for fending off the boat. Instead, push off using the toe rail, coaming or cabin side. Also, politely advise any individuals assisting your arrival at the dock to avoid using the lifeline stanchions or lifelines as fending points as well. Finally, don't be afraid to execute a "missed approach" if something significant changes at the last minute, or you simply don't like the way your approach to the dock has developed.

I don't recommend it on your *first* sail, but at some point, you may want to return to the dock under sail alone. In this case, all the same points above apply, but now you *always* want to end up with sails luffing as you near the dock – with the wind off your nose. If your approach seems too fast, don't hesitate to go around and try again. If making a down wind approach is your only option under sail, consider lowering all sails and blowing down toward the dock under bare poles. Unless the wind is above 10 knots, it makes sense to approach the dock with both main and jib hoisted. In more wind than that, your P-18 should handle well under mainsail alone. Having both sails up allows greater control should you stall-out short of your mark, and allows you to regain steerage more quickly from a dead-stop should you fail to make your destination.

Once you become comfortable with handling your boat under sail, docking under sail can be an enjoyable proposition. Should you find yourself blessed with ideal conditions – specifically an uncrowded ramp and an open dock - spending an hour or so making multiple approaches under sail can be both fun and rewarding. It's almost a certainty that one day your motor *is* going to let you down. Confidently knowing that you are capable of returning to the dock under sail alone will allow you to treat the untimely demise of your outboard motor as an *annoyance* rather than a *crisis*. The excellent balance and sailing characteristics inherent to the Precision 18 makes close quarters handling under sail a pleasure!

g. Retrieving the P-18

Just like launching, there are a variety of different methods and techniques for getting the boat back onto the trailer.

To get ready for the retrieval, I carefully unwind a length of winch cable and lay the hook over the tilt mechanism where it will be readily available for attachment to the bow eye. After that, I'm ready to head to the ramp. The key step to beginning any retrieval is to back the trailer down the ramp to the *proper* depth. Despite what you might think – or observe others do at the ramp – the proper depth of the trailer is *not* "as deep as physically possible." Backing a trailer too deeply can make retrieval more difficult, because the boat can float *over* the keel guides and end up being mis-loaded onto the trailer. At the angles most ramps are built at, I typically back my trailer down the ramp until just the forward edges of the trailer bunks are barely *above* the surface of the water. At this depth, and due to the trailer's angle, the keel will usually clear the aft roller, yet be unable to float *over* the keel guides. Again, depending on the angle of the ramp, the keel will contact the middle roller and stop, or bounce up and over it before stopping. The winch cable is lying right below the bow, so now it is lifted up, hooked onto the bow eye, and the boat is winched up to the bow stop. At this point, throw any dock lines onto the boat, and slowly drive up the ramp. When alone, I like to make a brief stop shortly after I come up the ramp to insure that the boat is on the trailer properly before I go further. If you have helpers, a simple "thumbs up" or "thumbs down" can provide you with this information without stopping. It is normal for the bow to settle away from the bow stop as the aft portion of the boat finally contacts the trailer while driving up the ramp. Because the majority of the load is on the keel rollers, a couple of cranks on the winch (once you arrive at your un-rigging location) will easily pull the boat back up snug against the winch stand. As always, keep a sharp eye out for power lines and other overhead obstructions when driving around the parking lot enroute to your preferred un-rigging spot.

Now for some variations: When you're new to the boat, the easiest way to get it back onto the trailer is to use both bow *and* stern lines to slowly pull it forward along the dock, gently leading it over between the keel guides, and pulling it forward until the keel contacts the middle roller. At this point, connect the winch cable and pull the boat up to the bow stop. This is easy, but it has two drawbacks: 1) You have to get wet – at least up to your knees (And in the cooler months, this may not be too fun; and 2) With any type of significant crosswind, you'll need a helper to handle the dock lines as you move toward the bow to hook up the winch cable. So, you may want to try using a slightly different technique – if you're feeling spry, and the circumstances seem appropriate.

I almost exclusively use what I have come to call my "*Drive-on; Monkey-Boy!*" technique for retrieving the boat. This technique requires great skill and finesse at the helm, but as you become more comfortable with your boat you *should* develop that skill. It also requires a modest degree of physical flexibility on your part, and I can't say for sure just how many more years I'll be able to do this now that I'm into my forties. If you aren't particularly nimble or mobile, this technique may *not* be for you.

With this technique, the "*Drive-on*" part involves maneuvering the boat onto the trailer under power. The *finesse* involves putting the boat perfectly between the keel guides while coming onto the trailer at just the right speed - fast enough to force the keel up and over the middle roller, yet slow enough to not damage either boat or trailer. Once I've "stuck" my landing, I put the motor in forward gear and set it at a fast idle so as to use the engine's thrust to hold the boat steady (relative to the trailer) while I move forward. *Before* I go forward, I turn off the fuel supply to the motor. Now, it is time for the "*Monkey-Boy*" part.

Moving smartly forward, I put down my bananas, grab the forestay, and step *around* the bow pulpit with both feet ending up on the edge of the toe rail. Holding onto the forestay, I step down onto the trailer winch, and from there I ease myself down to the trailer tongue, transferring my "death-grip" from the forestay to the bow pulpit as I go. While standing on the trailer tongue, I can easily bend down, hook up the winch cable to the bow eye, and winch the boat up onto the trailer. As I'm cranking away, the motor sputters to a stop. With this technique, I only get my feet wet up to the ankles. In cold weather conditions, a pair of sea boots will allow me to accomplish this task without getting wet at all! The addition of non-skid tape along the tongue and other potential "stepping areas" of your trailer is *highly* recommended.

Once you've mastered it, this technique allows for faster loading - which in addition to being helpful to others who might be waiting to use the ramp, means that your wheel bearings are submerged under water for a *shorter* period of time. A final benefit to the "*Drive-on; Monkey-Boy*" technique is that it works well in situations where a dock is not immediately adjacent to the ramp.

Un-rig the boat carefully and deliberately. A long day of sailing is enjoyable - but sun, heat, motion, and fatigue can slow you down, cause you to overlook things, and create other mental lapses. Take a break, and enjoy a cool non-alcoholic beverage. You'll work slowly anyway because more than likely people will soon be approaching you and asking you all sorts of questions about your beautiful boat - like "how many fish did you catch?" (Be polite.)

If you remove your outboard motor from the boat for the trip home (highly recommended, but not absolutely necessary), use care not to allow the power head to be positioned below the lower unit when transporting or storing the motor. Residual water can drain "down" into the cylinder and damage the engine. Some 4-stroke engines have additional limitations on the angles they can be transported (and stored) at as well, so familiarize yourself with *your* engine's limits. Once you have everything else put away, strapped down, and otherwise ready for the road, take a moment to walk around your entire rig (boat, trailer, and tow vehicle) looking at *everything* one last time. Make sure you've left nothing behind, and that you truly are roadworthy. I *know* you had a great day on the water because you *were* prepared. I hope you'll have many, many more!

Picture #10 – *Alert in Full Road-warrior Garb*



Note: When trailering the boat along the highway, I make an effort to keep my speed around 60 MPH. With some vehicles, it's possible to almost forget that this small boat is even "back there" – yet the nearly 2,000lb load is not insignificant when the time comes to stop. Keeping the speed down is probably the single best step you can take to insure that you *and* your boat arrive at your destination safely.

V Tuning the Rig

As your proficiency and skill in handling the P-18 develops, you will begin to wonder about whether or not your rig is *properly* tuned. Tuning can seem complex, but it really need not be. Additionally, if you've setup your boat as I've previously described, you only have to fiddle with *one* turnbuckle after you've stepped the mast. Everything else should maintain its "tune".

There are voluminous books written on tuning rigging. Yes, there is an optimum tension for your stays - but getting "there" is a bit of an "art". I'll try and give you a very basic rough idea. Understand that this information is based on my experience with the Precision 18, and it may indeed differ from some generic rigging book's recommendations.

First, a couple of terms that people often confuse...

1) Rake: Rake is the angle formed by the mast in relationship to the waterline (level). Most boats have their masts set with a slight aft rake. Rake affects "helm loading". Raking a mast aft can increase weather helm. Raking it forward can increase lee helm.

2) Bend: Bend is the amount of deflection (out of column) induced in a spar by the standing rigging tension and/or loading of the rig under sail.

The P-18 wants to have a "little" rake, and a "little" bend. Assuming your rigging is the proper length, you can arrive near the ideal rake by setting the backstay so that when you step the mast, the forestay can barely be attached to the stem head with the turnbuckle run-out (or open) to its limit.

Now, once you have that set, eyeball the mast. The first adjustment I do is to snug up (not super-tight) the upper shrouds to simply center and hold the mast athwartships. Leave the lower shrouds alone for now. Using a halyard held tightly and moved from side to side at identical points (say the corner of the cabin top) can aid your efforts at centering the mast.

Next, you need to set the bend. Now the type of bend you want to induce here is called "pre-bend". Three wires - the two upper shrouds, and the forestay, induce it. (The uppers are swept aft; notice the chain plates are AFT of the mast step - this is the "geometry" you're using.)

Again, with the mast already centered, start with an upper shroud and turn the turnbuckle a set number of turns – let's say three. Then, go to the opposite upper shroud and tighten the turnbuckle three turns as well. Finally, go to the forestay and tighten the turnbuckle several turns to snug it up - maybe 5 turns or

more. If you close your forestay turnbuckle more than half way, and the forestay does not seem pretty tight by its feel, go ahead and back it off to where you started from, and tighten each upper shroud a couple of MORE turns (but ALWAYS an equal amount)

When you get done, a half opened forestay turnbuckle means that you have about the right rake. The tensioned upper shrouds (because they are angled aft) will have induced a noticeable bend in the spar - as seen from sighting up the mast. Also because of the angle, it is the upper shrouds that are opposing (or transmitting) the load to the forestay - not the backstay, as you'd think.

I have a backstay adjuster (block and tackle) so I can induce far greater bend well beyond the pre-bend here. However, with my backstay eased, I still "pre-bend" the mast with the forestay and uppers. If you have no backstay adjuster, your backstay will feel somewhat looser than the forestay - and that's fine.

Once you have the rake set, and the pre-bend "dialed in", you can snug up the lowers. The lower shrouds should be noticeably looser than the uppers or forestay. Wire stretches under load, and stretches further the longer it is - so the lowers (shortest shrouds) will be looser than the uppers. I can bend my mast so much with my backstay adjuster that my leeward shrouds actually will go slack when sailing hard. With a fixed backstay, you DON'T want yours to behave like this. For YOUR lowers, you want them set just tight enough that the leeward lower won't flog about when sailing. Their function is to keep the mast in column.

This is the general idea - but if you ever buy (or borrow) a Loos gauge, you may want some "numbers" to aim for...

Picture #11 - The Loos Gauge



If using the Loos gauge, your upper shrouds and forestay should be set to approx 15% of the breaking strength of the wire. The P-18 rig uses 1/8" wire with a breaking strength (new) of 2,100 lbs. So, you want "about" 315 lbs. of tension on the upper shrouds and the forestay. (Again, you want the longest wires to be the tightest. Shorter wire should be less tight - but NOT slack.) Your lower shrouds should end up at nearly 10% of the breaking strength of the wire, or 210 lbs. - maybe even a little less. Because your boat has a fractional rig (the forestay does not go to masthead) the backstay violates the "rule" about long wires having more tension. Your backstay should end up with something around 210 pounds as well.

The end result - however you arrive at it - is to keep the mast straight laterally, bent slightly (fore to aft), and raked appropriately 5" with no really slack wires when sailing.

Note: I like to use a product called Lanacote (anhydrous lanolin) on the turnbuckle threads - particularly the forestay - when tuning the rig. This will prevent galling, and make the adjustment much easier.

This should give you a fairly decent "rough tuning" of your rig. But let me put this all in some perspective. You don't *need* to run out and buy an expensive Loos gauge. In fact, I don't even own one - I simply borrowed one to set up my rig. Once you've used one a few times, you'll get a feel for what a properly tensioned wire feels like.

For the majority of Precision 18 sailors, "close enough" really *is* close enough. The majority of P-18s with standing rigging problems that I've been aware of have had those problems exacerbated (if not caused) by rigging that was too *loose*. Many sailors worry that "tight" rigging places an unnecessary load on components and structure that could eventually result in damage. This would be true *if* the rigging really was "*too* tight", but "properly tight" rigging can *increase* the longevity of your rig, while loose rigs can induce damaging "shockloads."

While on the subject of rigging, a frequently asked question is: "*How often should I replace my standing rigging?*"

I replace mine about every seven years in the warm salt-water environment of Florida. However, the best answer to this question is that you should replace your standing rigging whenever your inspection indicates it *needs* to be replaced. If someone's mind is set to an arbitrary number of years, then they may feel that as long as their rigging is "under" that number of years in age, that their rigging is "solid" and reliable. Wrong answer! You need to *look* at your rigging frequently - and replace it when it's *necessary*. My backstay bridle failed after just two years, yet there are 15+ year-old boats out there sailing with their original standing

rigging - and rigs - intact. You can *anticipate* that your standing rigging will last between 6 and 12 years, depending on your environment and usage - but in actuality the rigging *could* fail in a just a few short years - or last twenty.

Bottom line: Inspect your rigging frequently and replace it as necessary.

VI Maintenance (Routine & Heavy)

Taking good care of a Precision 18 is relatively easy if you are willing to invest a little time, some money, modest physical effort, and you are disciplined enough to *not* let small issues develop into things that become large. It is far easier to *keep* a boat in good shape than it is to *return* a boat to good shape. If you are a stickler for perfection - and you demand that your boat be in top condition from the outset - purchase of a new P-18 may be the best path for you. (I bought my boat new.) The majority of used P-18s will have minor issues that will need to be addressed, but again the above average "build quality" of these boats means that they are worth the effort and expense to keep in top shape, or even restore.

The degree of personal commitment directed toward proper care and maintenance for boats of this size range varies widely among individuals. This means – for those of you looking at used boats to buy - that the degree of variation in the overall condition of older boats can be wide. Boats in this size range are often viewed by their owners as "starter boats", or "stepping-stones" on the way to "bigger and better". It is quite rare for any one individual to keep a boat of this size for say twenty years, *and* use it regularly (like I have) because the majority of sailors think their ideal boat *must* be a bigger one. Bigger has *got* to be better! The fellow with an 18-footer is convinced a 23-footer is what he needs. The guy with the 30-footer would be so much happier with the 38-footer. I recently saw a classified add for a 3-year-old 51-foot ketch that read: "*Owner moving up - must sell.*"

Anyway, because of the pervasiveness of this "bigger/better" mindset, boats the size of a Precision 18 can have rather sporadic and inconsistent maintenance over their lifetimes. Another factor in this equation is that the P-18 is often the first or second boat ever purchased by its owner(s), so many owner(s) may not have a full understanding or appreciation of exactly what it takes to properly maintain the boat, or the possible long-term consequences of neglecting it. It is my hope that this guide will help new owners develop a better appreciation of "maintenance". When they do move up to bigger boats, I hope the P-18 they leave behind will be in *better* shape for those wise folks who eventually buy them.

It is important for the new owner to understand that, once you've bought a boat, "sailing" has become far more complicated than the simple act of operating a wind-driven craft upon the water. For many people, sailing becomes a "life

style". As a minimum, the new owner needs to appreciate that "sailing" will now consist of waxing, cleaning, hosing off, painting, finishing, engineering, installing, removing, replacing, fixing, inspecting, figuring, cursing, figuring again, spending, crying, laughing, wondering - and in between all *that*, actually sailing as often as you possibly can.

The way I've chosen to address the issue of maintenance on my boat was unashamedly stolen from the US Air Force. The Air Force's primary air-refueling tankers have an average age of over 45 years old, yet they have a mission reliability rate of well over 90%. They accomplish this feat by taking good care of their aircraft on a routine basis, and then they periodically take the planes out of service for depot-level maintenance where the jets are literally torn apart and put back together again.

I have chosen to limit my sailing season to nine months a year. During those nine months, I sail the boat frequently and engage in what I call "routine" maintenance. The remaining three months, my boat undergoes its "heavy" maintenance cycle.

Since I've lived in Florida, I've elected to conduct my heavy maintenance cycle from August to October, which also coincides with the peak of hurricane season - and the least desirable sailing months down here. (hot, little wind, thunderstorms, bugs, etc.) People residing to the north don't have to worry about choosing their "down time" - it's called winter!

In my "system", *routine* maintenance involves minimal inspection and addressing those items that have become issues as a result of frequent use. It also involves the "routine" I go through before and after each sailing outing.

The *heavy* maintenance periods are times when absolutely everything is gone over with a fine-toothed comb. Alterations, modifications, probing inspections, detailed cleaning, polishing, lubricating, bottom jobs, re-building, re-rigging, sewing, and replacing things are all *typical* heavy maintenance activities.

This two-tiered system of maintenance has provided me with a boat that is almost always ready to go sailing, suffers few mechanical breakdowns, looks far younger than her age would suggest, and has proven exceptionally dependable in frequent and regular use. Please understand: keeping a small 18-foot boat in "top shape" using this method of maintenance actually requires far more discipline than actual *effort* - nearly every individual task is small, simple, and FUN! For me, this is all part of what I love about sailing.

Picture #12 – *Alert* Undergoing Heavy Maintenance



VII Heavy Maintenance Checklists

The primary purpose of these checklists is to serve as a guide to help you better comprehend and appreciate the specific tasks required to keep your P-18 in top shape. The "Heavy Maintenance" checklists involve inspections or activities that are typically accomplished during the three-month downtime.

However, some of these items (particularly inspection items) may be re-accomplished at other times, such as prior to a roadtrip or extended cruise. The checklists found on the following pages include standard and otherwise typical items found on the P-18. Owner additions, modifications, or alterations should result in items being added or deleted from these checklists - as you see fit.

a. Trailer Inspection/Maintenance Checklist

Frame	Inspect for bends or twists; inspect all welds; clean& paint all rust
Hinge Bolt	Inspect and/or replace. Check holes at tongue for elongation
Tilt latch	Free of corrosion; lubricate; Inspect spring; check "U" bolts
Bunks/guides	Inspect for strength; carpet attachment; fasteners secure in wood
Bunk brackets	Check for corrosion; clean &paint all rust; check for distortion
Bunk stands	Check lower adjustment bolts for tightness
Keel rollers	Remove; lubricate rollers; inspect; replace pal-nuts with new
Hubs	Clean & paint; lugs cleaned of corrosion & lubricated; inspect
Wheel Bearings	Remove; clean; inspect and/or replace; inspect races; re-pack
Grease Seals	Replace
Bearing Buddies	Remove; clean; inspect for firm fit in hubs
Axle	Clean & paint all rust; polish upper spindle where grease seal rubs
Leaf Springs	Clean & paint; inspect clip; Inspect & replace plastic grommet
U-bolts	Clean & lubricate; inspect for distortion; replace if necessary
Axle Bracket Plates	Check for deformation; clean &paint
Fenders	Clean; Inspect attachment brackets; tighten fasteners
Wheels	Inspect for deformation or impact damage; clean
Tires	Inspect sidewalls for rot; inflate to 80PSI (5.30X12 "C"); check tread
Winch stand	Inspect welds at base; inspect "U" bolts for tightness; bow stop
Winch	Inspect for deformation; lubricate; inspect cable and fittings at hook
Coupler	Lubricate; Inspect for proper adjustment; replace if worn
Safety Chains	Inspect. Replace if corroded badly
Lights	Check for proper operation; no cracks; dielectric grease in sockets
Wiring	Inspect entire run; no frays; connections at lights secure; replace
Wiring Connector	Free of corrosion; no damage
License Plate holder	Secure; no cracks or damage
Spare Tire Carrier	Bolts secure; lubricate lugs used to hold spare
Jack Stand	Bolts secure; Lubricate; free operation
Any additional hardware added?	Inspect as required Add to the checklist below

b. Exterior Inspection/Maintenance Checklist

Hull and Deck	Inspect for damage; clean; pressure wash; wax smooth areas
Waterline Stripe	Inspect; replace tape in whole or in part as required
Cove Stripe	Inspect; replace tape in whole or in part as required
Leading edge of keel	Inspect for dings; fill as necessary
Centerboard& trunk	Check leading edge of board and forward inside of trunk for damage
Barrier coat/anti-fouling paint	Inspect anti-fouling paint for adhesion and condition; recoat as necessary; check for dings penetrating barrier coat; recoat as needed
Rub rail and hull/deck joint	Pull rub rail off in small sections; inspect integrity of hull/deck joint; check fasteners; reseal as needed; clean and apply protectant to rail
Bow Eye	Inspect; re-seal as necessary; check exterior nuts for tightness
Rudder Pintles	Inspect for cracks, failure of welds; corrosion; replace as needed
Motor Bracket	Inspect for proper operation; paint plastic parts; lubricate
Pulpits	Inspect welds; remove corrosion; polish; tighten fasteners
Cleats	Inspect for cracks; wipe down with <i>Penetrol</i>
Running Lights	Check lens for cracks
Stanchions	Inspect base welds; tighten; remove and re-bed as required; polish
Lifelines	Inspect swages; pelican hooks; clean; chafe at stanchions; clevis pins
Anchor Locker	Inspect hinges; check and reseal drain; tighten twist lock; clean
Forward Hatch	Clean clear cover; lubricate; apply protectant to gasket; inspect dogs
Main Hatch	Inspect for cracks in corners; smooth operation; clean underside
Mast light deck plug	Inspect for proper attachment; corrosion free; function
Cockpit Hatches	Inspect hinges; inspect for cracks; clean underside
Stem Head Fitting	Inspect for elongated holes or distortion; polish
Mast Step	Check for bends; screws tight; polish
Chain plates	Inspect for cracks or flattening; remove and re-bed as necessary
Windows/port lights	Clean; Inspect for cracks; check for leakage
Exterior Trim	Clean; lightly sand and finish if wood; scrub with bleach water if poly
Deck Hardware	Check for integrity; security of attachment; free operation; corrosion
Inspection Port(s)	Lubricate gasket with silicone grease
Canvas & Covers	Inspect for wear or damage; check seams; clean; apply waterproofing
Tiller	Remove; refinish; inspect for delamination
Rudder Head	Disassemble; inspect for corrosion; clean and paint cheeks if necessary; remove & inspect/replace fasteners; check gudgeons
Rudder Blade	Inspect pivot bolthole for elongation; clean; wax or paint.
Anchor(s)	Clean; inspect rode; shackles; chain; welds; no bends or distortions
Any additional hardware added?	Inspect as required Add to the checklist below

c. Interior Inspection/Maintenance Checklist

All loose gear	Remove; inspect; clean; repair; replace as necessary
Cushions	Remove; inspect; clean and vacuum
Cooler	Remove; Inspect; check hardware; clean; refinish step as necessary
Inspection Ports	Open; Lubricate gasket with silicone grease
Centerboard Tube	Check hose condition; hose clamps secure; signs of leakage
Water leakage	<u>Check:</u> Bow eye, stem head fitting, bow cleats, anchor locker drain tube, pulpit bases, swim ladder brackets, stanchion bases, chain plates, forward hatch, windows, deck hardware fasteners, centerboard tube, pintles, cockpit drains, hatch hinges, hull/deck joint, trim fasteners, & owner-installed accessories; Re-bed, tighten, or correct as required.
Bilge	Clean and flush with fresh water; empty and wipe dry
Interior liner	Inspect for cracks or crazing; clean; remove stains
Aft under cockpit	Wipe clean; inspect bond of liner to hull where visible
Teak trim panels	Inspect for secure attachment of plywood screw blocks
Interior Teak	Wipe with bleach/water; dry; apply teak oil
Upholstered Liner	Spot treat stains; spray with <i>Febreze</i>
Cabin Light	Check for proper operation
Electrical Panel	Remove; check wires in back for security and corrosion; fuses; replace
Electrical Wiring	Where visible – inspect; check connectors at fixtures for corrosion
Battery	Remove; clean leads and connectors; check cells; charge; replace
Electronics	Remove; clean; inspect; apply dielectric grease to connectors
Bulkheads	Inspect edge trim for separation from plywood; check fasteners for tightness; inspect for water damage from chain plates
Chain plates	Check for corrosion and tightness; replace as necessary
Mast support beam	Check for signs of water leakage from chain plates & below; inspect
Fire Extinguisher(s)	Inspect for charge; Invert and shake; check for corrosion
Flares	Inspect for dryness; note expiration date
Horn	Check for proper operation
Inflatable PFD's	Manually inflate; inspect firing mechanism; clean; repack
Additional PFD's	Inspect; don and jump in pool to confirm buoyancy; rinse; dry
Medical Kit	Inspect; replace dated items; repack; seal
Any additional hardware added?	Inspect as required Add to the checklist below

d. Rigging Inspection/Maintenance Checklist

Standing rigging	Clean with "metal polish wadding"; inspect (attached wadding indicates frayed or broken strands); no bends, no kinks or deformations
Clevis pins	Remove; inspect for flat spots, wear, or corrosion; replace
Cotter pins	Remove; replace w/new
Swages	Inspect; look for cracks; remove corrosion
Backstay Bridle	Inspect; replace as necessary
Tangs	Inspect; look for cracks or tears; check rivets for corrosion; polish
Spreader brackets	Inspect for deformation and cracks; check rivets; clevis pins; cotter pins
Spreaders	No cracks & corrosion; check screw at outboard end for tightness
Spreader Boots	Replace as necessary
Rigging tape	Remove all; inspect underneath; replace
Halyards	Remove; inspect; wash in warm soapy water; switch end-for-end; replace
Jib halyard block	Inspect closely; replace
Masthead Fitting	Lubricate sheaves; inspect rivets; inspect backstay tang
Pivot pin at base	Check cotter pin inside mast for security; check holes for elongation
Halyard Cleats	Check fasteners for tightness; wipe with <i>Penetrol</i>
Mast Light	Check lens for cracks; crazing; yellowing; apply dielectric grease to socket
Mast Wiring	Check for security; check plug on end for corrosion
Mast	Inspect for bends or dents; inspect vang attachment bail; clean and wax lubricate luff slot with <i>Sailcote</i>
Gooseneck	Inspect for deformation and corrosion; lubricate; replace if necessary
Boom	Inspect vang attachment bail; cleats; reefing sheave(s); pad eye(s); end tang for mainsheet; lubricate foot slot with <i>Sailcote</i> , clean and wax.
Turnbuckles	Clean; inspect; lubricate; inspect toggles for bends or cracks
Mainsheet Blocks	Clean; remove rust from cheeks; lubricate with <i>Sailcote</i>
Boom Vang Blocks	Clean; remove rust from cheeks; lubricate with <i>Sailcote</i>
Jib and Genoa blocks	Clean; remove rust from cheeks; lubricate with <i>Sailcote</i>
Jib Tracks	Clean; lubricate with <i>Sailcote</i>
All running rigging	Jib sheets, mainsheet, additional control lines – soak in warm soapy water; rinse; dry; replace
All Sails	Spread out; inspect; repair; spot treat stains; clean; rinse; dry; lubricate piston hanks; fold; bag
Windex (indicator)	Lubricate with <i>Sailcote</i> , straighten; adjust arms (45 degrees off center)
Any additional hardware added?	Inspect as required Add to the checklist below

VIII Routine Maintenance Checklists

Items that are accomplished on a regular or semi-regular basis throughout the sailing season populate the "Routine Maintenance Checklists". The majority of the items in section b. (Daily Inspection/Maintenance) should eventually become part of your habit patterns – or "routine". As always, owner installed additions or modifications may alter the applicability of some items presented here, or add to this list.

a. Periodic Inspection/Maintenance

Turnbuckles	Visually inspect; cotters in place; taped as required; toggles unbent
Shrouds	No bends; No broken strands; No cracked swages
All lines	No undue wear; pulled core strands; cuts
Rudder Cheeks	Check fasteners for tightness
Rudder Pintles	No cracks or failing welds
Exterior trim finish	Touchup as required
Exterior	Wash, wipe down, dry
Interior Cushions	Remove; vacuum; air-out; replace
Interior	Wipe down
Water leaks	Visually Inspect; repair as required
Battery tie down	Secure
Battery Electrolyte	Topped off with distilled water
Battery Charge	Check; correct
Navigation Lights	Check for operation
Electronics	Check for normal operation
Electrical Panel	Check for normal operation
Fire Extinguisher	Indicates proper charge
Interior Light	Check for operation
Cockpit Drains	Check for leaks; free of obstructions
Canvas & Covers	Remove bird droppings
Sails	Visually inspect; repair as needed
CB Pennant	Inspect for wear; replace as needed
Backstay Bridle	Check for broken strands at bottom of micro-press fitting
Trailer	Visually Inspect; check grease seals; hubs not hot after travel; tires inflated to 80 PSI (5.30X12 "C"); check winch cable for broken strands
Any additional hardware added?	Inspect as required Add to the checklist below

b. Daily Inspection/Maintenance

Trailer	Hose off with fresh water; check grease seals; hubs not hot after travel; tires inflated to 80 PSI (5.30x12 "C")
Outboard Motor	Flush with fresh water; run carb dry; top off fuel (internal tank); clean
Exterior	Hose off completely - hull; deck, spars; pulpits; stanchions; everything
Aft under cockpit	Wipe dry
Bilge	Remove water; wipe dry
Battery	Check voltage
Motor Bracket	Hose off thoroughly
Lines	Rinse; coil; hang
Sails	Dry; Inspect; fold; bag; cover
Rudder Head	Hose off thoroughly
Rudder	Unrestricted movement; tiller swings up and down smoothly; not loose
Rig	Quick visual check
Cam cleats	Hose off thoroughly
Interior	Wipe dry
Cooler	Drain; clean; wipe dry
Lock/secure	As required
Any additional hardware added?	Inspect as required Add to the checklist below

IX Precision 18 Sailing Tips

Sailing a Precision 18 is easy. Sailing it *well* takes practice. This is a boat that likes to be sailed well, and will readily reward a skipper's efforts to maximize performance. Just as there are many different sailboats out there in the world, there are also many different personalities among skippers. Some sailors claim to be unconcerned with performance: "*I just want to cruise – I'm no racer.*" Fair enough. But, if you're *cruising* a small boat like a P-18, speed really *matters*. Speed can be the difference between getting to your anchorage before sunset, and getting there after dark. Speed can be the difference between getting around "the point" before the tide turns, and facing a foul tide for hours. Speed can be the difference between getting back to the dock before the thunderstorm strikes, and getting caught in a maelstrom. So, these tips aren't merely intended for "go-fast" racers; they're intended to help the Precision 18 owner who wants to gain all the potential benefits of speed. Plus, *speed* is fun!

Weight, and its placement, has a significant influence on the P-18's performance. To the degree that it is possible on so small a boat, you want to keep as much weight as possible near amidships – and least take steps to keep excess weight out of the ends of the boat. One way to assist in this endeavor is to choose a

"right-sized" auxiliary outboard motor, preferably under 60lbs - and ideally, *well* under 60lbs. Also, carry an appropriate but not excessive amount of fuel. If you are sailing on a small inland lake, you probably don't need to carry a 5-gallon "jerry jug" of fuel lashed aft in the cockpit. A small single 1-1/2 to 3 gallon tank in the port locker will suffice. Finally, use your own body weight (and that of your crew) to "best effect" rather than struggling to overcome the negative affects of sitting in the wrong spot.

I recommend that any new owner sail along with other "more experienced" sailors to try and pick-up some of the many nuances of sail trim. If you belong to a local sailing club that engages in racing, I highly recommend you get involved as a crewmember on someone else's boat for a racing series or two. You can learn more about how to make your boat perform well after one year of racing than you're likely to learn in many years of day sailing on your own. Even if you're fairly certain racing isn't your cup-of-tea, a brief exposure to that aspect of sailing can teach you a lot. Finally, when sailing along with other boats that appear faster, observe their sail trim and compare it to your own. A common mistake in sail trim made by many new sailors is to overtrim the sails – particularly when sailing off the wind. A good rule of thumb is: "When in doubt; let it out." On headings from close hauled to a broad reach, easing the sail until it just begins to luff (a slight bubbling or back-winding along the leading edge) is going to put you pretty close to "right." Experiment a bit! A small responsive boat like the P-18 will give you fairly quick feedback.

a. Light Air (under 5 knots)

The Precision 18 is an excellent light air performer – if sailed well. Sails should be hoisted and set with just enough halyard and outhaul tension to eliminate strong creases. The boom vang should be eased. Mast bend (if an adjustable backstay has been fitted) should be slight. Crew weight should be well forward in the cockpit, and to leeward to induce heel. In this instance, heeling allows the sails to hang in a better airfoil shape and, when combined with the forward placement of weight, can even reduce some wetted surface. A slight lee helm is normal when sailing in light air. Extreme rudder angles and inputs are often required to alter or even maintain course. The centerboard should be full down when going upwind, and fully hoisted whenever the wind is off the beam, or aft of the beam. It is normal for the centerboard to bang around within the trunk in light air conditions if the boat rolls to passing powerboat wakes, or ocean swells. Movement in and around the boat by skipper and crew should be kept slow and deliberate so as not to disrupt sail shape. Care should be taken not to overtrim the sails. The goal is to keep air moving across the sails by any combination of helm inputs and sheet adjustments necessary, and to *keep* the boat moving. In fluky conditions, the boat may move well in a light breeze, and then, suddenly

luff as the wind dies and the apparent wind moves forward. If this happens, slowly bare away from the wind as necessary to fill the sails, and then bring the boat back up to course as she interacts with the "new" wind. Light air sailing is challenging, and requires strong concentration. Visual clues are often difficult for the new sailor to distinguish. Resist the urge to crank up the motor every time the wind goes light. The Precision 18 may surprise you with her light air performance, and may shock the nearby skippers and crews of larger boats.

Picture #13 – Light Air



b. Medium Air (5-12 knots)

Medium air conditions are likely the most ideal for getting the feel of how your P-18 handles – and it is in this wind range that the boat can really teach you a lot. Sails will need to be hoisted slightly tighter in order to remove wrinkles, and the outhaul and other control lines will need to be tensioned a bit more as well. Since the P-18 has no traveler, the boom vang begins to become an important sail-shaping tool, and it should now be tightened somewhat so as to remove some (not all) of the twist along the leach of the mainsail. Depending on conditions, crew weight may need to be varied considerably between leeward and windward sides. The boat will noticeably respond to even the slightest changes in wind speed or direction. Compared to light air conditions, helm inputs become greatly reduced, and helm position when close-hauled can range from the slightest of lee-helm, to a modest weather helm. As always, the centerboard should be fully down for upwind work, but fully lifted once the apparent wind moves directly off the beam - or further aft. At the upper end of this wind range, the skipper will want to keep the mainsheet handy, as it's not uncommon to occasionally have to ease the sheet in puffs in order to maintain best speed - and avoid setting off the "squeal-o-meter" of your crew.

Picture #14 – Medium Air



c. Moderate Air (12-19 knots)

Moderate air sailing becomes lively, fun, and fast. First, it is at this point that spray begins to reach back to the cockpit when sailing upwind. (The wise skipper will snuggle up against the crew at the forward end of the cockpit and allow the *crew* to deflect much of the spray. Nice crew.) It is in this wind range that one begins to contemplate tucking a reef in the mainsail, and/or switching down from genoa to working jib. If *speed* upwind is your desired goal, the P-18 will sail faster upwind (in winds under 19 knots) with a reefed main and genoa, than it will with a full main and working jib. However, most people find the working jib easier to handle when tacking and trimming in these conditions. Therefore, the working jib is the sail I'd recommend for anyone new to the boat and sailing in moderate air. In these conditions, the halyards and other sail controls are typically on tight. Flattening of the mainsail becomes advantageous, and this can be accomplished with lots of outhaul tension, and lots of vang tension - and if you have an adjuster, lots of backstay tension. Everybody needs to be on the windward side. The boat carries only slight weather helm upwind, and if seas are building, it may require more assertive

corrections off the wind. The rules for centerboard use remain unchanged – except you may find pulling *up* on the pennant just a couple of inches (angling the board aft ever so slightly) helps with minimizing weather helm. Upwind, the mainsail may be eased so as to luff slightly along its leading edge. The jib should be sheeted in tight and "sailed fully"; alternately easing and trimming the mainsheet is the best way to maintain balance. Do not luff the jib in puffs; instead, luff the mainsail as necessary. Rather than react to puffs, look to windward and anticipate them. Moderate air sailing is challenging and fun!

Picture #15 – Moderate Air

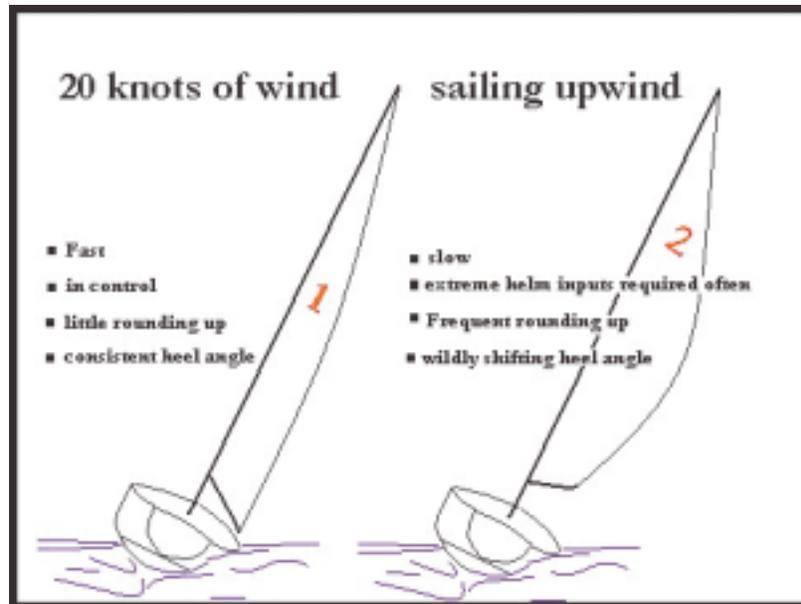


d. Heavy Air (19-25 knots)

Heavy air sailing in the Precision 18 is a wet proposition if headed upwind. New sailors (and their crew) often begin to get uncomfortable as the now frequent spray is occasionally mixed with solid water coming across and over the decks. If you haven't already done so, this is the point where you need to have the main hatch moved fully aft to keep water out down below. At the lower end of this range, the new sailor may wish to proceed under a full mainsail alone. At the upper end of this range, experienced sailors should be down to a reefed main and storm jib. If sailing under mainsail alone, boat speed to windward will not be particularly fast, while boat speed off the wind *can* be exciting. The P-18 doesn't readily plane, but it *will* surf at double-digit speeds for great distances. If sailing under mainsail alone, weather helm will be stronger than normal. To counteract this, raise up on the centerboard pennant about 9" to 12" to give the centerboard a more pronounced aftward sweep angle. Flattening the mainsail is a key to maintaining comfortable control and once again (on the traveler-less P-18), the boom vang comes into play. You may need to luff up momentarily - and even have a crewmember

pull down on the end of the boom – just to get sufficient tension on the vang. Halyards, outhaul, and other control lines should be on tight as well. Required helm inputs may sometimes become extreme, as you push the helm quickly to leeward in an attempt to feather the boat into the wind during a puff, or pull hard on the helm to keep the bow down in an effort to keep the sails filled and drawing. Sailing a P-18 (or any small boat) for prolonged periods in heavy air can be fatiguing. It can also be exciting, bordering on tremendously thrilling!

Diagram #12 – Effect of a Boom Vang on Sailing a P-18 in Heavy Air

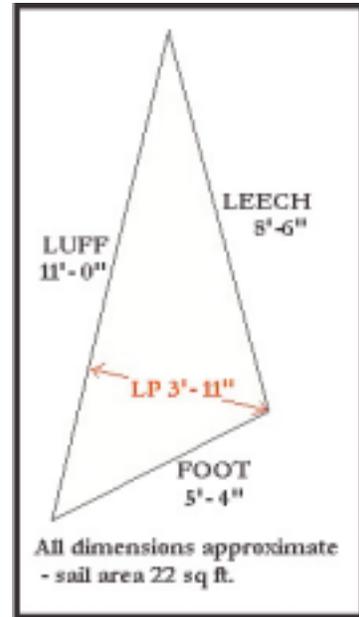


e. Strong Air (25 knots plus)

It takes some experience and skill to *safely* handle a P-18 in winds over 25 knots. It maybe be comforting for the new owner to know that the *boat* is capable of making progress to windward with a double-reefed mainsail and storm jib in winds approaching 40 knots – but it is ultimately the skill of the skipper that will determine the success of such an undertaking. The seas associated with this wind range can become eye opening, and the potential for seriously breaking things on board is great. Do not purposely sail in such conditions unless you are confident of your rigging's structural integrity, and are comfortable in your *own* abilities as well. Regardless of the skippers skill or experience level, sailing the boat in these conditions will not be dry, comfortable, easy, or forgiving. It is best to slowly build up ones skills toward handling these conditions, and to try and experience them in locations that will provide an area where one could duck-in for protection quickly. If you expect to *ever* sail in these conditions, a second set of reef points in the mainsail – along with the associated hardware attached to the boom - should be installed. A storm jib is an *excellent* addition to your boat if you expect to encounter such

conditions. In strong air conditions, sail with the hatches closed, and the companion way board in place. It is recommended that steps be taken to seal the starboard cockpit locker lid to prevent water from finding its way below in the event of a knockdown. (Duct tape across the edges will work.) Heel angles and leeway may be extreme at times. Extreme helm inputs and frequent playing of the mainsheet will be required. It may be necessary to sail a slightly lower course in order to reduce incidents of the bow burying (or stuffing) that can result in a sudden halt to forward progress. When sailing with a storm jib, the mainsail may need to be completely luffed at times in order to keep the boat on her feet.

Diagram #13 – Storm Jib dimensions

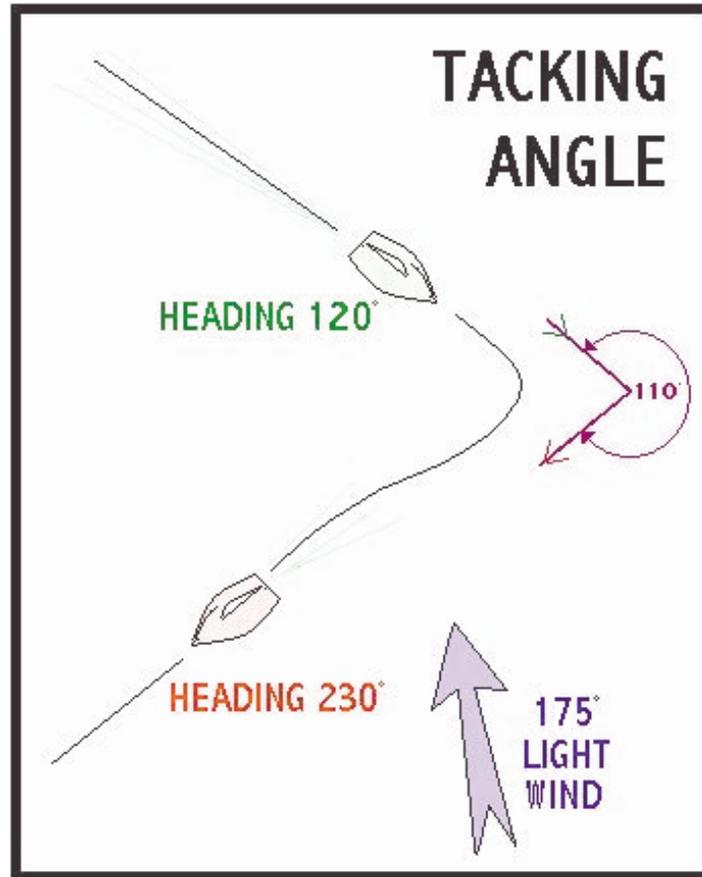


f. Target Tacking Angles

Different boats have different tacking angles at different wind speeds. Here are the tacking angles I have experienced (and now aim for) with my P-18. "Tacking angle" is simply the number of degrees between headings when sailing close hauled on opposite tacks. Say you're headed 120 degrees upwind on starboard tack in light air (under 5 knots). At that wind speed, your tacking angle is about 110 degrees, so you can anticipate a new heading on port tack of 230 degrees, or so. (Note: heading and track will typically *not* be the same.)

In light air (under 5 knots)	-	110-115 degrees.
In medium air (5 to 12 knots)	-	90-100 degrees
In moderate air (12-19 knots)	-	88-95 degrees
In heavy air (19-25 knots)	-	95 degrees
In strong air (25+ knots)	-	100-120 degrees

Diagram #14 –Tacking Angles



X Selected Modifications, Alterations, or Additions

There are always modifications, alterations, additions, and improvements that individual owners will choose to make to their boats so that *their* boat will more closely meet *their* specific needs. As mentioned earlier, if you intend to use your Precision 18 in a manner close to what was outlined in its original design concept, you shouldn't need to do very much at all. But, no boat is all things to all people, and differences in location, sailing environment, style, and personal choice will *always* be reflected in how an owner chooses to equip and accessorize *their* boat. In this section, I will touch on selected changes and improvements I've made to my boat over the years that *may* have some appeal to a larger majority of owners.

Safety

These are modifications that are intended to enhance or preserve safety. Of all the potential modifications to be made to the P-18, the only one I strongly recommend is this first one – the "starboard cockpit locker" lid modification. The other modifications described here may not be necessary or desirable for

many P-18 sailors based on their intended use of the boat and/or geographic location. However, the potential for large volumes of water to be shipped through the openings around the starboard side cockpit locker during a knock-down – even with the lid closed – is an "Achilles heel" in the otherwise well executed design and construction of the P-18. *All* owners should address this issue and, fortunately, this is fairly easy to do.

1a. Cockpit Locker Lid

When viewed from below, the nature of this problem becomes clear. There is a large gap between the deck lip, and the hatch that precludes the easy installation of any gasket or seal material. The design is such that rain and spray are easily deflected; yet solid water resting on top of the hatch *will* find its way below alarmingly fast. The cheapest and easiest way to prevent this eventuality is to carry a roll of duct tape to seal the gap between the lid and cockpit bench seats when necessary. At a minimum, this will do the job. The disadvantage to this cheap and easy method is that it requires that you know in advance that you're going to need it, and that you have sufficient time to put it in place. Assuming most knockdowns are "surprises", that's a pretty difficult need to anticipate - unless one arbitrarily breaks out the duct tape anytime the wind is over 20 knots. If you sail frequently in heavy air, that "fix" will soon become annoying.

So, the answer I came up with was to create a watertight locker lid that mated up precisely with the fiberglass lip molding around the opening of the hatch. I opted to make the lid out of ½" thick polymer lumber (*King Starboard*) and installed two six inch screw out deck plates along with one four inch deck plate.

Picture #16 – Watertight Locker Lid



The lid is held in place with corner clamps made of the same polymer material that are held in place with wing nuts on bolts. Removing the entire cover involves nothing more than unscrewing the two larger inspection ports and reaching inside to access the wing nuts, and removing the triangular shaped corner clamps. The 1/2" thick poly-panel had to be recessed along the entire bottom edge (approximately 3/16") to allow the cockpit locker lid to close without contacting the inspection ports. I use a bead of inexpensive bathroom tile caulk between the watertight lid and fiberglass lip so removal is easy.

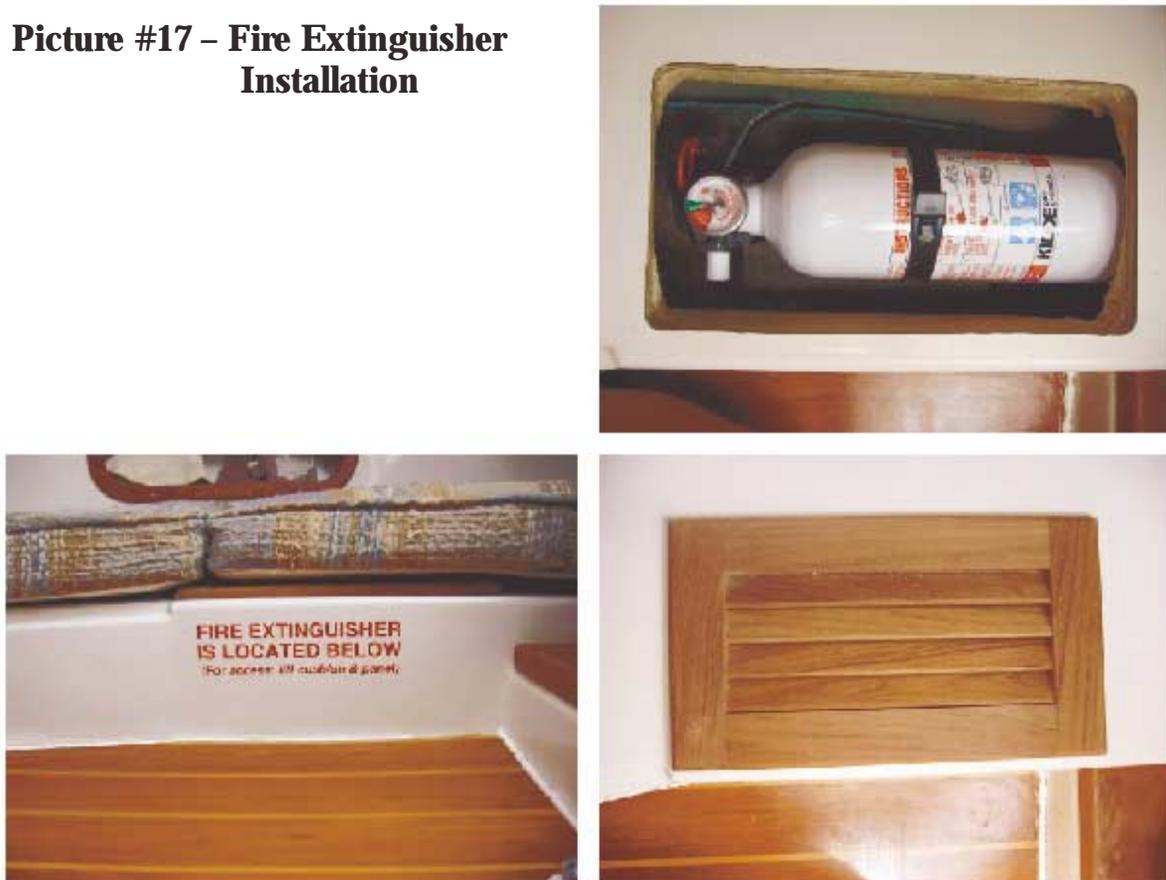
The lid must be removed completely in order to remove the battery. It also necessarily limits the size of items that can be stored in the cockpit locker. Still, I manage to feed dock lines, a water hose (for wash-downs when cruising), an extension cord, and even a tightly rolled spare mainsail through the larger inspection ports. More importantly, with the boat laid over on its side, large amounts of water will no longer come aboard here. This is just one of a variety of possible ways to address this "potential flooding problem" through the starboard side cockpit locker. Regardless of how the issue is dealt with, I recommend every P-18 owner take the time to do *something* – even if your "fix" is nothing more than keeping a roll of duct tape handy.

2a. Fire Extinguisher

Trying to find a good place to permanently mount a fire extinguisher is a tough task on most small boats. Space is always at a premium, and you'll ideally want the fire extinguisher to be both readily accessible *and* out of the way. So, I decided to take advantage of some unused space under the berths and cut out an access hole, install a teak backer block, screw an extinguisher bracket onto the teak block, and then store the extinguisher in its bracket. The access hole is covered with a louvered teak vent that has teak strips added to each side so it can rest firmly within the cutout - it's close to a "snap-fit". This installation is neat. The extinguisher is easily accessed, and yet it is out of the way.

In addition to the unit on the next page, I carry a secondary extinguisher (formerly my only extinguisher) mounted on a bracket just inside the starboard cockpit locker. Installation of the watertight locker lid hampered *quick* access to the cockpit locker mounted extinguisher - so the addition of another extinguisher elsewhere was needed. While this minimal 5-B-C fire extinguisher is small, so are potential fire hazards on a P-18. If you ever need to use one of these, it is important that you appreciate the need to use it efficiently and effectively, because it won't provide much more than eight seconds of continuous discharge.

Picture #17 – Fire Extinguisher Installation



In addition to the unit above, I carry a secondary extinguisher (formerly my only extinguisher) mounted on a bracket just inside the starboard cockpit locker. Installation of the watertight locker lid hampered *quick* access to the cockpit locker mounted extinguisher - so the addition of another extinguisher elsewhere was needed. While this minimal 5-B-C fire extinguisher is small, so are potential fire hazards on a P-18. If you ever need to use one of these, it is important that you appreciate the need to use it efficiently and effectively, because it won't provide much more than eight seconds of continuous discharge.

3a. Manual Bilge Pump

A manual bilge pump is mounted in the cockpit so that a lone sailor could operate it without leaving the helm. To my mind, this is an eminently seaworthy idea. In my installation, I installed the discharge through-hull in the upper corner of the port side transom as far away from the engine mount (and plywood coring) as I could get, while still being able to fit the 1-1/2" discharge hose onto the fitting. This required the installation of an access port in the back of the port cockpit locker. The pump is mounted below decks immediately in front of the port side locker, and the intake hose is led through a hole in the liner and down into the aft edge of the bilge keel. The pump's

cockpit mount fits flush along the cockpit's foot well, and the handle used to operate the pump is stored on rubber brackets inside the port side locker lid. The handle is further secured with a light line lanyard to preclude loss, or any other chance of it becoming misplaced. The pump is a *Whale Gusher Titan*, and a rebuild kit is kept on board – just in case.

Picture #18 – Manual Bilge Pump



4a. Grounding System

The Precision 18 does not come with a grounding system intended to protect the vessel (or its occupants) against lightning strike. There are a *few* reasons why this is the case. First, there is no such thing as a foolproof lightning protection system. Regardless of the steps taken, boats with and without a "lightning protection" can (and do) suffer lightning strikes. If the builder installed something called a "lightning protection system" (or a ground system whose purpose was to offer lightning protection), some owners *might* develop a false sense of security and take foolish risks under the assumption they were "protected". Next, such "systems" require care and maintenance. There is some evidence to suggest that a defective or inadequate ground system could

increase the risk of a strike. The many connections necessary in such a system are prone to performance-reducing corrosion and must be inspected and maintained regularly. Finally, the *American Boat and Yacht Council* (ABYC) recommends straight-line wire runs – something not practically workable on a small boat.

Nevertheless, I elected to install a grounding system on *my* P-18. I live in an area that gets more lightning strikes than almost any location in the world, and I've been on both sailboats and aircraft hit by lightning. I wanted to *do* "something". My system involved connecting *all* large metal on-board objects to a common ground – a sintered-bronze grounding shoe bolted near amidships on the starboard side, with connections accessible from behind the cooler.

To electrically connect everything I used heavy tinned copper strapping intended for this purpose. This was run between the liner and hull, and was stiff enough to be pushed around for great distances along the bottom of the hull. A "fuzzy brush" static dissipater was installed at the masthead.

Picture #19 - Elements of a grounding system



There is a great amount of conflicting information regarding the value, wisdom, and effectiveness of grounding (or not grounding) your boat. In the end, I suppose it comes down to whatever you as the skipper are comfortable with, *and* an understanding that lightning is going to do *whatever* lightning is going to do. Whether you believe the grounding system is essential or superfluous - or that a built-in system is preferable to a jumper cable attached to a copper plate or chain in the water and attached to a stay - there is a wealth of information and personal anecdotes "out there" to convince you that *you* are right. Regardless of all that conflicting advice, getting off the water and away from the boat when lightning approaches is the *only* thing I can strongly recommend as "lightning protection."

Picture #20 – Grounding System Installation Details



Since I installed my grounding system many years ago, the minimum size recommendations for wire have changed. Larger wire is now specified. In my installation, the only wires I use are from the chain plates and the stanchions – both very short runs of under 8" inches. The copper strap itself is connected to bolts on the stem head, pulpits, backstay, pintles, and outboard bracket. To connect the strap to the mast step, I replaced one of the four screws used to secure the step with a through-bolt to which the strap could be connected. If you're contemplating such an installation in your boat, I recommend you do some research and use the most current standards available for your system. The ABYC is one source of "standards" for lightning protection in small boats.

Standards and Recommended Practices for Small Craft.
Standard E-4, Lightning Protection.
American Boat and Yacht Council,
P.O. Box 806, Amityville, NY 11701

Sailing Performance

There are a variety of additions and improvements that can be made to enhance the already spirited sailing performance of the standard P-18. As delivered, I believe the boat constitutes a "90% solution" to the sailing performance equation. With minimal effort, it can be brought up to a "95% solution". If not previously equipped, simply adding a genoa to your sail inventory can be a *tremendous* performance enhancer in winds under 17 knots.

The four modifications or additions I wish to highlight in this section are: 1) adding genoa tracks, 2) installing a backstay adjuster, 3) adding an asymmetrical spinnaker, and 4) eventually changing to after-market sails. Additionally, adding a traveler would be a *big* improvement. However, I have yet to find a way to do this that would not cause *other* problems – be it interference with the bimini top I occasionally sail with in the heat of summer, or creating a knee knocker at the forward end of the cockpit. Thus far, the potential downside to the "acceptable" traveler arrangements I've conceived for my Precision 18 seem to outweigh the improvements in performance and ease of handling that I would anticipate from such an installation. But, I'm *always* looking.

1b. Genoa Tracks

In adding sailing hardware to my P-18, I prefer to first look for "dinghy" gear rather than "big boat" gear. There are a variety of styles, and sources for hardware. I stumbled across my genoa track on a clearance table at a performance sailing shop along the waterfront in St. Petersburg, Florida. I'm embarrassed to say I don't know for certain who made it – but similar track can be found at *Barton Marine*. (Link below)

http://www.bartonmarine.com/html/dinghy_dayboat.htm

I used the box style dinghy track. The sliders within it are fully contained by end stops fore and aft, and locked in place with a spring-loaded piston that engages holes on the track. The track is low profile, lightweight, adequate for the job, and the sliders are easily adjusted under load. I experimented with a variety of locations for placing the track, and ultimately settled upon the tops of the cockpit coamings. This placement provided a close sheeting angle for optimum pointing that was still open enough to not harshly backwind the mainsail or otherwise negatively impact the slot between main and genoa with the sail trimmed in fully. Additionally, the track allows the skipper to "shift gears" as wind conditions change by moving the slider and its attached block fore and aft to open or close the leech of the genoa - as desired. As you transition from upwind sailing to points further off the wind, moving the slider forward will take some twist out of the genoa and enhance performance in most wind conditions.

With this coaming-mounted placement of the track, the boat will point noticeably higher than those boats using a block attached to the aft stanchion base as a lead point – all the while making the same or greater speed in most conditions. Additionally, the fore and aft adjustability created by having the genoa's lead block attached to the slider is highly valuable. However, this location is less than ideal for beam reaching (and angles below that) where a

farther outboard placement of the track and lead would be advantageous. Recent changes to the racing rules allow a whisker pole to be used to leeward, and this technique can be helpful in overcoming the deleterious effect of inboard sheeting on "off the wind" performance that is inherent in this installation – if it matters to you.

Picture #21 – Genoa Track Installation on Coaming

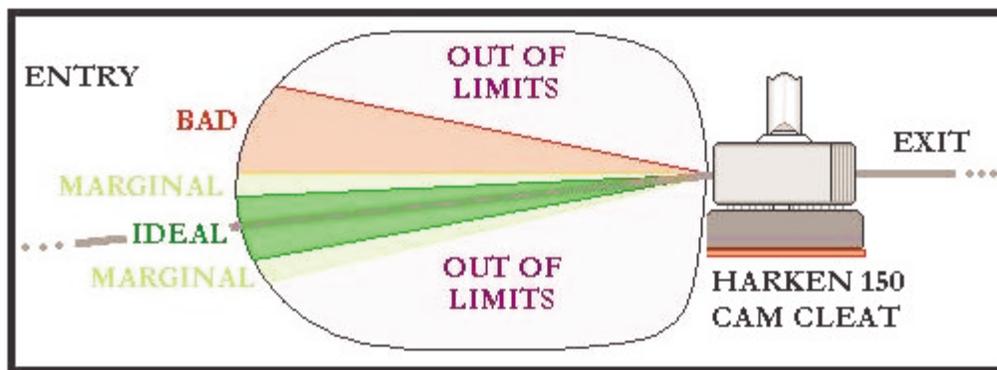


The actual installation of the track isn't too difficult. First, the coaming tops are not cored, so there are no worries about properly sealing a core to prevent water damage. However, the inside of the hollow created as a result of the shape of the coamings is filled with a rigid poured in foam that will have to be cut out and removed in places. This is messy work, and the interior cushions should be removed before any "foam removal" is undertaken. A razor knife is a good tool for making the initial cut, followed up by a hacksaw blade to increase the depth of the cut. Only cut a hole a few inches wide and leave "an edge" of foam on either side for use in securing covers later on. (I made covers out of thin aluminum sheet – all attached with contact cement.)

Caution: The standard electrical wires between the battery and electrical panel are taped up against the underside of the coaming on the starboard side and underneath the foam. Use care when removing the foam, *and* when drilling holes for the track, so as to *not* damage the wires.

The track should be through bolted using washers along with lock nuts, or with lock washers under the nuts. The cam cleat used in this arrangement is identical to those used for the smaller jibs – a Harken 150 Cam Cleat. To ensure a fair lead onto the cleat, a riser is necessary. (If you don't use one, the slight upward pull of the sheet leading into the cam cleat will allow it to pop free when under high load.) I cut mine out of teak using a band saw. Unlike the track, the cam cleat *needs* a backer block of some sort – fiberglass scrap left over from a previous cut out, or 1/8" aluminum plate would work well. The fasteners for the Harken Cam cleats are #10's – and you'll need to use at least 5" long bolts to accommodate the cleat, riser, backer, washers, and nuts. Installing Harken Cam Fairleads set to deflect the sheet *exiting* the cam will allow the sheet to be trimmed and released from the windward side of the boat.

Diagram #15 – Line Lead Into a Harken 150 Cam Cleat



While newer P-18s have jib tracks for the standard working jib, older P-18s were delivered without tracks for the jib blocks. The jib blocks on my older Precision 18 were placed too far aft to properly trim the jib, so I added short tracks on the cabin top as well. You can use the same type of dinghy track for the working jib track installation, or you can obtain the necessary gear from the Precision factory. Installation is easier than the genoa tracks, but care should be taken to properly seal the holes that penetrate foam core with epoxy prior to installing fasteners. Fender washers, lock washers, and acorn nuts (closed cap) will finish out the installation.

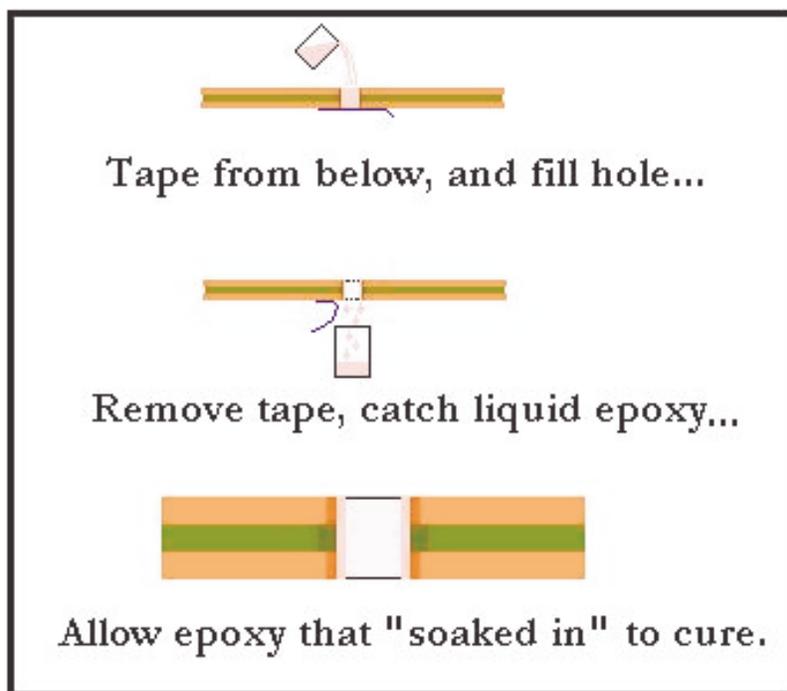
There are a couple of different methods I've used to successfully seal the core on my P-18. One way is to drill the desired hole *slightly* oversized, apply tape to the bottom of the hole, and pour in epoxy that has been thickened with a bit of colloidal silica, or other filler.

After that has cured for at least 24 hours, you can come back and *carefully* drill a right-sized hole through the center of the oversized hole leaving a cured epoxy

sleeve between the fastener and the core. This method works well, but it takes time. Then, the re-drilling process is replete with risk – go too hard and fast, and you can strip out the entire epoxy plug. Wander off to the side, and you can expose fresh core. Become impatient and try to drill too soon, and the entire plug can be twisted out.

So, I frequently use a more expedient method for installing new gear. I begin the same way by applying tape to the underside of the hole, and then I fill the hole with *un-thickened* epoxy. After it sits for several minutes – and before the epoxy kicks off – I remove the tape from below and catch the still liquid epoxy in a cup. While contained within the hole by the tape for several minutes, enough un-thickened epoxy soaks into the core around the hole to effectively seal the core. This takes less time and diligence than the "full cure" method, and allows me to seal holes and install gear in the same day. If *repairing* an existing hole, I recommend the oversized hole and "full cure" method – but for *new* holes in cored deck, the expedient method hasn't failed me yet.

Diagram #16 – An Expedient Method for Sealing Core



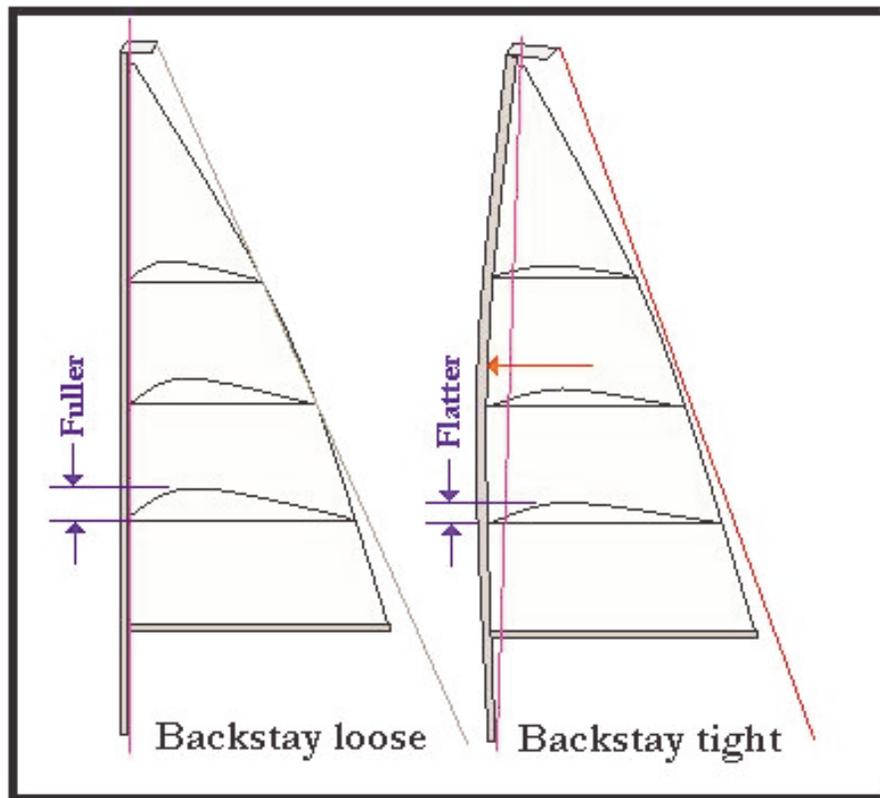
2b. Backstay Adjuster

A backstay adjuster is a great addition to any Precision 18. First and foremost, a backstay adjuster will allow the mast to be bent in such a way that the mainsail can be *flattened* while at the same time the forestay is *tightened* – both of which are helpful for sailing in moderate winds, and higher. Additionally, if the

backstay adjuster is designed similarly to the one I've installed, it will allow for the elimination of the backstay bridle. The backstay bridle is the single most failure-prone assembly in the P-18 rig as both backstay and mainsheet come together, and the entire assembly is subject to shock loads and twisting during jibes and other maneuvers.

Being able to flatten the mainsail in a breeze not only aids performance with improved boat speed and easier handling, a pleasant side effect is reduced heeling.

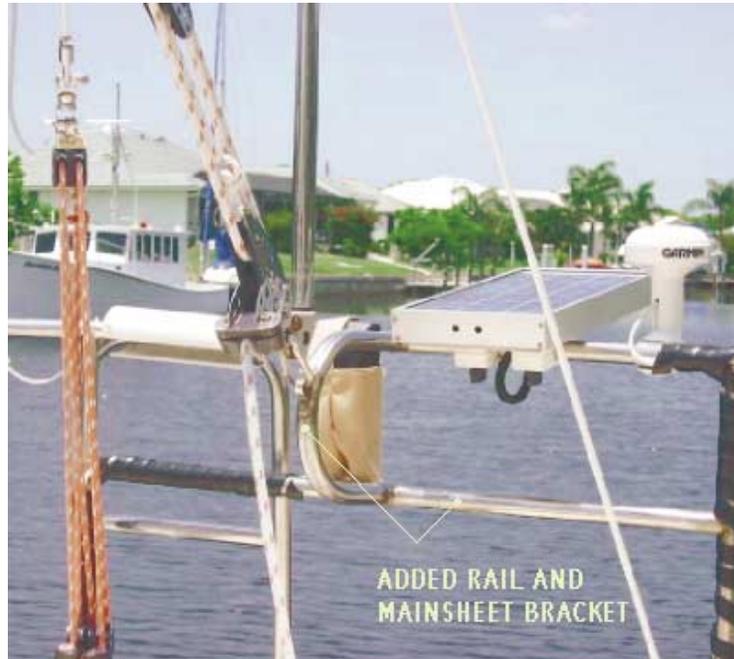
Diagram #17 – How a Backstay Adjuster Can "Flatten" a Mainsail



The first step involved in installing a backstay adjuster is to determine where to move the mainsheet attachment point. The easiest solution is to assemble a rope bridle for the mainsheet, similar to what is seen in the "modified" portion of Diagram #6 (page 30) so that a backstay assembly independent of the mainsheet can be installed.

The down side to this arrangement is that the fiddle block at the lower end of the mainsheet can move around and bang into the tiller (or elsewhere) in light air or bumpy conditions with the sheet eased. So, I elected to fabricate a *rigid* attachment point by incorporating a stainless steel bracket into the stern pulpit.

Picture #22 – Mainsheet Bracket



With the mainsheet relocated, the backstay adjuster can be installed. This otherwise simple design calls for shortening the existing backstay and adding an eye, toggle, and block to the lower end of it.

Then, a length of 7 x 19 wire (not 1 x 19 like the rest of the standing rigging), is used from the dead end on the port side, up through the turning block now attached to the end of the backstay, and then back down to a multi-part purchase, with integral cam cleat.

The new length of my shortened backstay is 19'- 6" pin-to-pin. The turning block is a Harken 308 wire block, and it is connected with a Johnson rigging toggle to a Sta Loc eye terminal. The 7x19 wire is 9'-6" long (eye-to-eye), with another Stay Loc terminal at the working end to which a swivel and Harken 085 double block with becket are attached. There is 12' of 1/4" line needed to create the 3:1 purchase of this sub assembly that terminates at the Harken 094 triple block with cam cleat.

In use, this arrangement provides for nearly a 6:1 mechanical advantage. (I say "nearly" because the turn of wire through the top is not quite 180 degrees.) It is readily capable of developing the desired amount of bend in the spar. A knot is tied at the end of the line so that even when completely disengaged from the cam cleat, the backstay will have sufficient tension to keep the mast in place.

Picture #23 – Backstay Adjuster Details



3b. Asymmetrical Spinnaker

There are a variety of options for maximizing off-wind performance, but my eventual choice was the addition of an asymmetrical spinnaker. Unlike a conventional spinnaker, the asymmetrical spinnaker requires no spinnaker pole, mast track (or fixed pad eye), topping lift, down haul, or other gear that makes single-handed use more challenging. I use a dousing sleeve (or sock) with mine that really makes the task of hoisting or retrieving easy. In use, the sail is hoisted within the sock with all control lines attached. When everything is hooked up, the sock is lifted, the sail billows out, and it can be sheeted in. Jibing takes practice, but in my arrangement, the sail floats out around the front of the boat (outside the forestay) and is trimmed in on the opposite side as the stern swings through the wind. Care must be taken to ensure that the sheets are eased enough to allow the sail to cross around, yet not so much that they contact the water allowing the boat to drive over them. With practice, the delicate ballet of jibing the spinnaker becomes second nature. The downside to the asymmetrical chute when compared to a traditional symmetrical chute is that it can't be efficiently sailed with wind angles between 150 and 180 degrees – if your destination is dead downwind, you may find it necessary to make multiple jibes so as to sail higher angles in order to keep the sail performing at its best. The plus side is that most asymmetricals are capable of being carried far closer to the wind than their traditional counterparts. In winds under 10 knots, I can carry mine with the wind slightly *forward* of the beam. This,

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combined with ease of handling, made the asymmetrical my choice for an "off the wind" sail suitable for single-handed use.

Picture #24 - Alert Moves Out Under Asymmetrical Spinnaker



Spinnaker hardware installation was fairly simple. The halyard was mounted 14" above the jib stay attachment point to allow for a slightly larger sail, and to keep the dousing sock from wearing, or possibly snagging, there.

Picture #25 – Spinnaker Halyard Attachment



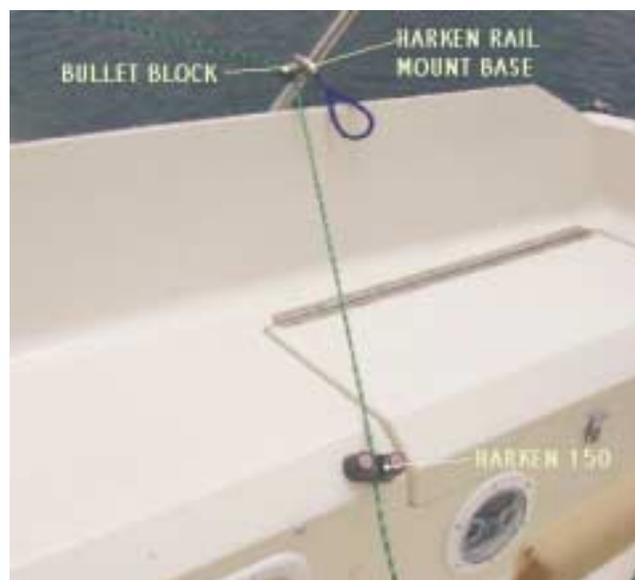
The tack line was led aft through a "D" ring attached to the front of the bow pulpit, to a block on the forward edge of the stem head, to a turning block at the base of the forward starboard lifeline stanchion, and finally onto a Harken 150 Cam Cleat mounted on the cabin side, just aft of the aft window. The tack line itself was made long enough to allow the sail to be lowered by pulling it into the cockpit with a sheet should the dousing sock ever become jammed, or not be used.

Picture #26 -Tack Line Details



The sheets are led aft to Harken rail mounted Bullet blocks and Harken 150 Cam Cleats mounted on the beveled edge of the cockpit seats.

Picture #27 - Spinnaker Sheet Arrangement



My asymmetrical spinnaker was custom-made, and the maximum luff length I specified was 20'-9". With the tack moved out to the end of the bow pulpit, the sailmaker used a "J" measurement of 6.5' (one foot larger than the actual measurement from the stem head to the mast.) The resulting sail is slightly oversized and creates plenty of drive. I call this my 2-knot sail – because if there is enough wind to fill it, the boat will do two knots – minimum. The asymmetrical spinnaker can be a great addition to the P-18, and it is a lot of fun to fly in a breeze.

4b. After Market Sails

The OEM sails that come with the Precision 18 are of good quality, and suitable for general duty. However, all sails have a limited lifespan, and on small boats the shape often seems to be lost long before the structural integrity of the sail suffers. When the time comes to get new sails, getting custom made after-market sails made specifically for your use and circumstance can pay huge dividends in performance. A good sailmaker will ask you questions regarding how you use your boat, how you intend to use your boat, where you sail, what wind ranges you sail in, and so forth. Your answers to those questions will allow the sailmaker to offer you any number of options in cut, materials, and improvements that will allow your boat to perform even better, such as: added roach to the mainsail, leach and foot lines, tell tails, draft stripes, a loose foot, a shelf-foot, radial cuts, extra reef points, cunningham grommets, one or more full length battens, and so on.

How do you know it's time to get new sails? Well, chronological age isn't a great indicator, because actual usage between different sails of the same age can vary widely. In practice, my sails seem to "last" about 2,000 – 2,200 hours of actual use. Assuming the sail isn't falling apart (a clear indicator), when the draft of the sail can no longer be moved forward using normal sail controls, the time to replace the sail is approaching. If the boat seems to heel excessively and go slow upwind, the time to replace the sails is approaching. If long vertical creases appear from the clew to the head and just in front of the battens – and easing or tightening normal sail controls can't remove them – the sail likely needs replacement. There are minor re-cutting procedures that can be used to help an aged sail get back some of its shape, but on a small boat like the Precision 18, I recommend you spend good money on new sails when the time comes, rather than spending good money on sails that are already going bad.

The deterioration of a sail's shape over time can be so insidious that it's difficult to fully recognize the negative impact it has on performance. When you finally

get around to buying new sails, the difference in performance can be eye opening. Good sails are simply a key to top performance in all conditions.

Picture #28 – After Market Sails



Comfort and Convenience

A desire to make the Precision 18 better meet one's individual needs will invariably cause the new owner to consider a variety of different changes and additions aimed at improving comfort and convenience while on board. The desirability or necessity of any of these changes is almost entirely dependent on how the boat is used, and one's personal taste.

1c. Cooler Modification

The standard 48-quart cooler that doubles as a companion way step works well. However, it has a few limitations and undesirable characteristics that can be easily addressed. First, in order to drain the ice-melt water out of it, you have to lift it up and tilt the end of it (with the drain plug down) into the cockpit. Then, if this just seems to be too much trouble and you go sailing *without* draining the ice-melt water, the excess water can readily pour over the side of the cooler and soak your berth cushions and anything else positioned "downhill".

To address the first issue, I installed a small brass hand pump in the upper corner of the cooler. It is simply held in place with 3M-5200. Temporarily attaching a short length of hose to the pump that can then be led to the cockpit (or centerboard tube), allows the cooler to be drained with no heavy lifting. Without the hose, the pump can also be used to easily get small amounts of water out of the cooler for cleaning, washing, or other use.

Adding baffles to the sides of the cooler (and sealing them with sealant) will keep any stray ice-melt from finding its way out of the cooler when the boat is heeled. The baffles I made are fabricated of teak and attached to teak cleats that are screwed onto the inside of the cooler. Also, using a 1/2" thick panel of Styrofoam trimmed to fit the space between the baffles significantly improves the insulating characteristics of the cooler. Lay the Styrofoam panel in place prior to closing the lid and move it aside for access to the cooler's contents.

The cooler also is home to a drop board that has three soft vinyl drink holders attached to it. The drop board rests in aluminum rails at the front of the cooler and can be used below right where it sets. It can also be lifted off the rails and placed in the bottom of the companionway with the holders facing outward or inward – as desired. The holders not only accommodate aluminum cans, they can hold an air horn, sun block, sunglasses, or a variety of other items you might want to have at hand. This cooler modification is inexpensive, easy to fabricate, and adds greatly to the utility of the cooler when cruising for more than a day or two.

Finally, to reducing any scratching or marring of the bottom of the cooler caused by aluminum cans sliding around, I use a simple rectangle of rubberized shelf liner on the bottom of the cooler. It's easily removed, dried and cleaned.

Picture #29 – Cooler Modifications



2c. Cabin Top Vents

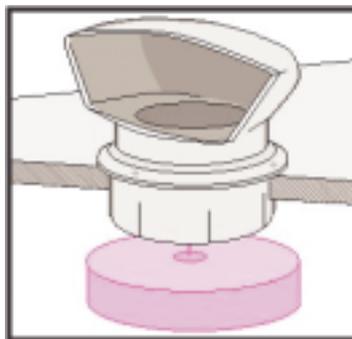
Ventilation through an open companionway and open forward hatch is excellent, but deteriorating weather may drive you below decks for extended periods of time and require both of those hatches to be kept closed. If that happens, the need for additional ventilation will quickly become self-evident. Older P-18s have fixed (non-opening ports) that are of absolutely no help in this circumstance, but those "lucky enough" to find themselves stuck below on newer boats can selectively open ports on either side to provide some fresh air. However, the opening ports can't readily be left opened in a driving rain with the boat swinging at anchor, so *additional* ventilation might prove desirable for those skippers who plan to spend more than just a few nights a year aboard their boats.

The vents I chose to add to my boat are Nicro Low-Profile Cowl vents made of soft-sided PVC. They rotate through 360 degrees, and are unobtrusive. On

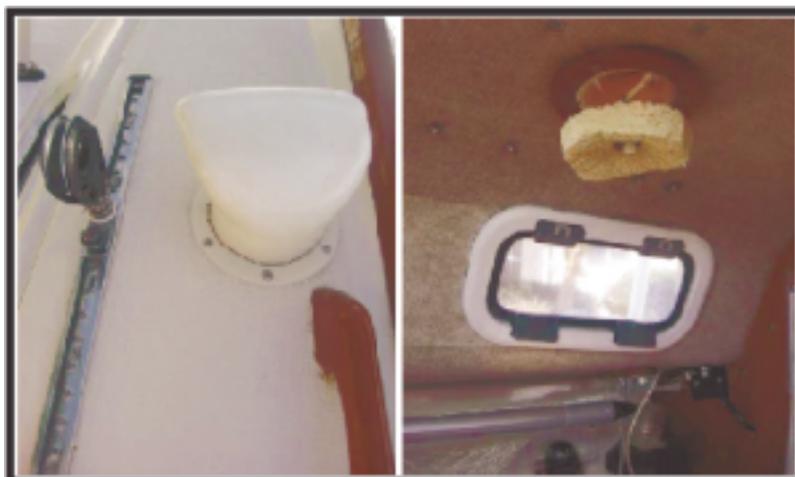
larger boats, these type of vents would typically be installed on a "Dorade box" that has baffles to prevent green water from finding its way aboard – however, I wanted to keep these vents as "low profile" as possible. So, in heavy weather conditions under sail, I simply remove the vents completely and replace them with press-fit deck plates. In nearly all conditions, the vents are turned away from the prevailing wind and spray when under way. If any spray (or rain) does find its way down the vents, I have sponges hung beneath them to catch any errant drops. The sponges are easily squeezed dry, and an occasional soaking in a bleach/water solution keeps them fresh and mold free. At anchor, the vents can be turned as desired to maximize inflow and exhaust. Furthermore, the retaining clip (to which the sponges are attached) can be used to turn the vents from below, without having to reach up on deck.

Installation was simple, and only required drilling an appropriately sized hole, sealing the foam core, and fastening & bedding down the mounting ring. A teak trim ring provides a finished appearance from below, and bug screen inserts keep the mosquitoes at bay. Even with opening ports, the vents add greater flexibility and comfort when caught down below during rainy weather.

Diagram #18 – Vent Installation



Picture #30 – Vent, Exterior and Interior



3c. Replacement Windows

Shortly after my boat turned 16 years old, the starboard window frame developed a crack that eventually migrated into the window itself. The company that supplied the frames was no longer able to supply replacements, so I was faced with some effort and expense to fabricate new ones, or change to an overlapping frameless design where the Plexiglas or Lexan window material was externally bolted to the cabin sides. While both options were certainly viable, at the end of the day I would have spent time and money simply trying to regain what I had – with no significant "improvement". Having longingly looked at the newer Precision 18s with the Lewmar opening ports, I began to seriously consider upgrading to those. A major portion of the challenge involved was that it would take considerably more effort and expense to accomplish that type of upgrade. After looking at the potential pitfalls inherent in such a modification, I decided that some of the work was simply beyond my capabilities. So, I searched around and found a local fiberglass repairman who came highly recommended and had quite an impressive portfolio of outstanding work on display. We talked about the job for some time, and worked out the details. The result? I would do much of the prep work; he would do *all* of the fiberglass and gel coat work. Later, I would do the actual window installation, and interior finishing.

I removed the existing windows, the lifelines and chain plates, and removed everything from the inside of the boat. (Fiberglass work *is* messy). I used a razor knife to cut back the interior carpet, and carefully stripped a ribbon of carpet off the cabin sides around the windows for a couple of inches all the way around. Then, I trailed the boat over to the fiberglass pro's shop, and he completed the job in just a few days. He built molds, and tapered his repair into the existing cabin sides. Then, he smoothed the exterior and reapplied gel coat to the entire coach roof from the front to the coamings – his match was perfect!

I bought the four Lewmar ports from the Precision factory. The folks there let me copy their template for cutting out the new holes *and* take measurements for positioning the new windows correctly. They shaved the interior trim rings to the correct depth, gave me the correct length of fastener to use in securing the frames, and talked me through the process of finishing the task. Their support was simply fantastic.

Using the template, I drew the outline of the window cutouts on the cabin side, masked around the outside of the line to protect the new gel coat from abrasion, and used my Saber saw to cut four big holes for the new windows in my newly-glassed-in cabin sides. I was shaking at first, but by window hole

number three, I was quite relaxed and comfortable. I cut the holes slightly undersized and then shaved them to the proper fit using a Dremel tool with a sanding drum attachment. The windows were dry fit to check for proper alignment and clearances. Once that was done, the new windows were set permanently in place with adhesive caulking.

To finish the interior, I used plastic sheeting to create a template for transferring the exact shape required to a new section of carpet used to cover the space between and around the new windows. The carpet was simply butt-jointed up against the existing carpet, and while noticeable, the fix is not grossly unattractive. The end result far exceeded my wildest expectations, and was well worth the cost. For me, this was a job where professional assistance with the glass work paid big dividends – there was simply no way I could have matched the gel-coat so perfectly and finished the cabin sides so flawlessly. The difference in ventilation, light, and overall appearance provided by the four opening ports is indeed remarkable.

Picture #31 – New Opening Ports



This is not a project that makes a lot of economic sense, and it will likely only pay back a very *small* fraction of its high cost at resale time. I rationalized the expense because 1) my existing windows needed to be replaced anyway, 2) direct replacements were no longer available, 3) the new opening windows would add greatly to my comfort, 4) I have no plans to sell my boat anytime soon, and 5) it was great fun to work this through to completion.

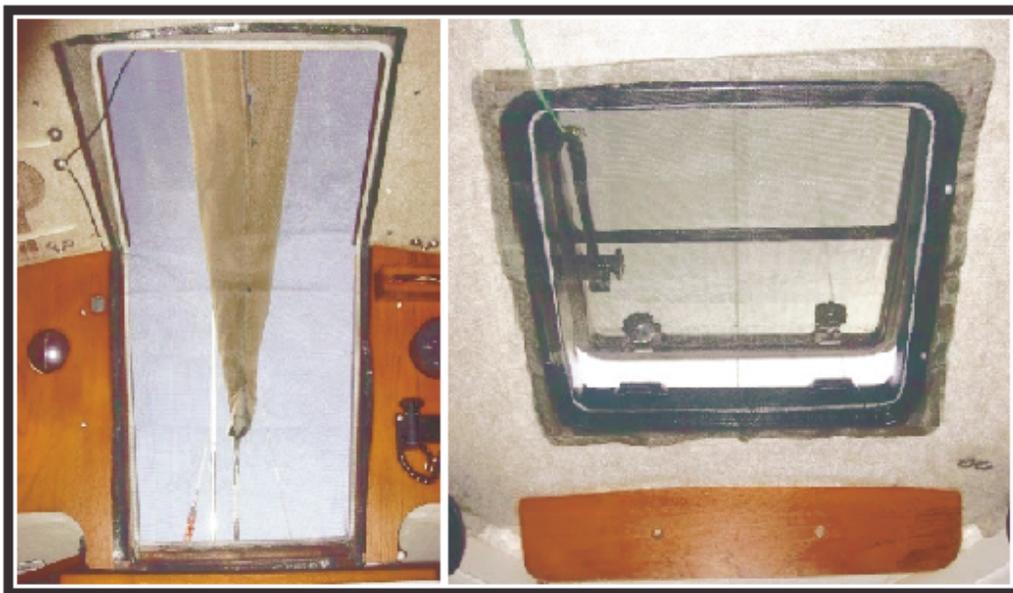
4c. Bug Screens

Finally, all that great ventilation now found on the P-18 can be a huge liability if you find yourself anchored out *without* bug screens. In many parts of the country, bug screens are not a "nice-to-have" item; they are a "got-to-have" item. There are a variety of different ways to rig bug screens on a boat - from fancy frames that fit neatly into the companionway slots, or rest in the forward hatch frame, to large oversized screens that are carefully draped around the hatch and held in place with weights or chain.

I prefer to take advantage of the upholstered carpet overhead liner's inherent ability to hold Velcro. I also take advantage of this for a variety of things like affixing a small mirror, storing items like plotters and navigation aids, *and* for affixing bug screens. (Use the "grippy" side of the Velcro not the "fuzzy" side.) Simply go to the hardware store and get a couple yards of fine mesh fiberglass screen and cut it to overlap the hatch and companionway by a couple of inches all the way around. Glue the "grippy" Velcro along the edges of the screen, and apply the fuzzy strips of Velcro to the edge of the teak trim panels either side of the companionway. (Stainless staples work well for this purpose.)

Makes sure any vents you install have bug screens as well, and if you haven't fabricated a watertight locker lid for the starboard cockpit seat locker, you might consider adding a removable screen to it too. Newer boats with opening ports have screens that can be fitted into their windows from the outside. Good bug screens should be easy to install, and fairly inexpensive. When the bugs are out in force, inexpensive bug screens can quickly become priceless.

Picture #32 – Bug Screens



Electrical

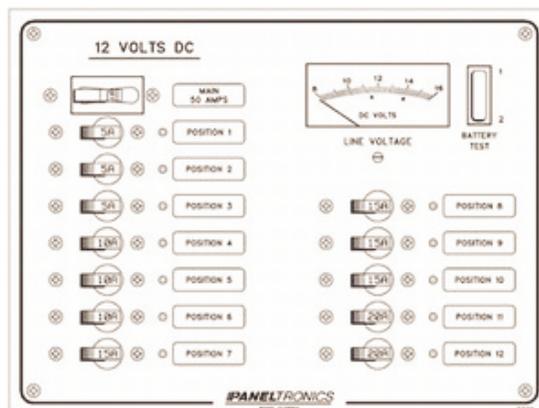
The electrical system installed on most small boats today is typically not an item that most builders point to with pride. In many boats, the electrical system seems to be viewed as a "necessary evil", and the typical installation is - at best - "adequate". The electrical system on the P-18 follows this trend, and is only adequate. In further keeping with the trends, the wiring is hidden to the greatest degree possible. Mechanical connections typically didn't incorporate heat shrink tubing and in my older boat the wire used appeared to be untinned automotive wire. (Newer boats have proper marine grade wire). The electrical panel didn't have a lot of room for adding circuits, and it used fuses rather than circuit breakers. Older boats also used low-end running light fixtures, but the builder has upgraded these over the years as well. At some point, older boats like mine eventually will need a whole new electrical system.

1d Replacement Electrical Panel and Wiring

I kept the single Group 24 battery, and installed a new 12 circuit electrical panel made by Paneltronics - an outfit that has a variety of semi-custom panels that can be adapted to meet your needs. Their products are high quality, and they usually provide fast turnaround – with most orders filled in less than 10 days. Visit them at: <http://www.paneltronics.com/>

I elected to install a Paneltronics model 2206 panel that, in addition to the 12 electrical circuits, came with a 50-amp main circuit breaker cutoff switch along with an expanded scale analog voltmeter. I was able to specify the amperage of the circuit breakers so as to tailor them to equipment they were protecting. The panel came with my selected label plates already installed. I was also able to specify a full-length hinge along the bottom edge of the panel to provide easy access to the connections.

Diagram #19 – Paneltronics Model 2206



I used heavy poster board to mock up a cabinet that would accommodate the panel, and once the precise shape was developed, I built the cabinet out of 1/8"mahogany plywood with 1x1 cleats, followed up with four coats of West System epoxy, one coat of primer, and two coats of flat white enamel. The cabinet is screwed down to the fiberglass liner below, and bedded in 3M-5200.

Picture #33 – Electrical Panel Installation



Much of the new wiring was carefully laid out and bundled outside the boat and installed as a preassembled unit. Wires forward of the panel were led between the fiberglass liner and hull. To do this, I fed the wire into split cable covers typically used on shrouds, and carefully pushed it forward. The task was made easy by the large oval trim rings I had previously installed in the liner (port and starboard) to gain a little extra storage. With the ends of the wires pulled through, the cable covers were left in place to serve as chafe protection. I used Ancor marine-grade wiring and crimped connectors with heat shrink tubing around all connections.

I purchased a good dual-action crimping tool that, once engaged on a connector, will not release until the right amount of "squeeze" has been applied – it was worth the money. This upgraded electrical system has proven to be "bullet-proof" over the past seven years.

2d. Solar Panel and Battery Charger

To maintain my battery, I installed a small 5W solar panel - the Siemens model M5. It puts out 5 watts, at 0.34 amps, with a maximum voltage (at load) of 15.0 volts. The unit is incapable of keeping up with demand while cruising, but it does put something back. However, what the panel does do exceptionally well is keep the battery topped off, and it replaces a weekend's worth of day-sailing battery-draw over the remainder of the week. This small panel is self-regulating, so no additional regulator is required - if used with common lead-acid batteries.

Installation was fairly straightforward. I mounted it to an aluminum plate (using rivets), to which two Atwood Rail-Mount clamps were previously attached. The panel then attaches to the stern rail and can be pivoted on one axis to better align with the sun's rays when desired. A hole was drilled in the underside of the railing, and the wire leads were led inside the stern rail and down to the battery through the stern rail's hollow forward base.

To charge a deeply discharged battery, I installed a Guest model 2610 charger. This is a small compact unit that puts out 10 Amps to a single battery (or 5 amps to two). It's a three-stage charger that does a good job of bringing the battery up to full charge and conditioning the cells for increased longevity. I mounted it on the port side of the interior cockpit foot well and wired it directly to the battery. A common three-pronged plug is used to supply power to the unit.

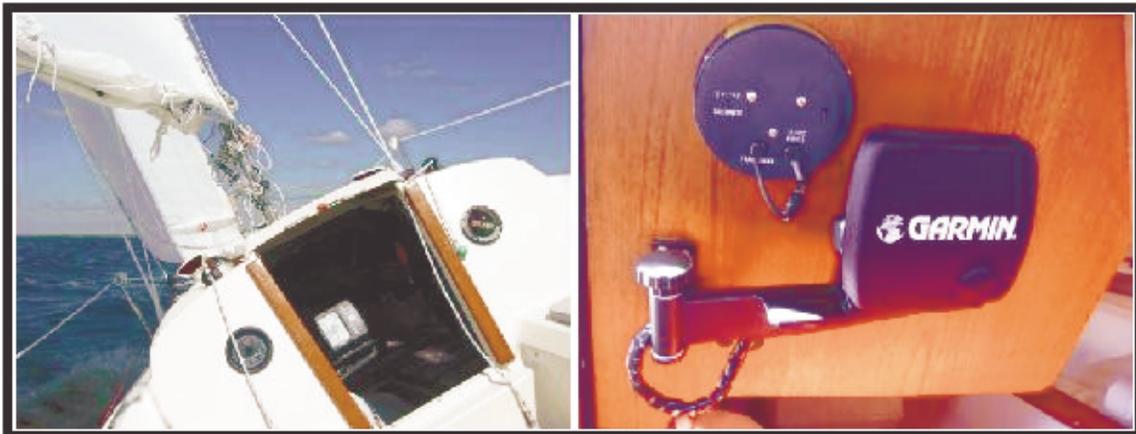
Picture #34 - Solar Panel and Battery Charger



3d. GPS

GPS is a valuable tool for any boat. For trailerable boats, a challenge associated with installing a GPS is simply finding a satisfactory place to mount the display unit. Space is always at a premium, and despite manufacturer's claims to the contrary, the unit should be mounted where it will have some protection from the elements. I elected to mount my GPS's Control and Display Unit (CDU) on an aluminum swing out arm purchased at West Marine. When in use, the unit swings out into the companionway and can be fully viewed and operated from the cockpit. (as shown in picture #35, on the left) In this position, it's still possible to move between cockpit and cabin without disturbing the position of the display. A quick twist of the friction knob allows the unit to be swung back against the backside of the cabin trunk where it can be locked completely out of the way, well protected from the elements or inadvertent damage.

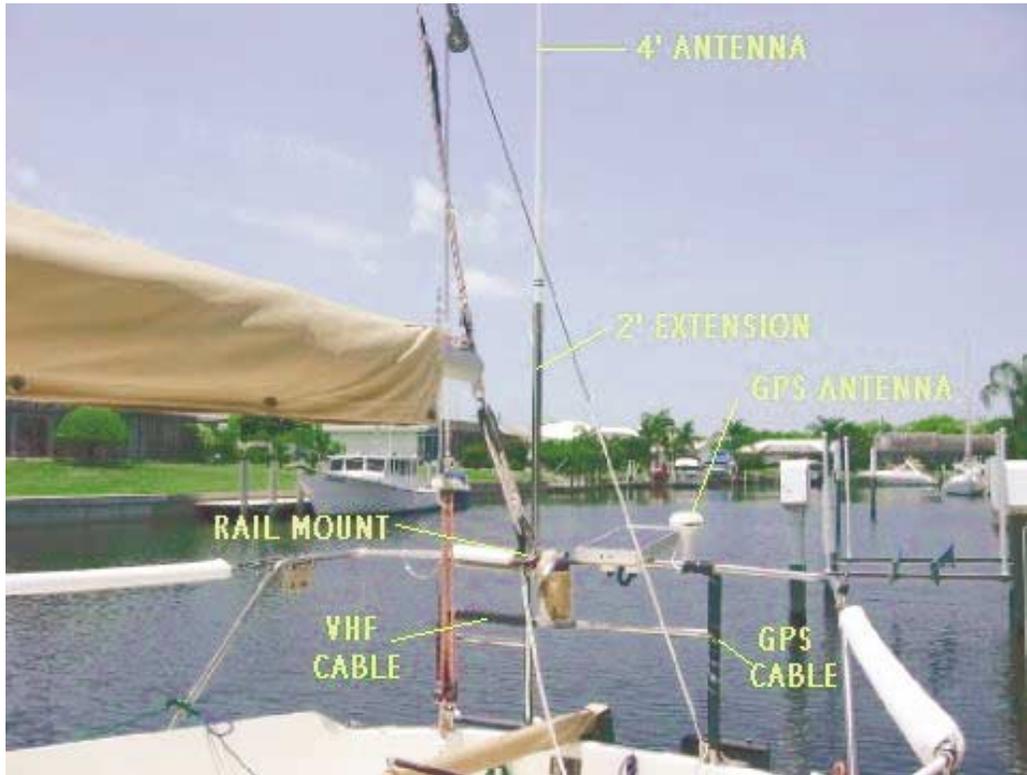
Picture #35 – GPS CDU Installation



The GPS antenna was mounted on the stern rail using an inexpensive nylon rail mount. The GPS antenna needs to be mounted in a location that is free from overhead obstructions – and as long as that can be accomplished, increased antenna height is not helpful. As supplied, the GPS antenna wire has a factory-installed connector on the end that makes leading it to the CDU challenging - particularly when it comes time to penetrate the hull, or pass through holes required to reach the display unit. One option is to cut off the connector, and install a new one once the wire has been run. I didn't like that option as the factory connection was very well made, and sealed with heat shrink tubing. Therefore, I elected to run the wire externally down along the stern rail and secure it with spiral wrap. To pass the cable through into the hull, I used a special cable through-deck fitting that allowed the connector to pass through and then tightly sealed around the cable once installed. The fitting was mounted high up on the transom – right under the rub rail. Leading the wires

up to the CDU is simple, and the only other wiring required is for the 12V power supply. If you don't want to mess with a fixed mount GPS, a handheld unit is a worthy option that offers the advantage of portability between boats, and accessibility for other "non-marine" uses. GPS is not a necessary item, but it can be both helpful and fun to play with.

Picture #36 – Stern Rail Mounted Antennas



4d. VHF

For many sailors, a VHF radio would be the one piece of electronic equipment they wouldn't want to be without. The type of installation you ultimately choose should be based upon: 1) the local area you sail, 2) unique conditions of an area you *might* want to sail someday, and 3) personal preference. VHF operates "line of sight". Antenna height, antenna characteristics, transmit power, and radio quality all affect performance. You simply have to choose what's right for you. For many sailors, a simple handheld radio meets all their needs. If you sail on inland lakes, or populated areas along the coast, a handheld radio makes tremendous sense. If your travels take you to more remote areas, a fixed mount radio may prove more desirable. If you choose a fixed mount radio, you'll get more transmit power. You'll also have to decide where to locate your antenna – the most typical options being at the masthead, or stern rail.

I elected to go with an Apelco fixed mount radio, in conjunction with a Shakespeare Galaxy 5400XT antenna that has a 3db gain, is only 4 feet tall, is made of fiberglass, and is mounted atop a 2-foot extension attached to the stern rail. This set-up requires no troublesome connector at the mast (required for a mast head antenna installation on a trailerable boat), and provides both a "transmit" and "receive" range that meets my needs. The wire from the antenna is led inside the extension, and then is led external to the stern rail opposite the GPS. Like the GPS cable, the VHF coax is secured with spiral wrap. For easy trailering, I replaced the lock nuts on the antenna's rail mount with wing nuts. Simply loosening the wing nuts allows the entire antenna assembly to pivot forward. The end of the antenna can then be secured alongside the mast. The radio itself is located in the cabin, but the cord with the Apelco radio was long enough to reach to the cockpit. Channels can be changed from switches on the microphone, so there's no need to mess with the control unit once the radio has been turned on, and the volume set to the desired level. I installed an auxiliary speaker in the cockpit foot-well mounted coaming box I'd previously installed. I have an extra microphone clip near the companionway for storing the microphone in a location that's easily accessible while I'm operating the boat from the cockpit.

The answer to "How far I can transmit and receive with my radio?" is: "It depends." But, I have routinely made radio contact with sailboats more than 12 miles away, and have received NOAA weather radio broadcasts from a station more than 90 miles away.

Picture #37 – VHF Installation Details



XI Conclusion

The Precision 18 is a well-conceived, well-built, and well-mannered small sailboat that precisely meets its design goals of offering "pure and simple" fun. The boat has been in continuous production for nearly twenty years now, and the changes over that time have been fairly small, thoughtful, and aimed at making the boat better. With nearly 600 P-18s having been built quietly without fanfare, this is a boat that has stood the test of time not because of anything unique, flashy, or exceptional – but because it simply and honestly meets the needs of many small boat sailors. Whether you buy a new boat, or a used one, the factory support you'll receive when you join the "Precision family" is exceptional. The Precision 18 is built by sailors - and *for* sailors. Bill and Richard Porter rightfully take great pride in every small boat that they - and their team of craftsmen - conscientiously produce.

The many modifications and additions I've made to my boat over the years have not been accomplished to correct gross deficiencies in the boat. In fact, it's a tribute to the overall quality of the boat that I have elected to keep it, care for it, and adapt it to meet my changing needs. After 18 years of ownership, I've yet to find a small boat that could adequately satisfy my sailing requirements *better* than the one I presently own.

If you're new to trailer sailing, I sincerely hope this book has provided you with some valuable insight into the Precision 18 so that you can more easily decide whether or not it is the boat for you. If you already own a P-18, I hope this book inspires you to take good care of it, sail it often, and make it "yours" by adapting it to meet your needs. Regardless, I hope your future sailing days will be many, happy, and safe.



XII Special Addition: Things That Work

This addendum is a random selection of things that have worked for me in the past - and *may* work for you now. I don't work for, own stock in, or otherwise "benefit" from *any* product recommendations here. I just share these "little tidbits" in the hope that you might find some of this information helpful.

Hull cleaning: I like to use a long-handled brush with medium/soft bristles. The non-skid cleans up exceptionally well with a pressure washer. (Use care not to hold the nozzle too close, or in one spot too long.) A dilute bleach/water solution works well on bird droppings and some other organic stains. I don't use fancy boat soap – regular car wash soap works fine. I use *Nu-Finish* car wax (paste or liquid), and this year, I buffed the hull with *3M-Cleaner Wax* before applying the *Nu-finish*. The results were remarkable.

Barrier Coat: I used *Interlux Interprotect 2000E/2001E*, and followed up with *Interlux* anti-fouling paint to insure product compatibility.

Sail Cleaning: *Oxyclean!* Brush on a generous mixture of *Oxyclean* and warm water, and allow the mixture to stand for several minutes. Rinse off thoroughly before it dries.

Metal Polish: *Never-Dull Magic Wadding Polish*. A small portion of wadding is pulled off (like cotton candy), and the item to be polished is rubbed with wadding until all dirt and grime is removed. Follow up with a dry cloth. This wadding is also handy for cleaning and inspecting standing rigging. Run a ball of wadding up and down the wire – any broken or frayed strands will leave a tell-tail trace of wadding that telegraphs the need for closer inspection.

Cleaning rust off "stainless" rigging parts: A wire brush on a *Dremel* tool makes fast work of rust stains. The wire brush can also be used to buff your faded, dull- gray Harken blocks back to a crisp glossy black color.

Teak Trim: When I lived up north and sailed on fresh water – multiple coats of varnish looked good and lasted a season. In Florida, the varnish failed quickly, and I have had good results with *Cetol* – two coats annually.

Cleaning a hazy forward hatch: *Aurora Clear View*. A two-part cleaner protectant that will return even a badly hazed and sun damaged hatch cover to almost new condition.

Storage: Storage can be easily added by installing side mounted canvas bags, and net hammocks.

Cushions: Remove them and allow them to air out frequently. Regular vacuuming keeps them clean. Stains should be treated immediately. Pick up spills with paper towels by blotting until the towels are nearly dry. An occasional squirt with *Febreze Fabric Refresher* or *Lysol Spray* will keep them fresh smelling.

Bilge Access: I replaced the small inspection port under the cooler with a larger 8" pry-out model that allows me – among other things - to wipe every drop of water out of the bilge.

Batteries: If they are of lead-acid construction, they should only be refilled with *distilled* water. Keep terminals clean, and coat connections with dielectric grease – *Ancor Marine* makes a good dielectric grease that is available in small tubes from West Marine. Recharge batteries after use – don't allow a battery to remain discharged for any longer than necessary.

303 Protectant: This is an outstanding protectant for use on tires, the rub rail, Lexan windows, and many other plastic or rubber items aboard the boat.

Boeshield T-9: This is a high quality lubricant that leaves a protective waxy coating behind to protect metals from corrosion.

Lanacote: An anhydrous Lanolin lubricant that offers superior lubrication and unmatched corrosion protection – ideal for use on rigging components like turnbuckles.

Sailcote: A high-performance, "dry" lubricant suitable for use on all *Harken* blocks, and ideal for lubricating the sail slots along mast and boom.

Sealant for Deck Hardware: *3M-4200* – good seal, mild adhesive, much easier to remove than the tenacious *3M-5200*.

Removing 3M-5200 or 4200: Use a product called "*Anti-bond*" – available from *West Marine*. Works great!

Sta-bil Fuel Stabilizer: Add to every tank of fuel; allows for easy starts after long periods of downtime, and keeps "old" fuel potent.

Boat Covers: Custom-made boat covers will protect your boat and gear from the damaging rays of the sun and greatly reduce the amount of effort required to keep the boat looking good.

Petit Trailer Cote: A durable, silver colored, single part paint that's ideal for the over coating and refinishing of older galvanized boat trailers.

Balancing Your Trailer Tires: Having your trailer tires balanced can greatly reduce vibration and "hopping" at highway speeds.

Whisker Pole: A *Forespar HD6-12 Twist Lock Whisker Pole* is a perfect match for your boat, and can greatly enhance downwind performance.

Harken Sail Chafe Protectors: Plastic wheel-type rollers that – when installed on the lifelines near the forward stanchion – can help ease the genoa up and over when tacking, or heading up to a close-hauled course. I also have one on my backstay to help my large-roached mainsail pass through during tacks.

Bimini Top: Makes sailing on those "light air" and hot summer days bearable.

Interior Fans: Makes sleeping on those "no air" and hot summer nights possible.

Stoltz Super Trailer Rollers: Polyurethane rollers that last much longer than the standard black rollers, and won't leave black marks on your keel or hull.

Reflective Tape: Apply to life jackets, and even the boat itself, to enhance visibility at night.

Cunninghams: Suitable for both mainsail and foresail; lines can be led aft; allow for easy adjustment of luff tension, and control of sail shape as conditions or point of sail change.

Tiller Extension: *Forespar* telescopic quick-release 27-48" model. Allows skipper to sit well forward, and outboard as necessary to improve performance. When used in conjunction with a *Forespar Tiller Lock-Box*, it can hold the rudder in any position desired for simple self-steering.

Tapered Battens: Tapered battens can provide a better sail shape. The thin (tapered) end of the batten is placed toward the center of the sail.

Tempo Spreader Boots: Provide a smooth wide surface that protects overlapping headsails from damage. The small model T427 fits the P-18 spreaders well. Secure with twine, and then wrap the twine with rigging tape.

Penetrol: A multi-use product I find ideal for cleaning and restoring the color to black nylon deck cleats that have become faded and oxidized.

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Diagram #20 – P-18 Profile (below)

