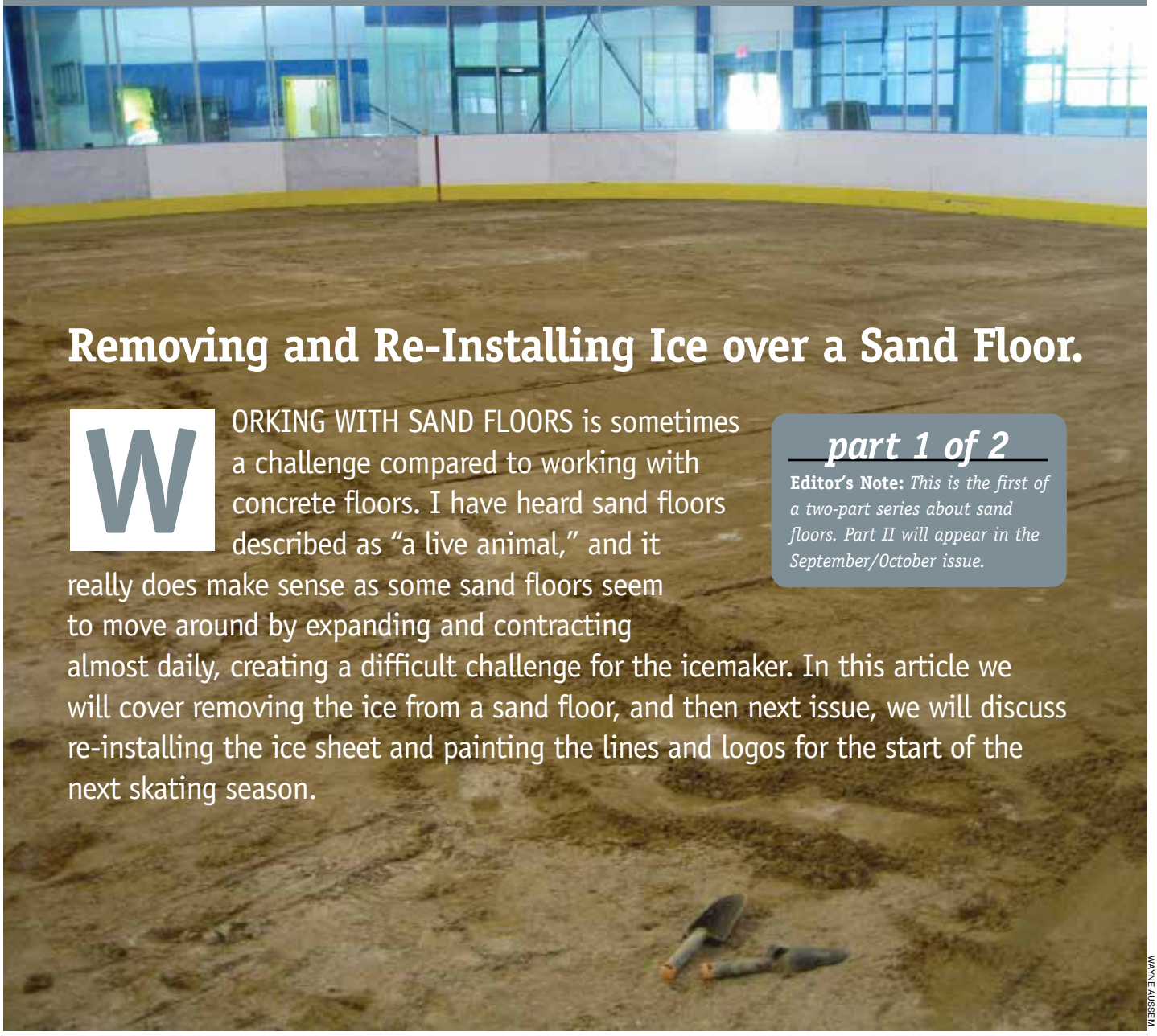
Do-Over

by DON MOFFATT



Removing and Re-Installing Ice over a Sand Floor.

part 1 of 2

Editor's Note: *This is the first of a two-part series about sand floors. Part II will appear in the September/October issue.*

WORKING WITH SAND FLOORS is sometimes a challenge compared to working with concrete floors. I have heard sand floors described as "a live animal," and it really does make sense as some sand floors seem to move around by expanding and contracting almost daily, creating a difficult challenge for the icemaker. In this article we will cover removing the ice from a sand floor, and then next issue, we will discuss re-installing the ice sheet and painting the lines and logos for the start of the next skating season.

WAYNE AUSSEM

Typically, with a sand-based floor you will carry a little more ice, and we will explain why when we get into installing a sand floor. There are two ways to do remove the ice, and usually a combination of both will be used to completely remove the ice over the sand floor. You can turn off the refrigeration system and let everything melt, which will take a very long time, or you can speed up the process by using your ice resurfacer (IR) to remove most of the ice and then let the rest melt out.

But before you even start to remove the ice, you need to have two things done to ensure you do a good job and, equally importantly, complete the task safely.

First, create a written plan for the

entire process and allow enough time for all of the steps. It has been proven many times that having a written plan will not only save time and money but will help prevent accidents and injury during the process. Once you have a plan, schedule the employees appropriately. Don't forget to include a plan for what to do with the old ice and ice paint — this has to be part of the overall plan. Remember that you must dispose of the ice and ice paint in a responsible and legal method.

Second, make sure you have all the materials needed to repair a broken or leaking pipe. For an indirect system, this is probably something you can do yourself if you have all of the materials and personal protective equipment (PPE) on hand. For a direct system, you may need to have a refrigeration mechanic and welder on hand. These systems (direct in sand) are very rare, so we will deal with the indirect system for the rest of this article.

Depending on your time frame and how long the ice is to be out, you may want to have some replacement sand on site so you can level the floor. This should be clean sharp or washed sand to put on the floor. Never use beach sand, or dirty used sand — this will affect your ice surface for many seasons to come. Clean, sharp, washed sand is the only way to know for sure that you are not introducing any contaminants into your floor and ultimately your ice surface.

The first step is to soften up the ice surface so it can be scraped out with the ice resurfacer more easily. The tricky part is when and how much to warm up the floor and when to turn off the refrigeration plant. Every rink floor and refrigeration system is a little different, so the following are only recommendations — you will have to experiment with your own floor and refrigeration system.

- If you have the ability to do so, warm up the room that the ice sheet is in. At the least, turn off the air conditioning in that area if you have it.

Do-Over

• Warm up the ice surface to about 26 degrees F and start removing the ice with the ice resurfacer. You do not want your surface to melt at this point; it must stay solid for you to drive the IR safely on it. (NOTE: Remember that the ice resurfacer is not designed for this task; as the name implies, it is to resurface the ice. You may have to make some adjustments to your IR. For example, add a hydraulic oil cooler, or at the least allow the machine to completely cool off periodically. Refer to your IR owner's manual for more tips and suggestions regarding using the IR for extended periods of time.) You should be able to remove the bulk of the ice with the IR. Do not drive your normal pattern. Change it up, but try to cover the entire ice surface equally.

WAYNE AUSSEM

The fastest way to melt ice is with air/wind. Using the type of large fans seen above will speed up the ice removal project.

• You may have to change the IR blade during this process to ensure you have a sharp cutting blade in place. This will save time and put less wear on the IR.

• During this process of removing your ice, you MUST be very aware of the floor and especially the piping below the ice surface! Get off the machine and walk the floor after every couple of patterns that you complete, looking for exposed piping and areas where you are already at the sand. Depending on how long the ice has been in, your floor will NOT be level. There will be high spots, and you must

address these when you find them.

• When you find exposed piping or high areas, mark them with an orange cone and stay away from these areas with the IR. You should not be shaving up sand with the IR, and you do not want to slice a pipe with the blade. Even a dull blade will cut a steel pipe.

• When you have the majority of the ice removed with the IR, you can move on to the next step. Turn off the refrigeration system. Once the refrigeration system is turned off, DO NOT try to drive the IR on the sand floor. Remember that the floor will melt from the bottom first and driving the IR over it you may break some pipes or get the IR stuck on the floor.

• If you are in a warm climate or it is during the summer, open up any garage doors or large doors to allow warm air to flow over the ice/sand floor. It may help to remove a couple of pieces of glass from the dasherboards to allow the warm air to more easily flow over the floor.

• Borrow or rent four large (36" to 48") fans. Place one fan in each corner of the rink against the boards to create airflow over the ice.
Make sure all the fans are pointed in the same direction. As the floor melts, move these fans farther toward the center of the rink floor. The fastest way to melt ice is wind or air flowing over the surface.

• There will be water sitting on the sand. You want to get as much of this water off the floor as possible. Using a small shovel or spade, create small canals to get the water to pool in one larger area. Don't worry about messing up the sand because you will be leveling the sand before freezing again anyway

• Remove the fans and put away or return to rental store.

• Borrow or rent a SMALL sump pump. If you use a pump that is too large, it will suck up the sand and continually plug up, causing delays. (A small waterbed pump also works well) Using a hose attached to the pump, remove as much water as possible off the floor to a drain.

Do-Over

• Once you have all of the water off the floor, walk the floor again looking for contaminants, ice paint or anything out of the ordinary and remove these items. Make sure when doing this step to look closely at the sand for any refrigerant leaks and then repair when found.

• The last step in this part of the plan is to make sure all of the pipes are in the proper place. Most systems use some sort of pipe chairs, make sure all of the pipes are in the chairs: You may need to tie some of the pipes to the chairs. Check with your floor installer to ensure the proper method for doing this. ★

Stay tuned for the September/October issue, when we will discuss installing the new ice, which is an exciting and exhausting process!

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The sand must be completely saturated before any freezing of the floor begins.

■ **CHECK OUT THE RINK MAGAZINE** ***in September for the conclusion.***