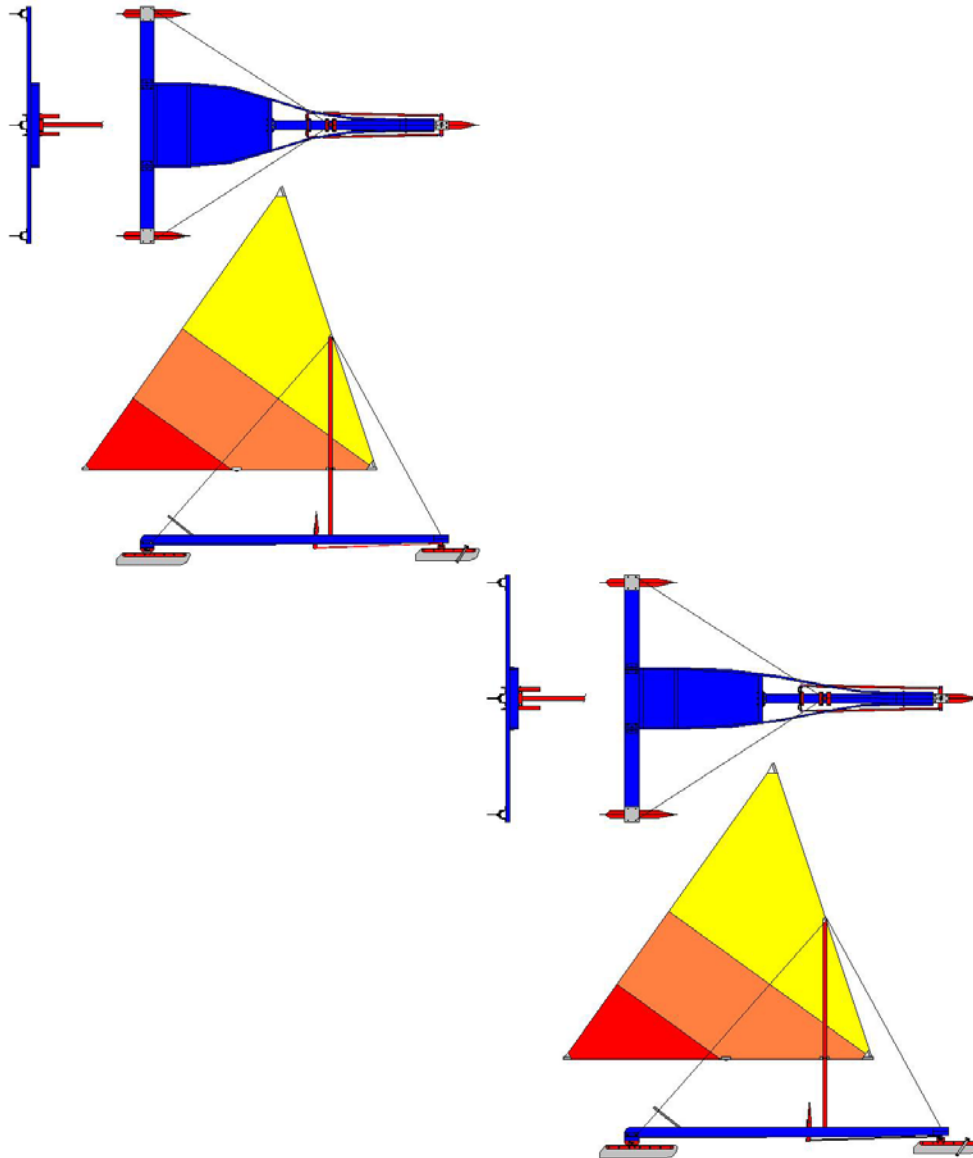


Construction Manual & Plans For The **Ice Tender**

Line of Iceboats

The Original 2-seat Ice Tender and single Ice Tender II



Additional information available at www.cherrywoodmedia.com

Thank you for purchasing the study plans and construction manual for my Ice Tender line of iceboats. I hope the drawings and this manual have enough information for you to successfully design and construct a great little boat like mine. I assume no responsibility for the finished product or its use. Remember the drawings and this manual is only to be used as a reference for you to design and build your own boat. Feel free to make any modification that you feel are necessary or will improve the performance of your machine. Also remember to always keep safety first and foremost in your mind when building any vehicle. You are not allowed to make copies or resell any part of this document or the drawings without written consent from Cherrywood Media. Please note that the pictures in this manual are of the Prototype boat and may not match the drawings exactly.

How you start is entirely up to you. I will take you through some of the steps I took during the construction of my boat.

1. Take your time and make the parts correctly, and remember workmanship does count!
2. Build the frame. Drawing IB-5000, It consist of (2) 2x4x8' & 2 (1x4x10') Boards.
 - a. Cut the 20" long 2x4 with the 45deg. Angle on it. Angle is not necessary!
 - b. Screw it to the other 2x4x72" (3) screws should be more than enough (Make sure the 72"- 2x4 is true and not warped or twisted.) I had to replace mine because it twisted and it twisted the entire frame with it.
 - c. Drill and Bolt Part's IB-5002 into position. Make sure to note the odd hole's position. That hole is used for the front mast cable.
 - d. Measure 6" from the end and draw a square line on top of the 20"er.
 - e. Mount the upper front corner of the 1x4's flush with the top at the 6" mark and the other end of the 72"- 2x4 should be flush with the bottom of it. This will give you a little caster for the steering yoke. Screw it together and drill the hole for the 5/6"x5.5" bolt. Place bolts in holes and tighten. Always use washers when ever bolting directly against the wood.
 - f. Cut the (24"- 2x4 original) or (18"- 2x4 II) and bolt Part # IB-5001 in the center of it. Making sure it is 1.5" up from the bottom and squared.
 - g. Bolt that assembly into place on the end of the 72"- 2x4 using Part# IB-5003. You will have to spread the 1x4's apart to do this. Do not screw the 1x4's to it at this time.
 - h. Cut (2) (32.5" 2x4's original) or (22.5"- 2x4 II).
 - i. Side (1) into position 25.5" from the end of the 1x4's. Pull the 2 ends of the 1x4's in with clamps or straps. Then slide the other one into position 5.5" from the end of the 1x4's. Align the 24" or 18" square with the 72"- 2x4 and screw together with 1x4's. Align the 32.5" or 22.5"ers and screw them into position. Do not remove the clamps or straps yet!
 - j. Cut a piece of 1/2" plywood to fit the cockpit area using the frame as the template. Screw it into position.

3. Build the Beam. Drawing IB-9000, It consist of (1) 2x6x8' Board.
 - a. Drill & Bolt IB-9003 and (2) IB-9002's on each end of the 2x6. Make sure to use grade 8 bolts here.
 - b. You will be loosening and retightening these bolts to make your runners perfectly aligned with each other.
 - c. Now place the Beam into position under the 1x4's on the frame.
 - d. Layout and drill the hole in the 1x4's on the frame to align with the holes in IB-9001 Brackets. Bolt the brackets to the frame using a thin shim (cardboard) one side. That way you can remove the beam later for storage.
 - e. Center and align the beam with the frame. Make sure to measure from the front of the frame to the ends of the beam to make sure it is aligned with the entire frame and not just the back.
 - f. With everything all lined up screw the IB-9001's to the Beam. Now it is starting to look like something!
4. Build the steering yoke, foot pedal, tie rod and runner assemblies according to their drawings.
5. Refer to the pictures in this manual and they will answer most if not all your question from here on out. You know the old saying about a picture being worth a 1000 words. Please make note that all the pictures in this manual are of the proto type and do not exactly match the updated drawings

Approximate Material List:

1-1/2 x 1/8 Angle		
Part No.	Description	Qty
IB-9002	Beam Brackets	4
IB-9001	Rear Axle Brackets	4
IB-6000	Mast Step	2
IB-5001	Center Mounting Bracket	1
IB-4001-R	Pedal Base	1
IB-4001-L	Pedal Base	1
IB-4002	Pedal Brkt	2
IB-4003	Mtg Bracket, Pedal	1
IB-3002	Yoke Brkt	2
IB-2002-R	Stiffener, Front Runner	1
IB-2002-L	Stiffener, Front Runner	1
IB-1002-R	Stiffener, Rear Runner	2
IB-1002-L	Stiffener, Rear Runner	2

1.0 x 3/16 Bar		
Part No.	Description	Qty
IB-8000	Mounting Straps	3
IB-5003	Mounting Strap	1

10ga SS Plate		
Part No.	Description	Qty
IB-1001	Runner, Rear	2
IB-2001	Runner, Front	1
IB-5002	Yoke Support Plate	2
IB-9003	Upper Mounting Plate	2
IB-5006	Cable Straps, Single	6

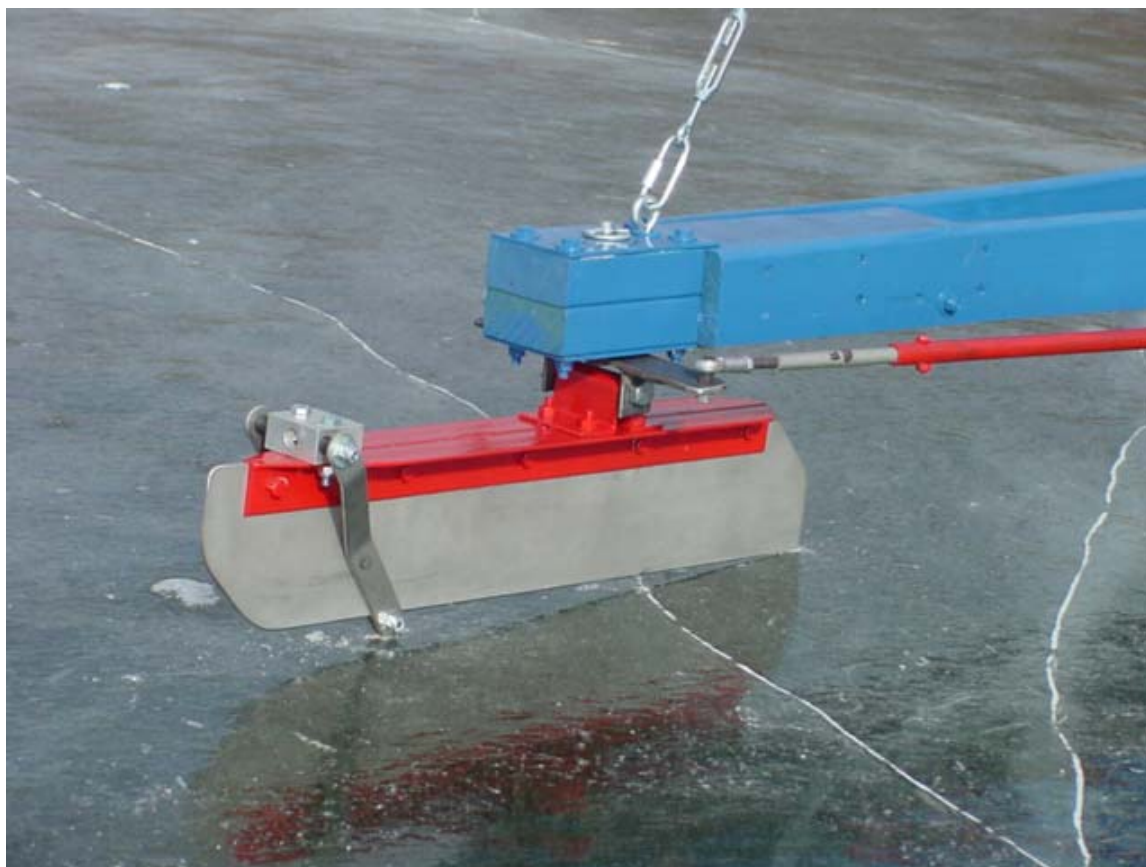
Hardware		
Part No.	Description	Qty
5/16x5.5	Bolt	2
5/16x4	Bolt	12
5/16x2	Bolt	12
5/16x1.5	Bolt	4
5/16x3/4	Bolt	32
#10x1	Screw, Wood	36
5/16	Washer, Flat	31
5/16	Washer, Lock	62
5/16	Nut	62
3/8x4	Clevis Pins	3

Wood		
Part No.	Description	Qty
1x4x10'	Side Planks	2
2x4x8'	Supports	3
2x6x8'	Cross Plank	1
3/8 Plywood	Floor	1

1-1/2 x 3/16 Bar		
Part No.	Description	Qty
IB-3003	Crank on Yoke	1

Note: This list is just a guideline and will have to be modified to match your boat

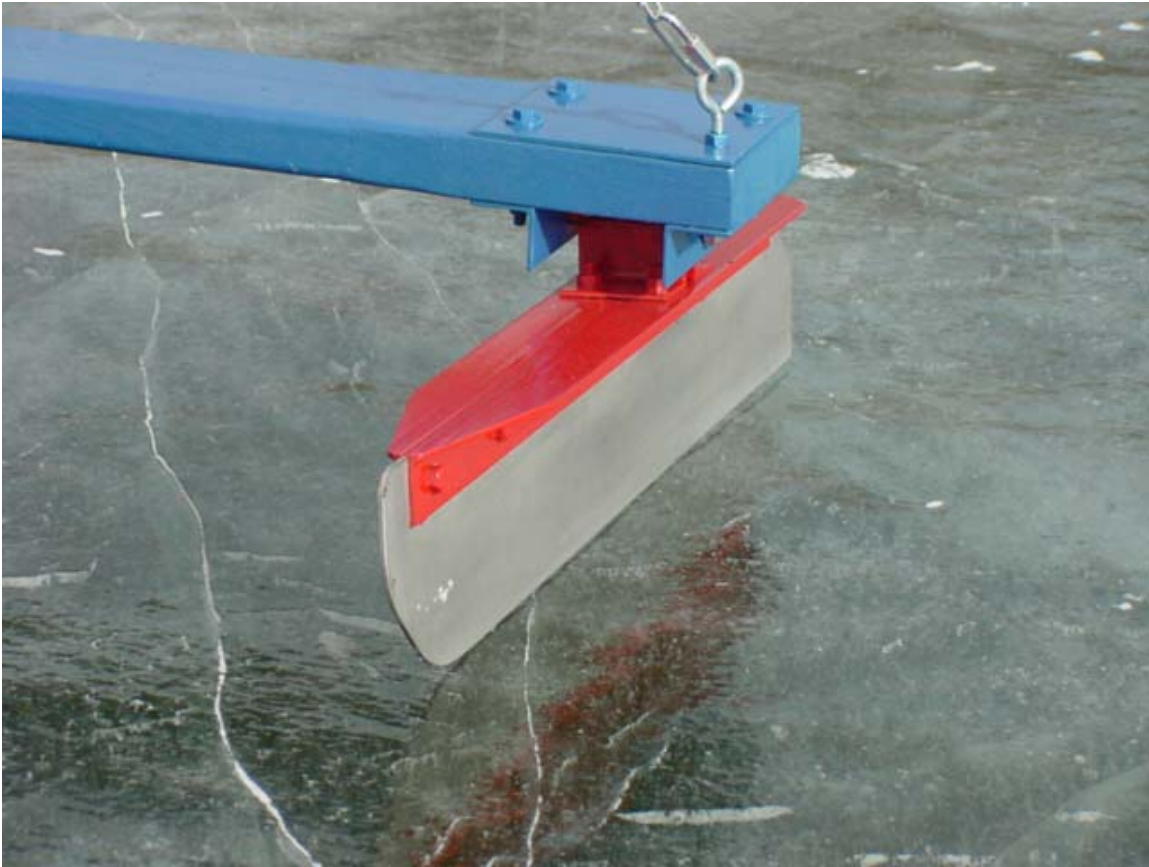
Front Runner Assembly



Front Runner Assembly

Notice the tie rod end assemblies bolted through to the black pipe (painted red). Also a good shot of the front turnbuckle and brake. The pivot blocks are now channel instead of the weldments shown above.

Rear Runner Assembly



Rear Runner Assembly and Axle mounting on the end of the Beam.
All 3 axles are $\frac{1}{2}$ " bolts with the threaded end cut off and a cross hole drilled for a cleaves or cotter pin. That way the runner assembly can be removed easily for sharpening or travel. Also note the eye bolts which can be used instead of IB-5006

Front Runner Assembly



In this shot you can see the foot pedal assembly and seat mounting rails. The center post mounting bracket should be noted also. In the updated version we no longer use the plastic seats. We sit right down on the floor and use a small back rest for our shoulders.

Mast Step Assembly



Here is the mast step and the end of the mast. Make sure to mount the 2 mast step brackets far enough apart to allow the mast some freedom of movement. I have about a 1/2" wider gap than the diameter of the mast. Also notice that I rounded the edges of all my lumber to keep it from splintering as easily.

Completed Boat



This is just a good all around shot for answering quite a few questions on the over all assembly.

Note: The Ice Tender was only designed to be use with 45-55 sq. ft. of sail. This one comes from a Snark Sail Boat. Some builders have used larger sails, but it is not recommended or necessary.