How to Start a Curling Club

Inside

- Introductory Letter
- Manuals & Write-ups: Club Information
- Manuals & Write-ups: Facility Information
- USA Curling Publications

USA Curling

5525 Clem's Way
Stevens Point, WI 54482

Phone: 715-344-1199
or toll-free 888-CURLERS

Fax: 715-344-2279
E-mail: info@usacurl.org

The Spirit of Curling

"Curling is a game of skill and traditions. A shot well executed is a delight to see and so, too, it is a fine thing to observe the time-honored traditions of curling being applied in the true spirit of the game. Curlers play to win but never to humble their opponents. A true curler would prefer to lose rather than win unfairly."

"A good curler never attempts to distract an opponent or otherwise prevent another curler from playing his or her best."

"No curler ever deliberately breaks a rule of the game or any of its traditions. But, if a curler should do so inadvertently and be aware of it, he or she is the first to divulge the breach."

"While the main objective of the game is to determine the relative skills of the players, the spirit of the game demands good sportsmanship, kindly feeling and honorable conduct. This spirit should influence both the interpretation and application of the rules of the game and also the conduct of all participants on and off the ice."

UNITED STATES CURLING ASSOCIATION

USA Curling™
dare to curl

National Office: 5525 Clem's Way, Stevens Point, WI 54482
715-344-1199 • fax 715-344-2279 • info@usacurl.org • www.usacurl.org

Dear curling enthusiast,

Thank you for your interest in starting a curling club! Curling is a team sport enjoyed by over 1.5 million people worldwide. It is easy to learn, a lifetime sport, and great family fun for all. Curling has enjoyed coverage of our Worlds events on ESPN and has most recently enjoyed much Olympic coverage on USA, CNBC, and MSNBC channels.

This PDF contains several documents to assist you in your endeavor. They are arranged accordingly into two categories: Club Information and Facility Information. From these documents, you will discover the basic components necessary for establishing a successful curling club including ideas from those who have gone before you and helpful hints on how to attract interest in your club. You will also learn the technical requirements for maintaining your club such as how to properly prepare ice, hack installation, and care for your stones.

Additional information will outline what it takes to transition from arena ice (where most clubs begin) to a dedicated facility, if you so wish. And don't forget to browse through our "Benefits of Membership" to discover everything USA Curling has to offer you and your members in this exciting journey!

Is there a club already established in your area? You can find out by visiting our website at www.usacurl.org. To the left side of our homepage click on the *"Looking for a curling club"* link to access a map of all USA Curling clubs.

Should your exploration into starting a curling club prompt additional questions, please don't hesitate to contact us at 1-888-CURLERS. You may also direct your inquiries to:

Nick Kitinski
Club and Membership Development Chairman

818-731-4268 * lenick@yahoo.com

OR

Jerome Larson
USA Curling Vice President of Member Services
707-374-3920 * JLCurler@frontiernet.net

We wish you all the best in your venture!

Good curling!

How to Start a Curling Club

Table of Contents

Club Information

Facility Information

CLUB INFORMATION

STARTING A CURLING CLUB

UNITED STATES CURLING ASSOCIATION

5525 CLEM'S WAY

STEVENS POINT WI 54482

TEL. 715-344-1199

TOLL FREE 1-888-CURLERS

FAX. 715-344-2279

E-MAIL: INFO@USACURL.ORG

WWW.USACURL.ORG

CURLING IN THE UNITED STATES

FACTS

Curling Attracts:

-Men
-Women
-Mixed couples
-Children
-College Students
- Seniors
-People from eight to eighty (+)

Curling is:

- a competitive sport
-a social sport
- a lifetime sport
-a team sport

Curling requires:

-minimal personal equipment
-limited training to participate
-a facility or place to curl

Curling is done on a:

-local level	-at curling clubs
	-at public ice facilities
-regional level	-in regional social curling events
	-in regional competitions to determine area representatives
-national level	-in national playdowns to determine national champions
	-in special competitions to determine Olympic representatives
-world level	-to determine World Champions
-Olympic level	-to represent the United States

Curling is played at:

-commercial ice rinks	-on ice converted temporarily for Curling use
-member owned clubs	–in dedicated facilities ranging in size from Two to eight sheets of ice
-private country clubs	–using dedicated ice facilities

THE ORGANIZATION OF CURLING

1. *Individuals & Groups:*	-Curling as unaffiliated groups on ice rental as their needs dictate -Curling as an affiliated club on rental arena ice -Curling as an occasional activity on natural ice
2. *Curling Clubs:*	-Private Groups set up to continue curling in their own facilities dedicated to Curling -As members of private Country Clubs which have created Curling facilities for their members
3. *State or Regional Organizations:*	-Represents the various Clubs within their state or Region to promote Curling in general -Represents the Clubs to the United States Curling Association
4. *The Untied States Curling Association:*	-Is comprised of all State and Regional members -Provides a National voice for the Curling populace -Promotes Curling within the Nation -Develops programs for educational purposes -Is the National Governing Body for Curling within the U.S. Olympic framework
5. *The United State Olympic Committee:*	-Oversees the funding and operation of National Governing Bodies of Olympic Sports -Provides financial and professional support to the National Governing Bodies
6. *The World Curling Federation:*	-The International Sports Governing Body of Curling Worldwide -Sanctions and administers world curling championships -Supports the growth of curling worldwide -Develops the format and eligibility for world Olympic play

GETTING A NEW CLUB STARTED IN CURLING

1. *Getting people:*	-Personal friends and contacts -Advertisements in local papers -Advertisements in the Curling News -TV exposure -Posters in the local area clubs and various bulletin boards -Chamber of Commerce -Local companies with northern U.S. or Canadian ties
2. *How many people*	-a nucleus of interested people (6) -eight people to play a game -enough to cover costs – minimum of 25
3. *Finding a location*	-renting ice at a public ice rink -renting ice for a league from an existing Curling Club -creating your own ice facility in a portable facility -building your own curling facility
4. *Getting equipment:*	-curling stones -ice maintenance equipment -hacks, scribes, scrapers, pebbling equipment, measuring device, brooms, sliders
5. *Covering the costs:*	-ice rental costs -equipment repair/replacement -insurance -rocks
6. *Getting training:*	-experienced people within your group -training courses from USCA
7. *Pitfalls to be wary of:*	-commitments that entail a financial obligation before there are enough people to meet the obligation
8. *USCA assistance:*	-Promotional materials -Instruction programs -Human resources

ORGANIZATION OF A CURLING CLUB

1. Board of Directors	-five to fifteen people	
2. Officers:	-President	
	-Vice President	
	-Secretary	
	-Treasurer/Bookkeeper	
3. *Committees:*	-Membership	-Locating Prospects
		-Running Open Houses
	-Ice	-initial installation
		-daily maintenance
		-equipment procurement
	-Leagues	-Men's
		-Women's
		-Mixed
		-Open
		-Junior
		-Competitive
	-Bonspiels	-In club competitions
		-Regional bonspiels
		-National events
	-Publicity/Newsletter	-Press releases
		-Club newsletter
		-Curling News articles
	-House	-Maintaining the club
	-Instruction	-Introductory lessons
		-Ongoing seminars

<u>Starting a Curling Club: A case-study of the Ogden Curling Club</u> **5/26/03**

The process of starting a new curling club in the USA depends on where you live. If you live in a part of the country where curling is well known, then the main issue is raising money to construct a dedicated curling facility. If you live in a part of the country where curling is not well known, then the task is more complex.

We have been curling in Ogden on a regular basis since the summer of 1998. It has been a slow process getting off the ground, but we have learned a lot (the hard way), and could do it much more simply if we were to start over from the beginning. Obviously it has been rather helpful to have hosted the US Nationals (2000), the World Juniors (2001), the US Olympic Trials and the 2002 Olympics. We probably know more about hosting top-level curling events than most more established clubs, but we still only get 2 hours of curling ice per week for our own use. We are over 800 miles from the nearest dedicated curling facility (Granite Curling Club in Seattle), so we had to start educating the local population from scratch on all facets of the game…In my opinion, what follows is a step-by-step process that should help new arena clubs get started.

Stage 1 The Nucleus

- Start with a handful of dedicated individuals (or just you) who want to make curling happen. Given the tight-knit nature of small towns, you should be able to find some like-minded individuals. If you're in a big city, you have a large pool of experienced curlers from "curling country" that you should be able to locate.
- Meet with a local ice-skating rink to determine when you can get inexpensive ice to start getting more people on the ice. Mid-day during the week is often pretty quiet, so they might be willing to give you 2-3 hours once per week for free/cheap if you do the ice-prep and organize the event. Be sure to talk up the idea that curling is the only ice sport with a broad demographic that can get people on the ice ranging from age 10-75…great family sport etc.
- Obtain some inexpensive curling stones. Two sheets (32) should be enough to get started. Two sheets puts 16 people on the ice, and makes it feasible to pay for the ice. The USCA also has a stone-loan program, so you can talk to them too.
- Purchase 1 or 2 dozen inexpensive brooms and sliders, and a pebbling can for ice preparation.
- The only other equipment you really need to get started are some hacks to freeze into the ice (If you're interested, visit my website at www.toriandesigns.com. I didn't find anything appropriate on the market, so I got these manufactured myself and now offer them for sale).

Stage 2 Early Growth

- Post information at the rink inviting people to free curling lessons during your weekly ice time. Issue a press release to the sports / community columnist at the local newspaper and TV stations describing your efforts and your free clinics to the general public. Emphasize that this is an Olympic sport that can be played by anyone. Encourage the reporters and photographers to stop by and give it a try. The USCA has quite a bit of information on how to get the word out, so there's no point re-inventing the wheel here. Media people by definition are quite competitive, so play up the idea that they can compete against each other.
- Make sure you have information you can hand out describing the benefits of the sport and why people should get involved. If you can set up an inexpensive website, you can direct people to that.
- Invite friends / acquaintances to start coming on a weekly basis so you can play real games and get a feeling for the game (find some retirees, self-employed or other folks with time on their hands who want to try something new). Curling is a great way to make new friends, but it is also a great activity for people who are already friends.
- Offer curling clinics to local businesses as an excellent corporate team-building program to encourage interaction among employees while enjoying an off-site activity (this is now our major source of funding). We have hosted many 1-2 hour events for up to 80 people and charge anywhere from $10-$40 per person. Gradually accumulate enough curlers to allow yourself to add additional sheets (more stones / hacks / equipment) as interest grows.

- Meet with your rink to see about starting a regular league, because competition is what makes curling fun, and encourages people to come every week. Financially, you will need to do the math to see how many people you need to start a league. For example, if your ice costs $125/hour like ours does, then 32 people on 8 teams on 4 sheets must pay approx $8/week to curl. Our arena is 95 feet wide, so we can accommodate 6 sheets, and we used the 2 extra ones to run clinics / public events during our first year of league. We now run 12 teams on 6 sheets during league. If you only have 24 people, the cost will be $11 or so per week. Remember, 2 hours of curling is still cheaper than a movie with popcorn, and way more fun! For a league to be successful, it needs to be at night to allow working adults to play (ours is 7-9 p.m. on Tuesdays). Weekends are usually intensive hockey / skating times for arenas (big revenue they are loathe to give up), and daytime during the week precludes all but seniors and the self-employed. Not surprisingly, our core early group of curlers were retired, self-employed (like me), kids with very understanding parents, and a few with flexible bosses.

Stage 3 Fund-Raising and Visibility

Now that you have enough curlers to play leagues, host bonspiels and such, you have reached a critical decision-point (this is where the Ogden Curling Club is right now). The club will start to divide into two camps. One includes those who are perfectly happy curling once a week, and view curling as mostly a social, but competitive activity that gets them out with a nice group of people. The other camp is interested in curling more often (3-5 times per week) and is looking to play at a more competitive level. If most of your club falls into the first category, then you can continue running the weekly league, encourage the more serious players to travel regionally for competitions, and enjoy your relatively low-key / low-maintenance club.

However if you have a significant contingent (like we do) that wants to play more regularly, and wants to play at a more competitive level, then you will need to start raising money for the eventual construction of a dedicated curling facility. The USCA has a thorough and well-written plan for this process, but it is more geared toward communities in the upper Mid-west where curling is more familiar and land costs are lower. Obviously if you find a wealthy benefactor or corporation who wants to help you, then you're home free!

We have been meeting with city officials to consider adding an ice surface to a yet-to-be-built urban recreation center. This approach may take too long, so we now have a business plan that we can pitch to local foundations and corporations that are civic-minded.

We have raised over $50,000 in the last 3 years from our various activities to act as seed-funding and show people that we are serious. Some of the money comes from T-shirt sales and the like, some from hosting bonspiels and leagues, but most comes from hosting corporate team-building activities or school-activities (phys-ed). We typically charge $10-$40 per person for a 1 or 2 hour corporate event. Most school and church events are on a tight budget, and we are more interested in the exposure than their money, so we only charge them a few $ per head.

The networking and recruitment opportunities from this are significant. A well-written plan for the future of the club can be used to sell companies and foundations on your project.

This period of growth is fraught with danger due to the chicken-and-egg problem. If you research the budget requirements for a viable curling club, you'll quickly realize that it's hard to get enough members to support a dedicated club unless you can curl more than once or twice a week. Ice time at arenas is extremely limited, so you will not be able to get additional evening ice time. If you can't get more ice time, you can't add more members (or at least you can't put more members on the ice). So, you're left in the position of having to commit to building a dedicated curling facility without knowing if you'll have enough members to pay for it.

Our plan is to take advantage of the recent economic downturn and purchase an old warehouse property for a reasonable price. We will purchase a portable refrigeration system. Ogden City has verbally agreed to a $90,000 low-interest loan. We have some major donors interested who are very community-minded, and we hope to use their interest to draw other donors in right away.

Fund-raising is by far the most difficult task facing new curling clubs. You must take advantage of any and all contacts available to you through your membership. You'll be surprised who knows who, and who's boss turns out to be from Canada, etc… Explore your network and get everyone involved. Select a fundraising committee and assign one person to act as the "go-to" person to ensure that you speak with a single, clear and consistent voice when approaching the community.

I have heard of some innovative fund-raising schemes that involve all members of the club "bonding" for the construction cost. For example, the club raises $200,000 by selling 200 x $1,000 bonds. Some number of these bonds will be paid back to members on a lottery basis every year, and the other unpaid bonds become a long-term pool of capital to acquire land or complete construction. Make friends with some of your local construction companies. We have standing offers from members who own contracting businesses who are willing to offer their services for the cost of materials. Be creative!

Stage 4 Construction and Long-term Viability

Once we are up and running in an existing building, we will offer curling clinics and leagues every day. We will establish a youth curling program in the school phys-ed system, and an active corporate curling league through our ongoing corporate events. Advertising and open houses can be used to attract people from the community who already know curling or who want to try it. This increased membership will be the revenue source that will allow us to fund-raise and move to the next phase.

I am still hopeful that our city will begin construction of an urban recreation center in 2004 or 2005. This is our backup plan if we can't arrange our own building. I have visited dozens of recreation centers around the country in the last year and have realized that an intelligent design that accounts for the seasonal nature of curling can be a wonderful addition to a facility without breaking the bank, but you have to get involved during the planning phase (it is extremely expensive to retrofit an existing structure for curling). Consider more than one construction plan to ensure that you have explored a wide range of ideas.

Contacts

There are lots of people in the curling community who can provide additional assistance. I recommend that you talk to Tammy Lehto in Seattle. She was one of the founders of the Ogden Curling Club, but was transferred to Seattle a few years ago. I hear that her efforts in her new job as Recruitment Chair have added 60 members to the club this year (her email is tlehto@prodigy.net phone 425-379-8507)…. she'll have plenty of ideas. Contact the USCA at www.usacurl.org and ask Bev Schroeder to send you all the information on starting a new club. Jerome Larson (jerome.larson@uboc.com) has been instrumental in building interest in curling around the West. All communities will have different issues that you will need to identify, but many of the basic issues as described here will be relevant. Feel free to call me if you have other questions.

Good luck and good curling,

Iain Hueton
President
Ogden Curling Club
ihueton@yahoo.com
Phone 801-627-4119

July 20, 2006

From: Stu Cohen, President
Columbus Curling Club (OH)

Attention all arena curling clubs:

- ❑ Do you despise 6 feet of negative curl; 15 feet of real curl; snake-like shots?
- ❑ Are you tired of lugging 48 or 64 or 80 stones onto the ice every nite?
- ❑ Have you had enough of freezing in 6 or 8 or 10 hacks each time you curl?
- ❑ Would you like to relax and have a beer or party in your own place?
- ❑ Is it a pain in the %&# to deal with your rink owners or managers or Zamboni drivers?
- ❑ Are you ready to pay the same amount as you are now and get to curl 3 or 4 times a week?
- ❑ Does 3 feet of curl in the right direction sound nice to you?
- ❑ How about your very own bonspiel where the ice doesn't cost thousands of dollars for a weekend?

Well, if you answered ***yes*** to **ANY** of the above, then what you need is your **own curling rink**. And that's what Columbus Curling Club is doing in just our 3rd year!!!

I know, you're wondering...who gave them all that money to set up a facility and buy the ice making equipment? Was it through sponsorship with Coca Cola or Tim Horton's or Ford? Did they connect with a municipal parks department or city like Detroit? Or was it some rich, eccentric millionaire who fell in love with curling this past Olympics? Or one of their well to do members that is making it possible? Did they find a special loan program through the USCA or WCF? How did they do it, you ask? Please tell us, you cry!

Well, I am all too familiar with those cries. No, *CCC* did NOT use any of the previously mentioned and all too often tossed about methods for having a dedicated curling facility. They are great ideas. Rarely are they the road to one's own club. I have yet to find any loan programs of any amount close to what is needed. I am not a politician and do not have the time or skill needed to work with cities and municipalities and corporations. They take a lot of time to build relationships, not to mention the time it will take to explain what the heck curling IS and convince them of the growth of the sport and the benefits of the game. It makes me tired just thinking about it! Maybe you are the type who can do it. Not me. Maybe some day someone in our club will be able to undertake one of those ideas. Oh, and we don't know any rich people either. Maybe we should have a Really Rich People Curling Party Fundraiser?

Okay, so HOW ARE YOU DOING IT? you ask.

Well, we simply have done it on our own. With our own money. No not millions of dollars. $50,000 is all that we needed. We wanted $100,000 but instead were able to get a loan for $50,000 more, using our Chiller unit as collateral. Nobody had to personally guarantee the loan, just good financials and healthy growth projections did it.

Oh yeah, that $50,000 from members....how did we pull that off?! Well, it's simple, really. We all love curling. There is nobody to *sell* the concept to...we are already sold on it...we are addicted to the game. We want to play more often. Most of us are able to put some money, $500 - $5,000 on the line for something we believe in. And it makes sense on paper. With 160 members already, and 500 waiting in the wings from the Olympics ***BOOM!,*** if we fail it's because we are just plain lazy.

As for the space, we are going into a warehouse space, in a nice area, clean and safe. We are leasing 12,000sf, so we can grow to 4 sheets, later. All you really need is 7-8,000sf. We'll be putting the rinks down "temporarily" for 5

years on the 6" concrete slab. Later, if we build, we can use the same stuff. The ice making company has all of the details figured out. Like insulation, construction of the rink systems, the Chiller unit, etc. We're supplying the volunteer labor and he's building it with us and overseeing it all. He's the same guy who was involved with Potomac, Utica and Norfolk Curling Clubs' ice making ventures.

Here are some more of the details:

HAVE A VISION!!!!

Let your members see the vision of a dedicated curling rink. Go to bonspiels and show them the difference between REAL ice and GARBAGE ice. Explain that arena ice can NEVER be made good enough for curling without a complete re-vamping of the arena's maintenance, prepping and ice-cutting methods. NEVER. And the reality is that the rink **will not** change what works for hockey, their major source of income. They may make the ice *less squirrely*, but it will NEVER be curling ice. Sure, you say, "Our new members don't know the difference. This is all they know. We still have lots of fun". Yes, you are right. But we owe it to our members and to ourselves to play curling as it should be played...NOW! You wouldn't go bowling on the side of a mountain...or play basketball in a wave pool...or hockey during an earthquake. The plain and simple truth is : ***It's not really curling until you are curling on curling ice***. And we at CCC know. We are you.

So listen up curling club leaders. Passionately explain the benefits of dedicated ice to your membership, share the vision of your own dedicated curling rink with them, show them it is possible sooner rather than later and live the dream together with them!

MAKE MONEY

We made money from our two seasons curling on arena ice. $5000 in year one, $10,000 in year two. Charge enough to make money! This will help the club to be financially secure and set you up with solid financials to show a bank some day if you need to get a loan.

GROW MEMBERSHIP THRU CLINICS

Use flyers, press releases and friends to build membership. Press releases to TV and newspapers give them the idea to do a story in the Sports or Human Interest sections. Put flyers in gyms, muffler shops, barbers, etc. Set up some clinics and charge $15-30 per person. People will pay to try it out. Have them pre-register and pre-pay. Max out the clinic. Get ready to sign them up immediately for league play.

GROW MEMBERSHIP TO CAPACITY

Curl on (5) sheets, if possible. More members curling means more money saved for that club of the future. NEVER TURN ANYONE AWAY! FIND A WAY TO GET THEM CURLING! Use byes in the schedule, if needed, to accommodate more curlers. At our club, members can sub for free on the nights they aren't curling. If it's the second week of the league and someone wants to join and you have space, have an experienced Skip take them on their team, give them a "quick clinic" before the game and get them curling.

We began with 54 members, then 80+, now, post Olympics, 160+. We had to be very creative. Year one, we had 13 teams curl 10 games over 10 weeks. We curled one night per week, 40 people on 5 sheets to start. Then, in the second half, we went to 2 nights per week, 80 people. Problem was it was a Saturday night at 9:45pm. Uggghhh! Only 16 of 80 people liked that idea. Creative scheduling helped. Saturday people curled only Saturdays, Thursday people curled 7 Thursdays and 3 Saturdays. Did people like it? No, and we

hated to do it. But curlers are great. They are willing to bend to make things work. And they heard enough about the vision of our own club and growing the sport, that it was a no-brainer. And if members are a bit uncomfy, it will make their financial support when ask, an easier, more apparent necessity.

GET THEM READY TO GIVE

Keep talking about it. Talk it up in year one and year two and year three ...until it happens. By you talking about it like it's inevitable that so will others. It's contagious. And as people get fed up with arena ice because of all of the delays by hockey prior to curling; the missed spots by the Zamboni driver that stop your stones mid-curl; the last minute schedule changes to accommodate hockey tournaments; the ridiculous amount of curl or squirrel;...the members will start asking and almost demanding that the dream of your own ice be made true...asap.

Let them know that just $1000 per person will do it. Or $5000 each from just 20 people. Just get in their heads **early** so they are prepared for the day when you say, "Okay, it's time. Let's fork over some cash and make this thing happen".

ONLY $100,000 TO SET UP YOUR OWN 3 SHEET RINK!!!

CCC members either loaned the club money or made a tax-deductible donation (it helps to become a 501(c)(3) non-profit sports organization to accept donations). These member loans (technically called *promissory notes*) will be re-paid by our club a **total** of $5000 each year, starting after 5 years, names chosen by lottery. If, for example, members give a total of $50,000 in loans, it will take 10 years to re-pay everyone at $5,000 total per year. Many will just make them donations, many will carry the amount forward, others will take their cash. This is a great way for members to feel they still have a hold of their money and it gives the club time to establish

itself and re-pay over time...at 0% interest, of course. We have gotten 1/3 in donations and 2/3 in promissory notes.

UP FRONT COSTS: THE EQUIPMENT

A 3 sheet chiller unit, roll out ice mats, all of the supplies and installation using volunteers should be about $100,000.

We may get $60,000 in donations and loans by the time we install the rink in October, but that's short a bit. Luckily, we have strong financials to show the bank. Plus, $50,000 is chump change to them and they have the Chiller unit as collateral.

Why the rush for us, you ask? Why not wait until we have ALL of the $100,000? Well, we are under the gun. The arena has no more time slots for curling other than midnight and we have 160 members. The math just doesn't work for 2 nights a week. So we have moved at lightning speed. You have more time to plan and make it happen, perhaps without a bank loan. Why pay interest when you don't have to, right? Plus, there are no guarantees that your bank will do what ours did.

Figure 1-2 weeks to install the rink, with 10-15 people helping each day. We are asking each member to take off one day of work to help out. Anyone can do that. Hopefully, all goes well and we'll be inviting you to our first bonspiel very soon.

OPERATIONAL COSTS: RUNNING THE RINK

Our members currently pay league fees of $160 to curl 10 games. If they curl both halves, they pay $320. Plus they will pay club dues of $30 for GLCA/USCA membership/Curling News/Insurance. That's $350 total per year to curl once a week, maybe twice if they sub in.

At our new club, they will curl as much as they want, and pay $475 per year total. So for $125 more per year, they get their own rink, warm room, etc. Not too shabby.

Let's say you have 160 members like us. And let's say, for simplicity's sake, that each member is worth $500 in revenues to the club for the year. That's 160 x $500= $80,000 of operating revenues the club will have.

So, how much does it costs to run a 3 sheet club? Well, there's rent. Ours is $48,000 per year. Plus electric, about $15,000. Our bank loan, $12,000 (see how this hurts to have?). We're up to $75,000. Then add in insurance, gas heat, water, other miscellaneous items. And it's getting pretty close to the cost of operations.

Of course, this doesn't include any additional revenues like from a bar, bonspiels, clinics, junior members, rentals, donations, sponsorships, etc. But here you have the basics in a nutshell. Variables such as your energy costs based upon your climatic zone and the cost of rental space in your area will effect the numbers. But it is VERY DO-ABLE! Just imagine how much easier you could breathe with 200 members and $100,000 of revenues. That's $20,000 more for breathing room! That's our target number for this year. But we can do it with 160. And we WILL grow each year. Even thought he Olympic craze is over for a few years, curling is still HOT.

I would be happy to get more detailed with anyone who has interest. My contact info is below.

Remember... ***It's not really curling until you are curling on curling ice.***

CURLING CLUB PRESIDENTS AND LEADERS...you CAN make it happen!!!

Stuart Cohen, President
columbuscurling@sbcglobal.net

Columbus Curling Club
614-268-0567 or 614-325-5147

National Office: 5525 Clem's Way, Stevens Point WI 54482
715-344-1199 ■ fax 715-344-2279 ■ e-mail: info@usacurl.org ■ web site: www.usacurl.org

MEMBERSHIP BUILDING PROMOTIONAL IDEAS

MEDIA IDEAS:

- Send press release to local newspaper about your local event.
- Call local radio station – offer information about your event.
- Send an invitation to the local schools offering a chance to try this Winter Olympic sport
- Offer a media night where local media can try curling. Media representatives are much more likely to cover something they know something about, and often like to try new things to write about it.
- If you club or areas has an athlete or coach competing in an upcoming National Championship event – or someone volunteering to officiate or work there – send information to the local paper as a potential feature idea.
- Develop a website for your club. In today's ever-evolving world of technology, pretty much every age group is using the Internet and email.
- Buy a classified ad in the local paper (run it over several days or weeks.)
- Corporations are always looking for team building activities. Create a letter to be mailed out to corporations inviting them to schedule a day or evening event, such as a staff retreat, non-traditional holiday party, etc.
- Get your local championship athletes and volunteers to go out and speak to groups and schools about their sport and experiences.
- Offer to do a presentation to students in their classroom.

PROMOTION TIPS:

- Select date(s) as early as possible and get the word out to your club members and media.
- Keep it simple and within a budget your club can handle.
- Involve as many members as you can.
- Consider soliciting food and beverage donations in turn for sponsor recognition and involvement. If it is a youth activity, local grocery stores will often make a donation.
- Make it fun and interesting. IMPORTANT: Treat this as a partnership, whereby, you will promote the sponsor and do your best to drive people their way. Businesses get many, many people approaching them with their hand out. Try to approach yours with a handshake.
- Remember, the traditional curling teaching method may need to be restructured for your event.

National Office: 5525 Clem's Way, Stevens Point WI 54482
715-344-1199 ■ fax 715-344-2279 ■ e-mail: info@usacurl.org ■ web site: www.usacurl.org

USCA Membership Database Overview

The USCA Membership Database was designed and built by USCA Sponsor Kodiak Technology. It was implemented in 2002 and continues to be a valuable asset for the USCA National Office, as well as its Member Regions and Clubs.

When Club Presidents and Treasurers want to access the database, all they have to do is go to www.association-data.com and follow the log-in instructions. The database is designed to make roster updating easy and more accurate and much more efficient than the old manual way. If a member club experiences any difficulty using the database, support is available at the USCA National Office to help guide you through the process – just ask for Christy or dial extension 207.

Although every member listed in the USCA database can register and get access to his or her own information, only current club officers or the club's designated Web Administrator (the "Committee") are able to work with all of the club's membership data. The database shows club information, committee information, a list of members, can generate reports, and can perform bulk updates (download and upload at one time instead of individual updates only).

Dues and club rosters have a January 31 deadline. All curlers should be registered, if they are club members or any individual that uses the club facility on a regular basis or at least six times per year. Longtime members and those just starting, league curlers or those who curl with a business once a month as an employment perk, should be registered for the following reasons:

- **Representation on the USCA Board of Directors is based on numbers.** The USCA Board makes policy and budget decisions that determine the programs and services our organization provides – from the number and type of Member Services Conferences and Junior Camps we offer, to the way Championships are run, to the selection of athletes for funding. The allocation of the number of directors each Member State/Region is entitled to is based on the number of dues-paying individual members as of January 31 *(Section 3 of the revised By-laws which are available on the USCA website at www.usacurl.org/goodcurling/).*

- **Representation on the World Curling Federation (WCF) is based on numbers.** The WCF also bases board representation on numbers of curlers in its member nations. The greater our representation on the WCF, the greater our voice in the issues determined at world level: rules of play, world championship events and scheduling, and Olympic Team Selection.
- **Numbers attract sponsors.** Our sponsors provide much-needed funding and Value-in-Kind (VIK) – and a large, appreciative "audience" for this generosity is a marketing tool for the USCA. It is one of the key features that help us attract and retain sponsors.
- **Dues fund member services.** These are the programs and services that support the growth of curling. Well-established and new clubs alike benefit from the expertise and materials that the USCA offers to strengthen membership development and retention, and long-term stability. Dues also support courses for instructors, officials and coaches; membership conferences focusing on marketing, membership development, arena curling, brochures, videos, posters, bumper stickers, pins, directories, the *Curling News* – ideas, expertise and enthusiasm!
- **It is fair.** When all curlers are registered, the dues support for USCA programs is distributed equitably among the membership.

The USCA protects and respects the privacy of individual members. Individuals have the right to choose whether or not they want to receive offers and information from other companies that the USCA does business with, whether or not they want to receive USCA email newsletters, etc. USCA members' contact information is collected by your club and listed in the USCA's online membership database. Online access to individual members' information on this members-only database is available only to you, to your club officers, club-authorized region administrators and to the USCA office and its database administrators. The database is password protected and secured to a high standard.

Per USCA policy, phone numbers are not made available to anyone outside of the administrators noted above. The USCA uses your name and mailing address primarily to mail your issues of the *U.S. Curling News*. In addition, USCA policy allows for rental of the member mailing list to curling-related entities, such as vendors of curling clothing and equipment; hosts of bonspiels, curling championships and other curling-related events (such as instructional camps and seminars); and USCA corporate sponsors. However, members can decline to have their name and mailing address included in any rented lists through an annual "opt-out" process.

To opt-out, please contact the USCA office to advise us of your wishes. Even if you've previously notified the USCA of your wish to opt-out, please contact us again so that we can confirm that the information is recorded in our database, which has been revised by this year's roster updates. We will keep a record of opt-out requests on file so that it will stay in force from year to year unless you change your status. Please send your request to the USCA at uscadatabase@usacurl.org.

ARTICLE 6. MEMBERS

Section 6.1 MEMBER CLASSIFICATIONS. Membership in the Corporation shall include the following classifications (subject to the qualification requirements of Section 6.2, below)

(a) Any organization of Curling Clubs.

(b) Any organization of Curlers conducting curling programs that are national in scope.

Section 6.2 MEMBERSHIP REQUIREMENTS. Each Member shall comply with all of the following requirements:

(a) If the curling club is domiciled in the state or region which is already represented in the Corporation by an association, then applicant's membership shall be through that association in their state or region. However, if the applicant has been denied membership by the appropriate association, then said applicant may apply to the Corporation for direct membership; and,

(b) Shall promote and generate a significant amount of curling activity; and,

(c) Shall use the rules of play adopted by this Corporation, or a variation thereof approved by this Corporation; and,

(d) Shall support in word and action the policies, goals and programs of this Corporation; and,

(e) Shall not endanger the tax exempt status of this Corporation under Internal Revenue Code 501(c)(3); and,

(f) Shall select its Individual Members without regard to race, color, religion, age, sex or national origin; and,

(g) To be considered a Member in Good Standing, the Member must abide by the By-Laws and the rules of the Corporation, including the requirements of this section, and must not be in arrears with respect to the payment of dues or any other obligations to the Corporation, as set forth in Section 6.5; and

(h) Shall be located within the territorial limits of the United States of America.

Section 6.3 APPLICATION PROCEDURE. The procedure for applying for membership for a state or regional association, or for an organization domiciled in an area that is not represented in the Corporation by a state or regional association, or for an organization refused membership status by the appropriate state or regional association, shall be:

(a) Written application for membership shall be made to the secretary of the Corporation at least 60 days prior to commencement of the Annual Meeting.

(b) The application shall be in writing, in such form as the Corporation may require. Said form shall, at the minimum, contain the following:

(i) Shall be executed by the secretary of the applying organization and shall contain the name of the organization; and,

(ii) Contain the names and addresses of all the Curlers represented by the applicant; and,

(iii) Shall contain a copy of its Articles of Incorporation/Charter and By-Laws; and,

(iv) Shall contain a request for membership and a statement that the applicant will actively participate in the conduct of the affairs of the Corporation and will abide by its rules and regulations; and,

(v) Such other information as the Corporation may require.

Section 6.4 ELECTION TO MEMBERSHIP. The election to membership shall be by affirmative vote of a majority of the Members of the Corporation, or their proxies, voting at the annual Members' meeting; or by majority vote of the Executive Committee at a scheduled meeting, subject to confirmation at the Members' annual meeting and subject to the payment of the first year's dues. All Members shall be selected without regard to race, color, religion, age, sex or national origin.

Section 6.5 DUES. Each Member of the Corporation shall pay annual dues for each Curler of each Curling Club in an amount to be fixed by the Board of Directors. Annual dues shall be paid to the treasurer on or before January 31st of each year. Membership list by Curling Club stating the name and address are to be attached to the dues payment.

Any Member in arrears in its annual dues at the end of the fiscal year in which the obligation was due shall be placed on probation status. Therefore it shall not be entitled to vote at any Members' Meeting, and Directors elected by such member shall not be entitled to vote at any Directors' Meeting until the delinquency has been cured. Any Member still in arrears one year after the end of the fiscal year in which the obligation was due shall have its membership revoked.

Section 6.6 RESIGNATION. Any Member may resign by filing a written resignation with the secretary, but such resignation shall not relieve the Member so resigning of the obligation to pay any dues, assessment or other charges theretofore accrued or unpaid.

Section 6.7 REINSTATEMENT. Upon written request signed by a former Member, filed with the secretary, provided all dues, assessments, or other charges have been fully paid, the Members of the corporation or their proxies, voting at the Members' annual meeting or the Executive Committee at a scheduled meeting, subject to confirmation at the Members' annual meeting, may by the affirmative vote of 3/4ths of those voting, reinstate such former Member upon such terms as the reinstating body may deem appropriate.

Section 6.8 MEETINGS. The annual meeting of the Corporation shall be held at a time and place to be designated by the Executive Committee for the purpose of the recording of directors elected by the members and transacting such other business as may properly come before the meeting. A special meeting of the membership may be called by the president or by the secretary or by any officer directed to do so by the Board of Directors.

Section 6.9 MEETING NOTICE. Notice of the annual or special meetings shall be mailed at least 30 days prior to the meeting to each Member at such address as appears in the secretary's record, stating the time and place of the meeting. The notice of a special meeting of Members shall state the purpose for which the meeting is called. Any annual meeting of the Members may act on any proposal included in the Notice of the meeting, and in addition thereto, any other proposal except a proposal for which special notice is required by statute.

Section 6.10 MEETINGS-VOTING. At any meeting of the membership each Member shall be entitled to one vote for each Curler represented by such Member for whom annual dues have been paid to the Corporation as of January 31st. The votes per Member shall be certified by the Corporation's treasurer. Except as otherwise provided by statute or by these By-Laws, a majority of the votes represented at the meeting shall be sufficient to adopt or reject any proposal and confirm each director.

Section 6.11 QUORUM. A majority of the Members must be present or represented by written proxies to constitute a quorum for the transaction of business.

Section 6.12 PROXIES. At all annual or special meetings of the general membership, a Member may vote by its designated representative or by proxy properly executed. The designated representative of a Member shall be the president of the Member or such other representative designated, in writing, by the Member as certified by the secretary of the Member.

Are YOU and Your Club taking advantage of everything USA Curling offers **?**

USA Curling Tools Help Clubs Gain and Retain Members:

- *COMPETE-AT:* Available to USA Curling's clubs providing end-to-end sport event management. Our partnership with Compete-At will help with the management of our national-level events and provide extensive event management and promotional tools and solutions such as bonspiel registrations and promoting social events at the local clubs.
- *"USA CURLING" BROCHURES* provide a colorful introduction for prospective curlers or those wanting to learn more about the sport.
- *EDUCATIONAL PAMPHLET BROCHURE* is a consolidation of the delivery, sweeping, strategy & spirit, safety & etiquette, delivery with the stick and wheelchair curling brochures. This "Instructional" reference pamphlet is a valuable tool for the introduction of curling fundamentals.
- *VIDEOS:* "Curling: A Lifetime Sport," and "Sweeping the Nation," provide an entertaining introduction to Curling and basic instruction for newcomers. New curlers can learn to play and enjoy the game in less than an hour!
- *RULES OF PLAY* wall posters help provide order and guidance to the sport of curling.

Communication with Members

- *U.S. CURLING NEWS:* Issues are mailed to each member household containing bonspiels calendar and results, club news, strategy, and other items for the recreational curler, as well as championship coverage.
- *USA CURLING WEBSITE:* www.usacurl.org provides end-by-end championship results, links to local clubs, and a wide array of club development information and news for individual members as well as the general public.
- *BETWEEN ENDS:* A monthly newsletter for your club management.
- *DIRECTORY & MEDIA GUIDE*: Updated annually, this provides a wealth of current curling information.
- *STONE SOUP:* A monthly e-Newsletter that gives updates on what is happening in the world of curling and the US Curling Association featuring a contest with official USA Curling merchandise prizes.
- *TWITTER:* Get the most current news on what's happening in the Curling World. Join today to start receiving terry_usacurl's tweets.
- *FACEBOOK:* Sign up for Facebook to connect with USA Curling.
- *USA CURLING REGIONAL CONFERENCES:* Provide regional club representatives with opportunities to network with clubs in their respective regions as well as USA Curling. Instructor courses and Skills Camps are offered as a component to the Regional Conference.

National Promotions

USA Curling facilitates the development of national TV programming for the promotion of the sport and membership growth. Since 2002, USA Curling has secured over $1 million in grants and value-in-kind support from sponsors to help with the production of this program. USA Curling has also built and nurtured relationships with major U.S. TV networks—including NBC and ESPN —which has led to the increase in national and Olympic programming.

Instruction for All Ages

- Annual youth curling camps help junior curlers increase their knowledge of the sport and improve fundamental skills. Camps help identify future Olympic talents.
- Adult seminars provide opportunity to increase knowledge of curling instruction, officiating, coaching, and ice-making (offered at various locations based on interest).
- Junior Merit Program measures the achievement of junior curlers. This five-tiered program offers colored bars (red, blue, bronze, silver, and gold) for display on curling jackets and is earned through testing of knowledge and skills of the sport and on-ice.

College Curling

USA Curling endorses college curling, which continues to grow in the U.S. thanks to the help of the Illinois State Curling Foundation, which began a curling program back in the late 1980s. Successful National College Curling Tournaments have been held since the early 1990s. At the same time, the number of states offering regional college curling tournaments has also increased.

Liability Insurance

- USA Curling's club insurance program provides access to liability insurance, and accident and health coverage with reasonable premiums and with broader coverage than that which is typically available from local agencies.

Championships for Competitors

- USA Curling Men's and Women's Club Championships
- USA Curling National Mixed Championship
- USA Curling National Jr. Men's and Women's Championships
- USA Curling World Wheelchair Team Selection Event
- USA Curling Senior Men's National Bonspiel
- USA Curling Senior Men's & Women's World Team Selection Events
- USA Curling Men's and Women's National Championships
- USA Curling Mixed Doubles Championship

Benefits for Hosting Championship Events

- Added revenue and community awareness.
- A shot of enthusiasm for club members.
- Gratification of hosting players from around the country.
- "Media-Marketing Partnership Model" provides training to committee leaders by USA Curling personnel.
- USA Curling provides a detailed contract for each host site. It distinguishes USA Curling and Host responsibilities, and also serves as a comprehensive guide to assist you in hosting your event.

USA Curling Database

USA Curling and Atom Ampd have worked together to create an online database that provides many benefits to our membership clubs.

- Direct, internet-based access for clubs to update their membership information.
- Immediate and accurate membership information.
- Ability to generate a variety of reports.
- Each member of USA Curling gets his or her own password protected access for updating personal information and visiting the Members-Only sections of the USA Curling website.
- Watch for additional benefits to become available as we evolve.

United States Curling Association (USA Curling)

USA Curling promotes curling in all its aspects and represents members at the World Curling Federation and the U.S. Olympic Committee. We maintain close contact with other curling bodies such as the Canadian Curling Association (CCA), to stay abreast of the latest development in techniques and tools to benefit USA Curling members.

Hilton Hotels Discount

Receive a 15% discount off the Best Available Rate at any of the 10 distinct hotel brands within the Hilton Worldwide portfolio. Support your NGB by staying with Hilton Worldwide. Go to www.usacurl.org to start saving today!

Office Location: USA Curling's business office is located at 5525 Clem's Way, Stevens Point, WI 54482. Business hours are from 8:30 am to 5:00 pm, Monday through Friday. Call the office for information and you'll be directed to the staff member or volunteer who can help you. Call toll-free 1-888-CURLERS (888-287-5377 or 715-344-1199) Fax: 715-344-2279; e-mail: info@usacurl.org; website: www.usacurl.org.

Revised 03-11-11

National Office: 5525 Clem's Way, Stevens Point WI 54482
715-344-1199 ■ fax 715-344-2279 ■ e-mail: info@usacurl.org ■ web site: www.usacurl.org

If we host it, build it, publicize it… will they come?

Tips on attracting media coverage of your events, club activities, league curling, etc.

The adage that "news is what fits on a particular day" carries a lot more truth than you might think. A club or sporting event that may merit front page news in your local paper could get bumped by some "spot news" event that carries the news of the day. Likewise, an event or news item that is normally buried in the back pages may suddenly gain importance and position if it's a slow news day. This applies to print as well as broadcast media outlets.

There are a number of ways in which you can increase the chances that your news items, club events or club members gain regular, consistent coverage in your local media. Much of this is plain old common sense, but hopefully there are a few insights here, too, that will help some of you.

Localize the story, event, athlete, etc. as much as possible—What's important to the *New York Times* may mean nothing to the *Bemidji Pioneer Press*. But what's considered not even worth a mention by the *Times* may make big headlines in Bemidji if the story has a local angle. (As a specific example, do you have club members who are competing in or volunteering to help out at the USA Curling national events? With their blessing, pass the names of these people along to the local media. They'll appreciate the inside angle.)

Be neat and organized— Organize your information neatly and in a sensible manner. Don't worry about writing a Pulitzer piece. Just provide the necessary facts (make sure they're correct!) and details. The media will build their own story. Providing it typewritten or digitally is best. As a newspaper editor previously, I received more than enough articles written on a napkin, or scrawled so badly no one could even guess at what the topic was.

Get the facts right—Make sure name spellings are correct. Include the correct dates, times, locations, etc. If including historical references, check your sources and be sure you're right. Misinformation, even if accidental, not only makes you look bad but also the reporting media.

Always, always provide your contact information—If the reporter or editor has a question, he/she needs an answer, or the news may not run. Provide a phone number (or numbers) and e-mail address where you can be readily reached, and include a backup person as a precaution. If you or your backups are traditionally hard to reach, make a point to call the reporter or editor yourself before their deadline just to see if they have any questions for you. BE HELPFUL, BUT NOT DEMANDING.

Follow the Boy Scout Motto—Be Prepared is a key element to remember when dealing with the media. Aside from providing the details about your story idea or event up front, be ready to deliver results in a timely basis. That often means immediately after your event is over, not after the evening banquet and the next day's cleanup party. Also be prepared to offer comments or quotes, or someone else who can provide them. Anticipate how you want the story to appear, and help the reporter produce it by offering the right information. If you are running an event and can't always be next to the phone, advise others who may be answering the phone that they need to find you if a certain reporter calls, or that they need to take down a return phone number and get it to you immediately.

If you don't have all the answers, say so and follow up—If someone from the media is seeking information that you don't have right at that moment, say so but tell them that you will get it and get back to them as soon as possible, giving a "no later than…" time as well. Then do so, and try to do it as quickly as possible.

Be persistent…— Provide the information to the media well in advance of when your event will happen, or when your club member is going to be involved in something. Well in advance means about three weeks out, if a normal event (months in advance if it's a national or international event). Then plan on sending polite and informational reminders, say two weeks in advance, one week out, and the day before.

But not pushy…—One sure way to guarantee that your local reporter will ignore your club for as long as he/she works in your community is to be demanding, threatening and ungrateful. Sure, it's hard sometimes to keep up the politeness when the person you're dealing with is convinced curling is a joke and not worth even discussing. Consider it a challenge to make this person a convert. The benefits will be far-reaching.

Build relationships—It pays to build professional relationships with the media you will be most often working with. If you become a consistent and reliable source of information, and are able to provide local angles and newsworthy information, your media contacts will come to count on you and are more likely to regularly use what you provide. Also learn the names of the people you are dealing with, and greet them when you see them on the street or outside of your event. Despite what they might say, many people in the media enjoy being recognized, and will remember your effort to recognize them.

Make it easy for them—By providing the framework of a story, or a unique story idea or local angle, you'll make the media's job that much easier. They'll appreciate hearing from you, especially when they know you have done your homework and can provide all the facts and details necessary. If you're pitching a story idea about a local volunteer, be sure that you have talked with that person ahead of time to get their blessing. Then be able to provide their contact information to the media you're working with. Going a step further by providing some background information on the person will make the media even happier.

Be consistent—If you have convinced your local newspaper or broadcaster to carry your weekly league results, make sure they are provided on a consistent basis. Don't miss a week because the league reporter had a dentist appointment. Make a schedule and keep to it.

Learn their wants and needs—Do you know what your local news outlets' deadlines are? Is your local paper a daily, weekly, twice-weekly? Does it come out in the morning or afternoon? What are the news deadlines? Does the radio/TV/newspaper outlet prefer to receive news items by fax, e-mail, mail or hand-delivered? Will the paper accept photos? If so, what are the format requirements? Will the TV station consider video clips not produced by their staff? If so, in what

tape format? These are just some of the questions you should try to answer as you build an information database about your local media.

Match different stories with different reporters—Curling is just sports news, right? Not always. There are people in your club who might make great lifestyle or health features, in which their love for curling can be mentioned. Stories about club members in business who have advanced in some fashion or done something noteworthy go in the business section. Students and teachers fit in the education section. If someone associated with your club has a fascinating story from travels or everyday life or whatever, there just might be a columnist who's interested. As you get to learn more about your local media, you'll recognize where each of these different story ideas should be pitched. Don't always send everything to the sports editor, who may not have time to care that Joe Curler rescued three people from a burning house adjacent to the curling club on Saturday.

There's a reporter in the house. What do I do?—If he's in the house as in the house on the curling ice, and he's not part of the game, you will probably have to ask him politely to move. But back to the original point I meant to raise: When you succeed in getting media to your club, remember your polite, undemanding ways (and remind others around you if needed). Make yourself or some other trustworthy person available to hang with the media and answer questions, provide insights, introduce possible angles, etc. Don't allow yourself to succumb to the desire to tell the reporter or photographer how they should do their job. Even though you're the expert on the sport, you can be helpful without being bossy. Don't tell them the only way to get a good picture is like Jill from Channel 4 does, by laying on her stomach in this particular spot. Provide ideas, but not demands. Provide assistance, but don't direct.

Don't forget to give thanks—After the story about your event or club has been published or broadcast, send a personal follow-up note to the reporter. Thank him/her for their time and interest in your sport and club. If you think they did an exceptionally good job, don't be afraid to say so. If there were some factual mistakes, point them out politely. (Try to begin your letter with a positive comment first, then insert the "however…", and then close with another positive statement.) Something like, "Just so you are aware, Bill's last name is Pennington, not Pengrenton," is useful and polite. Something like, "The story was good but you screwed up my last name, ruining the whole thing," falls more on the impolite and useless side. You might also take the opportunity to pitch a follow-up story idea, or to invite the reporter to an upcoming Open House or even a private curling lesson at his or her convenience.

IN SUMMARY—You probably get the picture, but the keys to focus on are:

- Work to attract media in a professional, organized manner.
- Be persistent, consistent, timely, thorough and reliable.
- Be helpful, but not demanding.
- Be creative. Get to know your media and the types of stories they like to run, then find similar angles within your club and membership.
- Work toward developing a positive, long-term relationship.
- Relish the successes, and view the not-so-successful results as continuing challenges.

FOR IMMEDIATE RELEASE
Feb. 1, 2007

Sample Open House Press Release

(BARROW, Alaska) – The Barrow Curling Club will hold an open house on Friday, Feb. 17 for people of all ages interested in trying out or just learning more about one of the newest Winter Olympic sports. Curling debuted as a full-medal sport at the 1998 Olympics in Nagano, Japan, and is again a major part of the program for the 2002 Games now underway in Salt Lake City.

Friday's open house, at 1212 Freeway Ave., begins at 4 p.m. and continues until 10 p.m. Informal instruction will be available throughout the event, and many of the club's 110 members will be on hand to answer questions and provide information about the 500-year-old sport of curling. Televisions at the club will be tuned to the day's featured Olympic coverage, which will likely include updates of Team USA's quest for gold in curling. There will also be taped presentations of curling instruction, championship highlights, and other features about the sport.

Curling is a sport for all ages and abilities. Similar to golf in many aspects, it is a lifetime activity that men, women and children can play and enjoy together. Beginners can receive instruction, practice the basics, and take to the ice for a game within the first hour of participation. But like that other Scottish sport—golf—it takes years and countless hours of practice and play to even begin to master curling. Olympic-level curlers are examples of the whole-body fitness, finely-tuned finesse, and mental toughness required to excel internationally.

Those planning on trying out curling at the Open House should wear comfortable, loose-fitting clothing (such as a jogging suit) and rubber-soled shoes. Wearing a couple of layers will allow you to adjust accordingly as you go from less-active instruction in the ice rink to full participation. The club will provide all other equipment needed to participate.

Whether you come to play or just to watch and learn, you'll get an insider's view of curling that, for one, will help you better understand the action during the 11 days of Olympic competition. For instance, you'll discover:

- What all that sweeping is about.
- The difference between a hack and a hog line.
- Why an end isn't necessarily The End.
- How easy it really is to slide a 42-pound rock down the ice.
- The meaning of "Hurry Hard!"
- Why it's desirable to throw rocks at the house.
- And finally, how you score in this sport.

While the Barrow Curling Club's league season normally begins in November and ends in mid-March, the club is offering a special, mini-league this season for newcomers interested in playing yet this season. A four-week session will begin on Tuesday, Feb. 20 and continue on each Tuesday thereafter through March 14. More information and registration will be available at the Feb. 17 Open House.

For more information about the Open House, or the Barrow Curling Club in general, contact Joe Almanac, (715) 256-0000, or joe.almanac@home.com. More information about curling is also available at www.usacurl.org, or by calling USA Curling at 1-888-CURLERS.

(###)

Editors: For more information, please call Joe Almanac, (715) 256-0000, or Betsy Rugge, (715) 258-1111, or the Barrow Curling Club, (715) 258-2222.

National Office: 5525 Clem's Way, Stevens Point WI 54482
715-344-1199 ■ fax 715-344-2279 ■ e-mail: info@usacurl.org ■ web site: www.usacurl.org

www.usacurl.org

World Curling Federation Stone Purchase Opportunity

To assist United States ice arenas interested in adding curling to their facilities for the first time, the World Curling Federation has offered to make used stones available for purchase.

If the facility decides to purchase the stones, then for every sheet of curling stones supplied, the amount would be payable to the World Curling Federation over a period of five years. The stones would then become the property of the facility.

To participate in this program, U.S. arenas would need to make arrangements with the World Curling Federation through the U.S. Curling Association at 1-888-CURLERS (287-5377) or info@usacurl.org.

For more information please contact Bev Schroeder, Director of Member Services at beverly.schroeder@usacurl.org or call 888-287-5377, Ext. 203.

SAFETY TIPS FOR CURLERS

- Warm up before playing. Stretching and warming muscles before going out onto the ice can help prevent injury.
- Step onto the ice with your "gripper" shoe. Never use your slider foot to step onto the ice.
- Always be careful when stepping off the ice. Always put your slider foot up first.
- Never stop a rock with your hand. Your fingers can be crushed, especially if the rock hits another rock while you're trying to stop it. Never use your foot to stop a fast-moving rock. You could lose your balance and fall. Use your broom to stop a rock.
- Always carry your broom, which you can use to avoid or break a fall in case you lose your balance.
- Never go onto the ice when your balance is impaired from sickness, excessive alcohol, etc.
- While sweeping, if you can't keep up with a fast-moving rock, stop.
- When you first step onto the ice, take note of the ice conditions. Sometimes the ice is slicker than normal. If so, use extra caution.

SAFETY TIPS FOR CLUBS

- Before and during each season, check to be sure that no water has frozen on walkways or carpets around the ice. Curlers anticipate sure footing on walkways. Icy walkways can cause fall, muscle pulls, and serious injuries.
- The entire ice surface must be flat. Never leave raised, depressed, or otherwise irregular patches of ice anywhere on the sheet.
- All walkways must be sturdy especially where curlers step onto the ice.

USA Curling™
dare to curl

LEARN TO CURL IN ONE HOUR

- View the Baxter Healthcare video, “Curling: A Lifetime Sport,” produced by the USCA.

- Warm up for a few minutes off ice.
- Safety first. Acknowledge that both the rocks and the ice are harder than heads. BE CAREFUL!
- Put a slider on (or use wrestling tape, duct tape, or slip-on surgeons’ slippers, if needed). Step gripper foot first onto the ice. Walk around a bit to get used to the feel of a slider.

- Get into the hack and put two rocks in front. Hold on with both hands and extend into the sliding position. See how far they can go.
- Once balance is established (still using two rocks for balance), go for a ride to the other end of the ice using a brush head at the small of the back. Go slowly and train the sliding foot to be centered. Begin to move one stone in front of your sliding foot while using the other for balance. Encourage a relaxed sliding position.

- Now, they’re ready to get into the proper hack position with the broom and one rock. Have them slide out on their own stressing the position of the sliding foot. Encourage a relaxed sliding position.
- Demonstrate how to grip the rock and pair off, one on each side of the sheet. Practice releasing the rock from the 10:00 and 2:00 positions to the handshake position and look for one-half revolution between partners. Practice both turns.

- Get back into the hack and demonstrate skip calls from the near hog line so they know which turn to throw.
- Once they have the turns figured out, let them throw it all the way down the ice.
- Demonstrate how to sweep. Make sure they take their sliders off. Get them started at about the tee line and sweep a few rocks.
- **LET’S PLAY!**

USA Curling™ dare to curl

FACILITY INFORMATION

Torian Designs LLC

Innovative Product Development and Marketing

Curling in an arena: a "how-to" guide

1/15/02

Required Equipment:

- Removable hack assemblies (2 per curling sheet)
- Pebbling can + appropriate sprinkler head (back-pack style containers are easiest)
- Zamboni or similar ice-resurfacing machine
- Circle-scribing tool
- Portable scoreboards (optional)

Ice Preparation: Hockey players and general skaters do not require the extremely flat ice surface that is necessary for curling. Therefore, the ice-resurfacing process must be slightly modified to accommodate the needs of curling. The edges of the ice surface (within 15 feet of the boards) tend to be the least flat due to normal skating patterns. Talk to your Zamboni driver about techniques he may know to shave the ice so that it can be made flatter before you start (a diagonal criss-cross pattern like on a baseball infield seems to work pretty well). After the ice is "leveled" to your satisfaction, have the ice re-surfaced with a normal Zamboni flood. After this flood freezes, use the Zamboni to do a dry-scrape along the length of all the sheets (not diagonally) as they normally would drive. Make sure they scrape the entire ice surface (not just the sheets) because it provides much better traction for people wearing shoes, and it tends not to sweat and accumulate humidity the way "shiny" ice does.

Sheet Location: Positioning your 1-4 curling sheets in the middle of the arena can avoid the major flatness problems found in any arena. An international-size arena is 100 ft x 200 ft. If you are playing in an arena of this type, the hack location (end-to-end) is easy to locate: it is approximately even with the outside hash-marks on the edges of the face-off circles. If you need more accuracy than that, it is best to measure.

Drawing the Houses: The easiest way to draw temporary houses is to make a scribe tool for drawing circles. This tool consists of a piece of 2x2 lumber, with large "Magnum-44 markers at 1-ft / 2-ft / 4-ft / 6-ft distance from a pivot screw. These scribe marks then become a template for using really large / fat permanent magic markers to mark the circles so that they are visible from the other end of the sheet. Remember to use a pesticide-spray container to apply a fine mist over the markings to ensure that the ink doesn't get all over people's pants when they slide through. If you are only doing 1 or 2 sheets, it sometimes makes more sense to put in the house at 1 end only. Then you don't have to worry about sliding through the house at all. You will also require fewer hacks to do it this way.

If you can convince your arena employees to paint actual houses on the ice, all the better (use standard ice-painting techniques).

Pebbling: The ice can be pebbled as it would be in any curling facility. Fill your tank with hot Zamboni water (the hotter the better). Use a standard curling pebbling sprinkler head to ensure that you get the correct pebble size (these are available in catalogs, as are complete pebbling cans). The back-pack style are easier to hold, but are more expensive. It is helpful to pebble a large area of ice behind the hacks so that new curlers get used to sliding on that surface before they step onto the sheet. If you are installing practice-hacks in the arena away from the actual curling sheets, pebble those areas also.

Hack Installation: see separate instructions

Questions? Contact Iain Hueton @ Torian Designs. Phone 801-627-4119 email ihueton@yahoo.com

Hack Rack Installation Instructions

So, how to install these things?? First things first: a little lesson in thermodynamics. All materials have properties which affect their performance when they undergo significant temperature changes. For example, aluminum is significantly more conductive than steel (and has a lower thermal mass), so it takes a lot less time to freeze into the ice. At the other end of the scale, rubber is an excellent insulator and does not like to change temperature.

We typically lay the hacks out on the ice (rubber-side down) to get them good and cold during the Zamboni run so that only the metal plate will be heated and cooled during the installation process (if the rubber starts off at room temperature, it takes much longer to cool off). If you are installing the hacks on the ice in a real curling rink, be careful to stay away from any painted areas of the ice because removal of the Hack-rack often lifts a small chunk of ice (and paint) with it since curling club ice is generally thinner than hockey ice.. So, if you want the hacks to freeze in quickly and solidly,do the following:

- find 2 large Rubbermaid / Tupperware containers (20 gallons) that allow the hack mount to sit flat in the bottom (Walmart or Kmart have them). A much smaller container can be used for single Hack-Racks

- place one container inside the other container (nested / stacked). This produces an air gap and provides an insulation layer so this bucket of warm water doesn't make nasty marks on your ice.

- Fill the container 1/3 full with hot water

- Take the container out to the hack location on sheet 1 (the hacks can be sitting rubber-side down near their intended location on each sheet, behind the hack position). Keep the water container off the actual sheet playing-surface to avoid the possibility of marring the ice or spilling water where it can effect the playing surface.

- Dip the first hack into the water (rubber-side up) with the rear metal edge deepest in the water. It's important to get the whole metal plate wet and hot while avoiding getting the top surface of the rubber hack wet at all (otherwise loose pieces of ice will break off the rubber during the game).

- Hold the unit in the water for 10-15 seconds, shake off the excess water, and quickly place it in position on the sheet

- Stand on the hacks to squeeze water onto the sheet and make sure that the aluminum tabs have sunk all the way into the ice (when the stone logo fills with water or pools around the frame, you're done). Then place a curling stone on each rubber hack to hold it down as it freezes (since we had the hacks on the ice prior to this process, they will not warm up your stones at all).

- Wait 5-10 minutes (or until all water around the Hack-Rack has frozen) and curl on!

Where to install the hacks: sheet / rink diagrams typically measure 6-feet from the back line to the beginning of the "ramp" on the rubber hack (the lowest portion of the ramp). If you're on hockey ice and don't have a back-line marked, the hacks will be even with the rear hash-mark on the face-off circle. If you're curling with small kids who can't get the stone into the house, consider freezing a hack off-center at the hockey blue line so they can throw from there without affecting the full sheet (angle it slightly to face the house). If you shoot from only one end with small kids, this "off-center' hack can be just a few feet off-center without interfering with adults throwing from the regular hack position

To remove the hacks: the current design has a very firm grip on the ice. So, you'll need to take the handle-end of a wooden broom and whack the back surface of the Hack-Rack at the 2 "tab" locations (the tabs should break free), then simply grip at the rear with both hands and pull straight up. If it is still firmly frozen, use the end of the broom to vertically strike the thin part of the hack at the front of the metal frame to break the front tabs loose. It is very important to pull with both hands to avoid bending the Hack Rack.

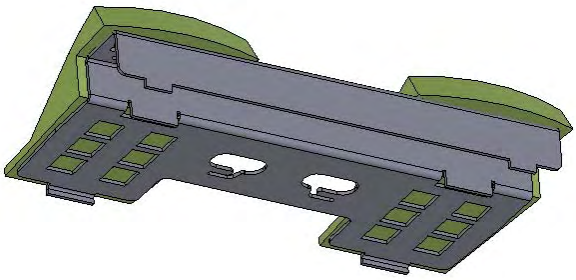
Questions? Contact Iain Hueton at Torian Designs.
Phone 801-391-8772
Email ihueton@yahoo.com www.toriandesigns.com

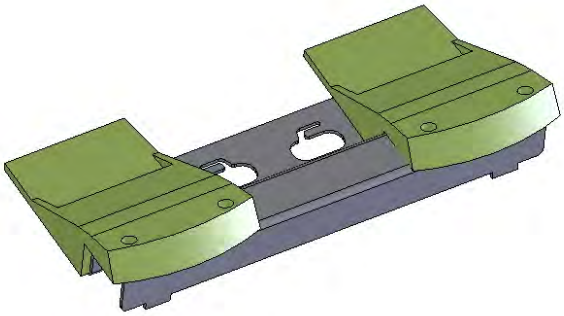
Torian Designs LLC

Innovative Product Development and Marketing
www.toriandesigns.com

Quick-Freezing Hack-Rack

- Installs in minutes to convert your arena ice to a multi-sheet curling rink
- Great for adding extra hacks for teaching groups (curling clubs and arenas)
- Accepts all types of rubber hacks
- allows hack-removal / easy replacement to facilitate Ice King or Zamboni resurfacing





How does it work?

The Hack-Rack is an aluminum frame with tabs and slots that sink into the ice and freeze it in place. It is designed to accept Marco hacks and all other hack styles.

Performance Advantages

- This hack system meets all USCA and WCF requirements and is approved for tournament use.
- Marco hacks are positioned so that it is impossible for the curling stone running surface to contact a metal edge.
- The new design ensures that even a high-speed "take-out" shot is very unlikely to cause the hack-rack to loosen from the ice.

Installation

- heat up the hack-rack in hot water for 15 seconds (all of the metal frame needs to get wet, but keep the Marcos dry)
- place it on the ice and quickly stand on it until it sinks down, flush with the ice surface (30 seconds)
- Place 1 or 2 stones on it while it freezes in (you'll be curling in 5 minutes if the hacks have been stored in a cold location…..a few minutes more if they are warm: the rubber holds the heat longer than the metal)
- It's best to keep the rubber hacks dry during the heating process so that the metal freezes in faster and ice doesn't form on the rubber hacks

Removal Strike the back of the frame with a broom handle just above the 2 teeth that stick down into the ice. Grasp edges of frame with both hands, and pull straight up.

Pricing

Hack-Rack frame only **$53 each (US$)**
(without Marco Hacks, but includes mounting screws &washers)

With 2 Marco Hacks installed **$105 each (US$)**

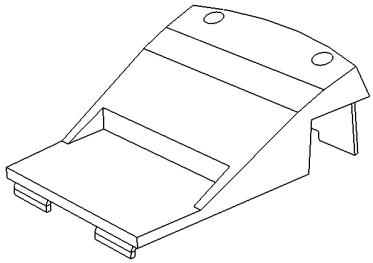
Iain Hueton (Torian Designs LLC)
1804 Ross Drive
Ogden, UT USA 84403
Phone 801-391-8772 ihueton@yahoo.com
www.toriandesigns.com

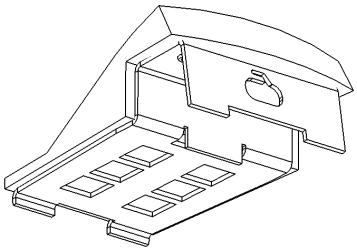
Torian Designs LLC

Innovative Product Development and Marketing
www.toriandesigns.com

Quick-Freezing Single Hack-Rack

- Installs on the center-line of the curling sheet
- Same hack is used by both left and right-handers
- Great for adding extra hacks for teaching groups (curling clubs and arenas)
- Accepts Marco Hack
- allows hack-removal / easy replacement to facilitate Ice King resurfacing





How does it work?

The Hack-Rack is an aluminum frame with tabs and slots that sink into the ice and freeze it in place. It is designed to accept Marco hacks, but it can be easily modified to accommodate other hack styles.

Performance Advantage

Since left and right-handed curlers are pushing from the same starting point, the skip will not have to compensate for the slightly different trajectory that occurs when there are two separate hacks.

Installation

- heat up the hack-rack in hot water for 15 seconds (all of the metal frame needs to get wet, but keep the Marco dry)
- place it on the ice and quickly stand on it until it sinks down, flush with the ice surface (30 seconds)
- Place a stone on it while it freezes in (you'll be curling in 5 minutes if the hacks have been stored in a cold location…..a few minutes more if they are warm: the rubber holds the heat longer than the metal)
- It's best to keep the rubber hack dry during the heating process so that freezes in faster and doesn't form ice on the surface after freezing.

Removal Grasp edges of frame with both hands, and pull straight up (or strike the back of the frame with a broom handle)

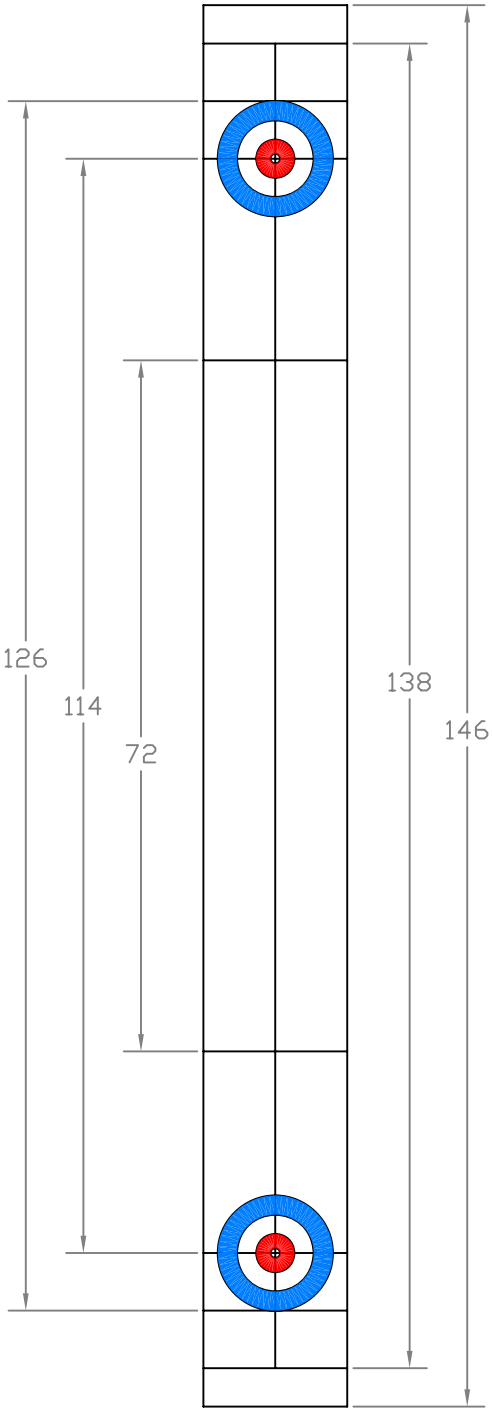
Pricing

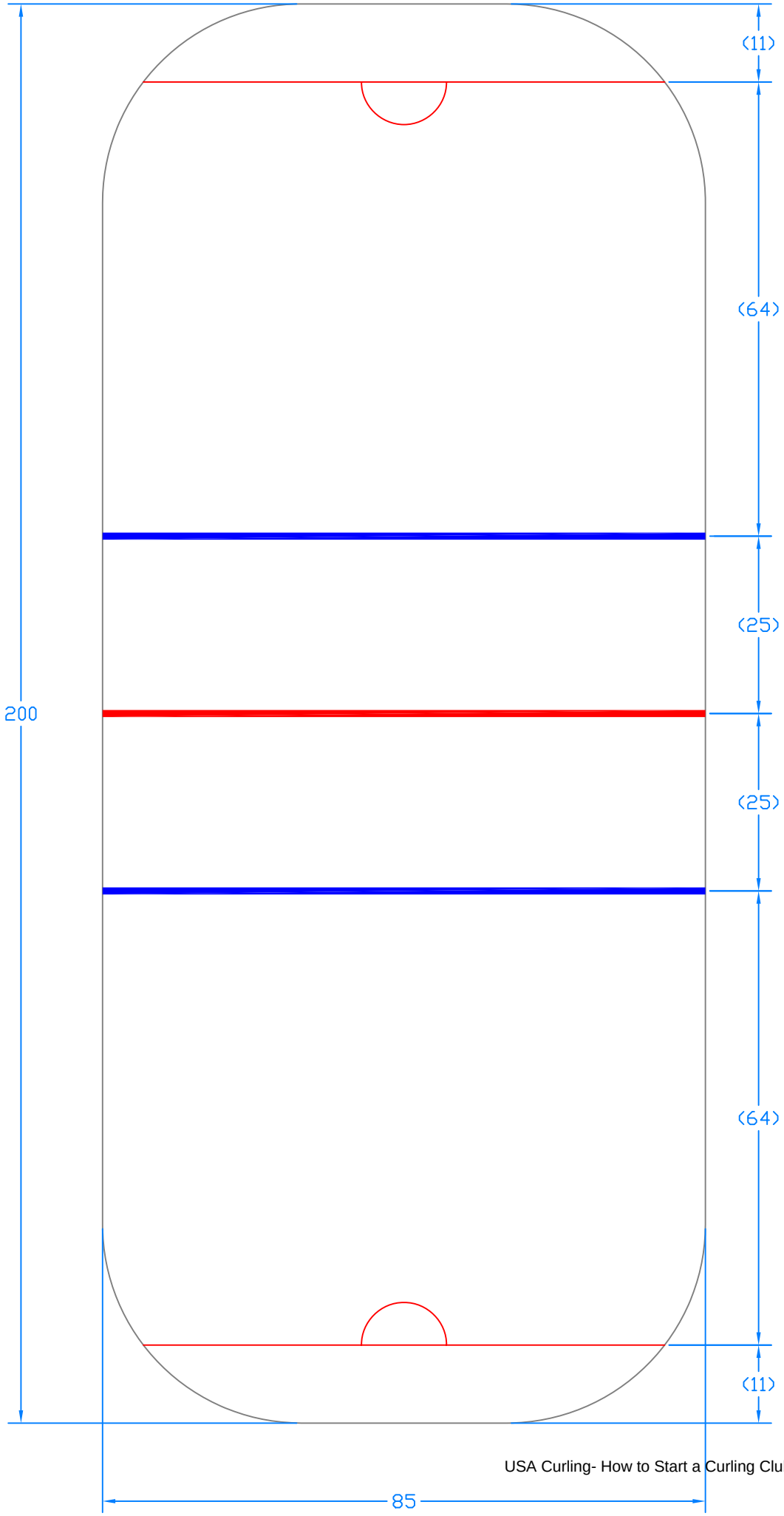
Hack-Rack frame only $**33 each (US$)**
(without Marco Hack, but includes mounting screws &washers)

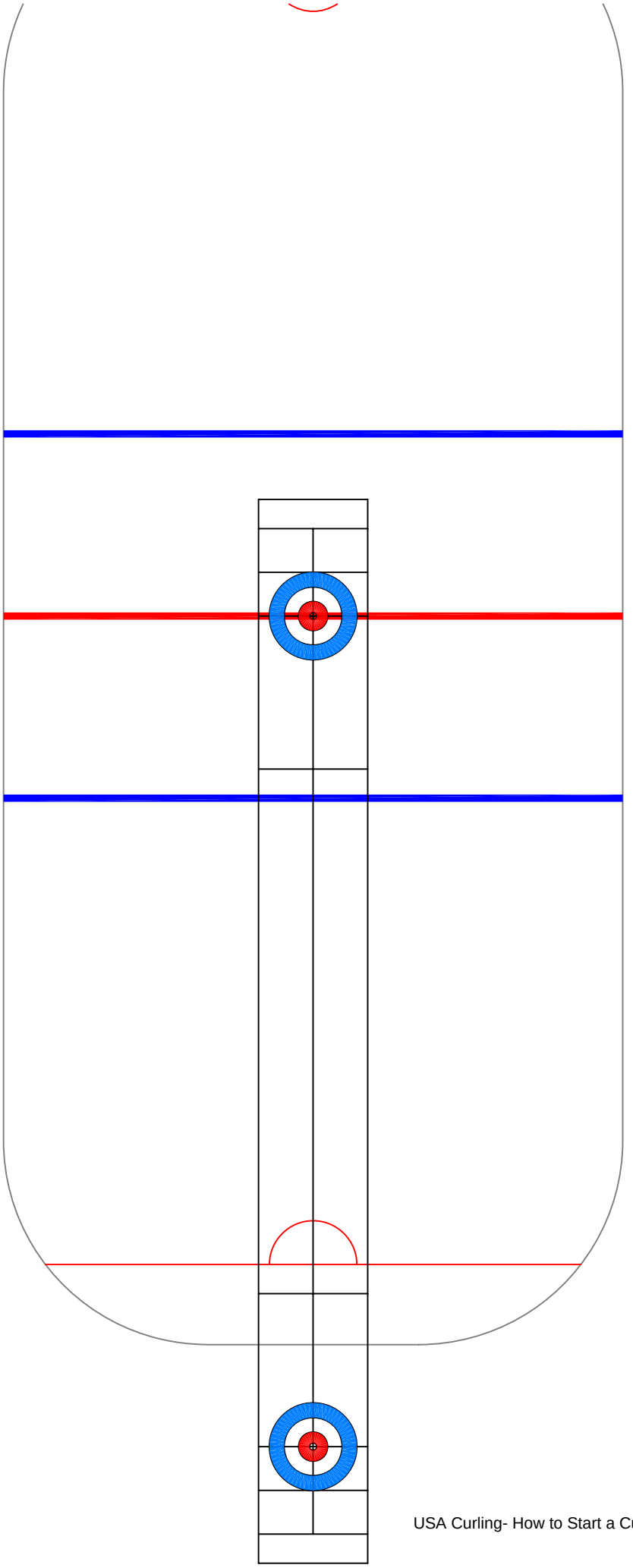
With Marco Hack installed **$59 each (US$)**

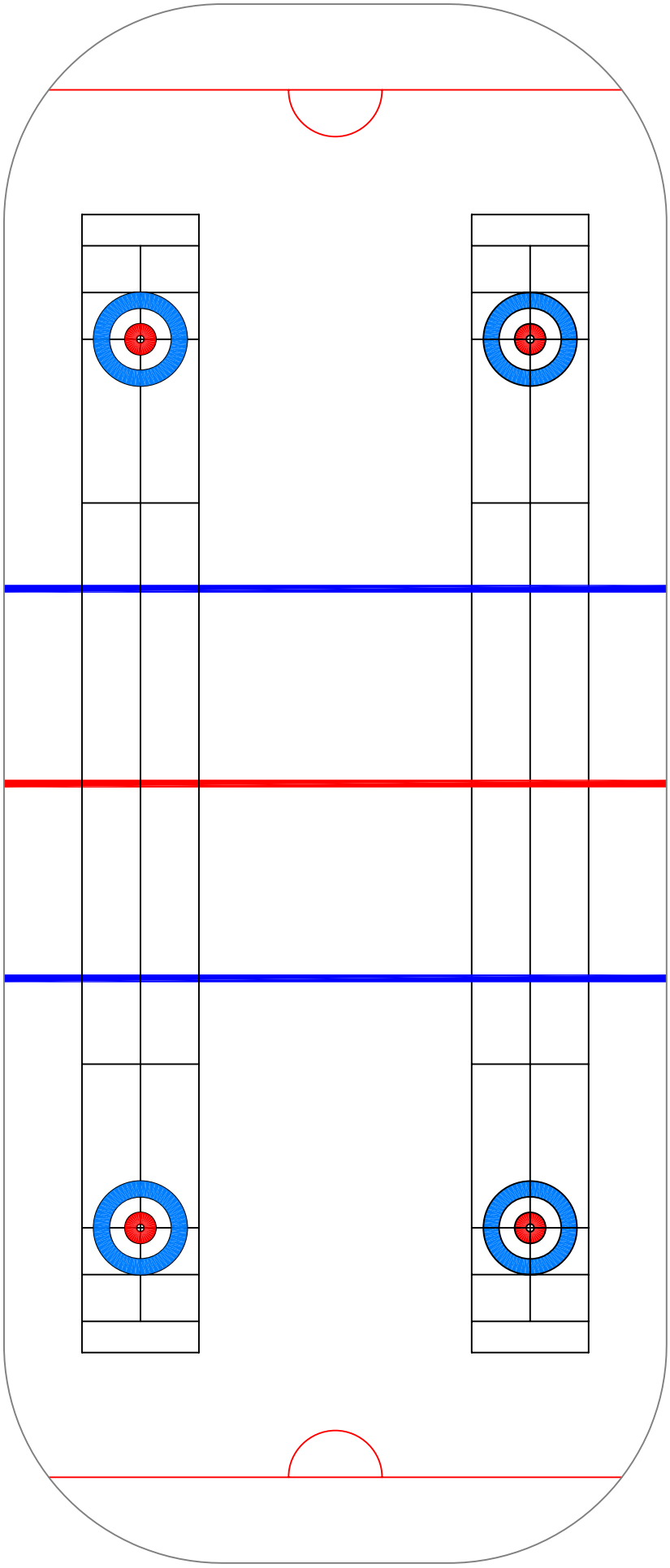
Double Hack-Rack (left and right hacks) is also available. (See separate brochure) **$105 each (with 2 Marcos) or $53 each without Marcos**

Iain Hueton (Torian Designs LLC)
1804 Ross Drive
Ogden, UT USA 84403
Phone 801-391-8772 ihueton@yahoo.com
www.toriandesigns.com


126
114
72
138
146


(11)
(64)
(25)
200
(25)
(64)
(11)
85





Curling Ice Set-up and Marking for Arena Ice

Materials

1. Paint, by rink, red, blue, options: yellow, green,
2. Tape, black semi-absorbent, for lines, options green
3. Small metal center, for pin,
4. Option for circles, use colored cut paper kit. Paint is preferred & more vibrant.
5. Colored string for lines if tape not used.

Manpower

1. 4 minimum 6-8 preferred.
2. Double check dimensions, & triple check
3. Set lines after foot traffic nearly done.

Methods: (For 14'6" wide sheets.)

1. Set lines with a small amount of tension to keep straight.
2. Spray heavy tape or lines. Let freeze before taking off tension
3. Do not step on tape or lines.
4. Use colored lines or tape. Better than white lines.
5. Set Center Line of ice rink, with tape or line.
6. Set Center Line of each sheet, with tape or line.
7. Set Edge Lines for each sheet, with tape or line.
8. Set Center of each house, with tape or line.
9. Set Tee-line, with tape or line.
10. Set Back line, with tape or line. Note: Set back of tape to line up with the back of the house.
11. Set hog lines.
12. Set hack locations with tape. 6 ft behind Back Line.
13. Make sure dimensions are cross-checked before painting.
14. Scribe circles, 6 ft radius, 4 ft radius. 6-inch radius.
15. Sweep away snow and ice. Paint edge of scribed circles with felt maker.
16. Outer 4-foot diameter circle will be 2-ft wide radius, inner circle will be 0.5 ft wide radius, button with be 1 ft in diameter.
17. Paint circles on ice appropriate color.

Machines:

1. Have extra scrapers for corrections & touch-up.
2. An Ice King is good to level the ice.

Other:

1. Plan ahead.
2. Who is coming?
3. Sell advertising for ads in ice.

Revised: 1/11/06
By: ACI

Date: July 29, 2005
By: ACI

Item	Description				
1	From USCA Rules and Procedures print out a copy of the ice rink dimensions				
2	Buy lots of strong cotton string, colored if possible.				
3	You can use an absorbent black tape if you like. Then you do not have to paint the lines.				
4	Plastic tape does not work very well. Hockey tape is not that good either.				
5	Each roll of tape should extend 150 feet. Splicing sections of tape usually ends up crooked.				
6	The procedures below use string and paint. Get lots of people like about 12 to 16.				
7	Have someone with a steady walk and hand to paint the lines straight with a special push brush.				
8	Locate center of rink on arena ice.				
9	From the center measure out 36 feet and mark the hog line with a felt tip marker.		36		hog line
10	From the center measure out 57 feet and mark the tee line	69	21	57	tee line
11	From the center measure out 63 feet and mark the back line	138	6	63	back line
12	From the center measure out 69 feet and mark the back line		6	69	hack
13	Repeat steps 3 to 6 in the other direction.		69		
14	Hack line to hack line should be 138 feet. Double check it.				
15	Run a string (or tape) down the center line of the sheet. Hold it tight at each end.				
16	Spray water over the string and hold until it freezes. A heavy spray works best.				
17	From this center line measure out the sidelines and center lines for each sheet.				
18	Run a string down each line and freeze it down with a heavy spray of water.				
19	Double check all your lines and dimensions.				
20	After all the lines are in and checked, paint over them with black or a colored paint.				
21	Note: The back of the back line should be touching the 12-foot circle.				
22	Note: The back line should not be outside the 12-foot circle.				
23	After paint is dry, lightly spray water over the paint. Be careful not to smear it.				
24	Scribe in circles. 6-foot radius, 4-foot radius, 2-foot radius, 0.5-foot radius.				
25	You can also use a 1-foot diameter disc to make the button.				
26	Paint in the 4-foot band on each sheet.				
27	Paint in the 12-foot band on each sheet.				
28	After paint is dry, lightly spray water over the paint. Be careful not to smear it.				
29	Continue to lightly spray many coats of water over the paint.				
30	Do a light flood over the paint. Gradually make more floods until the rink is at desired thickness.				
31	Admire your work and have a party!				
32	Caution: Do not walk on the string or tape.				

CURLING ICE PREPARATION AND MAINTENANCE

Prepared by Mark Callan, United Kingdom, for the World Curling Federation

Introduction:
This document is intended as an introduction to the procedures and processes that are required to be followed in order to change ice that has been used for other ice related sports to an acceptable standard that will allow curling to take place on a level playing surface.

An Overview:
In order for reasonable curling conditions to be produced and maintained, it is necessary to ensure that the ice surface is as level as possible.

The ice surface that is to have curling on it must be subject to continuous monitoring and daily maintenance work in order that the surface is kept as level as possible at all times.

Daily Maintenance:
Most rinks generally resurface after each public skating session or between periods if it is ice hockey. The above activities, as well as figure skating and\or speed skating (if applicable), all generally mean that there is a build up of ice around the side of the ice surface, in effect turning the ice surface in to a giant saucer bowl.

This is a situation to be avoided at all costs. Apart from being dangerous to patrons, it will also mean that if a leveling flood is applied the water will run off, creating ridges, which means that the ice surface will not be level.

The best method of controlling this build up is to 'edge the pad' at the very least on a daily basis. The method adopted in the United Kingdom is with a petrol or electric powered edger designed for the job (available from both Zamboni and Olympia), or by an attachment to the aforementioned machines' conditioner. If none of the equipment above is available a hand scraper could be used, but his is very labor intensive and slow.

Depending on an arena's usage, which affects the number of resurfacing operations carried out over a week, there will need to be floods applied to the ice to maintain a reasonable ice depth 1.5 to 2.0 inches for all activities.

With planned curling approaching, this is the ice-man's (technician's) opportunity to "visually see" how level the ice surface is.

When the flood is being applied, any areas that dry very quickly or where the water "runs off" will indicate that the ice is not level. The ice man should take note of these areas on a small drawing of the arena surface and concentrate his edging and maintenance program, i.e. resurfacing cutting pattern to target these areas prior to the next scheduled flood taking place.

Preparing for Curling:

It cannot be stressed often enough that a great deal of attention must be paid to the ice surface to ensure that it is level. On the days leading up to the curling event, keen observation and manual checking of the ice depth are required. The evening before the curling event, the ice should be edged and resurfaced prior to a flood being applied (with warm water if available).

All water being applied to the rink should be filtered de=mineralized or de-ionised if at all possible. Each of these processes will remove deleterious particulates from the water that increase freezing time and can contribute to the ice surface being "greasy."

It is of assistance to increase the ice surface temperature if possible prior to the flood as this will make the ice a little softer, and when the water is applied, will aid the leveling procedure. Care should be taken with air conditioning and air handling systems that no vents (outlets) are pointed directly at the ice surface, as they could produce a rippling effect on the water, which of course translates to rippled ice. Not Good.

At the end of the flood, dependant on rink size and water flow rates, the entire ice surface should be wet. Once the rink is frozen preparations can be made to ready the ice for curling.

Key Points:

Maintain a level surface.

- Ensure that the ice pad is edged regularly
- Check your water quality. Filter or treat if possible
- Check air conditioning system status and vent directions
- Ensure that all ice technicians are aware of curling preparation program

Pittsburgh Curling Club

Ice and Equipment Procedures

A. **Job descriptions.**

1. There will be one person assigned by the icemaster to coordinate setup and teardown each night. That person will be referred to as either setup foreman or teardown foreman.

2. The setup foreman should report to the arena a minimum of 30 minutes prior to the scheduled time. At that time the foreman will unlock all necessary cabinets and begin preparing for setup. Prep includes: making sure there is plastic to set the rocks on ice with, getting out the necessary ice brooms and rock box, getting the pebble tank ready, and making sure there are volunteers to help with the tasks.

3. The setup foreman will coordinate the volunteers from the first draw in carrying out the rocks and assigning tasks to complete setup. Tasks include: installing hacks, icebrush, pebble, rockbox, finebrush, and scoreboards.

4. The teardown foreman will coordinate removal and storage of all club equipment at the end of the curling session.

B. **Setup procedure**

1. **Rocks** are to be moved from the storage cabinet to the ice surface as quickly and safely as possible once the zamboni driver has completed two passes around the outer circumference of the ice sheet creating a 10ft. section of fresh ice from the boards outward. One person should stand guard and watch the volunteers to make sure no person or equipment gets near the path the zamboni driver is taking. The rocks are to be placed on plastic sheets up against the boards and should be left there as long as possible. A minimum of 30-40 minutes is generally needed to chill the running edge enough to begin play. Volunteers for this task is limited to adults. ***No one under 18 is permitted on the ice while the zamboni is on it.***

2. **Hacks:** All hacks should have mounting bolts set up in the installation position. Use the tub and small cart in the upright cabinet to haul the hacks to the back of the ice arena and fill the tub with hot water, enough to cover the mounting bolts. After the zamboni is finished and off the ice, hack installation can begin.
   A. **Installation:** Take a hack from the hot water and set it centered over the positioning marks on the ice. Allow the mounting bolts to burn indents into the ice. Lift the hack and using a cordless drill with a 3/8" bit, drill down just enough to allow the mounting bolts to sink in and allow the hack to lie flat on the ice. The hack will freeze solid within 10 minutes. When finished with installation, do not empty water out of tub. Save it for teardown. Usually we just let it sit on its cart off in a corner near the front of the ice sheet.

3. **Icebrush:** After the zamboni has cleared the ice, each sheet should be cleaned with the 90" icebrush. A pass up each side of the sheet usually is enough. This is to clean off the residue that may have been left from the zamboni. If necessary use more passes if the ice appears to need it. This is critical, as the ice needs to be as clean as possible before pebbling can proceed. As a pass is completed the icebrush should be cleaned off. This is done by brushing off the 90" brush with a small hand brush and should be done in one of the corners out of the way.

4. **Pebbling:** After a sheet is declared clean by the Icebrush crew it is ready to accept pebbling. Pebbling is reserved for those volunteers who have received training and pebbling certification from the Icemaster. Contact the Icemaster to setup training and certification. A separate manual will be provided to those who have completed pebbling certification that will cover pebbling procedures of the Pittsburgh Curling Club.

5. **Rockbox:** One person is needed to run the rockbox after pebbling is completed on a sheet. The rockbox is used to help prepare the pebble for play. Walking the rockbox on each side of the sheet, favoring the center, does this. The second pass can overlap the centerline a bit. If there is enough time a third pass splitting the centerline can be done.

6. **Finebrush:** The 90" finebrush is used to clean the smallest pieces of debris and ice on the sheet. The finebrush should be run in coordination with the rockbox. The finebrush should be cleaned after each sheet by brushing off the debris with a small hand brush. This is done in one of the corners where there is no traffic during play. Once a sheet has been rockboxed and finebrushed it is declared ready for play.

7. **Scoreboards:** Scoreboards and any advertising banners can be put up after the zamboni has cleared the ice.

8. **Final prep step:** When a sheet is ready for play and not before, the rocks can be brought forward from their chilling area on the plastic to their appropriate sheets. The plastic should then be taken back to the storage area, draped out to dry. When dry they can be refolded and put into storage.

C. **During play procedure**

1. The foreman will also be responsible for charting conditions each night. Thermometers and humidity gauges should be set out during setup. Also, an infrared temperature device is there to monitor sheet temperature and rock temperatures. A book with charts is in the upright storage cabinet.

2. When a match is completed the sheet is to be cleaned with a finebush, pebbled and then run the rockbox with a finebrush following. When this is done the sheet is ready for the next draw.

D. **Closing procedure**

1. As the matches are completing during the last draw all equipment not necessary (icebrooms, rockbox ect.) can be put back into their storage areas. Rocks are to be stored in their cabinet, arranged by sheet number and rock color.

2. **Hacks:** Hacks are removed by using the cordless drill and the special socket. Back out the mounting bolts until they are out of the ice. A gentle kick on the back of the hack should break it free of the ice. If hack won't break free, get some warm water and pour a little over the metal. Hack should then break loose. Run the mounting bolts back to their set position and store in the plastic tub in the upright storage cabinet.

3. Once all equipment is off the ice, take water left in tub from setup and pour onto ice surface in the areas that the rocks were originally set on the ice to chill. This will cover the ring marks that were made during the chilling process.

4. Close all doors to the ice surface. Make sure any garbage is picked up and all equipment is stored and locked down.

5. You're probably tired, thirsty and hungry by now, so go across the street to carbo load and rehydrate (coincidentally it's the same strategy used by marathon runners!)

8 CURLING ICE IN AN ARENA

Preliminary Release – 2003-09-18

To overcome the problems of dealing with different situations for different purposes, there will be some duplication in the section, which is presented as two different approaches to a similar problem.

FROM ICE TO CURLING ICE

The words of this heading are carefully chosen, because the two items are very different. Ice is simply the result of water being frozen by lowering its temperature to below 0ºC, whereas curling ice is a manufactured product of specific definition that has been made from ice, or by freezing water in a very specific way.
It is the purpose of this half of the section to bring together the relevant essential pieces of information scattered throughout the manual, to enable technicians to convert ice to curling ice in an efficient and cost-effective way on a regular basis. In the next half of this section, Curling Ice In An Arena, the same subject is addressed, but there it is aimed at providing excellent ice for a competition of some duration.

The problems

1. In many areas where curling is undeveloped, there is not (yet) a dedicated curling rink and not many players, but there is a modern skating facility prepared to sell ice time for curling. The ice is not however curling ice and has to be improved.

2. Ice in a skating rink is not perfectly level, but curling ice should be perfectly level to be playable.

3. The water that was used to make the ice was not clean and the ice contains many impurities and minerals, mostly salts. Curling ice requires a very clean surface, to be pebbled with very clean water at the right temperature.

4. Skating damages the ice, leaving deep gouges in places, which take time to repair.

5. No markings, lines or equipment have been installed and will have to be added quickly, and probably removed afterwards.

6. There is not sufficient time to do a good job, nor the equipment, nor trained technicians.

7. The ice-surface temperature is very important for curling. To complicate the matter it is very difficult to measure accurately, unless a probe can be placed on the ice surface where it is likely to be damaged.

The solutions

1. As every experienced curling manager knows, someone has to provide the driving force and maintain the momentum, but one person cannot hope to do it all himself.
   The skating-ice technician is the person with much to do and not enough time and now, with curling on the scene, someone is giving him even more to do. The skating-ice technician is also a very important person, respect his position.
   To solve this, form a club of all known curlers, have a meeting and select a committee. Let this committee take responsibility for the running of the curling and its ice, and the most knowledgeable and diplomatic member must liaise with the skating staff. Good communication and teamwork will solve most of the problems and develop a healthy atmosphere.
   Then have a fund-raising exercise to raise as much money as possible for equipment and specialised training for a curling-ice technician, who will take responsibility for the weekly conversion to curling ice along with the skating-ice technician.

2. If the skating ice is maintained well, it will remain reasonably level. A good Zamboni driver will find ways of compensating for high corners and middles, and will keep changing his patterns to improve the level. The more level the surface can be maintained, the less work to make it level for curling. In fact, if the ice is well maintained in a busy skating rink the constant scraping will lessen the effects of salts in the surface too (see Point 3).
   For maintaining the level of skating ice a powered edger is a must. It will “grind” down the higher sides and corners very quickly and is much easier than using a hand scraper. This should be done routinely, and is normally done every day in busy skating rinks. Edgers are available from both Zamboni and Olympia.
   The dedicated and willing skating technician should have a laser level at his disposal to regularly check his floor and see for himself where he is going wrong, and there is no simpler way.
   Scraping the surface with the Zamboni without flooding makes a big difference,

because it will scrape down irregularities without adding water, but scrape gently and both down and across the ice if possible. If only four sheets are needed in a full-size skating rink, it will be easier to level the middle of the rink than the side(s).
If the surface is reasonably level an overnight flood with warm water will give the best result for level, as well as the smooth surface required for curling.
Ideally, the best scenario is to keep the surface as level as possible during the skating phase, scrape and flood with the Zamboni to level off the surface, flood overnight with warm water and finish in the morning by pebbling and cutting with a powered cutter. These machines are expensive, but they do a very good job and without them it will be very difficult to achieve a level surface, especially if the work will be on a weekly basis. In most curling rinks they are used every day to maintain the pad. If a powered curling cutter is not available, the Zamboni/Olympia can be used to do a light, dry scrape (using little pressure) across the rink, which will remove the worst impurities and provide a reasonable surface for pebbling.

3. The ice that was used for curling in earlier days and is still used in many areas today, cannot be curling ice unless the surface has been cleaned of salts and impurities. In a curling rink this will be done over several days, by which time the surface will be clean and will remain so until the next flood. In skating rinks the constant scraping between sessions will maintain the surface quite well and a good dry scrape after flooding will remove the bulk of the salts. Of course, if the ice has been made with purified water there will not be a problem with salts at all.
The pebble water, on the other hand, has to be clean, at the right temperature (about 40ºC, depending on the hole size), using the right pebble head, with the ice-surface temperature at – 4.5ºC, the relative humidity at about 40% (at 1.5m) and the air temperature at 8ºC (at 1.5m) to give a dew-point temperature of – 4.3ºC, or all the other work that has gone before will be going to waste.
In short, install a water-purification system and a heater or heat-exchange system of sufficient capacity to enable flooding with clean and warm water.

4. To keep on top of the damage caused by skating, the ice surface has to be well maintained. Keep the problem small and it will be easier to repair. Curling-ice technicians will routinely fill in marks and holes with a little water before cutting the ice and this takes time, but if they don't do it the problem can get out of hand when only a flood can save them. The skating-ice technician will no doubt welcome a volunteer who will fill in the worst marks before he has to dress the surface with his Zamboni.

5. Installing the essential equipment depends entirely on co-operation between the skating and curling staff. The liaison member of the committee must work at this.
If the curling is going to be a regular event throughout the winter, it is best to install the lines and houses in the ice for the season, or paint the houses on the floor before the ice is installed. If the curling is less regular, simply measure up and scribe the circles in the ice – this is what is still done today for outdoor curling and it works.
The hacks will be easy to melt into place if the supporting frames are made of aluminium or steel, and are very quickly removed again.
The stones often present the biggest problem. Carrying the best part of sixty-four stones twice a week is not a task for the unfit and has inherent dangers of damage or injury. Either find a safe and dry area nearby to store the stones at a cold temperature (preferably – 4ºC), or have trolleys made that can each carry sixteen stones upside down in safety and create as cold an area as possible for them where, again, they will remain safe and dry. If space is available, consider installing a chiller similar to what butchers use, large enough to hold the trolleys and keep the temperature down.
Stones that are allowed to get wet will absorb moisture. Putting these stones on the ice will freeze the moisture, which has penetrated the stone through natural veins in the granite. When the moisture freezes it expands, putting the stone under stress. Hit the stone with another and it can acquire a "pit", which is when small particles of granite are jarred loose. See Section 21 on Curling Stones.
Stones stored in a humid area and in a temperature lower than the freezing point will soon be covered in frost. An example is shown below.

This is not for good them and also bad for playing conditions, as these stones have to be warmed before play causing the frost to melt on the surface of the stone. See below.

Having to do this to stones shows a clear lack of care and must be avoided.
Remember that a cold stone in a humid environment will quickly collect condensation, therefore the humidity HAS to be controlled. Again the butcher's chiller with a dry environment will prevent this from happening. Bringing stones back to the ice every week will depend on how warm they are, and stones that are not at the same temperature as the ice surface will not play well. Stones must be treated carefully and correctly, they are very expensive!
Other equipment, such as mops, pebble cans, etc. will also need to be stored in a safe and clean environment, and it is as well to remember that any item can grow feet and walk.

6. The problem of time is not really a problem, because there is never enough time when perfection is at stake. It is a reality, there is only so much of it, and it has to be used efficiently.
Plan, organise, streamline, save where possible and invest in the proper equipment, and there will be time to spare. Although curling-ice equipment is expensive, it is always worth buying the right tools for the job because this will save time and so money.
An Ice King or similar, with good blades, will be essential. Mops, pebble cans, pebble heads, brooms, etc. are not that expensive and are indispensable.
Thermometers and hygrometers are not always essential and are usually installed somewhere already, but a good infrared thermometer for the ice-surface temperature will be extremely helpful. There are also combined thermo-hygrometers available for the air temperature and humidity which are not expensive and are very accurate.
Buy the ice technician a laser level for Christmas. Then send him on a good curling-ice course to learn the science while the rest of the club raises funds to buy all the other equipment he asks for when he comes back.
A well-equipped, well-trained and well-motivated ice technician can make beautiful curling ice, and he will be worth every accolade. Be sure to reward him well.

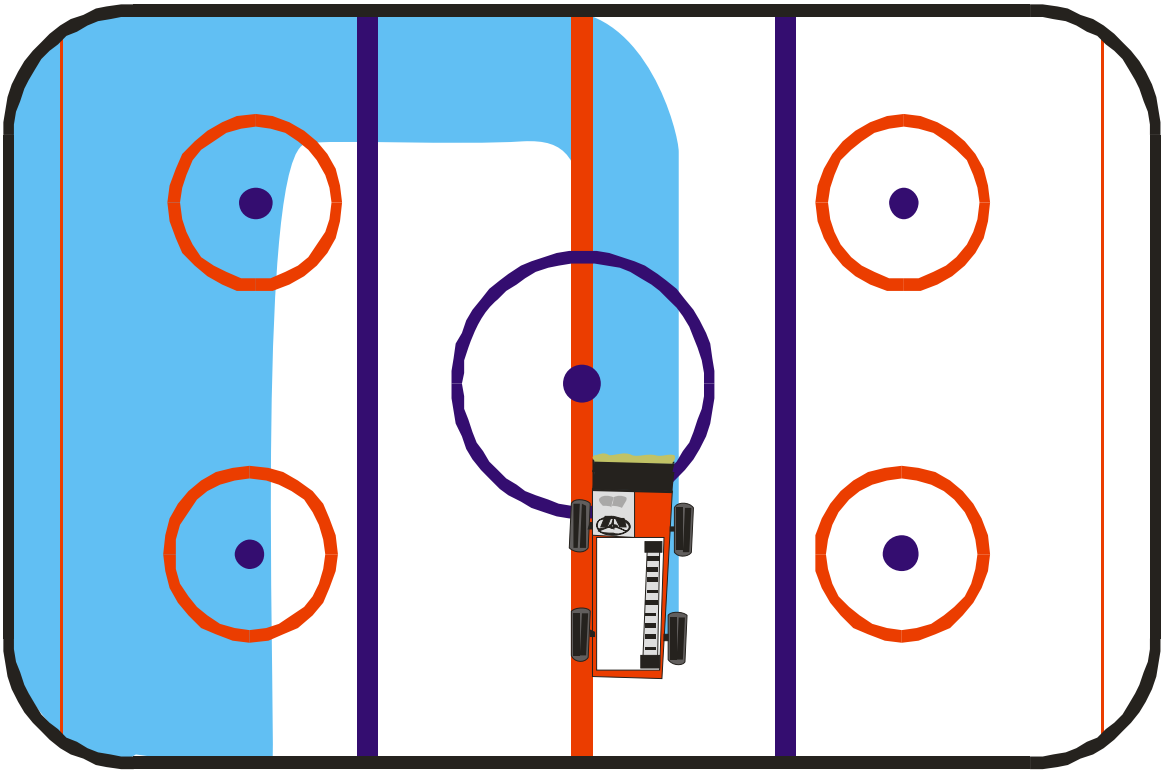
7. The ice-surface temperature is the most critical aspect of good curling ice. Not only must it be established at a given temperature, usually between – 4.5ºC and – 5ºC, it must be kept at that temperature, and an infrared thermometer is about the only instrument that can conveniently read the temperature. Unfortunately these are only reliable if the reading is taken at the same point, which means fixing one to a stand to aim at a chosen spot and provide a reading when needed.

Summary

The days of simply using ice and saying it is curling ice are being left behind. This manual clearly states that curling ice is a product of science and effort and, even for curling ice made from skating ice, if the definition is applied the objective will be achieved. The above supplies the basic essentials of converting from ice to curling ice, and anything less will not achieve the objective. Experienced ice technicians all know this and, if they are abreast with developments, they will acquire a complete copy of this new manual of the WCF, *Curling Ice Explained*.

For those who feel they have good reason to ignore the above advice, there follows information on how to break the rules and curl on ice according to the art of the possible. To avoid any confusion about skating ice, flip-over ice once a week or curling ice, the definition applied to this kind of ice will be "borrowed" ice, where ice is converted to something that can be curled on, in a short space of time and at irregular intervals.

The following page contains two pictures to help illustrate scraping across the rink, which causes less problems with lines that could deflect a stone from its intended course.




TXURI-URDIN
eltxuri.com
ARCCO
ARCCO

Further notes

1. The easiest way to maintain a level ice pad is to keep it that way. Make very good friends with the skating-ice technicians and persuade them to do good work every day, and this will make it very much easier when the ice has to be converted for curling. Better still, teach them to curl!
2. Be sure not to flood with the ice surface too cold (try for – 4.0ºC). In fact, raising the surface temperature a little to about – 3.5ºC during flooding will help the water to level better, but this is no way to level a very uneven pad!
3. Avoid air movement over the ice surface, which at worst will create rippled ice and at best cover it in a thick patch of frost. Keep the humidity down and if needed supply some heat. The standard for curling ice is to measure the air temperature and humidity at a height of 1.5m and aim to achieve 8ºC and 40% relative humidity (dew-point temperature of – 4.3ºC at 1.5m), with the ice-surface temperature at – 4.5ºC.
4. A quick way to visually see how level an ice surface is, is to watch it as it freezes after a flood. With the surface no colder than – 4ºC, and with a drawn plan of the floor at the ready, note which areas freeze first. These will be where water has run off towards lower areas and where the ice is therefore thinner. Do not think everything will be level, because the areas that freeze first are in fact higher and can be scraped (dry) separately with the Zamboni if their positions have been carefully noted. It will make a substantial difference to the overall level of the ice surface.
5. Get the stones to the ice as soon as possible to cool them down. Where they won't be in the way, put them on plastic beer-draining mats on the ice to prevent them melting the ice and absorbing water. Depending on how warm they are, it will take at least two hours, which is about the time needed for the cutting and cleaning.
6. As a rough job, circles can be scribed with quality felt-tip markers and even coloured in with larger markers. Remember to cover the ink with a very fine misting spray to freeze it in, and pebble the area along with the rest of the rink. Also remember to pebble behind the hacks to enable new curlers to have somewhere to get used to the feel of the ice (and to cool their feet down before curling!).
7. It is very difficult to curl on ice with a high salt content in the surface, because the pebble will melt in the salty surface. If the ice was made with unpurified water an attempt MUST be made to cut the salts off. The quickest is to pebble with hot water (60ºC) and cut clean, repeating the process as many times as time will allow.
8. Remember that a Zamboni or Olympia scrapes the ice, because the blade is not very sharp. An Ice King or similar powered cutters cuts the ice, because the blade is extremely sharp and actually shaves a fraction off the ice surface. A dull blade on a powered cutter is a waste of time.
9. Surface-ice temperatures for skating vary. For curling purposes and when flooding or cutting, ask the ice master to adjust the plant so that the ice-surface temperature will be around – 4.5ºC.
10. Good, clean ice is not very slippery. Some curlers in fact use chamois-leather cloth as a quick hack solution, which has sufficient grip to do the job.
11. If the pebble starts going flat (wearing down), it will do so along the sliding lines first. A quick extra pebble along these lines with a fine pebble head will overcome the problem for a few ends of curling.
12. When searching for equipment, it pays to surf the web and find what is available more locally. Simply specify the exact product and search. Be careful, however, with pebble heads in particular, because they vary a great deal between makers and models. Ask trusted and experienced curling-ice technicians where to go, because they know.

Miracles

Having to convert borrowed ice into acceptable playing ice is not easy, and miracles are not easy either. An effort will be made to assemble a minimum strategy and it will be added to this section at a later stage, but there are reputations at stake and there is no sense in advising new technicians to provide poor ice simply because it is convenient. The essence of curling is not to shove stones down the ice to see what happens, it is to challenge perfection by playing a good stone on good ice to better the opposition.

CURLING ICE IN AN ARENA

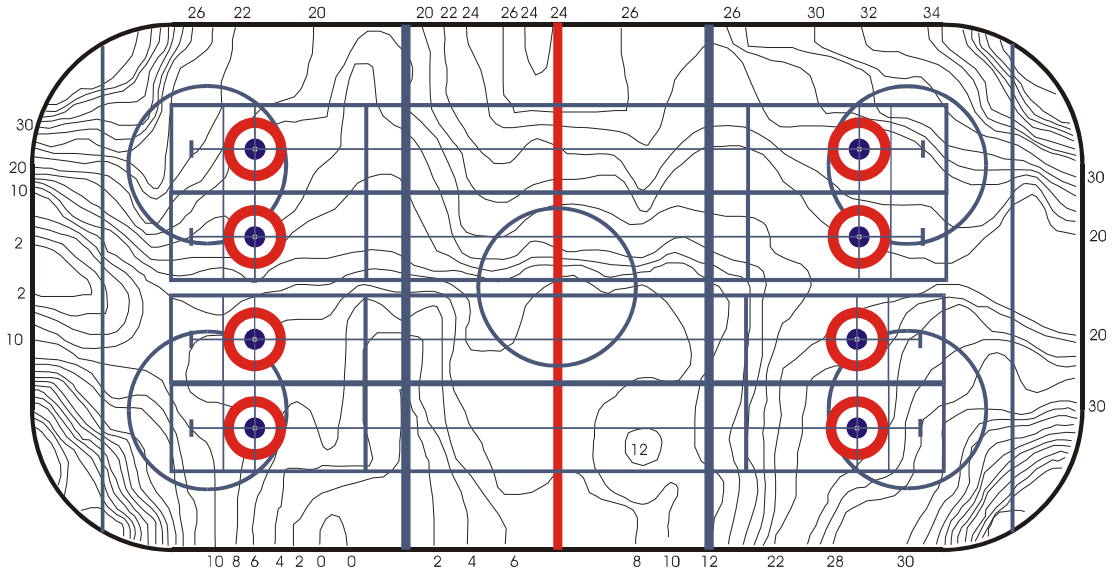
Many ice rinks share the facility between curling and skating, ice hockey and even exhibitions. While this is not an ideal scenario, it is the only means by which the facility can financially survive, as well as the only economical way in most areas for curling to be available to a club. Also, most serious competitions are now held in arenas capable of seating many thousands of spectators, where the ice often has to be converted from skating ice to curling ice. Under both these circumstances the problems are much the same and can be overcome.

The ice in an arena will invariably have been maintained by a machine such as the Zamboni or Olympia. The quality of the ice surface is directly related to the skill and experience of the ice technician and will vary considerably from venue to venue, and if the technician is not qualified in the production of curling ice he will not always be able to understand the degree of precision required. This is particularly relevant if there are regular change-overs, where the use of the Zamboni itself will need to be very skilful if a reasonable surface level is to be maintained. To make matters worse, there is usually insufficient time to do the job properly, which immediately limits the technician to the art of the possible.

All arenas will flood the ice on occasion, usually overnight, to keep the ice as level as possible. The Zamboni will soon destroy the level if there is too long a period between these level floods, yet the technician can only realistically flood so many times. The Zamboni both cuts and floods in the same motion, and while he can adjust how severe to cut the ice he doesn't normally adjust the depth during a cutting session, nor does he adjust the amount of water being applied since the beginning of the session. A further complication is that this work is often done at the end of the day – or in the middle of the night – when the technician is in a hurry to go home, with no patience for exacting ice maintenance.

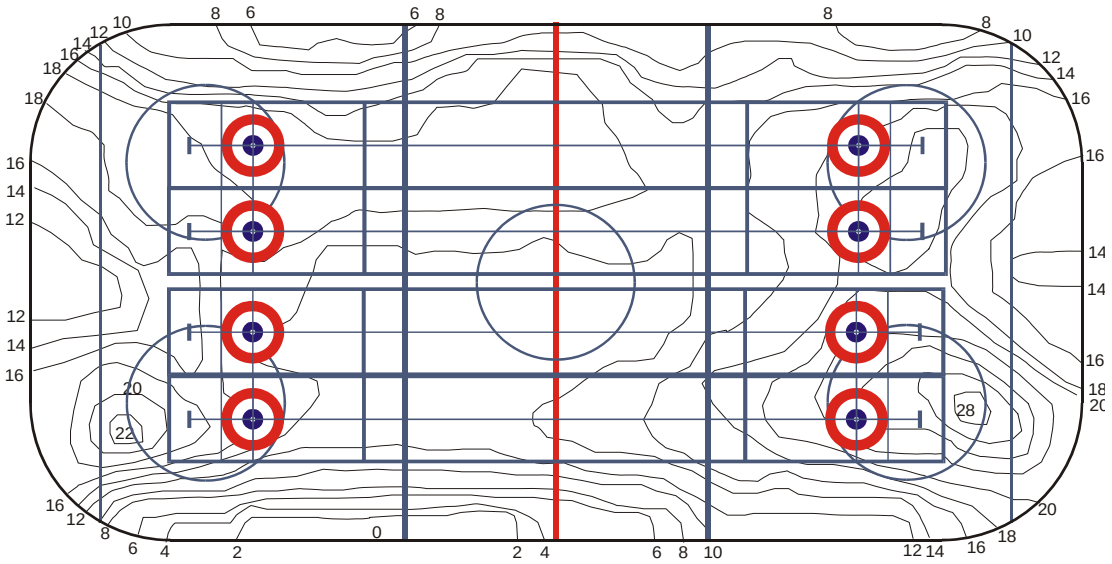
The machine runs quite fast over the ice, normally down the length of the rink, and when it reaches the end of the run it has to slow down to turn around. With the same amount of water still being applied at the rear it is obvious that more water will be delivered at every turn, and it would be impossible to achieve a level flood with the machine because one flood will overlap another at some stage. The skaters and ice-hockey players will also wear down the ice and this will inevitably be in the middle area of the rink and, combined with the Zamboni, create a level which is high at the shorter ends and along the sides. Other complications are players emptying their water bottles outside the players' stalls, creating a high area, or where the machine is driven onto and off the ice there could be a low area, or when technicians mill down the sides along the boards they could create a low strip there.

The level of the pad in hockey arenas can vary greatly, and more so if there is continuous skating over a long period. Most ice-hockey pads measured with a theodolite or laser level will show a difference in level of some 30mm, but where the concrete floor is uneven the difference in ice thickness could be as high as 150mm. A typical arena not maintained for curling will give the result shown below.



Contour lines in 2mm (the lowest spot is 0)

The next time the technician in the same arena had prepared the ice better towards curling because he knew what to do, and the result of his efforts can be seen below.



Contour lines in 2mm (the lowest spot is 0)

This clearly illustrates that, while arena technicians can significantly improve the level with successive floods, it will generally take much more than a few floods to level a skating pad sufficiently to provide a basis for the making of good curling ice.

Every arena technician must have clear objectives, and a clear understanding of what he has at his disposal to achieve those objectives. The most important component of the solution to his problem will be co-operation between himself and the curlers, or the curling club, or the curling-ice technicians provided by the organisers of a competition to help him. Without this co-operation it would be very difficult to make good curling ice. In the case of a club, it would be wise for the club to select a suitable individual to liaise with the arena technicians and provide the necessary information of their requirements. To allow every curler in the club to have their say would be disastrous, because too many cooks will spoil the broth (and the subject is complicated enough!). The most suitable person would of course be someone qualified in the making of curling ice and his contribution will make a significant difference.

As for the objectives, the different types of curling ice will play the most important role.

Club ice

Club ice will be ice available for curling almost directly after skating, and will certainly be down to the art of the possible. Many clubs and their curlers will accept this kind of ice if it is all they can get, but it really isn't curling ice at all. When the ice is installed in autumn the level will be achieved through flooding, and with the proper technique the ice will be as level as anywhere else. Despite the problems caused by cutting and flooding with a Zamboni the level can still be maintained by flooding with hot water whenever possible, usually at night once the hockey has finished. In addition the technician can cut "dry" more often to keep the ice thin, and with a careful schedule of floods during the season the ice can be maintained sufficiently level for curling throughout the season. Although this will result in more work for the technician and higher costs to the club or owner, there is no simpler way to keep the ice level. Bear in mind that level ice is only one requirement for curling, because the surface also has to be smooth and even, which involves the control of humidity and the temperatures of the ice surface, the air and the pebble water (see Section 13).

There are two broad scenarios for club ice after hockey:

<u>1. Curling directly after hockey.</u>

The ice has been cut and machine flooded during the whole day, and there will be courses from the cutting along the rink with the surface still rough after the last hockey game. If the previous overnight flooding had been done well the surface will be reasonably level, but the courses and roughness have to be removed. The simplest solution is to have four sheets of curling in the middle of the rink, which will leave some 5 metres of space along each side for the Zamboni to turn.

As a result the machine can work both lengthways and sideways and achieve a very good result, but of course the cutting will have to be gentle so as not to cause further courses which could affect the stones. Finishing touches can also be applied with an Ice King if time permits and a machine is available.

2. Curling first thing the next morning.
With curling first thing the next morning the overnight flood will give good conditions, and preparation of the ice will be the same as in a curling rink, with the usual pebbling and cutting. Although hand scrapers are still used, an Ice King or similar machine will make a much better – and easier! – job of it. The cutting is primarily to remove the salts and impurities from the surface of the ice, which will adversely affect the pebble (see Section 9).

Formula ice (Bonspiel ice)

Formula ice, or bonspiel ice, will be what an experienced arena technician has developed as the best he can do within the time available, and obviously there will be more time spent on the ice than with club ice. Many technicians have become masters of this art of change-over ice and their skill must be admired.
In the worst scenario, where there has been a long period of skating and the ice has to be prepared for an important bonspiel, it is best to start some two weeks in advance with the task of levelling the surface. The level will first be checked with a theodolite or laser level and mapped out as above (see Section 5), a process which will take about two hours, and the result will give a good indication of the problems to be solved.

Once the high spots are known, the technicians can scrape away at these during the two weeks and, combined with overnight floods, soon achieve a satisfactory result. (Using the differences in level the number of floods required can easily be calculated and scheduled accordingly, while the cutting will reduce the number of floods needed.) Every 2-3mm cut off from the highest spot will save a flood, while cutting down a high of 10mm will save more than three floods – time is the biggest problem for any ice technician preparing curling ice from skating ice.
Depending on time, manpower, plant, etc., the finishing work can start as late as the day before the bonspiel on the surface last flooded the night before. By doing the measuring and painting in the morning, which will take some 6 to 8 hours before everything is sealed in, it will still be possible to flood twice and have sufficient time for the pebbling and cutting. It is important to be able to keep cutting until the snow has become white to remove all the impurities, which would otherwise find a way into the playing pebble with poor consequences. Again a powered cutter such as the Ice King will make quick work of this, and with careful planning the tight schedule is feasible.
For both the above it is important not to forget about the hacks and stones. Removable hack plates in aluminium are now preferred for ease of use and these should be ready to be put in place before the last floods. The stones will need to be cooled in advance and, before they can be put directly onto the ice, will need to be as cold as the ice surface itself. In arenas there will be the corners outside the rink where stone cupboards can be installed, otherwise a purpose-built stone cooler will have to be built somewhere within reasonable access. The stones cannot be put directly onto the ice to be cooled down because they will melt the ice, and if humidity enters the granite it will increase the pitting process. If the ice has to be used for cooling down the stones, they have to be put on a form of hard plastic that won't allow water through, or on plastic beer-draining mats. Warm stones have to be cooled some 24 hours in advance.
It is sometimes the case that there is nowhere to leave stones in a cold environment sufficiently near the rink, but that there is a suitable area some distance away. Carrying a number of curling stones to this location is hard work, and if this is repeated twice to and fro every week it becomes a burden on volunteers or staff. To overcome the problem heavy-duty trolleys can be constructed that will carry two sets (sixteen) stones each to be moved to a suitably cool place. In this way the stones can be kept quite cool and will acclimatise within an hour or so when returned to the ice on plastic mats.

Competition ice

Competition ice, or championship ice, needs much more time. It will seldom be attempted in the normal running of an ice rink but mostly in an arena for the purpose of a specific event, and as the ice has to be as near perfect as possible the technicians will need several days to do their work.
It is extremely difficult to put down on paper everything that is involved in the making of championship ice. If the competition is held at a rink where the ice technician is suitably competent, he will do it his way and that will be as good as any other way. But if the competition is in an arena not normally used for curling, the job will usually be given to one of a handful of experts who have proved their worth in previous years at similar events. These masters of curling ice are exceptional technicians who travel many

thousands of miles every year to deliver perfection on schedule, and it would be unrealistic to think that this manual could hope to teach them much.
However, the contents of this manual will help to teach any technician the technical requirements of their craft, and with experience many will become sufficiently expert to make the ice for the World Curling Championships. The secret to success for any technician remains that he should never be afraid to learn more, and by learning from the masters he will become a master technician himself and make excellent competition ice.

Championship-ice schedules

Here a detailed listing is included as an aid to producing championship ice in an arena, which will invariably have been used for ice hockey and will therefore have "old" hockey ice on its floor.

Technical aspects
It is essential to investigate all technical aspects of the facility in as much detail as is possible. The more that is known, the better the ice and the better the competition.

1. How many compressors are there and what is their capacity.
2. What is the cooling system (an indirect-brine system or a direct-expansion system).
3. The construction of the floor from subsoil upwards.
4. The pipework in the floor, including the sizes, spacing between pipes and the direction in which they were laid.
5. The refrigeration steering system (e.g. to adjust the brine temperature, manually or by computer).
6. The dehumidification systems, their capacity and steering system.
7. The air-conditioning system, its capacity and steering system.
8. Any constant air flow over any area of the ice surface that might affect the ice.
9. The quality of lighting, or if temporary lighting will be installed and their type and location.
10. The mains water quality from the tap to be used (obtain a test result from the authorities).
11. Any known floor movements or other peculiarities.
12. The availability of hot water for flooding, ideally at a rate of 2.5m³/hour.
13. How well is the building constructed, especially air and moisture entering through walls, the roof or openings of any kind.
14. What equipment is available for use on site, and its condition.
15. What help is available and when.

Compressor duty
It is surprisingly frequent that a problem occurs with the compressors, causing the ice to melt at the worst possible time. It is essential that a system is in place, either manual or computerised with backup, that will ensure that the compressors are monitored at all hours. Normally arenas have alarm systems and a twenty-four hour call-up facility, and these must be switched on and monitored as a failsafe at regular intervals. When changing from automatic steering to manual steering, remember (and have a back-up reminder!) to switch back to automatic when leaving the building.

Paintwork
Ice paint for the surface and the houses (see Section 5) must be specially formulated for ice use.
Brushes and spraying equipment, with a boom fitted with non-drip nozzles.
A router scribe to define the circles will give the best result.

Backboards
By fitting backboards behind the hacks (see Appendix 1 for layout) the area of ice surface can be reduced by some 20%. This will save on flooding/freezing time and reduce energy costs for hot water and freezing. The boards will also be used to mark out the sheets.

Dividers
Dividers will also separate the sheets. Foam dividers are used and they will be installed when there are no more than five floods to be done.

Layout
The width and positioning of the sheets, usually five, must be decided, planned and drawn on paper. The line positions are then marked on the backboards and sides. See Section 5 and the Appendix for the measurements of the lines.

Lines
Wool is very good to use for lines in the ice. The lines can be single or double, and the hogline can be painted between two lines of wool with relative ease.

Logos
Competitions have sponsors and they have logos to be installed into the ice. Plastic and ice are not very compatible, and it is wise to ensure that logos are produced from a material suited to the purpose. Fibre sheet or paper is best for printed logos, while very large logos can either be printed in sections or painted by hand onto the surface. See Section 5 for the technique.

Hacks

Sufficient hacks must be in good condition and ready to be installed. See Section 5.

Blades

The cutting blades are vital. Four blades should have been reground at the factory and must be tested for flaws and finished before the competition starts.

Water quality

If the test result of the water is unsatisfactory, equipment will be needed to clean the water. The most common method is deionisation.

Flooding water

A thermometer and flow meter must be fitted after the warm-cold mixer to be able to constantly read and adjust the temperature and flow rate for a uniform heat and flow.

Pebble water

Even with good mains water it is better to use deionised water for pebbling, because mains water will never be as clean as deionised water. There are small deionisers on the market that will supply water in sufficient quantity.

Water heater

An electric urn fitted with a thermostat will heat the pebble water to the right temperature and keep it there, with no need to mix hot with cold. Because deionised water is more aggressive, it is best for the "kettle" to be made of plastic or stainless steel.

Temperature monitors

The following is essential for adjustments to be made, because it is impossible to be accurate by working blind:

1. Control sheets for recording the data at regular intervals (see below).
2. Thermometers on the flow and return of the brine.
3. A probe in the floor for the controller.
4. Thermometer probes at different heights for the air temperatures.
5. Meters for the dew point, inside and outside.
6. An accurate means of measuring the ice-surface temperature – fixed infrared laser that can be calibrated and logged.

See Section 13 for more information on temperatures.

Lighting

It is often the case that the lighting in an arena is insufficient for television recording. If the lux level in the arena is too low temporary lights will need to be installed, and some lights are better than others. Check with the television company what type of lighting they intend to use and find out what effect these will have on the ice. See Section 16.

Stones

Often the stones used will be a set that has been tested and is delivered to the venue. Even so it is always wise to test the stones on the ice to see how they behave, and with the help of a few good curlers (who would no doubt enjoy the practice!) much can be learned. If there is time it is always a good idea to see how well stones are matched and to match them again if needed.

Sample log sheet

Most experienced technicians will have their own log sheet, designed to record all the information they need to install ice in an arena setting. Below is a sample as a guide, which is easy to design and maintain on a computer or on paper.

Day	Time	Set temp/ temp	Surface ice temp IR 1	Surface ice temp IR 2	Ice temp probe 1	Ice temp probe 2	Air temp 1.5 m	Air temp 3.0 m	Air temp 10 m	Brine temp out	Brine temp in	Dew point inside	Dew point outside	Temp outside	Air condition supply temp

Material and equipment

The list here is not exhaustive and is in alphabetical order for simple reference.

Adhesive tape for repairs (Duck tape)
Allen keys for stone handles
Backboards (60m of 100x50mm wood or similar)
Battery-powered drill/screwdriver
Blowtorch, hand-held with spare gas
Brooms, coconut hair or stiff, wide, 2pcs
Circle scribe, router type
Computer for temperature-control system
Cotton lines/yarn/wool, enough for all the lines
Cotton mop and bucket for ice use only
Coupling with valve and thermometer
Couplings
Curling stones
Cutting blades 4pcs
Cutting machines, ideally two battery-powered units, with chargers
Deionising unit for flooding and pebbling water
Dustbins
Dustpan and brush
Flooding hose to flood from both ends
Flooding stick with valve
Flow meter
Foam dividers 100mm² (400m for single sheets, 320m if outer sheets are paired)
Hand scraper
Hand spray can for the lines
Honing kit and stones
Hose clips
Hose, extra length to flood from both ends
Hygrometer to measure relative humidity
Ice paint, red and blue
Ice paint, white
Ice-surface thermometer (fixed probe)
Ice-surface thermometer (infrared laser)
Ice-surface thermometer (hand-held thermo-couple probe)
Insulation tape for repairs
Laser level or theodolite
Levelling team
Levelling map
Logos printed on textile fibre
Marco hacks complete with flooding cups mounted on aluminium plate.
Mats to cover hacks, 10pcs
Measuring jug (for snow after nipping)
Measuring tape, long
Measuring tape, short
Mop and bucket for floors
Nipper
Paint brushes and/or rollers
Paint brushes for the houses, 6-8pcs (old curling brooms)
Paint roller (for logos)
Paint scraper, stainless steel
Paint table or cardboard boxes, 4-6pcs
Pebble cans, 2pcs
Pebble heads
Racks, for racking/moving stones
Screws (for marking lines)
Plugs (for marking centres)
Small cans for paint
Snow bins, 2pcs
Snow shovels, 2pcs (plastic corn shovels)
Speedfit couplings
Spirit pens
Spray bottle for repairs
Spray gun or nozzle for sealing with hose
Spraying equipment (boom) for white paint
Sticks to stir paint
Stopwatch
Sweeper, 2pcs (with string mops and four spares)
Tee centres
Temperature gauge for urn water
Temperature-analyses software
Thermo-hygrometer for dew point
Thread tape, 2 rolls
Tool kit for emergency use, hack repairs, blade changing, etc
Towelling and cloths
Urn for heating and storing pebble water, 2pcs
Warm water (40ºC) to flood the arena three or four times a day at 50l/min (11gall/min)
See also Section 10 for items normally available at venues.

Preparation

As the two diagrams show at the beginning of this section, old hockey ice typically varies in level by about 30mm or more. The time schedules below are based on a reasonable work effort by the ice technicians. The timescale can be shortened if they work around the clock, but this is not really good practice. The flooding in particular needs time to freeze, and it is good for the tension in the new ice to dissipate during the night and the strains to equalise, which will help prevent cracks in the ice. This also gives impurities time to work their way to the surface of the ice.

A week in advance of curling-ice operations

Check the level. With the help of the arena staff the floor should be mapped and high spots identified, and they can then work away at lowering the level with the Zamboni and remove the high spots to reduce the thickness of ice as much as the floor will allow.

Day 0 late evening

The first job upon arriving at the arena is to check the level of the old ice once more. It is essential to know as much as possible about the floor to prevent unforeseen problems at a stage too late for repairs. See above for a sample, and the Appendices.

Day 1 (see detailed schedule below)

1. The high spots identified the previous evening can be cut down with the Zamboni first thing in the morning. Every 2-3 mm that can be cut down off the higher spots will save one flood, which equals to around 5 hours in time. Saving time is now important, as the competition is approaching at relentless speed.
2. When the high spots have been scraped down as much as possible, spray the whole surface with water to produce a smooth surface to paint the white onto. It is a good idea to use the spray boom, which will also test its operation. The white paint will cover all the hockey lines and provide a good base for the curling ice. See Section 5.
3. When the white paint is satisfactory, seal it in carefully with the spray boom. At the same time measure the location of the backboards and freeze them down in place across the rink. Along the hockey boards the measuring of the different lines across are marked, and on the backboards the sheets are measured and marked. It is advisable to use the measurement sheet and have the planned width of the rinks at hand.
4. Put a screw in line with the teeline at the boards and the middle of the rinks on the backboards. Stretch strings between these screws and, where the strings cross, drill holes into the ice for the centres of the houses.
5. Scribe the houses with the router scriber. Then paint the houses twice, sealing with water between coats for a good result. When all painting is finished seal in the houses, first with a light spray and later heavier sprays. Finish by using the boom to have a good sprayed surface for the lines and the logos.
6. With the help of volunteers this whole process will take a full day.

Day 2 (see detailed schedule below)

1. Start with the lines and the logos first in the morning. Know where the logos should be located before installing the lines, because the centreline often passes through a logo and it is important to know beforehand whether the lines go beneath or above the logos. For details see Section 5.
2. All the sealing of the painting, lines and logos must be done before the end of day two, and hopefully a light flood or two.

Day 3 until the finish (see detailed schedule for 10 floods below)

1. Flooding towards a level surface begins on day 3, for detail see Section 7.
2. There are three floods every day, which will give the ice time to relax and return to the same temperature as before each flood. If a flood is applied as soon as the ice is dry (0ºC), shrink tension will be built into the ice which will cause cracks – this tension is released when the day's floods of some 10mm are cooled to – 4ºC overnight (see Section 21).
   It is of course possible to work around the clock if necessary, but the ice technicians must not fall victim to the time and must instead ask in advance for the time needed. Day-and-night work will create tired ice technicians who will make mistakes.
3. Once the ice pad is in good level, the foam dividers can be installed, after which the sheets are flooded separately.

During this preparation period, which is scheduled below, a different number of people will be involved. The schedule can be squeezed by working around the clock, and note that the number of personnel on this list does not include the head and assistant ice technicians.

Day	Time	Action	Staff
Before		Everything to go on the ice should be in place.	
Days before	2 hours	Check the level of the ice.	Levelling team
Day 0	1800-2100	Check the level of the ice again.	Levelling team
Day 1	0800-1000	Cut down the high spots on the ice with the Zamboni. Control the level with an instrument during the process.	2
	1000-1200	Paint the ice white.	6
	1200-1300	Seal the paint with sprayed water.	6
	1300-1400	Freeze (lunch).	
	1400-1500	Install the backboards.	6
	1500-1600	Measure out the sheets.	6
	1630-1930	Cut the circles and paint the houses. Install logos.	6
	1930-2200	Seal the paint and apply a light flood.	6
Day 2	0800-1000	Install lines and hacks and remaining logos.	6
	1000-1100	Seal in all lines and logos.	6
	1100-1200	Cold flood.	6
	1200-1500	Freeze.	
	1500-1600	Warm flood.	6
	1600-1900	Freeze.	
	1900-2000	(Cut the ice) Warm flood.	6
Day 3	0800-0930	(Cut the ice) Warm flood.	6
	0930-1300	Freeze.	
	1300-1400	(Cut the ice) Warm flood.	6
	1400-1800	Freeze.	
	1800-1900	(Cut the ice) Warm flood.	6
Day 4	0800-0930	(Cut the ice) Warm flood.	6
	0930-1300	Freeze.	
	1300-1400	(Cut the ice)	6
	1400-1600	Install foam dividers, seal the foam, cold light flood.	6
	1600-1800	Freeze.	
	1800-1900	(Cut the ice) Warm flood.	6
Day 5	0800-0900	(Cut the ice) Warm flood.	6
	0900-1300	Freeze.	
	1300-1400	(Cut the ice) Warm flood.	6
	1400-1800	Freeze.	
	1800-1900	(Cut the ice) Warm flood if needed, otherwise cut the ice, clean, install hacks and centres.	6
Day 6	0800-1200	Ice preparation, cutting, pebbling (spare day for flood).	6
	1200-on	Test.	
Day 7	0800	Practice.	2 teams of 5
Day 8	0900	Competition starts.	2 teams of 5

Competition week

During the competition week ice maintenance begins 90 minutes before the competitors start their practice at 0800. The competition ends about 2100 in the evening, which requires ice technicians on duty for about 15 hours a day. Two teams of 5 members each (without head and assistant) can split the days during the week, here called A1 and A2.

Day	Time	Action	Team
Day 7	0630-0800 **0800-0915** 0915-1000 **1000-1115** 1115-1200 **1200-1315** 1315-1400 **1400-1515** 1515-1545 1730-2000	Ice maintenance **Practice session 1** Ice maintenance **Practice session 2** Ice maintenance **Practice session 3** Ice maintenance **Practice session 4** Cleaning Opening party and ceremonies	A1 and A2 A1 and A2 A1 and A2 A1 and A2 A1 and A2
Day 8	0630-0800 0800-0820 0820-0830 **0830-1130** 1130-1230 1230-1250 1250-1300 **1300-1600** 1600-1700 1700-1720 1720-1730 **1730-2030** 2030-2100 2100	Ice maintenance Practice Cleaning **Draw W1** Ice maintenance Practice Cleaning **Draw M1** Ice maintenance Practice Cleaning **Draw W2** Cleaning End of the day	0630 – A1 1400 – A2
Day 9	0630-0800 0800-0820 0820-0830 **0830-1130** 1130-1230 1230-1250 1250-1300 **1300-1600** 1600-1700 1700-1720 1720-1730 **1730-2030** 2030-2100 2100	Ice maintenance Practice Cleaning **DrawM2** Ice maintenance Practice Cleaning **Draw W3** Ice maintenance Practice Cleaning **Draw M3** Cleaning End of the day	0630 – A2 1400 – A1
Day 10	0630-0800 0800-0820 0820-0830 **0830-1130** 1130-1230 1230-1250 1250-1300 **1300-1600** 1600-1700 1700-1720 1720-1730 **1730-2030** 2030-2100 2100	Ice maintenance Practice Cleaning **DrawW4** Ice maintenance Practice Cleaning **Draw M4** Ice maintenance Practice Cleaning **Draw W5** Cleaning End of the day	0630 – A1 1400 – A2

Day 11	0630-0800 0800-0820 0820-0830 **0830-1130** 1130-1230 1230-1250 1250-1300 **1300-1600** 1600-1700 1700-1720 1720-1730 **1730-2030** 2030-2100 2100	Ice maintenance Practice Cleaning **Draw M5** Ice maintenance Practice Cleaning **Draw W6** Ice maintenance Practice Cleaning **Draw M6** Cleaning End of the day	0630 – A2 1400 – A1
Day 12	0630-0800 0800-0820 0820-0830 **0830-1130** 1130-1230 1230-1250 1250-1300 **1300-1600** 1600-1700 1700-1720 1720-1730 **1730-2030** 2030-2100 2100	Ice maintenance Practice Cleaning **Draw W7** Ice maintenance Practice Cleaning **Draw M7** Ice maintenance Practice Cleaning **Draw W8** Cleaning End of the day	0630 – A1 1400 – A2
Day 13	0630-0800 0800-0820 0820-0830 **0830-1130** 1130-1230 1230-1250 1250-1300 **1300-1600** 1600-1700 1700-1720 1720-1730 **1730-2030** 2030-2100 2100	Ice maintenance Practice Cleaning **Draw M8** Ice maintenance Practice Cleaning **Draw W9** Ice maintenance Practice Cleaning **Draw M9** Cleaning End of the day	0630 – A2 1400 – A1
Day 14	0630-0800 0800-0820 0820-0830 **0830-1130** 1130-1230 1230-1250 1250-1300 **1300-1600** 1600-1700 1700-1720 1720-1730 **1730-2030** 2030-2100 2100	Ice maintenance Practice Cleaning **DrawW10** Ice maintenance Practice Cleaning **Draw M10** Ice maintenance Practice Cleaning **Draw W11** Cleaning End of the day	0630 – A1 1400 – A2

Day 15	0600-0730 0730-0750 0750-0800 **0800-1100** 1100-1130 1130-1150 1150-1200 **1200-1500** 1500-1530 1530-1550 1550-1600 **1600-1900** 1900-1930 1930-1950 1950-2000 **2000-2300** 2300-2330 2330	Ice maintenance Practice Cleaning **Draw M11** Ice maintenance Practice Cleaning **Draw W12** Ice maintenance Practice Cleaning **Draw M12** Ice maintenance Practice Cleaning **Tie Breakers (if necessary)** Cleaning End of the day	0600 – A2 1400 – A1
Day 16	0630-0800 0800-0820 0820-0830 **0830-1130** 1130-1230 1230-1250 1250-1300 **1300-1600** 1600-1700 1700-1720 1720-1730 **1730-2030** 2030-2100 2100	Ice maintenance Practice Cleaning **Tie Breakers (if necessary**) Ice maintenance Practice Cleaning **Tie Breakers (if necessary)** Ice maintenance (2 sheets) Practice Cleaning **Women's semi-finals** Cleaning End of day	0630 – A2 (if tiebreakers) 1400 – A1 (if tiebreakers) Else 16.00
Day 17	1100-1230 1230-1250 1250-1300 **1300-1600** 1600-1630 1630-1650 1650-1700 **1700-2000** 2000-2030 2030-2100 2230	Ice maintenance (3 sheets) Practice Cleaning **Women's Bronze medal/Men's semi-finals** Ice maintenance (1 sheet) Practice Cleaning **Women's final** Ceremony Cleaning End of the day	1100 – A2 1600 – A1
Day 18	07.30-08.30 08.30-08.50 08.50-09.00 **09.00-12.00** 12.00-12.30 12.30-12.50 12.50-13.00 **13.00-16.00** End	Ice maintenance 1 sheet Practice Cleaning **Men's Bronze medal game** Ice maintenance 1 sheet Practice Cleaning **Men's final**	0730 – A1 1200 – A2

This section is an extract from the manual Curling Ice Explained, © The World Curling Federation

CURLING MANUAL

Building a Curling Facility

Prepared for
by
The Club and Membership Development Committee
of the
United States Curling Association

Contributors
Jay Davies, NSARB
Phil Draper
J. Peter Mitchell
Keith Schreiber, AIA

United States Curling Association

5525 Clem's Way
Stevens Point, WI 54482

tel 715-344-1199 • 1-888-CURLERS
fax 715-344-2279
info@usacurl.org • www.usacurl.org

This **Building a Curling Facility** manual is a work in progress. Please contact the USCA if you have questions, corrections, or comments. Thank you!

CONTENTS

Financing your club

Operating your club

INTRODUCTION

Scope and purpose

Most new curling clubs begin by renting skating ice on a once-a-week basis. They face a number of obstacles to growth such as high cost, scheduling problems, and poor ice quality. Curlers in these clubs dream of the day they will have their own facility with all the advantages it will bring. A dedicated curling facility is a "must" if a club is to thrive and grow.

Unfortunately, the transition from rented ice to even a basic, two-sheet facility of their own is a difficult one for a small club with 50 or so members. The high cost of building, regulations, and the difficulty of finding a suitable site are a few of the major problems facing builders today. A stand-alone curling facility operated only five months of the year is almost impossible economically.

With Olympic status has come an increased interest in curling. The United States Curling Association has recognized the need to grow the sport of curling and thus the need to build more curling facilities. This manual was prepared to assist clubs considering making the transition from rented ice to a dedicated curling facility.

How use this manual

This manual in intended as a guide rather than a detailed, explicit "how to" book. We have tried to make it as complete as possible by covering all the questions usually faced by a club planning to build a facility. We have also tried to be as specific as possible without including information likely to be quickly outdated.

Each of the following seven major sections covers a single aspect of building and operating a curling facility. Also included is a set of six worksheets designed to help a club decide important questions concerning building. These worksheets can be completed with the help of the material in the seven sections. It is recommended that the reader review all sections before completing the worksheets.

Help and support from the USCA

The USCA has a wide variety of programs, publications, and services to help clubs with all aspects of club operation. These include help with building membership, marketing, ice making, instruction and training, youth curling, and college curling. In addition, the USCA has a group of consultants who can advise clubs on matters related to building a facility.

For more information on programs and services contact:

Member Services Manager
United States Curling Association
1100 CenterPoint Drive, Box 866
Stevens Point, WI 54481
Tel: (715) 344-1199 or 1-(888) CURLERS
Fax: (715) 344-2279
E-mail: usacurl@charter.net • Web site: www.usacurl.org

BEFORE YOU START

How long will it take?

It is very important that a club undertaking the building of a curling facility have a realistic expectation about how long the project will take. There is no simple answer to this question because each club faces a unique set of circumstances that can significantly affect the time required. Obviously, a club that is building a replacement facility will likely take much less time than a club that is building a new facility from scratch. However, based on the experiences of clubs that have built in recent years, it is safe to say that the project will take a minimum of two years.

The important point to realize is that a well-thought-out plan will help greatly in reducing the length of the project. The purpose of this manual is to help you create, as quickly as possible, a plan tailored to the needs of your club by providing you with ideas, support, and reliable sources of information. Planning a building project is discussed in more detail under Strategic/ Business Plan in the next section.

Building codes, permits, and zoning

Construction Codes and Permits: A curling facility, even if privately owned, is considered as occupied by the public for fire code and safety purposes. Conformance with local building codes is mandatory. Depending on the area of the country, a model building code such as the Uniform Building Code, the Building Officials & Code Administrators National Code, or the National Fire Prevention Association, will apply. You should confirm with your designer and builder which code(s) applies. Construction permits will typically be submitted through your local Construction Department and Fire Marshall's offices.

ADA Compliance: The Americans with Disabilities Act is a Civil Law covering accommodation of people with disabilities. This legislation is intended to provide fair access to your facility, without use of a "back door" or segregation, to persons who are disabled, such as, non-ambulatory, confined to a wheelchair, blind, deaf, elderly, arthritic, or mentally deficient. Your facility must conform to this law because of use by the general public, employees, and membership. All compliance interpretations should be verified with your local ADA committee (typically through the Building Permit Department).

Zoning: The land use allowed in your community should list "Recreational" and/or "Business" use for your zone. Some jurisdictions may require a "Special Exception" approval because of club/business type functions if they are not clear that your facility is solely for recreational use. Curling facilities usually fit in the same category as tennis clubs, racquet ball clubs, golf clubs, etc., but classification becomes confusing when zoning officials realize there is a social club as well as a recreational aspect. Liquor license and food service complications should be addressed early with these municipal officials.

Approaches to design and building

Your club can choose between two basic approaches to designing and building a curling facility: design-bid-build and design-build/turnkey. Both methods have advantages and disadvantages, and you should choose the one that better suits your needs.

Design–bid–build: In this approach, the design and construction are two separate steps. First, you hire a designer (architect) to define the project and prepare a design, construction drawings, and specifications. Second, the design information is given to contractors who bid or negotiate a price for their part of the project based on the specifications and drawings. There are several advantages to this approach. Your Building Committee will be more involved in the process and will make the important decisions. Less up-front money is required because initially you will only be hiring a designer. Fund raising will be easier because you can show people what the project will look like before its built. Completing the design before getting a bid makes quality control easier. Soliciting bids from several contractors on a completed design may result in a lower cost. Using a separate designer means the designer will be your agent and more likely to be your advocate in dealing with a builder. The down side of this approach is that you will not know your cost until the bids are received, and the process usually takes longer.

Design–build: In this approach, both the design and construction of your facility are the responsibility of the same entity. Your would hire a contractor or builder who, in turn, would hire all consulting architects and engineers and all the subcontractors who would actually build your facility. The advantages of using this method are that you only have to deal with one contractor, and the process is usually faster than one that requires a separate construction bid. In addition, you will know your cost earlier. The down side is that you will have no independent agent looking after your interests regarding quality and performance. And, since the price is usually agreed upon prior to building, there may be disputes about what was included in the price. Also, you may have little flexibility if you want to change the design after the contract is signed.

Project phases

Regardless of which approach to building your club takes, there will be several distinct phases in your project. Each of these phases is discussed below.

Planning: The planning phase, as the name implies, involves identification and documentation of all the building issues your club will need to consider, evaluate, and make decisions on. During this period, you will identify the building site and define what the building needs to provide in terms of space. You will also identify and define the look and feel of your new club. In this early phase, it is not necessary to have an architect under contract but it may be desirable, particularly if there is no one on the committee that has the ability to facilitate and document the planning process. Additionally, architects have specific training in functional planning and programming that could be invaluable in compressing this phase and making it more efficient and thorough. Refer to the section on selecting an architect if your committee feels one is needed in this phase. The end product of the planning phase should be a document that fully defines your project goals and objectives.

The key to successful planning is identifying and listing all the functional, practical, and perhaps not-so-practical "needs and wants" your members would like to have in the completed project. Ask your committee members to visualize the new club at its fifth anniversary. Ask a thousand questions such as "What does your club look like? How does it feel to be out on the ice? What do you see when you look out on the playing arena? How do guests view the game? Do you have an equipment locker? How about a refreshment after the game? Is there a place for small kids?" All these and similar questions will help you to form an overall project vision that, if achieved, should be the measure of your success in realizing your goal.

After setting your vision, start on your list of "Needs." These are the basic functional requirements that every club must have, as a minimum, in order to play the game; for example, the number of sheets of ice; the amount of room behind the hacks for walkways; a compressor room; washrooms; etc. Next, identify those features, spaces, and functions that you would like to have in your ideal club—a warm area for spectators to view the game, a place to change, a full meal kitchen or just a snack bar; a bar/lounge; social hall, etc. These are your "Wants". In the early planning phase, it is important to set aside the question of cost and budgets. Differentiating between Needs and Wants will be necessary when it comes time to prioritize these lists in light of your available budget. They'll be plenty of time to worry about this later. For now, you should be defining what your "ideal club" would look like. Once this is defined, the reality of cost and budget will inevitably require that the design be modified, reduced, or planned for phased implementation.

Next, from your list of Needs and Wants identify specific spaces or rooms and estimate the amount of space you will need for each. The ice playing area and the refrigeration plant area are relatively easy to do and depend only on the number of sheets your club needs. Other areas, such as the warm room, washrooms, locker area, etc., depend on the size of your membership. To assist you in this effort, a list of typical space and the per occupant area allowances is provided in Appendix A.

Once the various areas are identified, list all the detail requirements for each space such as lighting, power outlets, plumbing, etc. A sample Room Data Sheet is provided in Appendix B for use in developing these requirements. Also, consider if you require specific desired functional adjacencies or relationships between various spaces, e.g., the warm room will need to be directly adjacent to the playing area with full view of the ice.

In this phase, you will also need to identify and document the specific needs of your building site. These needs include parking and on-site vehicle circulation. Other issues related to utility services, septic collection, drainage, etc., should be investigated. The issues related to site development are discussed in more detail in later sections.

Schematic Design: In this phase, your architect will take the requirements you have developed and prepare a number of conceptual plan sketches of designs that meet your needs. From these sketches, you should select a preferred plan from which Schematic Design Documents, consisting of drawings (plans and elevations) and outline specifications, will be prepared. These documents should be sufficient to fix, describe, and illustrate the full size, character, and scope of your new club, including materials, equipment, component systems and types of construction as may be appropriate. During this phase, your architect will also analyze the project scope and prepare an estimate of construction costs. (see the section on estimating for a detailed discussion on costs). If this initial estimate exceeds your budget, you will need to make changes to the program and your architect should make recommendations to keep the project within the limits of your budget.

Design Development: After your club has approved the schematic design, your architect will prepare *Design Development Documents* consisting of drawings, specifications, and other documents as necessary to set forth in detail the requirements for the construction of your facility. Your architect will also begin meeting with regulatory agencies to identify permit requirements. During this phase, your architect will update the previous cost estimates and make recommendations as necessary to keep the project within the limits of your budget

Construction Documents: In this phase, your architect will prepare *Construction Documents* consisting of drawings, specifications, and other documents as necessary to set forth in detail the requirements for the construction of the facility. Your architect will assist in making permit submittals to regulatory agencies. Prior to issuing the documents for bid, your architect should provide an estimate of probable construction costs and recommend changes as necessary to keep the project within the limits of the budget. This estimate should include the development and inclusion of bid alternatives to provide reasonable assurance that you will be able to award a construction contract that does not exceed your budget.

Bidding or Negotiation: During this phase, your architect will assist you in obtaining and evaluating bids or negotiated proposals and assist in awarding and preparing contracts for construction. Your architect will also provide clarifications and prepare addenda to the *Construction Documents*.

Construction Phase—Administration of the Construction Contract: Your architect will likely administer the *Contract for Construction* between your club and the building contractor. Your architect will visit the project during construction to become generally familiar with the progress and quality of the construction and to determine, in general, if the work is being performed in accordance with the *Contract Documents*. The architect will keep you informed of the progress of the work and will endeavor to guard against defects and deficiencies.

Based on his/her observations and evaluations, your architect will act as a consultant regarding the contractor's applications for payment. Your architect will assist you in determining whether to reject work which does not conform to the *Contract Documents*. The architect will also assist you in preparing changes for the your approval and may recommend minor changes in the work that do not involve an adjustment in the *Contract Sum* or an extension of the *Contract Time* that is inconsistent with the intent of the *Contract Documents*.

Selecting architects and builders

If you decide to use an architect, you should make your selection using written selection criteria your club feels are the most critical to achieving a successful design. First, identify the qualifications you feel the architect must have in order to make the project a success. Typical criteria used for selection include:

- Past experience with similar facilities (curling clubs, private clubs, sports facilities, ice rinks, etc.)
- Ability to design to a budget
- Ability to work with groups/committees
- Quality of services provided (get references)

You should not make your selection only on the basis of fee comparison for several reasons. First, remember you are not buying a product where value comparisons can be easily made. Rather you are buying a service in which the relationship and working abilities differ such that cost has little comparison to the quality of service received. Also, small variations in fees are not important in the overall project costs. The ability to provide the most responsive service is more critical to overall project success than a 2% difference in fees.

After establishing your selection criteria, you must next identify architects that are capable of providing the needed design. Your initial list of candidates may be developed by word of mouth, from the yellow pages, or by placing an advertisement that describes the project, the

selection criteria, and requests that interested firms submit a statement of qualifications. Be sure to set a due date for receipt of all statements of qualifications.

Once you have all the responses, thoroughly review the information provided and rank the submissions from the most to the least qualified. At this time, a clear winner may be evident. However, it is usual to invite the top two or three to an interview where you can assess them face to face. It is important to remember you are hiring people, and it is as important to know that you can work with them as it is to know they can do the job. How easy it will be to work with an architect will usually come out during an interview. Allow an hour for the interview with a 25-minute presentation followed by 20 minutes of questions and answers. This permits 15 minutes between interviews.

After the interviews are complete, rank the firms. Issue a scope of services to the highest-ranking firm and request that they submit a fee proposal. After reviewing the proposal, you may need to negotiate the scope and fee to fit within your budget. If you are unable to agree on a scope and a fee with the highest ranked firm, cease negotiations and request a proposal from the second firm.

With this selection process, you can be assured of selecting the firm that you feel is most qualified, will be the easiest to work with, will be most responsive to your needs, and will do so at a price you can afford.

This method of selection can also be used to choose a designer/builder should you decide to employ the design-build approach.

Sources of information

GETTING ORGANIZED

Committees

As an established club, you should already have a set of by-laws, a board of directors, and several committees. Before embarking on a building program, you will need to form a Building Committee with a chairperson and several subcommittees.

The chair of the Building Committee will be responsible for the overall administration of the program. The chairperson must be an enthusiastic supporter of the program with leadership and communication skills and the ability to coordinate activities without losing site of the "big picture." It is important that the chair have a flexible schedule to accommodate meetings. The chair must also keep the Board of Directors and the club membership well informed of progress.

The specialized and detailed work is the responsibility of subcommittees. At a minimum, you will need the following subcommittees:

Membership: The responsibility of this subcommittee is to establish ties with the club membership by soliciting input on the project from the members through the use of surveys. They are responsible for "marketing" the project to the members and calculating potential membership.

Legal: This subcommittee is responsible for purchase agreements, leases, and standards for accounts and money. Its is very important to have the correct language in agreements you will have to live with for many years.

Design: This subcommittee will research and select the building design and layout.

Financial: This subcommittee is responsible for the Business Plan, analyzing cost of club operation, and applying for bank loan financing.

Fund Raising: The responsibility of this subcommittee is to raise money. Sources include members, friends of the club, national and regional organizations, corporate sponsors, gifts, etc. They are also responsible for deciding how to raise construction money, details of certificates issued to members, and whether to seek "non-profit" (501 (c) (3)) status.

Strategic/Business plan

Every club that builds a curling facility should have a Strategic Plan and a Business Plan. In its simplest terms, a Strategic Plan is a statement of what the club is, its mission, and its goals. A sample Strategic Plan is shown in Appendix A. A Business plan is a detailed description of how the goals in the Strategic Plan will be achieved. A sample Business Plan outline is shown in Appendix B.

One of the major goals of your Strategic Plan will be to construct a curling facility, and it is essential that all club members understand and support this goal. A club that is not united behind such a major project will surely fail. Before proceeding, make certain you have full member support.

Your Business Plan will be similar to the ones commonly used in business. Some members of your club may have had experience in preparing and/or implementing such plans. It is important to remember that your Business Plan will be carried out by volunteers who have other

things to do besides work on your project. Some tasks will take a little longer to get done than they would in the business world.

A Business Plan can be summarized in a timeline chart such as the one shown below which shows a few of the activities required in building a facility.

Sample Business Plan Timeline

Month	1	2	3	4	5	6	7	8	9	10	11	12
Activity												
Purchase site				■								
Select design				■	■	■						
Locate site	■	■	■									
Select builder							■	■				
Member pledge drive	■	■	■									
Apply for mortgage				■								

Each Business Plan activity is listed in the table and assigned a start and a completion date.

Collecting information on other curling clubs can be a useful step in the club building process. Studying other clubs—where they've been and where they are going—can help you get a sense of what a new club will face during its lifetime. Here are some things you should try to find out about other clubs:

Membership and recruitment: How many members does the club have? How many are active? Are they committed and enthusiastic about improving their club, or are they ambivalent and reluctant to invest their time and money? What is the average age of the membership? Is the membership getting older, or is the club successfully recruiting new, younger members that can keep the organization afloat for years to come? What is the economic state of the membership? Is it significantly better or worse than several years ago? Can the club expect to have a steady stream of dues-paying members, or is it getting harder over time to recruit and keep members who can afford to curl? Is their membership growing? Where do new members come from? What kinds of strategies are in place to acquire new members? Do they work? How many new members does the club attract? How many does it lose each year for all reasons?

Dues: What are the club's dues and fees? Is the scheme popular with the membership? How could it be improved?

Finances: What are the club's major sources of revenue? How has the revenue stream changes over the years? Is revenue increasing or decreasing? What are the club's major expenses? How have expenses changed over the years? Do they have any major expenses in the near future? Does the club have any debt? Does the club have a surplus or loss at the end of each year?

Facility: How was the facility acquired? Is it fully owned by the club? What condition is it in? What kind of maintenance does it require? What does it cost to maintain, especially in the off season? Will it be viable in 10 years?

Overall club health: What is the overall state of the club? What is the likelihood that it will still be in operation 10 years from now? What would happen if, hypothetically, the facility suddenly did not exist? Would the club fold, or could it rebuild? Is the club vigorous enough financially and in terms of membership to survive for many years?

REDUCING COSTS

Sharing your facility

One way to reduce the risks and costs of developing a new curling facility is to share the development effort and the facility.

Other Curling Clubs: This option will only be feasible in areas where curling is already well established. If there is another curling club in your area that for any reason would like to be a partner in building a facility, it would be worthwhile at least to explore the possibility of a joint effort. With two or more clubs joining together to share a club building, the risk and effort of developing a facility as well as the operating expenses can be spread over a larger membership.

Other Ice Facilities: In this case, you are two basic options. The first is to build your facility next to a skating facility and pay a ground lease for the area under the club and a use fee for the supporting spaces (toilets, locker room, warm room, etc.) located in the skating arena. It is possible to share the ice plant with the skating arena, but you must have your own temperature control system because skating ice and curling ice require different surface temperatures. Your second option is to build a facility that could also be used by skaters. Your facility would have to have at least four sheet of ice. The ice could be rented to skaters in the off season, or even shared during the curling season if your membership could not support full-time use.

Other Recreational Facilities: Swim clubs and tennis clubs sometimes have enough unused land to build a curling facility. Sharing facilities with such a club has several advantages. First, the site likely already has many features, such as a parking lot, club room, etc., so all that is required is the ice area and a modest warm room.

Do it yourself

In the "good old days," it was possible for a group of "do-it-yourselfers" to build a curling facility. If one or two club members had some building experience, perhaps one was a contractor, plans would be drawn up and a volunteer force of willing hands assembled. Unfortunately, in many areas of the country, this option is no longer feasible because of building codes, laws, and regulations.

Before deciding whether you can do it yourselves, you should check your local laws relating to building and development to determine whether you need a licensed professional prepare the building plans and specifications. In most jurisdictions, it is a requirement of law to have plans prepared under the supervision of a licensed architect or engineer who must stamp/seal the drawings. It may be impossible to obtain a building permit without detailed structural calculations, energy use estimates, waste water plans, etc. If your area will still allow non-professional development, or if you feel you have sufficient volunteers with the requisite professional qualifications, this may be an option worth pursuing.

One of the first decisions your building committee needs to determine is whether your club has architects, engineers, builders, or contractors as members. Certainly having this expertise "in-house" can be one of your best assets. However, it is important to remember that these members design and build buildings for their livelihood, and you should not expect to have them donate their services for free. There is certainly nothing unethical nor intrinsically wrong

with having a club member design or construct your club, but if that member also serves on the building committee, the possibility of, or a least the appearance of, a conflict of interest should be considered.

If you use volunteer professionals to develop your club, make sure that either they carry suitable insurance or that your club procures a project policy. Although their services may cost you nothing, they still can make mistakes for which they and your club will be liable should self-development with volunteer labor result in injury.

If self-development is pursued, consider the type and complexity of the building system you plan to use. Obviously, a steel and masonry building structure will require a higher level of building skill than wood-framed walls with prefabricated trusses. Do not attempt to build a complex building with volunteer labor unless your club has some experienced construction supervision.

Public land/building

One of your primary concerns in building a new curling facility is where and how to get the land. One way of solving this problem and possibly reducing or even eliminating the cost is to enter into a partnership with a local governmental agency that will provide the land in return for your club providing some public benefit.

Whom to Approach: A local parks and recreation agency is the most obvious initial contact. The typical mandate of these agencies is to develop public land for recreation, and curling obviously falls into this category.

How to Approach Them: It is important to remember that a public agency is subject to a tight budget and close scrutiny. In order to convince an agency to participate in a joint public-private development they must have a strong defense to the question "What's in it for us?" To be successful you must tie the project into their mission and/or offer them use of the club in the off season.

You can appeal to the mission of a Parks and Recreation group by emphasizing the recreational and sport benefit of curling for all ages and abilities. In addition, you can offer the ice area in the off season for indoor recreational pursuits such as roller hockey, indoor soccer, basketball, large hall activities, dances, etc.

Off-season use

It is unlikely that your club will be able to leave your new facility idle during the off season. When designing your club, you should keep in mind possible alternate uses. Two important choices you make will greatly affect your options—the number of sheets of ice you build and the type of floor you install in the ice area. Generally speaking, the larger the floor area available, the more options you will have. A concrete floor in the ice area capable of light industrial use will be much more useful that a sand floor.

During the off season, your club will likely rent your facility to other ventures rather than operating the activities themselves. Possible income producing uses include:

Temporary Storage: This activity is usually not used by individuals because they typically need smaller, secure areas. However, in some parts of the country it may be feasible to rent space to individuals who need to store seasonal equipment such as snowmobiles, snow blow-

ers other such items that they typically use during curling season.. Renting the facility out as temporary storage may be most valuable to moving and transit companies, contractors, and other similar businesses that may need a large covered area on a temporary or seasonal basis. If the ice area is properly insulated and the leaseholder is willing to pay the power bill, renting the area as a cold storage facility may also be an option.

Flea Market: Flea markets are typically a regular weekend event in which the vendors rent table space on a per day basis. Your club could subcontract to an established flea market operator for a daily rental fee. Another way to produce income at a flea market is to operate a snack bar.

Special Shows: One time sales events such as sports card shows, pet shows, antique shows, etc. frequently require a large flat floor area with supporting wash rooms and service spaces. Contact show promoters to determine the market for this use. Income can range from a daily lump sum charge to a percentage of the gate/sales. In some areas, there may be a sufficient market to have your club full nearly every weekend. It is also possible to make income from a snack bar operation.

Other Sports: This option may be somewhat limited because most summer sports are usually played outdoors. Possibilities may also be restricted by the size of your ice area floor. Sports such as indoor roller hockey or indoor tennis need at least a four-sheet. Tennis also requires a greater ceiling height than other possible uses.

Energy considerations

The cost of power to operate your facility's ice making equipment will be one of your club's major expenses. Your cost will depend on the climate in your location and on the power rate charged by your local utility. When planning your facility, you should compare carefully the first-costs of insulation, vapor barriers, reflective blankets, etc., against the long-term costs of power. It may be less expensive in the long run to pay the extra cost of installing more insulation when first building the club than to pay the cost of lost energy over the life of the club.

In most areas of the country, local building codes and ordinances mandate a maximum allowable energy usage for both space conditioning and lighting. This value is most often given for lighting as a maximum foot-candle per square foot of area and for space conditioning as a maximum BTU/Hour loss rate. To determine projected energy usage the following factors should be considered:

The Building Envelope: The term "building envelope" refers to the physical enclosure on the exterior walls and openings, roof, and floor. Each component in the envelope has a "U" value which is the rate at which the material or component transmits heat over time from the hot to the cold side. The lower the "U" value, the higher the resistance to heat transfer. The ability to resist heat transfer is commonly referred to as the "R" value. If the exterior walls are uninsulated steel panels the envelope will have a lower "R" value than if it is constructed of foam filled sandwich panels. Obviously, the uninsulated panel costs considerably less than the insulated sandwich panel. However, you will likely gain back the cost differential in five or fewer years of operation from the energy savings realized.

Lack of insulation can have a detrimental effect on the ice. If the outside temperature becomes very high and there is little insulation in the envelope, the heat load may become too large for the ice making equipment so that the ice becomes unplayable.

Typical building insulation values accepted as a proscriptive compliance with most energy codes are:

Location	Insulation
Floor slab/Foundations	R-10
Walls	R-19
Ceiling	R-30

Lighting: Most energy codes will limit the type and quantity of artificial light in a space. Because curling ice is a special use area, it may not be subject to lighting limitations. However, it is important to not over light your playing area. Most energy codes will not permit the use of incandescent lighting in large areas and so fluorescent, high pressure sodium, or metal halide may be your only possible lighting options. Because of low first-cost, strike-time, color rendition, heat generation, and glare issues, fluorescent lighting is the most commonly used method in curling facilities. Generally, fluorescent lighting with warm-white lamps, spaced evenly so as to provide 50 foot-candles of illumination at 3 feet above the ice, provide optimum lighting for curling. It is important to make sure that all fluorescent lighting in the ice area have cold weather ballasts because normal ballasts will not work To achieve the optimum energy performance, use T-8 fluorescent fixtures in lieu of the more traditional T-12. Although the lamps can cost 20-40% more, they last longer and use 30% less energy.

Mechanical Equipment: You will have less opportunity to control the energy usage of the mechanical equipment in your facility because it will be selected based on your operating conditions and the projected capacity required. High power using equipment includes the ice refrigeration plant, space heaters and ventilators; hot water heater/boiler; dehumidifiers; etc. To manage the energy usage of this equipment efficiently, you should make sure that they are sized to meet anticipated demand without an excessive safety factor.

Other Considerations: If for any reason your facility does not have sufficient insulation, you should seriously consider using ice blankets. The technology of newer products make the use of ice blankets more feasible. They are lighter, less bulky, and more efficient than older products. If you plan to use ice blankets, make sure that you have provided a storage area adjacent to the ice.

In recent years, the use of a reflective material suspended from the ceilings of ice rinks has gained popularity. This material greatly reduces the radiation heat load from the ceiling on the ice surface. The refrigeration power saving can be as much as 20% so that the cost of the material can be recovered in about three years. In addition, the reflective material creates a warm zone near the ceiling that eliminates dripping, and the reflective nature of the material reduces the amount of lighting required.

LAND

Selecting a site

The site you choose will impact both the cost of construction and the operation of your facility. This decision is a critical one that must be made with diligence and objectivity. When analyzing a possible site, your should consider the following factors:

Land Use: One of the first things you need to identify is the regulatory restrictions on a site. Almost all jurisdictions in the United States regulate land use through zoning and other forms of land use regulation. Curling clubs could be classified under a number of uses such as; business; recreation; amusement/entertainment; sports club, etc. The important thing to know is how the applicable land use/zoning code will classify your club and whether the site under consideration permit this use.

Beside restricting use, most zoning codes also establish minimum development standards for establishing a new use or changing from a previously permitted use to a new one. Some of the issues typically addressed in zoning codes include:

- Maximum density of use
- Minimum landscaping required
- Vehicle circulation and parking
- Pedestrian walks
- Signs

Public vs. private land

See "Public land/building," page 16.

Shared site

See "Sharing Your Facility," page 15.

Serviced vs. raw land

See "Sharing Your Facility," page 15.

Surplus land

See "Sharing Your Facility," page 15.

BUILDING

Layouts and designs

(To be inserted: typical layouts for 2- to 6-sheet clubs) *[work in progress]*

Ice shed

Types of Building:

Conventional.

Metal prefal.

Fabric covered metal frame: Tension fabric (PVC polyester) skin stretched over galvanized tubular truss/arches. These can be of a double wall construction to allow insulation space between the faces. This type of construction has the shortest life span of any shelter (material warrantees of 15 years). The cost will be the lowest of the alternatives (approximately $6 per square foot for kit materials). A potential problem is vandalism because the fabric could be purposely cut or torn.

Tilt-up concrete panels: These could be site-poured or factory-poured panels that are tilted up to the vertical position and welded to each other to form a simple flat wall. Typically used for warehouse, agricultural, and industrial type buildings, they are a quick, inexpensive way to form an exterior wall structure. The inside face can be furred with insulation boards or an insulation sandwich construction. This type of construction provides a long-term durable concrete exterior surface.

Footings: The building itself must be placed on a stable footing substructure to prevent differential movement within the building which will crack and destroy it. The substructure under the ice rink must also be stable enough that the ice surface remains level throughout the playing season. Most of the states in the northern half of the country have severe enough winters that frost is a potential problem. In these areas, foundation systems must be designed to penetrate the ground below the frost level.

Floors—Sand vs. Concrete: There are two types of floor commonly used in curling facilities: sand and concrete. In a sand floor, the refrigerant pipes are embedded in the sand which is cooled below the freezing point. The cold sand is then flooded in successive layers until the desired thickness of ice is reached. Because the pipes in the sand are vulnerable to damage, this type of floor cannot be used for other purposes in the off season. Refrigerant pipes embedded the concrete makes the best year-round floor for curling and other uses. However, the cost of installing a concrete floor is substantial. A multi-layer insulation barrier is applied under the entire floor area to prevent frost from penetrating into the ground below. For facilities that make ice for the full 12 months of the year, a subsoil heating system may be necessary to ensure that the subsoil does not freeze and cause frost heaves.

Storage: Your club will need to provide storage space for various items used in making and maintaining ice such as scrapers, hoses, and a pebbling can, as well as building maintenance items such as ladders, spare parts, etc.

Insulation: In most cases, it is necessary, or at least desirable, to insulate a curling facility. This involves placing an insulation envelope between the indoor rink and the outside weather.

ASHRAE standards, which take into account your local heating degree days, should be used to determine the most effective design, quality, and value of the insulation required. The most effective location for insulation is in the roof/ceiling assembly, but insulating the walls should also be considered. An effective vapor barrier on the warmer side of the building shell will help to keep frost and condensation from becoming a problem on and inside the shell itself.

Dehumidification: There are several sources of humidity in the playing area of a typical curling facility. They include leakage through the building shell from the outside atmosphere, the players themselves, sublimation of the ice surface, and water used in pebbling and flooding.. Excessive humidity will cause problems because of frost buildup on the ice surface and drips from the ceiling. These problems are usually avoided through the use of a refrigerant or desiccant type dehumidification system, or, in colder parts of the country, by heating and thus drying the air in the playing area. Ceiling treatments such as *Alumasorb* can be used in conjunction with dehumidification to eliminate humidity problems.

Lighting: The table shows the level of illumination recommended for curling by the *Illuminating Engineers Society.*

	Illumination (Footcandles)	
Class of Play	Hack to Hog	Hog to Hog
Professional	125	100
Tournament/Amateur	50	30

The illumination at the house ends of each sheet should be between 50 and 125 ftc and 30 to 100 ftc for the rest of the sheet. The lighting system used should minimize glare off the shiny ice surface. Fluorescent strips with electronic or cold-weather ballast starters is a commonly used system. High energy discharge lighting sources should be avoided because they can cause local warming of the ice surface.

Mechanical *[work in progress]*

Comparative costs *[work in progress]*

Quality construction *[work in progress]*

Ice making equipment

Refrigeration *[work in progress]*

Ice mats *[work in progress]*

Ice maintenance equipment *[work in progress]*

Water supply *[work in progress]*

Curling equipment

Stones *[work in progress]*

Scoreboards, hacks, etc. *[work in progress]*

Warm room

Furnishings: It is important to develop a list of furnishings for your warm room. The list should include items such as: tables for 8 with chairs; chairs for people watching the curling; a trophy case; window drapes; etc. A careful choice of furnishings can make a big difference in making your club functional, comfortable, and attractive to new members.

Kitchen: Most small curling facilities have kitchens similar to those found in churches and other clubs, i.e., they have ovens, microwaves, refrigeration, etc., sufficient for the preparation of snacks and light meals and that allow a large quantity of food to be heated and served at the same time. In designing your kitchen, provide a countertop work area layout that can accommodate at least four people at a time. Be sure to comply with the ADA regulations. A fully compliant kitchen for the preparation of food is much more complicated because it must meet the Department of Health and Building Codes for public food service. A kitchen of this type is treated like a restaurant kitchen and would require commercial ranges, hoods, fire sprinklers, special countertops, equipment, commercial dishwashers, and sewer/drain grease traps.

Bar: If your club can obtain a liquor license then, for control purposes, it will likely want, at a minimum, a stand-up bar that separates the server/bartender from the patrons. Minimum equipment for such a bar includes a refrigerated cooler, ice machine, sink with hot/cold water, and a lockable storage area for liquor. If the bar area is near the ice area, a draft beer tap may be considered and the beer keg can be kept in the ice area. The bar area should meet ADA requirements.

Washrooms: The facility should provide a separate toilet and lavatory facility for men and women and a drinking fountain. A janitor service sink is recommended, and larger clubs may consider installing showers. Most plumbing codes set a minimum number of fixtures based on the number of occupants, typically one toilet (water closet) per 50 persons and one lavatory per 75 persons. Washrooms must meet ADA requirements.

Changing Rooms: Your facility should provide separate areas for men and women. These areas should have a bench, clothes storage/hanging, and preferably some lockers. The size of lockers can vary from small for a bag and shoes to large for hanging coats and storing brooms.

Heating and Ventilation: The warm room should meet current ASHRAE standards for heating, ventilation, and, if applicable, air conditioning. Special steps must be taken to maintain air quality in smoking areas.

Electrical service

The ice refrigeration plant will be the largest electrical load and will depend on the size of unit(s) used. The other loads will be the coolant circulating pump(s), lighting for the ice area and warm room, dehumidifier, kitchen and bar areas, the various electrical outlets throughout the building, and possibly a water heater. The table shows the expected average monthly electrical energy consumption in kWh/month for clubs of various sizes for a cold and a warm climate. These numbers can be used to get a rough estimate of power costs for your club.

Monthly Power usage (kWh/month)

No. of Sheets	Warm Climate	Cold Climate
1		
2		
3		
4		
5		
6		

Parking

The number of parking spots your club will require will be determined by local zoning regulations. This number is usually determined from the number of occupants expected in the building. A lenient regulation may only require one parking spot for each 5 occupants. The number of occupants may be determined as one per 15 square feet of club room and 8 players per sheet of ice. A two-sheet facility with a 1,500 square foot warm room would require 23 parking spots. A more restrictive regulation may require one spot for each three occupants and may require including the area of the ice surface as well as the warm room.

You should expect to provide two handicap spots for every 50 regular spots. Parking lot surfaces are usually required to be dust free and so require a concrete, macadam, or similar paving. Landscape screening of the parking area from adjacent properties may require a lot line setback.

FINANCING YOUR CLUB

Raising money

Bonds/Shares: The primary source of funds used to build most non-publicly owned curling facilities in the United States has been the club membership itself. By and large, the initial club membership will fund a large portion of the required equity in the form of cash. The cash is often acquired by the club through the sale of bonds in amounts ranging from $100 to $10,000, depending on the economic status of the membership. Bonds can take many forms. They can be interest bearing, redeemable, subject to a sinking fund requirement, or due at a date certain. Keep in mind, if they are interest bearing, the interest will have to paid from operating income or accrued. In either case, payment of interest could cause difficulties later.

Solicitations: The use of a 501 (c) (3) corporation can be a major benefit in soliciting contributions. This type of corporation, if approved by the Federal Government, can receive tax deductible contributions. Such contributions can be in the form of cash, appreciated assets such as stock holdings, or hard assets that can be sold to raise cash. Many clubs have received 501 (c) (3) status, but obtaining this status requires following specific guidelines. If your club is considering applying, they should consult with someone who is thoroughly familiar with process.

Sponsors: These are people who will help to underwrite a facility because of their love for the game. While finding these people is not easy, if you are successful, then financing your facility will be much easier. You should canvas your membership for the names of potential sponsors. Sponsors can be rewarded and recognized in various ways, e.g., naming a club event after them, plaques displayed in the club room, etc. If you have a 501 (c) (3) tax exempt status, sponsors may receive a tax advantage.

Public Grants: Your club may be in a position to receive support from a public organization. State programs that provide athletic outlets for juniors are a good example. Service clubs might also help if your club provides a facility for a youth group supported by the service club.

Financing

Mortgages: Your club may have difficulty obtaining a commercial mortgage because most financial institutions are reluctant to underwrite a facility for a sport with which they are unfamiliar. Your best source for a mortgage loan may be a local bank where the decision makers are likely to be familiar with your area and to know some of the people involved in your curling club. They will be more likely to grant a mortgage if they believe the property can be used for another purpose if the club fails and the property sold to satisfy the debt.

When approaching an institution for a loan, you should have a well-thought-out presentation ready. Your presentation must include a breakdown of the total anticipated costs, your equity component, how it will be raised, and where the loan fits in. You should not expect a loan to represent more than 50% of the total cost of the project. The people who will build the facility and run it in the future should be detailed. A pro forma operating statement showing income and expenses and how your club will make the monthly payments must be presented and must be realistic. Your should not be surprised if the institution asks for the personal signatures of the founders on any sort of loan.

OPERATING YOUR CLUB

Organization

If your club has been curling on rented ice, you will already have an operating organization in place with a set of by laws, a Board of Directors, officers, and some committees. Your club should already belong to a regional curling association that, in turn, belongs to the United States Curling Association. If you do not already have these you will need to set them up.

Once your facility is in operation, you will probably need to upgrade the structure of your organization. At a minimum, your club will need:

- A set of by laws covering all aspects of club operation, responsibility of officers, election of officers, etc. A sample set of by laws is included in Appendix A.
- A board of directors elected by the membership
- Officers, including at least a president, vice president, secretary, and a treasurer.
- A regional association representative
- Committees including, at a minimum, membership, building/maintenance, ice, bar, and curling.

Finances

Clearly, if your club is to survive, your income must exceed, or, at least, equal your expenses. Expenses are easier by far that income to estimate and project. For this reason, income projection must be done realistically and conservatively. Income at any recreational facility such as a curling club is sometimes determined by factors beyond the control of the club. Planning for a "rainy day" is a very wise move.

Expenses

Taxes: Real estate taxes will likely be one of the largest annual expenses your club will face. In some communities, particularly in smaller centers, you may be able to get some relief if you can convince local officials that your club is a major benefit to the community. For example, if the schools can use your facility for sports and/or education, or the Parks and Recreation department can become some sort of partner.

Your club may have to file a state or local income tax form if you receive income from bar sales or other activities. In some states, your club may be required to collect sales tax on some items. Be sure to check with state and local authorities.

Utilities: The cost of electrical power is the largest single operating expense for most curling facilities because electricity is expensive and a refrigeration plant is in operation 24 hours a day during the curling season. Many utility companies use peak demand pricing where the maximum load during the billing period determines the per kilowatt-hour cost for that period. You can keep your power costs down by starting your compressor in the fall just after the billing cycle begins and shutting it down in the spring just before it ends. You should also look for special rates from your utility company.

Maintenance: A new facility should not require a lot of expensive maintenance for several years. However, your membership may want to make some improvements during

this time. Your greatest maintenance concern will likely be your refrigeration equipment. Great care should be taken in starting up your equipment in the fall and in shutting it down for the summer. If your club is fortunate enough to have someone on your maintenance committee who is familiar with refrigeration equipment you can probably do the work yourselves. If not, it would much better to have the work done by a professional.

Mortgage: If your club has a first mortgage, the debt service on this mortgage ranks second in priority behind real estate taxes in the list of bills to be paid. The payments will usually be monthly throughout the calendar year, so even though your facility may be shut down in the summer, the mortgage payments still have to be made. Lenders have little room and not much reason to be forgiving. Failure to pay the mortgage on time will often carry a significant penalty.

Other: Additional expenses your club should budget include a contingency fund, bar and kitchen supplies, property insurance, liability insurance, and regional and national curling association dues.

Income

Dues: Dues income will be the largest single source of income for your club. There are two steps in setting dues. The first step is to select the type of dues structure best suited to your club. Dues structures range from the "one size fits all" type in which a member pays one fee that covers all club curling to one in which the dues are determined by how much curling the members does. Other aspects of the dues schedule include reduced rates for new or younger members or members willing to curl at non-prime-time hours, and trial memberships.

Once you have selected your dues structure, you must set a dues rate which will produce the required income. Needless to say, your dues rate must make your club competitive with similar recreational activities in your area. Your can get some idea of this by comparing your dues with the cost of bowling, indoor tennis, swim clubs, etc. The most difficult part of setting a dues rate for a new club is to estimate membership. Your best bet is to base your estimate on your current membership and a reasonable, conservative estimate of your net growth rate. When estimating net growth rate include the possibility of loosing existing members—it happens!

Bar: Most curling clubs have a bar of some sort that generates a profit for the club. The situation in your club will depend on local liquor laws, your licensing arrangement, your storage capacity, your cooling capacity, and your need to provide a staffed bar.

In recent years, police enforcement of drinking and driving laws has increased. Your club should have adequate liquor liability insurance.

Bonspiels: Invitational and in-house bonspiels are not only fun but can generate appreciable income through increased bar sales and entry fees. Keep your bonspiel fees competitive by checking to see what other clubs are charging for similar events. Experience will soon tell you what income your club can expect from bonspiels. Keep in mind that, to be successful, bonspiels, like all club activities, require effort on the part of the members, and it is easy to overdo a good thing.

Off-season: Most curling facilities were not designed for use in the off season. If your clubs plans to generate income by using the facility in the off season, you should include

any necessary features in the original design and make sure that you meet any local codes for the type of use you are planning.

The warm room is the most likely part of your club to be useful in the off season. Summer time use may require air conditioning and additional kitchen and washroom capacity.

If you are considering using the ice area in the off season, then you should consider the largest unobstructed floor area you can afford, preferable with a concrete floor built to commercial building standards.

Other: Other sources of income include use of club by outside organizations for regular or occasional curling, fund raisers for special projects, sponsors for bonspiels or youth programs, etc. Some events may not raise a lot of money but are worth the effort because they give the club good exposure within your local community.

Leagues

Most clubs structure their curling on a league basis, and, if your club has been curling on rented ice you are likely already familiar with setting up this type of activity. With your own facility your club will be able to expand the types of leagues it can offer. Men's, women's, mixed, open, senior, and youth leagues are typically found in most clubs. Current trends suggest that many prospective new members may want to try the sport on a less structured basis. You may, for example, want to consider "drop-in" league in which the teams for the games are made up from the members that show up that day. The revenue from this type of curling may be small and difficult to predict, but, by offering flexibility, you may attract more people to the sport who will ultimately want to participate in more structured leagues.

Ice making

High quality ice is essential to the success of your curling club. Nothing will discourage potential new members faster than unplayable ice. Ice making is part art and part science and requires a knowledgeable and dedicated ice maker and Ice Committee. Ice making courses are available from the USCA, and it is strongly recommended that your club send its ice makers to these courses and give them every opportunity to learn from the experts.

Bonspiels

In any club, bonspiels serve several purposes—social, income production, competition, practice, to mention a few. For a new club looking for new members, bonspiels are an important recruiting tool because they are fun. You should schedule some sort of bonspiel activity for your membership about once a month and be sure that all new and prospective members are invited.

Marketing

The task of marketing in your club may be assigned to the Membership Committee or it may have its own committee. In either case, your club must be prepared to "sell" curling in a very competitive market. Potential new members will likely have several choices of where to spend their discretionary recreation dollar. The USCA has developed a seminar course for clubs to help them with marketing and club management using the latest methods and techniques. Your club should consider taking advantage of this course.

WORKSHEET/CHECKLIST

A. Potential membership

B. Estimating capital available

C. Determining size of club

D. Estimating building costs

E. Estimating permissible debt load

F. Factors to consider

SUPPLIERS

Refrigeration *[work in progress]*

Ice equipment *[work in progress]*

Dehumidifiers *[work in progress]*

Stones *[work in progress]*

Curling suppliers *[work in progress]*

Building Systems *[work in progress]*

ACKNOWLEDGMENTS

[work in progress]

Revised 2008-02-01

Technical requirements for good playing and environmental conditions in a new curling-rink

(When reconstructing an old rink or using an old building, the technical requirements have to be adapted).

1. The building

- the sheets should be at least 5.00 metres wide and 45.72 metres long to follow the WCF Rulebook.

- the walkways around the ice-surface should be at least 1,0 metre wide. At the home end we suggest even wider if possible. The reasons for that are to keep dirt out of the ice surface and to avoid air movement down the walls towards the ice surface due to cold walls.

- the height between the ice and the ceiling should be enough to prevent cooling of the ceiling which can cause drips because of the humidity in the rink. Solutions with low ceiling are possible.

- the walls and the roof-design should be as tight (closed) as possible (see humidity below) and well insulated to prevent any adverse effect from outside weather conditions.

- a "warm" material (example wood) should preferably be used in the ceiling (roof) and wall construction as it will not absorb the coldness so easily which will cause higher humidity levels before the condensation point is reached (which prevents drips).

- There should be room in the ice area to park a power scraper on and close to the ice in a comfortable way. The scraper must be parked in a cold area. If it's possible the blade should rest on cold carpet.

- To take care of snow from the scraper a snow-well on both short ends is recommended.

- A workshop room and a water room should be located in the building. The workshop room should be used to maintain of and repair equipment, to keep the tools and so on. In the water room the pebble water heater, the mops, the pebble-equipment etc. should be located together with the flooding hoses and a tap for both hot and cold water to mix for flooding, and also space for water treatment equipment (DI or RO). These rooms must be located so it is easy and comfortable to reach the ice area.

- A tap for drinking water for the curlers is good to have in the ice area.

- It's an advantage if the ice surface is free from stones when the ice should be maintained. A cold area with stone boxes dedicated for the stones outside the maintaining area is a solution but the detailed shaping is a challenge.

2. The plant

- For a single curling rink it is a good idea for safety reasons to use two or more compressors.

- For environmental and safety reasons a direct expansion system should not be used. (forbidden in most countries)

- Use compressors with primary refrigerants which are environmental friendly. (Different rules in different countries).

- Insulate the compressor room carefully to avoid noise in connected rooms.

3. **The ice floor**

- the WCF preference is for the base to be constructed of concrete (insulation 2x50mm with extruded Styrofoam will prevent frost underneath during app. 6 months of play). If longer ice time the economical solution is to have a heating floor underneath and with a year around ice the heating floor is a must to prevent frost heaving. A heating floor is not possible to construct afterwards. Other types of floors are possible.

- the requirement of the level of the pipes in the floor is less than +-2 mm in difference. The level of the pipes is the most important part for a concrete floor of good quality. The concrete surface should also be levelled as good as possible on parity with the pipes.

- the pipes (polyethylene, PVC) should be dimensioned for a good flow for easy heat removal. The pipe diameter should be 25mm with 75mm or less between the centres.

- the pipes should be located across the rink (if an “ice-mat” with small pipes is to be used, the mat pipes can be down the rink) to prevent frost ridges along the sheets in humid areas. Large difference between ingoing and outgoing brine-temperature will give uneven frost ridges.

- with regard to energy efficiency, Calcium Chloride is a good choice of secondary coolant. Its heat transfer coefficient is better than glycol. Both are environmentally acceptable.

- a three header system will give a more even temperature on distributed brine liquid and because of that more even temperature over the whole surface. A three header system is recommended. The cooling pipes should only do one turn from in to out to keep the difference in brine temperature as low as possible.

- The pipes, pumps and the settings in the cooling system should be dimensioned so laminar flow doesn’t come up.

- the floor has to be reinforced and the top of the cooling pipes should be covered by 25mm concrete. It is advisable to lay a reinforcement net on top of the pipes as it gives a strengthened floor and also gives better possibilities to lay and keep the pipes in level during the concrete pouring procedure.

- the base should be constructed to prevent movement of the floor. If built directly on the ground, the base should not be connected to the rest of the building to prevent movement from the building influencing the base. (Floating floor).

- the edge of the concrete floor should have a frame of concrete (10-15cm high like a pool) to prevent leaks. On the inside of this frame, a wooden lining 12-15cm high should be fitted. A loose wood frame is also possible but is liable to leak. Other solutions are possible.

- the concrete surface should be smooth to have a good result when painting. The paint should be good quality water based two component paint.

- when painting the ice, an environmentally approved (non toxic) ice paint should be used.

4. **Air condition, humidity**

- the air in the arena should be heated (see heat exchanger below) and controlled by a thermostat. Comfortable and economic air temperature is app. +6-7 degrees Celsius, 1.5 metres above the ice.

- in areas with high humidity the humidity inside the arena should be controlled by a dehumidifier. Dehumidifiers need a tight building to work well. The dimensioned dew point-temperature for a dehumidification plant is approx. -4 to -5 degrees Celsius to prevent frost on the ice. The economical and appropriate running dew point temperature can be some degrees Celsius higher.

- for good ice-conditions no constant air movement over any areas of the ice can be allowed. Cold walls can create air movement (cold draught) over the ice and problems with frost freezing along the wall. This can be prevented by walkways around the ice but better is good insulated and tight walls.

- compressors used in the air conditioning system have to be environmentally approved.

5. Steering- and control-systems

- if the curling rink is using the same refrigeration system as a skating rink, the curling rink should have its own brine pump and its own steering- and control-system to enable the ice surface temperature to be maintained at the correct stable level. Using a three way valve with motor shunt thermostat-regulated towards the brine is a good solution to maintain a stable temperature. To have stable conditions on the right level in the rink is very important (see the handbook Curling Ice Explained from the WCF).

6. Heat recycling

- the refrigeration plants should have a heat recycling system. The hot water produced should be used in the curling rink or where needed elsewhere. A heat recycling system has a pay back time of 3 to 4 years.

7. Water

- an area with very bad water will need a water purification system. (Deionizer or Reversed Osmosis), at least for the pebble water. Pebble water needs to be heated, preferably in a thermostat-regulated tank.

- a Reverse Osmosis system (membrane system) is preferred as it is more environmentally friendly as there is no requirement to take care of chemical substances like there is in a deionising system.

- the hot flooding water (app. 35 degrees C) supply for a 4 sheet rink should have a capacity of at least 2.5 m^3/h during the time of flooding (approx. 1 hour) and a reheating capacity of 3 hours.

8. Light

- the rink should have good light. At least 1000 Lux (45 degrees) is required for TV. The lamps should be located in such a way that reflection towards the players will be prevented. Between the sheets and along the outside walls are the preferred locations. Fluorescent tubes are a very good solution.
-

9. Acoustics

* It’s important that the wall and ceiling has sound-absorbing surfaces.

Some of these items are described more fully in the Curling Ice Explained (CIE) - the WCF Ice Makers Manual

Leif Öhman
1 February 2008

ICE ORIENTATION

- For those who are being introduced to the sport of curling, it is very important that their first experience be a positive one:

  a) safe and fun
  b) straightforward & uncomplicated
  c) no damage to the facilities

- Inspect the hacks and the ice surface for damage or safety hazards (holes or nicks in the ice, ice on hacks, water on the ice, etc.)

- Although serious injuries or accidents are rare, you must be ready to deal with them if and when they occur. Find out telephone numbers for ambulance, police, fire department and hospital.

- Develop an emergency action plan - know where the closest telephone, exit and first-aid equipment are located.

- Be sure each curler has been oriented in proper on-ice procedures before going on the ice.

- Ask about medical problems or motion inhibiting injuries to any of the curlers.

- Conduct a proper “warm-up”.

- Children can be encouraged to wear a helmet (hockey or bicycle).

- ♦ Make sure you have arranged adequate supervision if possible (1:4...instructor/student).

- ♦ Nobody should step onto the ice until you are present.

- ♦ Footwear must be clean.

- ♦ Step onto the ice with the gripper foot first...mention this several times.

- ♦ Weight must be under the centre of the body when weight is placed on the slider. A semi-crouch position is easiest.

- ♦ Insist your curlers walk on the ice, no running.

- ♦ Encourage respect for stones, ice and facilities.

- ♦ Tell curlers to always keep an eye on the stone, whether it's moving or not.

- ♦ Remind curlers to stand well away from the person throwing.

- ♦ Check your curlers' equipment for proper fit and condition. Extreme caution should be exercised while new curlers become confident on the ice.

- ♦ Slowly walking up and down the ice is a good way to start.

- ♦ Next try sliding down the lines with the sliding food pointing in that direction.

- ♦ First slides should be very short ones.

- Probably not a good idea to use the stones at all on the first day.

- Give lots of encouragement and don’t worry too much about the specifics.

- Give enough rest breaks, do not strain the normally unused sliding muscles.

- *(if you are working with very young curlers it would be nice to ensure they have a safe way home).*

Things to Consider When Looking For Stones

Common Kinds of Curling Granite

Blue Hone

- This type of granite is mainly characterized by its color and condition of the strike bands
- Light gray with random white specks throughout stone
- Half moon shaped chips are predominant in blue hone granite stones
- Used in inserting, blue hone is the optimum material for repairing running surfaces of pitted stones
- Due to the density of the granite blue hone is the most undesirable granite type for striking bands
- Once Blue Hone stones have begun to chip they are irreparable
- If your club has Blue Hone stones, they can be reconditioned providing that the strike bands are in good condition
- If you strike bands have begun to chip, your club should be planning to have your stones replaced

Ailsa Craig Common Green

- Green in color, Ailsa Craig Common Green stones have large black deposits in the stone that are outlined with white flecks
- The make-up of this type of granite includes dissolvable material that makes this granite very susceptible to pitting
- The strike bands of the Ailsa Craig granite stones are very much like those of the Blue Hone granite in that it is not uncommon to find half moon shaped chips in the strike bands
- Taking into consideration the quality of the strike bands and the chance of pitting, reconditioning is not recommended
- Inserting this type of granite is highly recommended but the decision depends on the condition of the strike bands, namely the number and depth of the chips
- There is vast difference in the quality of Ailsa Craig Common Green granite. It can be quite good or can have a large amounts of impurities allowing for holes and rapid deterioration of striking bands

Red/Brown Trefor

- Red/Brown Trefor can be found in several shades of brown, and will always have white and black flecks that run throughout the stone
- Trefor granite is a larger grained granite which leaves it slightly susceptible to pitting in the running surface, but make it excellent material for strike bands
- Red/Brown Trefor is suitable for both reconditioning and inserting, although inserting is our recommended option
- Inserting Trefor granite brings the best of running surface material together with the best granite for strike bands

Blue Gray Trefor

- Usually deep blue/gray color, blue gray trefor granite has prominent white flecks that can be easily spotted throughout the stone
- This type of granite can be reconditioned, but is more prone to pitting in its lighter shades. Like all trefor granites, blue/gray trefor is an excellent candidate for inserting

Keanie

- The Keanie name derives from the family name of the company making these stones rather than the proper name of the granite
- Pinkish in color, with large white and black flecks throughout, keanie granite is a very porous material
- This quality makes Keanie stones high risk for pitting and/or developing flat spots in its strike bands
- Keanie stones can be inserted to obtain good performance from the running surface. This is a good option if the stones are only going to be used a few games per week. This will make for very inexpensive stones for casual use
- If your club's stones are made from this granite, serious consideration should be paid to replacing your stones

Hybrid Stones

- Trefor with blue hone inserts
- Keanie with blue hone inserts
    - Inserting curling stones with Blue Hone inserts is a procedure that has been used in curling stone repair since the early 1960's

    - The denser, tightly grained blue hone granite has proven to be the most resistant to wear and moisture penetration
    - It is for that simple reason that blue hone granite is still the best material for inserts today

Trefor with ceramic Tileserts

- This process is where the bottom of a stone is cut off flat and a ceramic floor tile is then epoxied to the bottom of the stone. Thompson's in Canada is the only company using this process
- This stone runs straighter with use

Life of a Stone

25-30 years before it needs reconditioning
This is assuming that the stones are taken good care of
Life of the stone is calculation on a 6 month season with 3-4 draws / day
180 x 3 x 25 = 13,500 games; 180 x 4 x 25 = 18,000 games

Things to Consider When Purchasing Stones

Buyers Beware, because of the demand for stones it can be a Seller's Market
Know your sources of supply – manufacturers, reconditioners, suppliers, & clubs
The reputation of supplier, post-sale warranty, etc.
Condition of stones – running surface & striking band, type of granite
Performance – try them or get references (honest & knowledgeable)
Need reconditioning? Consider cost & end result.
Purchase or lease
Are stones you are purchasing a matched set (same type of granite)
1 or 2 running surfaces (watch scribe marks)
Weight – suitable for reconditioning in future (38-39 pounds)
History of stones
Handles – metal or plastic
What are you willing to settle for and what can you afford
The supply of used stones is limited and varies from day to day. Considerable lead time may also be required for new stones. Plan ahead.

Things to Consider When Reconditioning Your Stones

Kind of granite
Running surface and / or striking bands
Inserts
Artificially aged
Transportation
Get references (complete list - 3-5 years)

Good Care

Cool down – keep dry!
Proper handling & storage
Care in transport
Use during play

USA Curling offers a stone loan opportunity to clubs through the World Curling Federation. To find out more information on this stone loan program contact the USA Curling office at 888-287-5377 or email info@usacurl.org.

Partial List of Curling Stone Suppliers & Reconditioners

Canada Curling Stone Co. (new & used)
1-1985 Blue Heron Drive
London, Ontario, Canada N6H 5L9
Contact: Fred Veale or Kimberly Tuck
Phone: 888-580-7951
E-Mail: fveale@canadacurlingstone.on.ca
Web-Site: http://www.canadacurlingstone.on.ca/main.htm

Kays of Scotland (new & used)
9 Barskimming Road
Mauchline, Ayrshire
Scotland, KA5 5AJ
Contact: Donald McCray
Phone: +44(0)1290 550256
E-Mail: info@kaysofscotland.co.uk
Web-Site: http://www.kaysofscotland.co.uk/

Steve's Curling Supplies (supplier)
5010 Ironwood Drive
Madison, WI 53716
Contact: Steve Brown
Phone: 608-222-1691
E-Mail: steve@stevescurling.com
Web-Site: http://www.stevescurling.com/

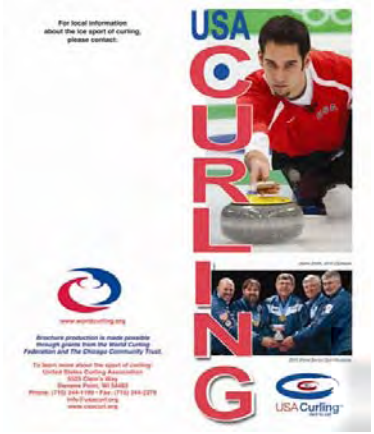
Dakota Curling Supplies (supplier)
PO Box 407
Langdon, ND 58249
Contact: George Phillips or Randy Darling
Phone: 800-256-0900
E-Mail: curling@utma.com
Web-Site: http://www.dakotacurlingsupplies.com/

Thompson Broom Manufacturing (supplier & reconditioner)
Transcona R.P.O.
P.O. Box 62057
Winnipeg, Manitoba, Canada R2C 5G2
Contact: Al Thompson
Phone: 888-832-3728
E-Mail: thobroom@thompsonbroom.mb.ca
Web-site: http://www.thompsonbroom.mb.ca

Olson Curling Manufacturing & Supplies, Ltd. (supplier & reconditioner)
10555 116 Street
Edmonton, Alberta, Canada T5H 3L8
Phone: 800-661-2492
E-Mail: gord@olsoncurling.com
Web-Site: http://www.olsoncurling.com/Iceequipment.pdf

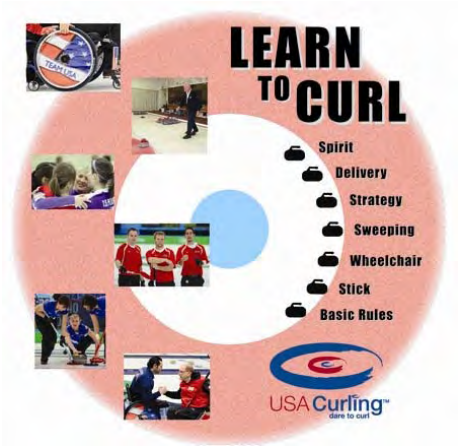
USA Curling Publications

The following are several publications available through USA Curling. Click on each picture to view online or email Christy Hering at christy.hering@usacurl.org for a free copy!



USA Curling Brochure

Full color, overview of the sport of curling. Great for open houses.



Learn to Curl Pamphlet

20 pages of full color instructions to help you get your curling career started. Great for beginners!

Media Guide & Directory

Printed annually; 145 pages; contains contact information for all USA Curling member clubs.

USA Curling Club Poster

Printed annually; club poster can be used to promote club events and hung throughout the community or just at the club.