

Brushing

INTRODUCTION

Brushing is an important aspect of the game of curling. Too often curlers spend most or all of their practice time delivering stones and spend very little time perfecting their brushing techniques.

Effective brushing enables the stone to maintain its momentum longer than it would have had it not been brushed thus allowing the stone to travel further. Since the amount the stone curls is dependent on time, a brushed stone will not have as much time to curl and, as a result, the stone will travel straighter.

LEARNING PROGRESSION

Brushing is a skill that should be developed in specific segments:

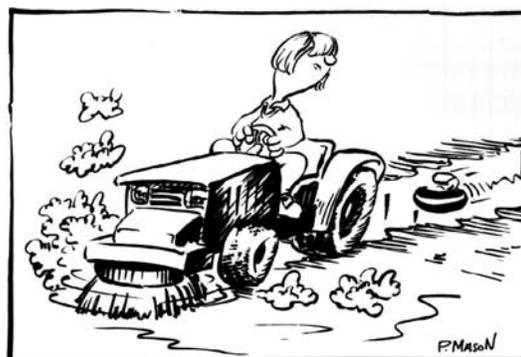
- Brushing effectiveness.
- Equipment and its care.
- Stance.
- Grip.
- Footwork.
- Brushing action.

BRUSHING EFFECTIVENESS

There have been many theories regarding the effectiveness of brushing and what it actually does. Brushing reduces the friction between the stone and the ice surface in three ways:

1. Smoothing the pebble.
2. Removing frost and debris.
3. Causing the pebble to melt briefly to create a thin film of moisture that acts as a lubricant between the ice and the stone.

To become an effective brusher, the curler must develop endurance, brush head speed, downward pressure on the brush head, weight judgement skills and the ability



WITH THE RIGHT TECHNIQUE ALL CURLERS
CAN BE GOOD SWEEPERS

to communicate the weight to the skip or vice skip in the house.

EQUIPMENT

In order to develop an effective style of footwork that can be used to brush on both sides of the stone, the use of grippers/anti sliders on both feet is highly recommended. A slip-on gripper is placed on the sliding shoe when the curler is not delivering.

Grippers should be inspected prior to each and every game, to ensure that they are in a suitable condition. Any equipment that comes in contact with the ice surface must not cause any damage to the ice surface or leave debris on the ice surface. Grippers are generally made of a soft crepe-like rubber or a pebbled type of rubber. Grippers made of a pebbled type of rubber eventually tend to shed small pieces of rubber as they become worn. Examine your gripper to ensure that it is not shedding. Grippers should be washed regularly on the inside and the outside with soap and water to remove loose debris and dirt buildup.

There are many types of brushes on the market today. Brushes may be made of hog hair, horse hair or a fabric covered brush

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Figure 3-1

head. The brush heads come in a variety of sizes and shapes, some with a fixed angle between the shaft of the brush and some with a flexible or offset angle (figure 3-1). New curlers are encouraged to try a variety of different brushes to determine which brush “feels” right for them.

Regardless of the type of brush that the curler selects, the brush must be cared for. Hair brushes should be inspected after every shot that involved brushing. This is done simply by rubbing their hand across the bristles to remove any frost or debris from the brush. A quick glance will also allow the curler to inspect the brush for loose hairs – those that appear to have “grown” since the last time that it was checked. These long hairs should be pulled out and deposited in a refuse container, not on the ice. Periodically, the curler should check to see if the adhesive holding the bristles in place is still in good condition. After a period of time, the glue may break down, allowing hairs to fall out, potentially causing the stone to slow down or travel off line.

Synthetic brushes need to be cleaned on a regular basis. Between shots the brush head is scrubbed with a small brush similar to a nail brush. This will help to remove any loose debris that has collected on the surface. Do this over a refuse container.

Between games, when the brush head has dried, the head may be vacuumed. This will remove dust that has accumulated in the brush head. When the surface of the head

is dirty, it can be washed. Spray a small amount of fabric cleanser on the fabric head, add water and scrub. It may take twenty-four hours for the head to dry completely after it has been washed.



Figure 3-2

When the fabric no longer makes an audible scratching noise as it scrubs the ice surface, it is time to replace the brush head.

STANCE

Stand beside the path of the stone. Position your feet so that they are shoulder width apart, parallel to the center line (path of the stone). (Figure 3-2) Bend your knees so that your weight is on the balls of your feet. The heels may be raised slightly off the ice. This stance position will permit you to move efficiently down the ice and ensure that you have a clear line of vision toward the target and your skip or vice skip. A clear line of vision enables the brushers to see stationary stones and is beneficial for weight judgement and communication.



Figure 3-3

GRIP

Place the brush handle across the front of your body. Grip the handle with both hands, dividing the handle of the brush into thirds. Position the hands so that the hand closest to the stone is approximately one third of the way up the handle from the brush head. This hand is the bottom hand and is in a palm down position. Place the top hand a further one-third of the way up the handle, palm up. (Figure 3-3)

Hold the top part of the handle against the rib cage with the upper part of the arm. Lean forward and place the brush head on the ice. Transfer some body weight onto the brush head by lifting the heels slightly off the ice. The bottom arm should be relatively straight. Remember the weight is on the balls of the feet.

FOOTWORK

Bend your knees slightly and place some body weight on the head of the brush. Take a step (with the outside foot) to initiate forward momentum down the sheet. From there you will use a gliding cross country ski style of footwork down the ice.

Both feet remain in contact with the ice at all times. Remember to remain on the balls of your feet to ensure that the upper body weight remains on the brush head.

ALTERNATE FOOTWORK METHOD

Curlers are strongly encouraged to use double grippers for footwork. If this is not possible due to the lack of a second gripper, you may need to learn a push-glide motion to propel yourself down the ice. With this type of footwork, the new curler will only be able to brush from one side of the stone. (Fig 3-4)

The side of the stone you brush on will be determined by the sliding foot. If your slider is on your left foot, then you must brush on the left side of the stone.

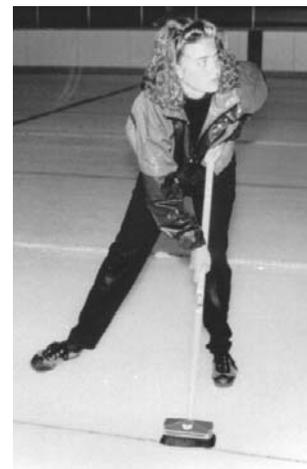


Figure 3-4

Position your hips at a 45 degree angle to the path of the stone. Your feet should be slightly more than shoulder width apart. Lean forward so that most of your body weight is on your sliding foot, leaving the gripper foot free to provide momentum. Simply push with the gripper foot, slide on the sliding foot and brush in front of the stone. When more speed is required to keep up with the stone, bring the gripper foot up to the sliding foot and extend the back leg to produce momentum.

BRUSHING ACTION

Apply as much downward pressure as possible through your lower arm onto the brush head. Implement a small push-pull action with your top hand/arm onto the brush handle. Develop a series of short (6 inch / 15 cm) rapid strokes to brush/scrub the path of the stone.

BRUSHING DRILLS

The objective of the on-ice drills is to develop confidence with the stance, grip, footwork and brushing action on both sides of the stone. The objective will be accomplished by the following drill procedures.

**DRILL #1 – Footwork
(no brushing yet)**

- Position yourself on the left of the center line facing down the sheet.
- Assume the correct stance and the correct grip on the brush handle.



Figure 3-5

- Place the brush head on the ice on the center line. (Figure 3-5)
- Implement footwork action without brushing.
- Travel slowly with the cross-country ski style of footwork. Gradually increase the travel speed.
- Repeat the drill on the right side of the center line. (Figure 3-6)
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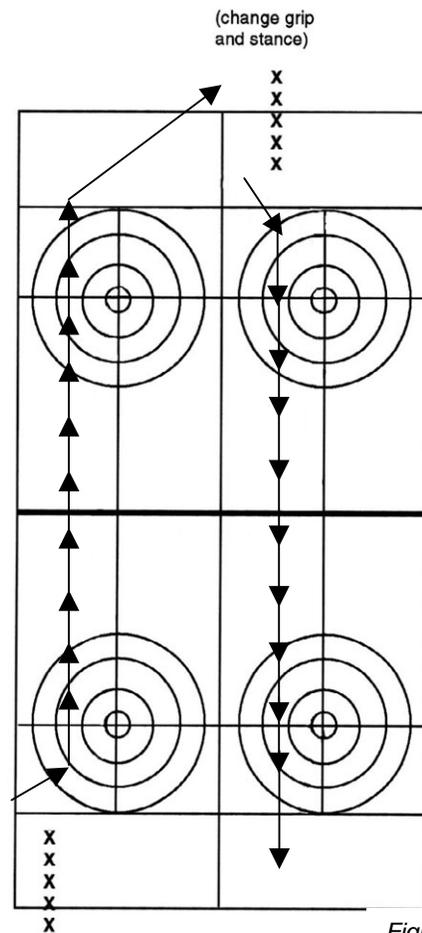


Figure 3-6

Curlers line up behind the tee line at the home end. When the first curler has moved 10 to 15 feet, the next curler can begin to move.

The footwork is identical from both the right side and the left side. Remember the brush generally goes across the front of the body.

**DRILL #2 – Stationary Brushing
(no footwork motion)**

- Position yourself to the left of the center line.
- Hold the top part of the handle tightly against your body with your upper arm.
- Apply downward pressure through the lower arm onto the brush head.
- Apply a slow back and forth motion with the top hand.
- Vary the speed on the strokes; slow/medium/fast.
- Repeat the drill positioned to the right of the center line.

DRILL #3 – Footwork and Brushing

When you have practiced stance, footwork and stationary brushing as individual drills, it is time to combine footwork and brushing. Using the same format as the footwork drill, move along the ice on the left side of the stone and then perform the mirror image of the drill from the right side.

- Position yourself to the left of the center line.
- Practice slow stationary scrubbing.
- Incorporate slow cross-country ski footwork.
- Increase/vary travel speeds for draws and takeouts.
- At the far end of the sheet move to the right side of the center line and repeat the drill from the other side.

DRILL #4 – Add Stones

It's time to incorporate the stone into the practice.



Figure 3-7

- Repeat Drill #3 using a stone. The curlers work in pairs. One curler pushes the stone slowly down the ice with a brush while their partner brushes. Gradually increase the speed of the stone so that a more realistic brushing action is experienced. The partner can

help to monitor the brusher's brushing action – stroke length. When the stone has traveled the length of the sheet of ice, repeat the drill reversing the positions of brusher and pusher. Repeat drill on the opposite side of the stone.

- The next step is to arrange the curlers into groups of three. One curler pushes the stone, one brusher brushes from the left side and one brusher brushes from the right side. (Figure 3-7)

Right from the beginning the curler is encouraged to learn to brush from both sides of the stone. Footwork is easier when the two brushers are on opposite sides of the stone. From a safety point of view, brushers on opposite sides is much preferable. There is less chance that one brusher will trip the other brusher. The closer the two brushes are to the stone, the more effective they will be. It is easier to get the brushes close together when they are on opposite sides of the stone.

- Repeat the drill with a curler delivering stones rather than pushing the stone. (Figure 3-8)



Figure 3-8

The curler brushing next to the stone is referred to as the inside brusher. The inside brusher has the main responsibility of judging the traveling speed (weight) of the stone, and to do so must consistently scan the distance from the stone to the final destination. The inside brusher should position their brush head close to the stone. This allows the outside brusher to also

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move in close. The outside brusher must observe the path of the stone and be cautious not to interfere with the inside brusher. The outside brusher will assist the inside brusher in judging the speed of the stone.

When the two brushers are waiting to commence brushing, they should stand well to the side and position themselves between the back line and the tee line. As the thrower begins the forward motion, both brushers begin to move forward, slightly ahead of the player delivering the stone, so both may begin brushing as soon as the stone is released. Both brushers must be sure that they brush directly in front of the stone at all times.

BRUSHING TIPS

- Practice brushing on both sides.
- Be prepared to brush from the hog to the tee line and beyond if necessary.
- Follow all stones to their conclusion. Don't give up on them part way down the ice!
- Know what shot is being called to understand what weight is wanted.
- Develop good communication with the skip. Let the skip know what weight was delivered.
- Prior to every shot, check the intended path of the stone. Remove all visible debris.
- The inside brusher should brush as close as possible to the stone. The outside brusher should brush as close as possible to the inside brusher.
- Brush all shots lightly to keep the path clean.
- Check brushes after each shot. Ensure that they have not accumulated debris. Deposit debris in the refuse container, not on the ice.
- As you brush down the ice, remember to breathe normally. Do not hold your breath.
- Alternate your vision from the stone to the far end and continually judge and rejudge the weight.

- The brushers are responsible for judging the weight of the delivered stone. The skip/vice skip is responsible for judging the line or path of the stone. Communication between the brushers and skip is vital.



USE OF THE BRUSH HAS MEANT
ADDED PRACTICE IN DAILY
SITUATIONS



WEIGHT JUDGEMENT

Many times throughout the course of a curling game, the question is asked “What is the weight?”

The person asking the question may be the thrower. The thrower needs assistance to determine how hard to deliver the stone. In many instances, the person asking may be the skip. The skip needs to know the speed of the stone to determine if the delivered stone will finish in the desired location. Weight judgement skills and the ability to communicate this knowledge are a primary responsibility of the lead and second. Their judgement must include knowing the speed of both draw shots and takeouts. Excellent weight judgement skills are critical to the success of teams playing a finesse game.

Curlers need to develop their observation skills and memory of various paths on the sheet of ice.

Observations include:

- How many stones have been played in the area?
- Has the pebble been worn?
- Is there frost present?
- Is the stone moving from an area of quick ice into an area of slower ice?
- How much impact does sweeping have?

- Has the speed of the ice changed from the previous end?

The lead and second are the primary judges of weight because they stand near the hog line at the throwing end of the ice, and therefore are in a position to see the released weight of every stone. There are several ways of reading weight: using a stopwatch, comparing the weight with your home club draw weight and comparing the weight with a previous game’s weight.

Many brushers use a stopwatch to aid their judgement. Curlers time a variety of aspects of the game but we must remember that the stopwatch is a tool to assist them to judge.

Timing Draw Shots

Many curlers time draw shots to give the thrower a good indication of the weight/speed needed to deliver a specific draw shot. Timing the draw shot would assist the thrower with:

- comparing the speed to well known ice;
- identifying any changes in ice conditions; and
- identifying paths that may be fast or slow.

There are a variety of systems used to time draws:

1. Hog line at the throwing end to stop in the house.
2. Back line at throwing end to stop in the house.
3. Hog line to hog line.
4. Back line at throwing end to hog line at throwing end.

Once the curler knows the time it takes a draw shot to travel over a specific distance interval, they can use this information to deliver a stone of the same speed. Curlers must practice delivering stones that take specific lengths of time to travel the length of the sheet. The key word here is “practice”. In order for the information to be useful, the curler must practice delivering stones of different weights or speeds.

If a draw shot requires substantial speed and therefore a short period of time to travel

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down the ice, it requires a relatively significant amount of force. Therefore the ice is “slow” or “heavy”. If a stone takes a longer period of time to travel the same distance, it requires less force and is moving slowly. The ice is, therefore, relatively “quick” or “fast”.

During a practice, the team may determine that it takes a stone 23 seconds to travel from hog line to tee line. If they were to practice for ice that is 24 seconds, they would practice delivering stones that would stop just short of the house. Each extra second of time is equal to about 6 to 8 feet of distance. Practicing on 23 second ice, for 25 second ice is a matter of delivering draws which stop 12 feet (plus) short of the house.

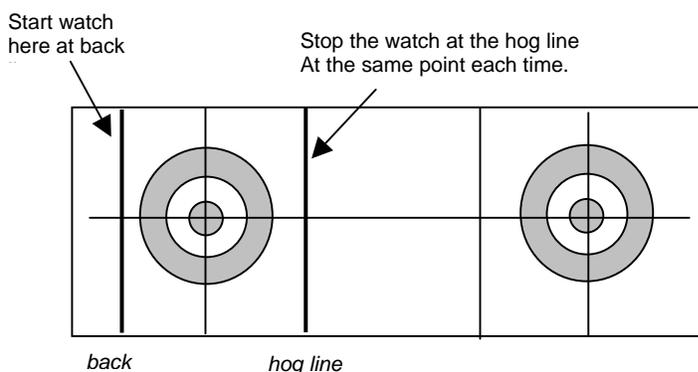
Knowledge of upcoming ice conditions is very useful for practice planning. Call ahead to competition sites and ask the ice technician what interval time is required for a draw shot to stop on the tee line. (Make sure that you know where he is starting the stop watch – back line, tee line or hog line.)

Timing from hog line at the throwing end to stop in the house assists the thrower prior to delivery of a draw.

Interval Timing for Sweepers – Option A

Interval timing was developed to assist brushers to evaluate where the delivered draw shot would stop. This type of timing is useful for the stone that is currently in motion.

- START the stopwatch at the first back line.
- STOP the watch at the first hog line.
- Note the time on the stopwatch.
- Observe where the stone comes to rest.



For Example: The first stone is delivered at a time of 3.5 seconds and it comes to rest in the top of the 12 foot circle. The next stone delivered down the same path is timed at 3.6 seconds. The brushers would expect that the second stone would stop short of the rings.

The longer a stone takes to travel from the back line to the hog line, the slower it is thrown and hence the momentum is decreased.

Stopwatch timing, using interval times, is a technique that helps the brushers develop their skill in judging the delivered weight. The brushers must constantly observe the stone as it travels down the ice and re-evaluate their initial judgement.

Many factors may influence the accuracy of the interval method of judging weight.

- Curlers who slide out slowly and then give a push to the stone will have different times than curlers who deliver with only a small amount of fine tuning mechanism.
- The running surface of the stones may vary and as a result the stones may vary in speed and curl.
- The number of stones delivered down a particular path in the sheet of ice will influence the speed of ice in that path.
- Human error may occur in stopping and starting the stopwatch. (It is advisable that the same person on a team does all the interval timing. Some curlers may start and stop the watch early or late. A difference of 1/10 of a second is significant. The error is not important as long as the error is consistent. If the same curler times all their

teammates' shots, the error will be constant.)

Note: When timing stones, use your first finger to stop and start the watch. The finger is more accurate than the thumb.

The second brusher should be observing the delivery of the stone. Did the curler add a push at the end or pull back at release? This brusher must watch carefully as the stone is released. The timer will confirm or deny the initial judgement. As the stone travels down the ice, the two brushers need to constantly fluctuate their line of sight from the stone to the house and evaluate the final destination of the shot.

Interval Timing – Option B

This particular interval timing system requires the use of a stopwatch with a count down function.

The countdown stopwatch approach is generally utilized between the back line and the hog line at the delivering end of play.

The stopwatch is preset to an established number of seconds that reflect the amount of time it takes (generally 3.4 to 3.6 seconds) for a successful draw shot to cover the distance from the back line to the near hog line.

The countdown function on the stopwatch is started when the delivered stone reaches the back line. The stopwatch will make a beeping noise when the preset time has elapsed. The sweepers observe where the released stone is relative to the hog line when they hear the beeping noise and, based on that assessment, determine whether the correct weight has been provided.

Using the hog line as the reference point, sweepers are able to quickly judge the speed of the stone at release and, therefore, if they should begin to sweep or just clean and, of course, immediately communicate their assessment to the skip.

The stone's proximity to the reference point (hog line) at release will be impacted by the specific speed of the ice on the path the stone is about to follow. We can expect the

ice to vary somewhat as a game progresses and as the broom is moved from a centre ice to an outside ice position.

Timing Takeouts

Competitive teams select three or four distinct takeout weights to use. These specific weights must be communicated, during a game, to each team member and must be understood by each team member.

To promote consistency in weights for takeouts, a team may use timing. Timing takeouts is usually used in practice situations. We can all see what a skip means by hack weight – enough weight for the stone to reach the hack. What does the skip mean by normal, regular, control or peel?

During practices, takeout weights are predetermined so that everybody on the team understands what weight is requested.

When working on a set team weight for a specific weight, for example "normal":

- Team members deliver takeouts.
- Time shot from hog line to tee line.
- Determine a comfortable time for all team members.
- Identify the time (for ex.: 11 seconds).
- All team members attempt to deliver stones with this speed (within 1/2 second of the designated time.)
Developing a consistent speed assists in making more shots.

The drill is repeated for other weights (control, peel). Takeout weights should be at least two seconds apart.

Shots delivered with the requested weight present fewer problems for the skip when he is calling line. Shots that do vary from the designated weight may present problems. Communication of the exact weight delivered is vital.

Weight judgement and communication of the exact delivered weight is vital for success. Brushers must practice observing and determining the weight of the delivered stone.

READING THE ICE

Each team member must know the layout or shape of the sheet of ice. Even though the skip takes prime responsibility for reading the ice, each team member must observe each delivered shot. On occasion, skips need help to remember what happened at a particular time or at a specific spot on the ice. All team members must therefore watch all shots that are thrown (their own and their opponents') in case the skip needs assistance. Brushers must have knowledge of how the ice is reacting. Brushers need to be able to anticipate where the break (sudden curl) occurs on shots. Brushers need to know where the pebble has worn down. A draw that travels straight down the "well used" middle section of the sheet might require less weight than a draw that initially travels down the middle and then curls over the unused ice on the outside of the sheet.

On the other hand, a draw down the unused, outside section of the sheet in the early ends usually requires much more weight than one that travels down the used or broken-in centre section. A draw shot that has a pronounced curl needs more weight than a straight running draw (assuming uniform ice) because a curling draw shot has a slightly longer path and digs into the ice more as it takes on its curl than a straight running draw. The brushers must know the path of the stone. Brushers must know whether the stone curls quickly from the keener, used ice onto the heavier, pebbled side ice so that they can judge and brush the ice. Brushers must be able to judge when the ice has gone flat (the pebble has been worn down too much.)

Experienced brushers generally display good anticipation when brushing. If a draw shot is expected to curl from fast ice to heavier ice, it is often necessary to begin brushing before the curl begins. Furthermore, on many takeouts, brushing must begin before the anticipated curling occurs. Inexperienced brushers too often do

not use their brushes until the stone begins to curl quickly – and then it may be too late. The ice usually changes during the game. Knowledgeable brushers recognize when this change occurs and use their skills to adjust to the new conditions.

BRUSHING COMMUNICATION

Good communication during brushing may help a team succeed that does not deliver as well as another. The skip's ability to communicate the intended shot clearly to each team member ensures that each curler is aware of the team's primary objective. It is important for all four players to take on an active role in communication.

Signals

Verbal instructions can be used very effectively in some situations. However, in most cases, it is difficult to hear instructions that are shouted from one end of the sheet to the other. An appropriate solution is to develop a set of hand signals to signify specific weights (touch shoulder – throw peel weight, touch hip – throw control weight). Each member of the team can see exactly what weight is requested and the appropriate decisions can be made by the thrower and the brushers.

It is a good practice to have the thrower and the brushers return the signal to the skip. This return signal tells the skip that all team members know exactly what weight is being requested. Giving the weight signal back to the skip assists the other team members to focus on the desired weight. At release, the outside brusher should quickly signal the delivered speed of the stone. The weight signal improves communication and increases the chance for a team's success.

Before the Shot

The skip must communicate to the thrower and the brushers the specific shot and weight desired. The specific weight should be signaled and the signal returned by the teammates. The brushers, knowing both the

intended shot and the required weight, must visualize the intended path of the stone. It is very beneficial if the team knows what Plan B (back-up plan) is as well. Knowing the game plan is a must. The brushers and thrower must know: what do we want, what are we prepared to accept and what is not acceptable. If we are not sure of the exact weight, is it better to be a little light or a little on the heavy side?

During the Shot

Once the thrower has initiated the delivery, both brushers move down the ice with the stone. On draw shots, one of the brushers may be timing the back line to hog line interval. The other brusher is observing the slide and release to judge the speed of the delivered stone. Immediately at release, one of the brushers will inform the skip of the speed. The skip will use a short command to inform the brushers of any off-line delivery (wide or narrow). Communication should continue as the stone moves down the sheet. Brushers must always be prepared to brush until all stones have stopped. Brushers must continually move their line of sight between the stone and the intended target.

Shots requiring judgment for weight and line are the most challenging. The person in the circles usually has control. Such shots might go as follows:

A come-around hit is being played; as the stone is released, the skip calls "Sweep" (the stone is narrow). The brushers respond with "Control weight". If the skip continues to call "sweep" the brushers identify that the call is for line.

- A come-around draw is released and both brushers immediately start brushing. The skip knows the stone has to curl a considerable amount and for that reason calls "Whoa" (the stone is wide). The brushers originally started brushing because they knew the stone was light and therefore reply "not enough weight". The skip must then decide whether to continue brushing and get the stone into the circles without

cover or to not brush and allow the stone to curl and probably stop short.

Many inexperienced skips and vice-skips tend to call brushing too late. Curlers should not wait to call brushing; rather, they should develop the habit of calling at the first indication of need.

After the Shot

The team must communicate upon completion of the shot. The thrower should recognize the efforts of the brushers. "Well done, thanks." The skip should congratulate both thrower and brushers if the comment is appropriate or say "My error" if it applies. Positive communication after each shot makes each member feel as if he played an important role in the execution of the shot.

On the other hand, if a shot was missed, a simple "Tough luck, sorry" should be conveyed to the appropriate members. The reason for the miss should be determined and expressed by those who erred so that if the same shot is called later, everyone will know the adjustment required. Negative comments should not be uttered at any time unless they are constructive criticisms.

RESPONSIBILITIES DURING BRUSHING

The thrower, brushers and skip or vice-skip have distinct responsibilities during brushing.

Thrower

When determining whether or not a stone requires brushing, the team should use the thrower's opinion as an initial indication of execution. Curlers with experience usually know at the time of release whether they have made an error, that is, turned the stone in, flipped it out, or thrown the wrong weight. In such cases, the thrower will offer advice to the brushers at release.

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Brushers

The primary function of the brushers is to judge the weight of the shots and to brush accordingly. Both brushers must function as a unit in judging weight. One may be the timer and the other judges by feel and observation. On open draws, the brushers have complete responsibility for brushing, but on line calls, direction on brushing comes from the person in the house.

Skip or Vice-Skip

On all shots on which line is a consideration, the acting skip has total control. The brushers advise him of the weight and he must believe their call and use that information to call the correct brushing for line. Teamwork is very important because many shots require both line and weight calls.

Hits and rolls and freezes demand precise teamwork. Line is vital, but calling line requires that weight be identified accurately. Any deviation of weight from the expected will cause the stone to take a path different from that which the skip expects. Thus, both the skip and the brushers must communicate well during the shot to achieve the desired result.

Guards are a difficult shot to execute perfectly: both line called by the skip and weight judged by the brushers are important. A joint effort is therefore necessary to produce the desired result. However, because the most critical factor on a guard is the line, the skip should have the final decision on this shot.

On tap-backs, come-arounds and draws, both weight and line are important but the skip should have the final say in calling because of the importance of the line call.



In conclusion, the skip makes the final decision about line and the brushers have primary responsibility for weight. In cases where an interaction of weight and line judgement is needed, good communication between the skip and brushers greatly increases the team's ability to produce excellent shots.