ICE BOX

Ice Box Recommendations

from 1973 Maintenance Manual [refers to older, upright iceboxes]

Several owners have found that if some ice is placed in the lower portion of the ice box that food there is kept at better temperature and ice will last longer. This ice can be in many forms, such as a cake, a bag of cubes, or a small bucket of cubes; but one of the most convenient forms has been to use one of the flat, square, bottle-type containers filled with water and frozen in a home freezer. These hold approximately three quarts and are flat such that if they are stood up against the back of side of the ice box, they do not take up much room. Even after the ice melts, the contained cold water contributes toward refrigeration.

Making Ice Last Longer

Rolph Townshend, August 1975 Mainsheet [refers to older, upright iceboxes]

I have had trouble for years with poor insulation qualities of the A30 ice box, especially on a hot calm day when we have to motor for hours. The ice just vanishes. I used poured foamed epoxy resin and added 2 inches next to the engine, under the ice box, and in the port seat area against the ice box bulkhead. I did get an improvement in the insulation qualities, but not as much as I had anticipated. It was a hell of a lot of work and an equal amount of mess, and I was disappointed in the result from the point of view of how long my ice lasted.

This year I added one simple device and I have gotten a fantastic improvement. I was concerned that the drain hole that the box into the bilge was allowing the hot air from the engine to enter the box or that the engine's need for air into the carburetor was pulling cold air out of the box via the hose. Either way I decide to do something about the drain opening; so I got a piece of 3/8 O.D. copper tubing about 18" long and bent it into a "S" shape, put one end into the drain hose with a clamp and the other end over the valve that allows water to enter the engine through the hull. This creates a low spot that holds a small amount of water from the ice box; as the tube fills it rises to height above the valve and water flows into the bilge. In other words, I created a trap the same as under your sink at home.

It works well and as I said I have experienced a great improvement in my ice box. Someone else might want to try it.

Modification of Cockpit-Opening Ice Box

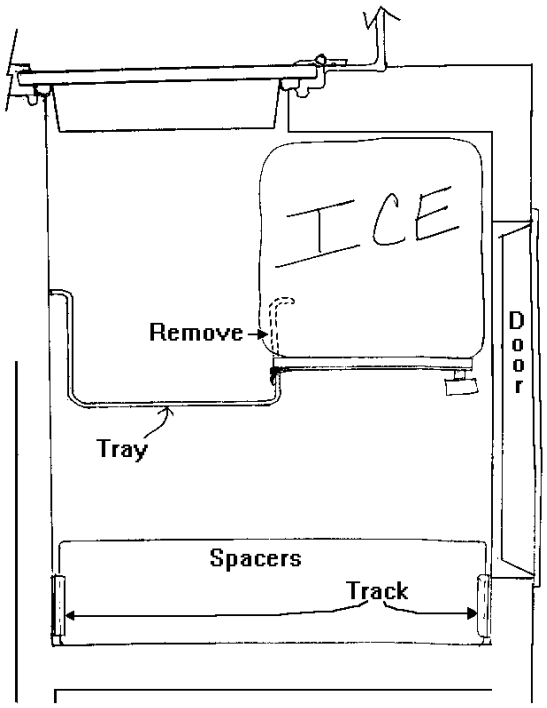
from 1973 Maintenance Manual [refers to older, upright iceboxes]

The first several hundred Albergs were manufactured with a cockpit-opening ice box. They lend themselves to modification which increases their capacity and reduces ice loss.

A previous newsletter had a suggestion to increase the efficiency of the ice box by keeping some ice in one form or other in lower part of the ice box. This, however, we found was not necessary after the below-mentioned changes were made in *Marlin* #215.

After looking at the teak fence in the ice box of #50 to hold ice cubes in place while daysailing, it was decided to go a step further and double the capacity of the ice compartment on #215. First the ice tray was removed and the forward side of the tray was cut away leaving about a 1" lip. To this lip was hinged a piece of corrugated fiberglass panel equal to the horizontal space left between the tray and the forward wall of the ice box. The fiberglass opposite the hinge was reinforced with a ½" square wooden strip. The fiberglass can be raised to a vertical position and held with a short loop of shock cord over a screw head or lowered to a horizontal position (forward and slightly elevated to drain aft into the tray) where the reinforcing strip bears on small blocks of wood (or screwheads) screwed to the sides of the box. The tray is reinstalled about two inches lower than it was originally. Milk cartons, bottles, or similar items can still slide under easily. With these changes, it is no trouble to get 75 to 80 pounds of ice in the upper section.

Next we installed adjustable, removable fences in the lower section of the ice box to prevent the contents from sliding back and forth as you go from tack to tack. We used Reynolds aluminum double channel track sold to the handyman to make horizontal sliding doors. We cut the track into 3" lengths front and rear and installed six pairs vertically, one on the forward wall and one on the aft wall spacing them at convenient intervals. Several fences can be made of 1/8" aluminum or Plexiglas or other suitable material to slip into the vertical channels. Cut a limber notch in the bottom of each fence so that condensate will not be trapped but will drain away.



Additional insulation has been installed. An extra two inches of Styrofoam was added to the side and bottom areas of the ice box in the engine compartment and to the side in the forward part of the port seat lockers.

The cockpit ice trap door needed insulation and better weather-stripping. We made a new trap door of 3/8" marine plywood and put 2" insulation on the underside. Then we covered the whole thing with aluminum foil and then with white vinyl convertible cloth. This new trap door was installed with box hinges so that it could be removed simply by sliding it to one side. (Removal makes it easier to get large chunks of ice in.) New, contact type sponge rubber weather-stripping was stapled in place.

The present ice box drains were supplemented by two more drains, one for the tray, and one for the bottom of the box, placed in the outboard areas opposite the present drains. Brass nipples were used throughout the fiberglass and rubber hoses were tied into the present drains. Now we don't

accumulate water in the ice box when we are on a starboard tack for a long period of time.

Insulating Your Ice Box

Harry Gamber, December 1983 Mainsheet [refers to newer, top-loading ice box]

This entire discussion is based on the insulating characteristics of boats #484 and below. It's quite possible your boat may not need any additional insulation but you know what you have and perhaps you'll want to make a small improvement. I figure that my ice box is now 2 to 3 times more efficient based on what I did. Let's get on with it before you skip to the next article.

Let's first acknowledge that we have different ice box installations, but they all have commonalities. Visualize your ice box as a six sided box and I'll identify each side with names such as outboard side, forward side (that's toward the pointy end) top, bottom, etc. The overall objective is to encase the box in urethane which come in two forms, solid sheaths and foam. I've been told a 1" thickness of this stuff is equivalent to 3 to 4" of Styrofoam. We'll call the solid type "therma-sheath". The brand I used is Rmax. It's exactly 7/8" thick and it has foil on both sides. You've undoubtedly seen it in new residential construction sites, there being big blue "R's" on the outside. The first problem I had was finding the stuff. I searched everywhere and finally found it in my back yard since there is continual construction going on all around me. Thus, since I couldn't buy it, I stole it. I didn't really. There's lots of it lying about and in the dempsy dumpsters. On one occasion I asked a worker who didn't speak English and he motioned O.K. The other form is a foam sealant. I found it in Dart Drug. It's called "Easy Insulator", a blue can. It claims that it equals 25 tubes and costs about $6.00—I got mine on sale for about $3.00. I used 2½ cans. It contains no formaldehyde or fumes.

When I did mine, it was about 100 F and it took me about six hours. This is the type of job that Bob Marshall will tell you, "Oh ! you can do it in 2 hours and 13 minutes"' but then he's fast and I'm slow. I nearly ran out of beer doing mine. Now, here's what I did. I made patterns out of brown paper for the inboard side next to the engine and the aft side in the port seat locker. Be sure to overlap the one corner next to the muffler. If you cut the one in the seat locker a little higher than necessary to cover the fiberglass, you can nail the top edge to the plywood. I used 1" roofing nails. The adhesive I used to bond the foil and fiberglass is some black stuff used to bond paneling to studs (PL-200). It's real cheap, about $2.00 a tube. You'll need a caulking gun. I used about two tubes. Just run a ¼" bead about 1" from the edges. Punch it gently into place, wait a minute or two, and then push hard. Mine is still holding. The top is the hardest one to do. What I did is make patterns for the various sections and simply glue to the inside top of the ice box. I put some rubber strips of insulation around the edges of my two ice box covers.

Now the foam operation. This is somewhat of a guessing game since you're dealing with areas you can't really see. As explained above, you put sheathing on the inboard side, next to the engine. You'll note you still have a wedge composed of teak. I drilled three ¼" holes in this wedge. You then insert the nozzle of the foam sealant in the hole and press until it starts to ooze out of the hole. The forward side is done in a similar fashion. Drill about three ¼" holes near the top edge and fill them up. You should use up at least a can doing these two areas. Now the final areas consist of the outboard side and the bottom. This really one open large area which follows the contour of the boat hull. The bottom is the bilge. You can best view this area from inside the port seat locker providing you have a left eye and by pulling out the port drawer inside the cabin next to the deck and sticking your head in there. Flat heads are better than pointy ones. I squirted foam into

this area from that small hole in the seat locker and through some ¼" holes I drilled in the top teak shelf next to the side and through the side next to the hull behind the port bunk. A work of caution—this foam really expands! I put a little too much in the wedge area next to the engine compartment door and I could hardly get the door back in. When you finish, you can run a bead of the foam around some of the places where you used the sheathing. Finally, at the suggestion of one of our members, I put some of the sheathing behind the engine compartment door and under the small counter above the engine. It helps muffle the engine sound.

I know it's difficult to envision the above. I showed my efforts to several people with whom I cruised this summer. I'll be at the seminars in February and I'll bring samples of the materials mentioned above.

This is a good investment of effort and time and costs virtually nothing in dollars. I was on the summer cruise and I would say I had half of my blocks of ice on the fourth day.

Harry Lied!

Ray Marks, August 1984 Mainsheet [refers to newer, top-loading ice box]

In his article in the December 1983 Mainsheet, Sir Harry says about insulating the icebox that "it's relatively a snap and only required 2½ cans of foam." Well, this "ain't true!" Before starting to insulate the icebox on #434 we removed the port cabin drawer and drilled two 3" holes in the aft side of the fiberglass drawer holder-inner. This enabled us to peek through one hole and shine a flashlight through the other. What we found was one huge cavern underneath the icebox toward the area of the motor (maybe 6" deep).

So before you insulate your icebox, insert a plastic tube in your icebox drain hole and get it down into the bilge area. Insert in the bottom end of the hose a piece of stainless steel wire and bend the wire so that it forms a water trap such as your bathroom sink so that the melt water allows you to foam in the bottom of the box and leave a channel for the melt to dissipate. We put a band of tape around the icebox end of the plastic tube so that it would not fall down through the drain itself.

Using a piece of insulation we constructed a dam under the icebox so that we could squirt the foam under the box and prevent it from running down into the bilge. We then followed Harry's instructions. However, we used 5 cans of foam (so far). We also might mention a little side note about purchasing the foam while on sale at $2.98 a can, using one can and then the second can was not pressurized. The third can was fine. The next step was leave the boat, go out in search of some more foam and being successful in securing some but at either $5.98 or $6.98 a can (I'm gradually trying to forget how much!) On the bright side, we subsequently took the defective can back to the original store and have a replacement can of foam to squirt in the icebox when we run out of other things to do on the boat.

In order to fill the void under the box and to the stern, we drilled 3 holes in the bottom of the icebox and used these holes for putting the foam in.

The box works but I'm convinced that if we could take the box apart, a lot better job could have been done.

Cockpit and Icebox Drain Discussion

Skip Hallam, May 1977 Mainsheet

Some, if not most, of the Alberg 30's came equipped with galvanized saddle tees on two drain hoses which could some day cause a serious problem if neglected. One of these

tees is installed in the port side cockpit drain hose and is connected to the ice box drain hose. The other tee is installed in the exit hose from the head, and is connected to the wash basin drain hose. The concern is that these saddle tees are made of galvanized steel instead of bronze and are both located below the water line. Obviously, if the fitting should ever fail there would be one very wet Alberg. Obviously also, these fittings have been in use for quite some time now. Our boat was made in 1965 and the fitting on the cockpit drain is still in use with no visible sign of wear and the fitting on the head was in use until three years ago. I am becoming more concerned about this fitting now and have decided to eliminate it and eliminate my worry.

The first step is to replace the entire cockpit drain hose with a new length of hose. This may prove to be easier said than done because the old hose has been installed so long that it quite probably is "frozen" at both points of attachment and it is at an awkward and uncomfortable place to work in. Now, what do you do with the ice box drain hose? You can just let the ice melt drain straight into the bilge but that's not recommended because fresh water in the bilge causes the growth of algae which stinks in due course of time. Also, anything liquid spilled in the ice box goes into the bilge and that will stink in time. (Try milk for openers.) A final objection to this solution is that you would have to open another air vent into the ice box for the hot air from the engine to travel unless you went to the trouble to put a trap in the line.

Cliff Falkenau has come up with the most practical solution to the problem that I have heard. Cliff led the ice box drain hose to the galley pump that normally is connected to the sea water hull fitting and which pump we never use. All that remains is to occasionally pump the melt from the ice box. For my own purposes, I will have to modify this arrangement slightly. I have the older type ice box with the deck loading hatch and I have cut down one side of the ice tray and extended it to hold more ice. Therefore, since the ice tray cannot hold any melt, I will have to provide for holding it elsewhere prior to pumping. I will lead the drain hose over or around the engine to a "holding tank" installed underneath the galley (making sure to allow for a gravity flow) and when the holding tank is full, simply pump it out with the galley pump referred to above.

An alternative to this arrangement might be to connect a bronze tee to the through hull fitting for the cockpit drain and then connect a nipple and cockpit drain hose to the "top" end of the tee and a nipple and ice box drain hose to the "middle" of the tee. My personal objection to this arrangement is that there would be more metal fittings below the waterline to corrode. I will concede that I may be unduly conservative in this regard.

The other saddle tee is installed in the exit line of the head and almost at the through hull fitting. This fitting was a pleasure to be rid of. More often than not, the wash basin drained very sluggishly and the source of the stoppage was at this saddle tee. I would clean it out and a few weeks later it would be stopped up again. The cure is easy. I led the wash basin drain hose to the back end of the head and wedged it between the porcelain bowl and the seat. Now the drain water empties into the head without an obstructions and all that remains is to pump the head. From time to time, you have to make sure that the hose hasn't worked its way out from the back of the head. It will make a mess if it does. To complete the installation, the exit hose section containing the old saddle tee has to be replaced between the through hull fitting and the waste loop fitting.

The piece of exit hose that I discarded was of the type containing spiral wire reinforcing and may be still prevalent in a large number of boats. I discovered that the wire had rusted clear through the casing material to the outside and I suspect was working on the inside casing, also. Since this part of the hose was below the waterline, it could have been serious. What complicates matters further is that the eroding was occurring on that part of the hose closest to the bulkhead and was almost impossible to detect visually without removing the hose first. I replaced both sections of exit hose with a plastic corrugated hose from Fawcetts. The inside of the hose is completely smooth so that nothing can get trapped in any crevices.

More on Ice Boxes

Phil Beigel, March 1984 Mainsheet [refers to older, upright iceboxes]

Having read of two ice box improvements (Bob Marshall's & Harry Gamber's) the following is the improvement made to Carnival Lady US17 without a major alteration of the box.

This improvement has resulted in a major reduction of ice usage (2 to 3 times longer) and the ability to have ice cubes available over a week's cruise.

Steps taken to insulate the box were:

1. Remove wood trim around top of box (shelf trim)

2. Pry up shelf carefully so as not to damage shelf or side of box (shelf may be glassed in at rear)

3. Remove the loose foam sheet by hand or by digging out (the top, entire front and most of the side to the engine can be cleared)

4. Pour acetone by way of a small tube on the remaining foam which cannot be reached (it will dissolve). This is necessary on the side to the hull and the area under the bridge deck. These steps will clear the old foam from top, whole front, side to the engine, side to the hull, and to the degree the acetone runs under the inner liner, the area under the liner.

5. Pour in new foam - Two foam in place kits were purchased from Read Plastics, Rockville, Md. Material was mixed (½ pint of each part at a time) and poured into the now open areas. On the first couple batches be prepared to hold a rag against any foam which may come out the bottom of the box. As each batch is placed the open cavity is filled and the sheet foam which could not be reached is sealed in place. The final batch will raise the foam level above the top of the box. This can be trimmed flush with a butcher knife.

6. Replace top of box (shelf) and edge nail in place. Replace shelf trim.

Materials Needed:

1. Two Foam in Place kits (Isofoam PE-2 Bulk resin 2 quart kit from Read Plastics)

2. Six one-quart paint mixing buckets - paper

3. Two half-pint jars

4. Small tube stiffened with stick to direct acetone flow and funnel on end.

5. One pint acetone

Time required - one day or less. Cost - approximately $45.00 for the job