

Beyond the Basics of C4

Original by Bill Ackerman

Current version by Sue Curtis, April 2024

This is the third of three books about C4. The first covers calls, the second covers concepts, and the third contains in-depth discussions about a number of complex topics.

These books contain many examples, with a wide range of difficulty. Some of them represent examples that are commonly used, but others are included primarily to illustrate a particular technical point. These latter examples may be better as mental or checker-pushing exercises and less suitable for actual dances. The intention of the authors is to include appropriate comments with the more difficult examples.

Some C4 concepts have brief explanations in Book 2 and more complete (or more detailed) explanations in this book. In those cases, the explanations in Book 2 are intended to get dancers started on the simpler examples. Dancers who are new to those concepts and only want to get the basic idea may wish to read the Book 2 definitions first.

These books are now being maintained by Coop Bellini and Sue Curtis, who have been providing regular updates since June 2023. Many thanks to Bill Ackerman for creating these books and maintaining them for over 10 years. His work continues to benefit the entire community.

A summary of all updates can be found at the end of this document.

Table of Contents

1 Fractions and Parts	1	9 Single	56
Tree Structure of Parts	1	Additional Examples	61
Calls with Fractions but not Parts	3	10 3x1 / 1x3	62
Calls with Poorly-Defined Parts . .	4	Additional Examples	68
Re-evaluation	5	11 2x1 / 1x2	69
Parts of Concepts	6	12 4x0 / 0x4	71
Concepts with Undefined Parts . .	7	Epsilon Method	72
Stacking Meta-Concepts	8	History of Document Changes	75
2 Grand Working <direction>	10		
Starting from a 2x4	10		
Starting from a 1x8	14		
Additional Directions	16		
3 Multiple Formations Working <direction>	17		
Starting from a 4x4	18		
Starting from a 2x8	21		
Starting from a 1x16	22		
Triple Formations Working <direction>	22		
Additional Directions	23		
Multiple Diamonds Working <direction>	23		
4 Supercalls	25		
5 Expanded Supercalls (“It”)	27		
Catch It <N>	27		
Lines It Thru	28		
Checkpoint It by It	28		
6 Collisions	29		
7 Combining Offset Concepts and Phantom Concepts	34		
8 3x3 / 4x4 / NxN	39		
Selecting the Pairing	41		
Learning Typical Calls	44		
Additional Examples	55		

Chapter 1

Fractions and Parts

The use of fractions and parts is familiar to dancers starting somewhere between Mainstream and C1. At C4, it is useful to understand the nature of parts and fractions in a lot more detail.

Tree Structure of Parts

Many calls have a well-defined list of parts, but the individual parts can be further subdivided if desired. Let's start with the call "Catch Mix 3". By definition, this call has 3 parts:

1. Square Thru 3 to a Wave
2. Mix
3. Step and Fold

Some dancers want to split up the Square Thru into separate parts for each Pull By, but that ends up being confusing because the parts of Square Thru are not well-defined. Other dancers want to split up the Mix into two parts. That can be done, but that does not change the number of parts in the Catch call. Rather, the parts of Mix are treated as a "second level" in a "tree structure" (or outline) of parts:

1. Square Thru 3 to a Wave
2. Mix
 - (a) Centers Cross Run
 - (b) Centers Trade
3. Step and Fold

The Catch call still has 3 parts, and can be modified with the concepts Initially, Secondly, or Finally, "Secondly Tandem, Catch Mix 3" means that the entire Mix is done Tandem.

The fact that the middle part can be further split in half allow us to divide the entire Catch call in half:

- Square Thru 3 to a Wave; Centers Cross Run

This call has 2 parts at the top level. That means it is considered to have 2 parts, and it would normally be fractionalized into halves. Concepts such as Initially or Finally select one of the top level parts. In particular, Initially applies to the entire Reset 1/2, not just the 1/2 Zoom. “Initially Tandem Settle Back” is commonly used. Make sure you do the entire Reset 1/2 Tandem, not just the 1/2 Zoom.

Because the first part can be further divided in 2 parts, a fraction such as 1/4 can also be used. “First 1/4 Tandem Settle Back” would mean that only first 1/2 Zoom is Tandem. Some callers also use Initially recursively, with terminology such as “Initially Initially Tandem, Settle Back”. This is parsed as “Initially [Initially Tandem] Settle Back”. The “[Initially Tandem]” is applied to the Reset 1/2, so again, only the 1/2 Zoom is done Tandem. Similarly, “Initially Finally Tandem, Settle Back” means that the Hinge part of the Reset 1/2 is done Tandem.

You may also encounter the term “flatten”. This is not actually called but can be used in conversation to describe specific situations. Flatten means that all the individual parts in the tree structure are listed in the order they are done but there is no hierarchy. For example, the call “Swing and Mix” is considered to have 3 parts (Swing, Centers Cross Run, Centers Trade) for historical reasons. It is *not* considered to have a tree structure where the first part is Swing and the second part is Mix, which can then be further subdivided. You could say that Swing and Mix is flattened.

Calls with Fractions but not Parts

So far we have focused on calls that contain well-defined parts. It is also possible to use some fractions on calls that do not have parts defined at all.

Here are some examples.

- Wheel Around. This is a 180 degree turning motion which can be divided into halves, but it is not considered to have parts.
- Swing, or Turn 1/2 By the Right/Left, or related calls. These are also turning motions that can be divided in half (producing 1/4 Turns) but are not considered to have separate parts.
- Cast Off 3/4, or Turn 3/4 By the Right/Left, or related calls. These are turning motions that can be divided in thirds (producing 1/4 Turns) but are not considered to have separate parts.
- Half Sashay. This is a 180 degree motion where dancers exchange places. In C4 terminology, the first half is a Single Shuffle and the second half is a Mesh. These are not considered to be separate parts.
- Pass Thru, or Right Pull By. These calls have a path with a clear halfway point. The first half is Touch and the second half is Step Thru. These are not considered to be separate parts.
- Circulate. We commonly do 1/2 Circulate, but Circulate does not have parts. The second half of Circulate can be tricky, but is usually some kind of Drop In, Grand Drop In, or Concentric Drop In.
- Dosado. This is a circular motion and could be divided into halves or thirds or quarters, but is not considered to have parts.
- Scoot Back. The first half is a Follow Thru. The second half is complicated because there are 2 types of Scoot Backs, one from a Box and one from a 1/4 Tag. The second half of the Box-type Scoot Back starts in two-faced lines and is an Any Shoulder 1/2 Tag (or Couples Twosome Hinge). The second half of the 1/4 Tag type Scoot Back begins in waves and is equivalent to

Hinge and Extend. Again, these are not considered to be parts but are recognized as halfway points.

- Counter Rotate. Some calls contain parts described as Counter Rotate the Diamond 1/2. This action can be divided into halves (Counter Rotate the Diamond 1/4 for each), but is not considered to have parts.

It is important to recognize that these calls can be fractionalized (based on a portion of the underlying motion) but they are not considered to have “parts”. They can be used with concepts that require fractionalization (Sandwich, “Interrupt after 1/2”, or First/Last Half <concept>). They cannot be used with concepts that require dividing the call into parts (such as Initially/Finally or Interlace).

Calls with Poorly-Defined Parts

There are a few calls that seem to have parts, but the parts are written in such a way that later parts rely on information that must be gathered from a preceding part. Consider the call Reverse the Pass:

- Leads Trade
- Pass Thru
- Original Trailers Trade

The 3 parts are listed, and we can clearly do 1/3 or 2/3 of this call. We can even do 1/2 of the call, because the Pass Thru can be split in 1/2. However, the third part refers to information gained in the first part. What would it mean to do “Like a Reverse the Pass” (the last part only)? Who would do the final Trade?

For a call to have “well-defined parts”, each part must be able to stand on its own and not rely on a designator or position from an earlier part of that call. Calls like Reverse the Pass can be considered to have poorly-defined parts. They can still be used with some fractions, but it is generally better to avoid using them with concepts such as Initially/Finally that expect well-defined parts and re-evaluation between parts.

Other calls in this category include:

- Any form of Rotate or Single Rotate where it is necessary to remember whether you started in Lines or Columns.
- Any form of Bounce or Patch referencing a position in the original setup, such as Bounce the Centers. Designators that do not depend on the original setup, such as “Bounce the Boys” or “Bounce the Girls” avoid the problem.
- Beau/Belle Tie, which require you to do parts 2 and 3 while remembering whether you were a Beau or Belle before part 1. Designators that do not depend on the original setup, such as “Everyone Tie”, avoid the problem.

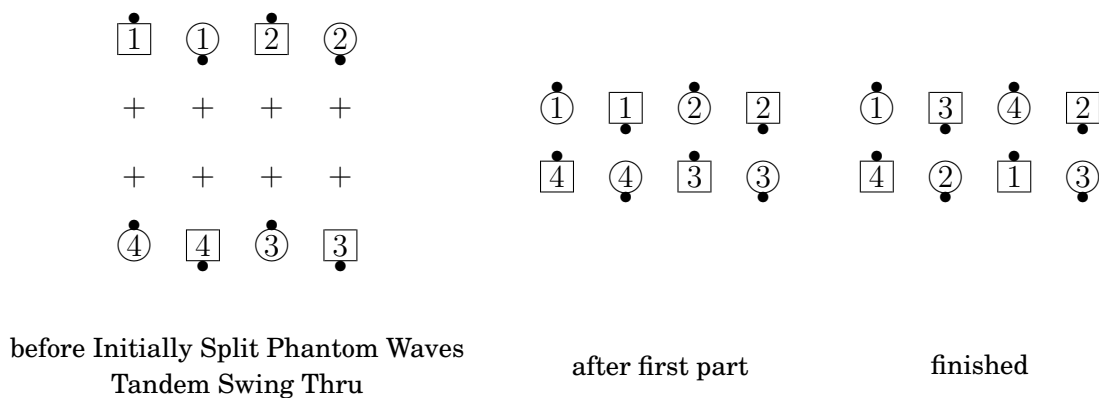
Note: Parts are still considered well-defined if they contain a call such as “Roll”, even though it relies on flow information from the preceding part or call. A key distinction is that Roll can be used independently of the original call and take its flow information from elsewhere. For example,

consider the call “Like a Sidetrack”. This simply means to do a Roll, using the Roll direction from whatever call you recently did. It does not mean to figure out which way you would have Rolled if you had done a Sidetrack. So, in that sense, the Roll can “stand on its own” in terms of being separable from the original call.

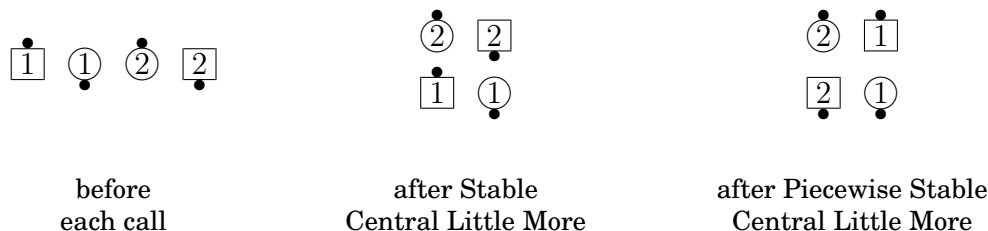
Re-evaluation

When a call or concept/call combination is broken up with the use of meta-concepts, interruptions, or concepts such as Sandwich or Interlace, we say that the dancers must “re-evaluate” the resulting setup. Sometimes this simply means re-consider whether you are a Center or End (or Leader/Trailer, Beau/Belle, as needed by the call). For example, consider the call “Sandwich Trip the Set around Slimdown”. You might start the Trip the Set as an End, and then find yourself in the Center for the second half of Trip the Set. You must re-evaluate your position as being in the Center, and do the Centers’ part of the second half of Trip the Set. Do not try to remember where you started the call; just apply the definition from your new position.

Another thing you might need to re-evaluate is whom you are paired with for Tandem/As Couples calls. Consider the call “Initially Split Phantom Waves, Tandem Swing Thru”. Note that this is parsed as “Initially [Split Phantom Waves] [Tandem Swing Thru]”, so the Tandem applies throughout. First, do Split Phantom Waves, Tandem 1/2 by the Right. Then you need to do a Tandem 1/2 by the Left, but Tandem with whom? The way this is typically used, it will end in normal Parallel Waves after the Split Phantom portion. Then, re-evaluate your position and find a new Tandem person for the 1/2 by the Left.



There are other situations where some dancers may be tempted to re-evaluate, but that is not correct. Consider the call “Stable, Central Little More”. Some dancers are tempted to do “Stable Step and Fold” followed by “Stable Box Circulate”. This is actually “Piecewise Stable Step and Fold”, which is different. If Piecewise is not specified, then Stable is applied to the entire Central Little More as one unit, without re-evaluation.



Parts of Concepts

So far we have only talked about the parts of calls. Some concepts by definition impose a set of parts on the call/concept combination, or otherwise change the number of parts.

The parts of concepts only matter when concepts are stacked together, with something like “Initially Stable, Crazy Mix”. Then you need to know the parts of Crazy Mix in order to determine which parts are done Stable.

Below are some examples:

- Crazy. Every (full) Crazy call has 4 parts, regardless of the parts of the base call.
- N/4 Crazy. Every N/4 Crazy call has N parts, regardless of the parts of the base call.
- Echo. Echo and Reverse Echo have 2 parts, regardless of the parts of the underlying call, and regardless of the concept applied. For example, Echo Crazy Swing Thru has 2 parts: Crazy Swing Thru, and (normal) Swing Thru. Double Echo and Reverse Double Echo have 3 parts. Triple Echo and Reverse Triple Echo have 4 parts.
- The meta-concepts referring to individual parts (Initially, Finally, Secondly, Oddly, Piecewise, and others) always preserve the parts of the base call. For example, “Initially Crazy Mix” has 2 parts: Crazy Centers Cross Run, and (normal) Centers Trade. “Secondly Omit Step Lively” still has 3 parts even though one of them is not actually executed.
- Interlace has the sum of the parts of the base calls. “Interlace Crazy Circulate with The Difference” has 7 parts.
- Sandwich has 3 parts: 1/2 of the main call, the entire interruption call, and the last 1/2 of the main call. This is true even if the main call does not have parts.
- Twice (or N Times). This has 2 parts (or N parts, for N Times).
- Finish. If the base call has N parts, this has N-1 parts. If Finish is applied to a call where the first part is defined but later parts are not, then the parts of Finish are not defined.
- Fractionalization. As long as the fractionalization is aligned on part boundaries, such as 3/4 Change the Centers, then the number of parts is simply the number of parts being included (3 in this case). If the fractionalization is not aligned on part boundaries (such as 5/6 Hot Foot Spin), then the parts are generally not used (perhaps because the fraction would tend to mislead dancers as to the number of parts).
- Improper fractions, such as 1 1/2. These are generally treated the same as proper fractions; the calls “Swing Thru 1 1/2” or “1 1/2, Swing Thru” have 3 parts. These calls are not frequently used with other concepts because the wording that comes naturally to callers can be interpreted multiple ways. In particular, the call “Initially Tandem Swing Thru 1 1/2” can be interpreted two ways:

- Initially Tandem [Swing Thru 1 1/2], or equivalently, Initially Tandem, 1 1/2, Swing Thru. This applies the concept “Initially Tandem” to the 3-part call “Swing Thru 1 1/2”. Only the first Right-Hand Turn is done Tandem.
- [Initially Tandem Swing Thru] 1 1/2, or equivalently “1 1/2, Initially Tandem Swing Thru”. This applies the concept “1 1/2” to the 2-part call “Initially Tandem Swing Thru”. Both Right-Hand Turns are done Tandem.

Callers who use “Initially Tandem Swing Thru 1 1/2” usually want the first interpretation. Some callers do make an effort to put the “1 1/2” in a location that makes the call unambiguous.

- Concepts that add an additional action, such as Reflected, Revert, or Paranoid. These are controversial. Some people think they add a part, and others think the new action is combined with the preceding action. However, explicitly using the “Add” concept with a meta-concept, such as “Initially Add”, follows the rules for Initially/Finally above and does not add a part.

To understand the implications of these concepts having parts, consider the call “Initially Stable, Initially Crazy Mix”. Parse this as “Initially [Stable], [Initially Crazy Mix]”. First we need to know the parts of “Initially Crazy Mix”. As specified in the rules for Initially/Finally above, this has the same number of parts as Mix:

1. Crazy Centers Cross Run
2. (normal) Centers Trade

When “Initially Stable” is applied to that call, the Stable concept applies to the entire first part, that is, the entire Crazy Centers Cross Run. So the full call would be “Stable, Crazy Centers Cross Run” and then (normal) Centers Trade.

Concepts with Undefined Parts

The next question is whether all concepts not listed in the previous section automatically retain the same number of parts as the base call. Some concepts such as As Couples or Tandem seem clear; for example, Tandem Swing Thru has 2 parts. However, that approach does not work for all concepts.

Consider the call “Checker Board Mix”. Does this concept/call combination have parts? If it does, we should be able to write them down in the same format we have used earlier, with two independent calls listed on line 1 and line 2. However, “Checker Board Mix” is most definitely *not* “Checker Board Centers Cross Run” followed by “Checker Board Centers Trade”. That would be called “Piecewise Checker Board”. It’s also not “Checker Board Centers Cross Run” followed by a normal Centers Trade. That would be called “Initially Checker Board”. As we can’t write down the parts of Checker Board Mix, we can only conclude it does not have well-defined parts.

Note that this does *not* mean that “Initially Checker Board, Mix” is invalid. That call only requires the Mix to have well-defined parts, which it does. However, it does mean that a call such as “Initially Stable, Checker Board Mix” is invalid. That call would require “Checker Board Mix” to have well-defined parts, which it does not.

In contrast to the invalid “Initially Stable, Checker Board Mix” above, the following calls are all valid:

- Checker Board, Initially Stable, Mix

- Initially Checker Board, Initially Stable, Mix
- Initially Stable, Initially Checker Board, Mix

Historically, some authors have taken an alternative view that whenever Initially or Finally is applied, Piecewise is automatically inserted, as part of the “re-evaluation” process. However, that view leads to a lot of confusion and counter-intuitive examples on concepts such as Checker Board that imply some additional action that is not part of the specified call. A better approach is for callers to always apply appropriate meta-concepts such as Initially or Piecewise that better describe what they want.

Similar problems arise on Concentric or Cross Concentric. A call such as “Initially Stable, Cross Concentric Recoil” leaves dancers confused about when, and how many times, they are supposed to do the Cross Concentric adjustment. The core problem is that the parts of a Cross Concentric call are not well-defined. Any of the following would be better calls:

- Cross Concentric, Initially Stable Recoil
- Initially Stable, Initially Cross Concentric Recoil
- Initially Stable, Finally Cross Concentric Recoil
- Initially Stable, Piecewise Cross Concentric Recoil

These all avoid the parts of Cross Concentric by putting the concept first or by using it with a meta-concept.

Concentric (without Cross) is typically a less serious problem than Cross Concentric, but it is still usually better to avoid assumptions about the parts of a Concentric call. In particular, Concentric and Piecewise Concentric can produce different results, and it is not always clear what callers intend with examples like “Initially Stable, Concentric Recoil”. Combining a meta-concept with Concentric, as with the Cross Concentric examples above, makes the intention clear.

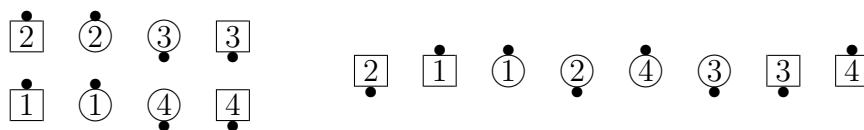
Stacking Meta-Concepts

In the earlier discussion of the tree structure of parts, we mentioned using a stacked combination of Initially/Finally with Settle Back. There aren’t a lot of similar examples that work well with calls alone (that is, without applying other concepts). However, many such examples can be created in combination with concepts such as Echo or Crazy, and these can be quite difficult.

Consider the call “Initially Finally Echo Concentric Settle Back”. This is parsed as “Initially [Finally Echo Concentric] Settle Back”, so we need to use the parts of Settle Back:

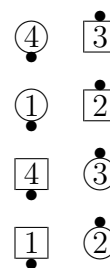
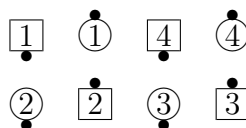
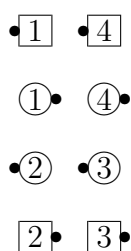
1. Reset 1/2
 - (a) 1/2 Zoom
 - (b) Hinge
2. Centers Cross Back; Ends O Circulate 2

First, note that “Finally Echo Concentric” must be applied to the first part of Settle Back (Reset 1/2). Then, note that “Echo Concentric” is applied to the last part of the first part (Hinge).



before Initially Finally
Echo Concentric
Settle Back

1/2 Zoom



Concentric Hinge

Hinge

finished

As another example, consider “Initially Finally Stable, Echo Tandem Mix”. This is parsed as “Initially [Finally Stable], [Echo Tandem Mix]”, so we need to know the parts of Echo Tandem Mix:

1. Tandem Mix
 - (a) Tandem Centers Cross Run
 - (b) Tandem Centers Trade
2. (normal) Mix
 - (a) (normal) Centers Cross Run
 - (b) (normal) Centers Trade

“Initially [Finally Stable]” applies the Stable concept to the last part of the first part, that is the Tandem Centers Trade. Contrast that with “Finally Initially Stable, Echo Tandem Mix”. That would apply the Stable concept to the first part of the last part.

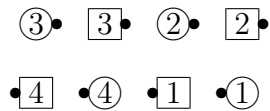
The examples given in this section are harder than what is typically called in practice. Examples such as “Initially Initially Tandem Settle Back” are used in practice, and many dancers have learned them over time as special cases. If you figure out the Echo combinations in this section, you will likely be well prepared for anything that is called in practice.

Chapter 2

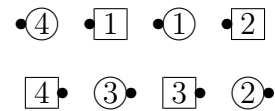
Grand Working <direction>

A brief explanation of Grand Working is given in Book 2. This section provides more details.

Consider the call Grand Cross Back:



before Grand Cross Back



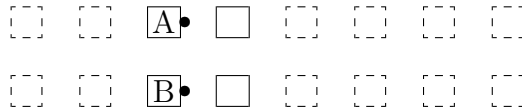
after

Six people do the diagonal pull-by. This is the “intuitively obvious” meaning of “Grand”. Grand Swing Thru also has an “intuitively obvious” meaning. The Grand Working <direction> concepts give a well-defined and general interpretation for these.

On a Grand Working call, everyone does a 4-person call in a 4-person setup made of two adjacent 2-person setups, put together in ways that might be complex. Normally, if Cross Back is called from columns, the 2x4 is split in the natural way. One way to look at this is that each 2-person miniwave is associated with the other miniwave on its own “split” side. But on a Grand Cross Back, two people (the head boys in the example above) work in the 2x2 box formed by associating their center miniwave with the other center miniwave. Grand Cross Back is the same as Grand Working Forward Cross Back. This means that everyone works in the box formed by their miniwave and the miniwave forward of them, if there is such a miniwave. If there are no spots in the setup in front of them, they work in the only way possible, which is split. This will be true of the side boys in the example above.

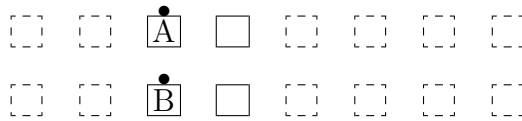
Starting from a 2x4

In general we could say that Grand Working Forward means this:



On Grand Working Forward, if you are person A or B,
do the call in the 4 solid spots.
(The person next to you doesn't have to be facing the same way as you.)

Grand Working Right means this:

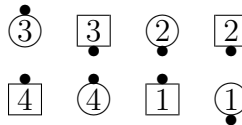


On Grand Working Right, if you are person A or B,
do the call in the 4 solid spots.

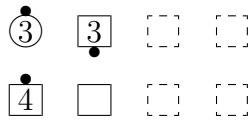
Grand Working Backward and Left mean the obvious thing.

In normal cases (assuming the caller didn't say something like "2x8 Matrix Grand Working Forward") there aren't as many spots as the above diagrams suggest. One only has to figure out whether to work on each side ("split") or in the center 4. Furthermore, the ends have no choice—they always work split. The centers have to use the given direction to decide whether to work with the other centers or with the adjacent outsides.

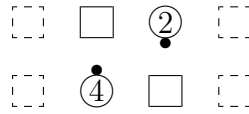
The thing that makes this concept (and the Multiple Formations Working <direction> concept) difficult is that the center subsetup and each split subsetup overlap by 50%. One has to get used to doing a call in the presence of people who are doing something apparently unrelated. It is of course the caller's responsibility to make sure that the resultant overlapped setups don't conflict.



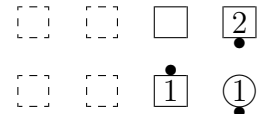
before Grand Working Right Bingo



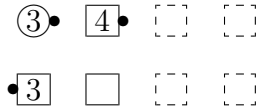
3 people think this



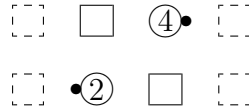
2 people think this



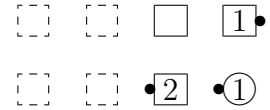
3 people think this



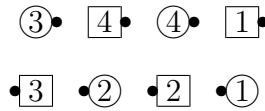
resulting in this



resulting in this

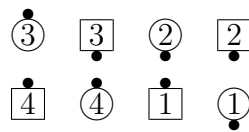


resulting in this

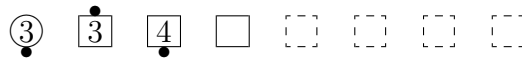


Finished

Handling the 50% overlap becomes tricky when the call is a shape-changer. Consider Grand Working Right Peel and Trail. The three results are end-to-end lines that overlap by 50%:



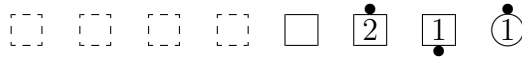
before Grand Working Right Peel and Trail



result on the left side



result in the center



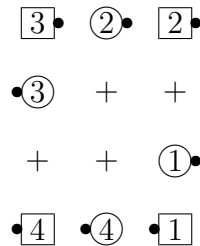
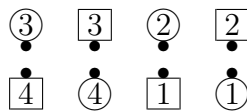
result on the right side



Finished

Rather than dealing with the intricacies of overlapping setups by 50%, it is probably better to concentrate on doing the call split or in the center. Use your shape-changing and “breathing” skills. For example, if you are in the left group in the Peel and Trail case, concentrate on the two end-to-end waves that would result from a normal (split) Peel and Trail, and on your position in that formation. The overlap will then take care of itself.

Sometimes the results can’t be overlapped, because they are only one person deep in the overlap direction. In that case they are simply put together. The people in the outer “split” lines have to leave extra space for the center line. We say that “the overlap goes away”.



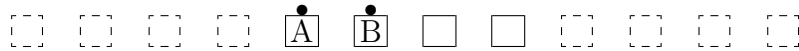
before Grand Working Right
Swap the Top

after

Starting from a 1x8

If the starting formation is a 1x8, it's harder to figure out what 4 people you work with.

Grand Working Right means this:



If you are person A or B, do the call in the
4 solid spots on Grand Working Right.

Once again we have shown an impossibly large number of other spots. And once again you can't associate another setup with yours if it would be out of the actual matrix—in such a case you use the only 1x2 that is next to yours.

It is important to know what **pair** of people (couple, miniwave, tandem, or whatever) you are in, and choose the appropriate other **pair** of spots to work with—the Grand Working concept associates two 2-person setups (couples, miniwaves, etc.) to make a 4-person setup.

If the other person in your own 1x2 is not facing the same way as you, their interpretation of “right” will be different, but their spot is still part of the 1x4 setup that you work in. “Grand Working Left” means the obvious thing. If the setup is a generalized 1x8 tidal column, the concepts “Grand Working Forward” and “Grand Working Backward” could be used.

“Grand Working Together”, which is almost never used, means work with the other 1x2 that is closer to your end of your 1x2. Your partner in your 1x2 will have a different opinion of which other 1x2 is closer, of course. “Grand Working Apart” means work with the 1x2 that is farther from your side of your 1x2.

All of these designations are quite difficult to deal with in a 1x8, and there is another formulation that is almost always used. “Grand Working as Centers” is the same as “Grand Working Together”. Notice that, if you associate your 1x2 with another 1x2 on the side closer to you, you will be a center of the resulting 1x4. If you are a very end of the 1x8, you have to use the 1x2 on the other side, and you will be an end.

Conversely, “Grand Working as Ends” is the same as “Grand Working Apart”. If you associate your 1x2 with another 1x2 on the side farther from you, you will be an end of the resulting 1x4, unless you are one person in from the end of the actual 1x8, in which case you have to use the other 1x2, making you a center of the resulting 1x4. These two facts provide a convenient way to deal with Grand Working as Centers or Ends:

On Grand Working as Centers, choose the 1x4, either split or in the center, that makes you a center of it, if possible. If not possible, use the only available 1x4.

On Grand Working as Ends, choose the 1x4, either split or in the center, that makes you an end of it, if possible. If not possible, use the only available 1x4.

While this may not sound like an improvement over the Together/Apart way of thinking about things, it actually works very well.

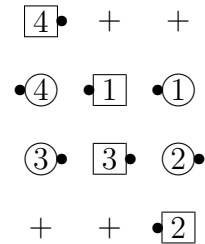
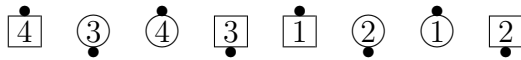


before Grand Working Right, or Apart,
or As Ends, Swing Thru

after
(Plus dancers would call this
a Grand Swing Thru.)

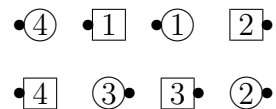
The dancers don't even need to think too hard about whether they are in the outer miniwaves and the direction therefore doesn't apply to them. The rule that everyone uses is "Pick a wave (center wave or split wave) that makes me an end, if possible. If not possible, pick the only wave that works." In this example, everyone except the head girls can pick a wave that makes them an end. The head girls can't, so they work as centers of their split wave.

These two designations are practically always used, rather than "right" or "apart", from 1x8 setups. After they were invented, there were suggestions that "Grand Working as Beaus" could be used in 2x4's instead of "Grand Working Right", but those terms were never adopted.



before Grand Working as Centers
Lockit

after



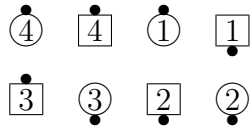
before Grand Working as Centers
Single Polly Wally

after

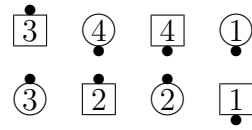
The latter is also called just Grand Single Polly Wally. As we have seen, many plain "grand" calls can be reformulated in terms of "grand working". These reformulations may or may not be helpful to you.

Additional Directions

There are a few more designations that one sometimes hears. “Grand Working Toward the Center” means the obvious thing—work with the other centers if you are in the center, and work with the adjacent centers (that is, split) if you are on the outside. “Grand Working Clockwise” is used in a 2x4, and is quite difficult. Assuming you are a center, imagine there is an old-fashioned clock (the kind with hands) in the very center of the set, and its hands are sweeping (clockwise) through your spot. After it passes you, it will pass through an end or another center. Work in the formation that includes that person. Of course, if you are an end, none of this applies to you, and you always work split. “Grand Working Counterclockwise” means the opposite, of course.



before Grand Working Clockwise
Circulate



after

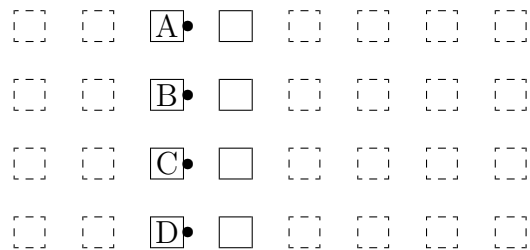
Chapter 3

Multiple Formations Working <direction>

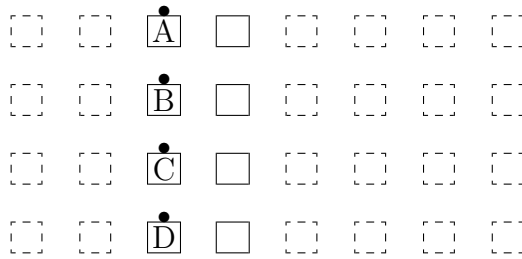
The Multiple Formations Working <direction> concept has a lot in common with Grand Working <direction>—the setups are just bigger.

On a Grand Working call, one associates one's 2-person group with another group to form a 4-person setup in which to do a 4-person call. On a Multiple Formations Working call, one associates one's 4-person group with another group to form an 8-person setup in which to do an 8-person call.

In general, Multiple C/L/W Working <direction> means this:



On Multiple Lines Working Forward, if you are person A, B, C, or D,
do the call in the 8 solid spots.
(The other people in your line don't have to be facing the same way as you.)

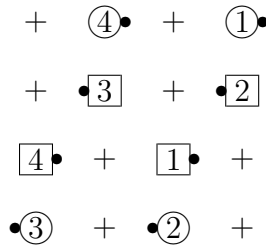


On Multiple Columns Working Right, if you are person A, B, C, or D, do the call in the 8 solid spots.

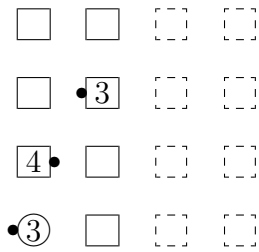
Starting from a 4x4

In a 4x4 matrix, the setups are smaller than the diagrams above, and one only has to figure out whether to work on each side (“Split Phantom Lines”) or in the Center Phantom Lines. Furthermore, those in the outer lines have no choice—they always work in Split Phantom Lines. Those in the center lines have to use the given direction to decide whether to work with the other center line or with the adjacent outside lines. Columns work analogously to lines, of course.

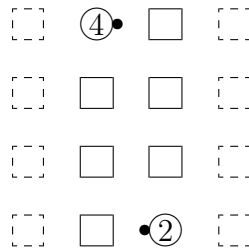
As with Grand Working, the center pair of lines, and the sets of Split Phantom Lines, overlap by 50%, which can be difficult to handle. It is helpful to concentrate on whether you are working in Split Phantom Lines or the Center Phantom Lines, and use your breathing and shape-changing skills.



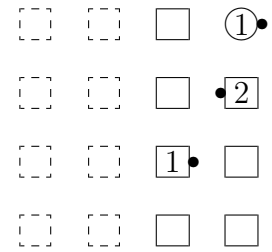
before Quadruple Lines Working Forward
Trade the Deucey



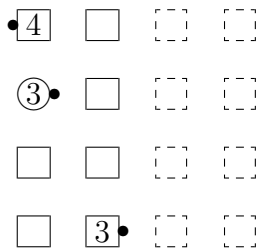
3 people think this



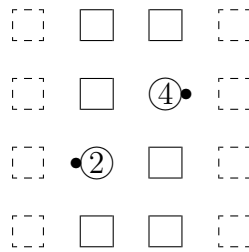
2 people think this



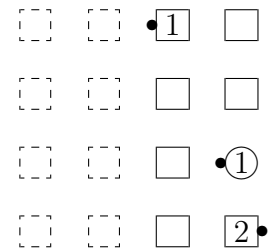
3 people think this



resulting in this



resulting in this



resulting in this

$$\begin{array}{r}
 \bullet 4 + \bullet 1 + \\
 \textcircled{3} + \textcircled{4} + \\
 + \bullet 2 + \bullet 1 \\
 + \bullet 3 + \bullet 2
 \end{array}$$

Finished

Handling the 50% overlap becomes tricky when the call is a shape-changer. You need to use your shape-changing skills in Split Phantom or Center Phantom Formations. If the call changes the 2x4 into a 2x4 oriented the other way, it will appear to finish in Split Phantom Boxes or The Center Phantom Boxes.

$$\begin{array}{cccc}
+ & \textcircled{4} & + & \textcircled{1} \\
+ & \boxed{3} & + & \boxed{2} \\
\boxed{4} & + & \boxed{1} & + \\
\textcircled{3} & + & \textcircled{2} & +
\end{array}$$

before Quadruple Lines Working Forward
Criss Cross the Deucey

$$\begin{array}{cccccccc}
+ & \textcircled{3} & \textcircled{4} & \boxed{3} & + & + & + & \boxed{2} \\
\boxed{4} & + & + & + & \boxed{1} & \textcircled{2} & \textcircled{1} & +
\end{array}$$

after

If the calls finish in 1x8's oriented the other way, it will appear to finish in end-to-end Split Phantom C/L/W, or the center 1x8. This is very difficult, but it's really just a problem of figuring out where you are in end-to-end Split Phantom 1x4's.

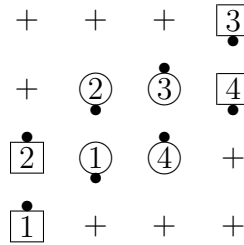
$$\begin{array}{cccc}
\textcircled{3} & + & \boxed{3} & + \\
\textcircled{2} & + & \boxed{4} & + \\
+ & \boxed{2} & + & \textcircled{4} \\
+ & \boxed{1} & + & \textcircled{1}
\end{array}$$

before Quadruple Columns Working Right
Strut Right

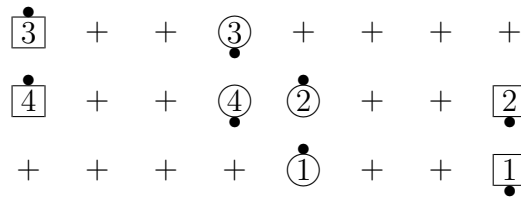
$$\textcircled{2} \textcircled{3} + + + + \boxed{4} \boxed{3} \boxed{1} \boxed{2} + + + + \textcircled{1} \textcircled{4}$$

after

If the calls finish in 1x8's oriented the same way, it goes to a 3x8. The overlap goes away.



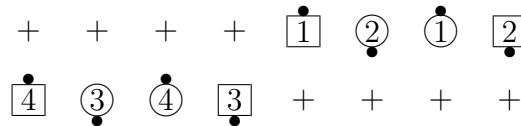
before Quadruple Waves Working Forward
Flip the Top



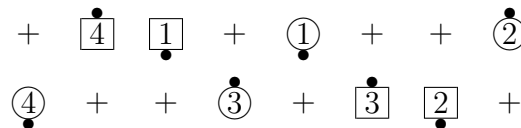
after

Starting from a 2x8

If the starting setup is a 2x8, the concept must be by Quadruple Boxes Working in some direction. Working Together or Apart are common choices. Use the adjacent box closer to your individual position. Those in the outer boxes always work in Split Phantom Boxes, of course.



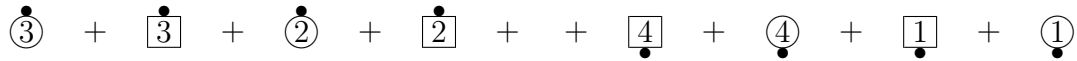
before Quadruple Boxes Working Together
Trade the Deucey



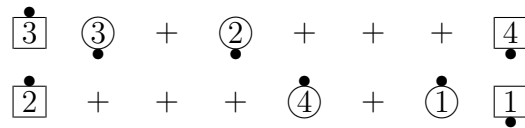
after

Starting from a 1x16

If the starting setup is a 1x16, the concept must be Quadruple Lines Working in some direction. Combine your 1x4 with another 1x4—either work with the 1x4 on your side, as in Split Phantom Lines, or combine the center two 1x4's in the center. If the given direction is together (or apart), work with the 1x4 closer to (or farther from) your side, that is, closer to your 1x2 in your 1x4. Columns work similarly, of course.



before Quadruple Waves Working Apart
Relay the Shadow

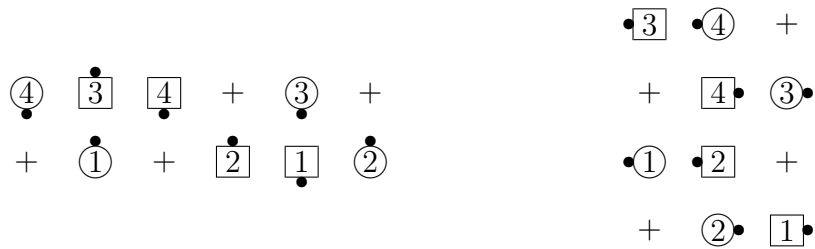


after

Each side girl, who is in one of the center 1x4's, works with the other center 1x4, to their right, because that 1x4 is farther from their own 1x2. The side boys are also in the center 1x4's, work with the outer 1x4 to their left. That is because that 1x4 is farther from their own 1x2 within their own 1x4.

Triple Formations Working <direction>

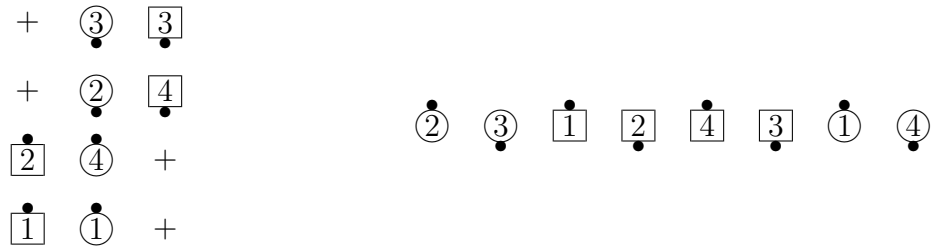
The “Triple Formations Working” concepts are perhaps more common than Quadruple Formations. They are done from appropriate 12 matrix setups. Those in the outer 4-person formation always work with the center formation. Those in the center formation work with whichever outside formation is indicated by the given direction. For example, on Triple Boxes Working Together, if you are in the center triple box, work with whichever outside box you are personally closer to. On Triple Lines Working Together from a 1x12, if you are in the center triple line, work with whichever outside line you are closer to.



before Triple Boxes Working Together
Flip Back

after

The trick of working in Split Phantom Formations or Center Phantom Formations doesn't work when there are three formations, and putting back the 50% overlap is more difficult. You must think about an 8-person formation that is 50% overlapped with the other setup. Locate your 8-person setup so that the inner half of it will be in the center of the whole set, and the outer half will abut that inner half. This can be quite tricky.



before Triple Columns Working Right
Strut Right

after

If the number of formations is 5 or more, things become extremely difficult.

Additional Directions

The meaning of "Working Toward the Center" and "Working Clockwise" is the same as for Grand Working.

Multiple Diamonds Working <direction>

Specifying a direction from Diamond setups is more difficult because the Diamond Points typically need a direction such as Forward or Backward, while the Diamond Centers typically need a direction such as Together/Apart or Right/Left. By definition, the word "Together" can be used to mean "Together or Forward". For example, on Triple Diamonds Working Together, the Centers of the

Center Diamond work “Together” (with the closest diamond) and the Points of the Center Diamond work Forward (with the diamond they are facing).



before Triple Diamonds Working Together
6x2 Acey Deucey

after

Similarly, the word “Apart” can be used to mean “Apart or Backward”. Those who are in position to use “Apart” such as the Diamond Centers do so, while the others work with the setup behind them. This is less commonly used.

Chapter 4

Supercalls

Calls that permit an <anything> call, such as Rotary <anything> or Breaker <anything> are sometimes labeled as “supercalls”. This essentially means that they can be treated as calls or concepts. Calls that can be modified by “But”, such as “Tally Ho But <anything>”, are also considered supercalls.

Under normal circumstances, it doesn’t make any difference whether one thinks of a supercall as a type of concept or not. People know how to do a Tandem Linear Cycle, and they know how to do a Tally Ho but Linear Cycle. Both are complex operations in which Linear Cycle plays a role.

However, when used with meta-concepts, supercalls are best thought of as concepts. The commands “Initially Rotary, Flip Back” or “Initially Tally Ho But Flip Back” must be parsed as “Initially” <concept> <call>, so they only make sense if “Rotary” is a concept and “Tally Ho But” is a concept. Then, the interpretation becomes more clear. The “Rotary” or “Tally Ho But” is applied only to the first part of Flip Back.

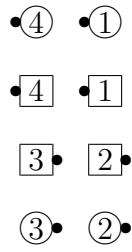
Initially Rotary Flip Back:

1. Rotary Flip the Line 1/2
2. (everyone, normal) Scoot Back

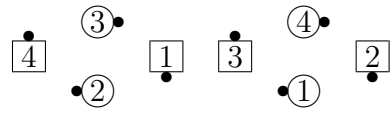
Initially Tally Ho But Flip Back:

1. Tally Ho But Flip the Line 1/2
2. (everyone, normal) Scoot Back

Also, keep in mind that the order in which the words are used can be counterintuitive. Think carefully whenever the concept is Finally.



before Finally Line to Line But
1/4 Wheel to a Diamond



after
(Do the 1/4 Wheel first, and the
diamond part at the very end.)

Chapter 5

Expanded Supercalls (“It”)

Some calls that might be used as supercalls present an additional challenge because the replacement call does not normally come at the end of the call. Consider, for example the call “Catch <anything> <N>” This call allows a replacement call, but the replacement is normally specified in the middle of the call name. Some callers have tried something like “Initially Catch, Swing Thru, 3” but that ends up being confusing because “Catch Swing Thru 3” is a legitimate call in its own right. Instead, the current syntax for calls of this type uses the word “It” to indicate where the replacement call goes. The “It” syntax has recently been used with Catch, Lines Thru, and Checkpoint. These are described separately below.

Catch It <N>

This syntax provides a way to use “Catch <anything> <N>” as a supercall. The word “It” specifies that the call that follows, or the required portion of that call, needs to be inserted where the word “It” is. Although not typically used this way on its own, “Catch It 3, Motivate” would be the same as Catch Motivate 3.

Typically, the “It” syntax is used in combination with meta-concepts such as Initially or Finally. Below are some examples.

Initially Catch It 3, Swing Thru:

1. Catch [1/2 by the Right] 3
2. 1/2 by the Left

The first part of Swing Thru goes where the “It” is in “Catch It 3”. The rest of Swing Thru is done normally.

Finally Catch It 2, Latch On:

1. Right Roll to a Wave
2. Catch [Hinge] 2

The first part of Latch On is done normally. The last part of Latch On goes where the “It” is in “Catch It 2”.

Lines It Thru

This syntax provides a way to use “Lines <anything> Thru” as a supercall. The word “It” specifies that the call that follows, or the required portion of that call, needs to be inserted where the word “It” is. Although not typically used this way on its own, “Lines It Thru, Scoot Back” would be the same as “Lines Scoot Back Thru”.

Typically, the “It” syntax is used in combination with meta-concepts such as Initially or Finally. Below are some examples.

Initially Lines It Thru, Flip Your Neighbor:

1. Lines Flip the Line 1/2 Thru
2. (on each side) Follow Your Neighbor

The first part of Flip Your Neighbor goes where the “It” is in “Lines It Thru”. The second part of Flip Your Neighbor is done normally.

Finally Lines It Thru, Flip Your Neighbor:

1. Flip the Line 1/2
2. Lines Follow Your Neighbor Thru

Examples with Lines It Thru often feel like Initially/Finally Centers, except that the ends do an extra Circulate while the centers are doing their call.

Checkpoint It by It

A challenge in using Checkpoint with meta-concepts is that Checkpoint normally takes two calls. The “It” syntax provides a way to specify that the following (one) call will be used in both places. Although not typically used this way on its own, “Checkpoint It by It, Lockit” would be the same as same as “Checkpoint Lockit By Lockit”.

Typically, the “It” syntax is used in combination with meta-concepts such as Initially or Finally. Below are some examples.

Initially Checkpoint It by It, Hinge the Lock:

1. Checkpoint Hinge by Hinge
2. (normal) Lockit

The first part of Hinge the Lock goes into both places where the “It” is in “Checkpoint It by It” The rest of Hinge the Lock is done normally.

Initially Checkpoint It by It, Explode the Top:

1. Checkpoint Explode by Explode
2. Finish Explode the Top

The first part of Explode the Top goes into both places where the “It” is in “Checkpoint It by It” The rest of Explode the Top is done normally.

Chapter 6

Collisions

The question of when it is appropriate to have people “collide and take right hands” (sometimes called the “same position rule”) is a controversial one. Opinions vary, from those who don’t believe collisions should ever be used, to those who believe Lockit is legal from inverted lines. Most people accept the historically common usage in various types of “ends move up” actions in Chain Reaction, Motivate, Tally Ho, etc., and the very similar action of coming to the same point or end spot on Diamond Circulate, Flip or Cut the Diamond, or 6x2 Acey Deucey.

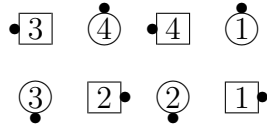
A thing to be very clear about is that “collide and take right hands” applies only when a call **finishes** with two people sent to the same spot as a result of the complete execution. There is a similar-appearing situation when a call is stopped prematurely, because of an interruption or fractionalization. When this happens, the definition of the call must have had them passing right or left shoulders. In such a case, they stop during the pass, forming a miniwave of corresponding handedness.



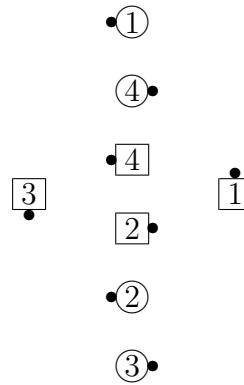
before 3/4 Run Wild

finished; people doing
the Cross Run take
the outside track

This sometimes requires paying careful attention to the paths that people take. When the paths coincide exactly, the right shoulder rule applies, and people take right hands if they stop at that point. If the paths do not coincide exactly, they follow the appropriate traffic rule.



before 1/2 Circulate



finished; there were no actual collisions

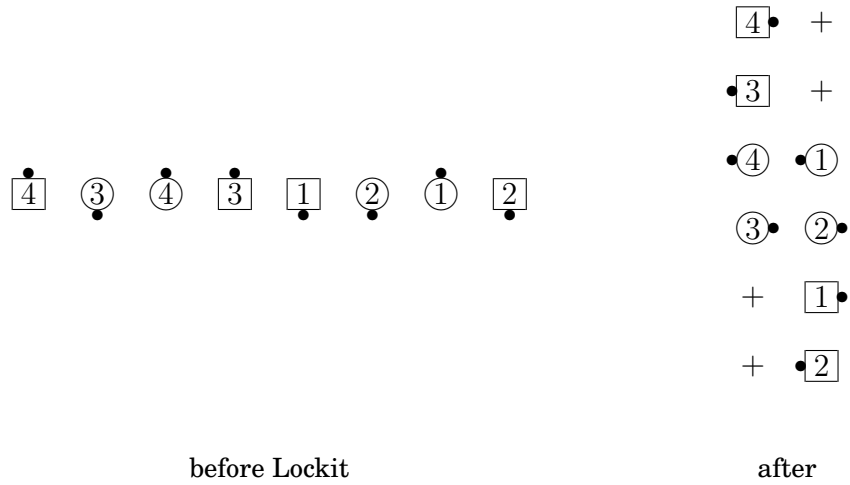
In all cases the people who come to the same spot must be facing opposite directions. The rule is that they take right hands even if the call had the word “Left” in it, as in Left Chain Reaction. (Left Chain Reaction calls for a left Hinge.) However, if the “Mirror” concept is in force, everything is Mirror, including collisions.

When collisions occur at the end of a call, people’s resultant positions aren’t the usual ones, and it becomes necessary to figure out where the “extra” people go. The general rule is that they slide “outwards”. People not involved in collisions are not supposed to move from their natural positions unless absolutely necessary. In the simple case of a collision on a “move up”, the result is therefore typically a parallelogram.

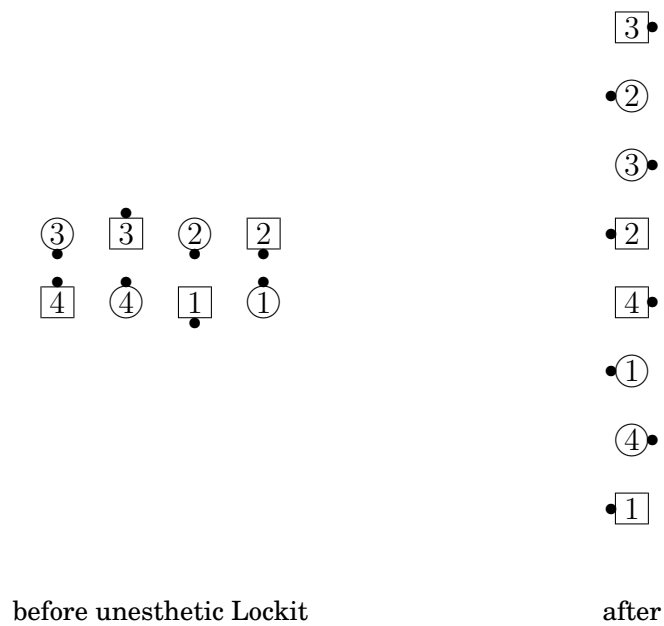


before Chain Reaction,
Turn the Star 1/2

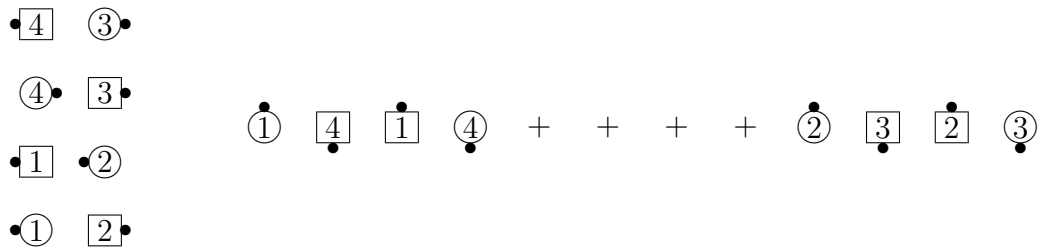
after



Sometimes the people not involved in the collision have to move, but this is really just “breathing”.



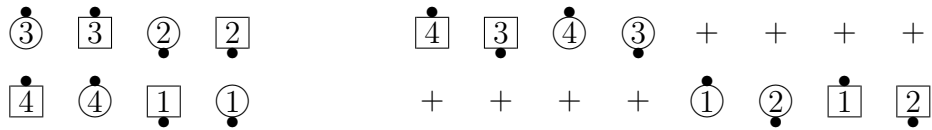
Sometimes people might be tempted to “leave space for the phantoms”, or “maintain symmetry” but this is often wrong.



before Lockit

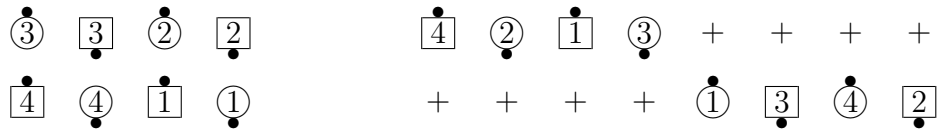
after doing it wrong; there are no
phantoms going into the center spots;
result should be a 1x8

For some calls, collisions occur in multiple places. Everyone moves outward from the center of the overall formation.



before Split Circulate

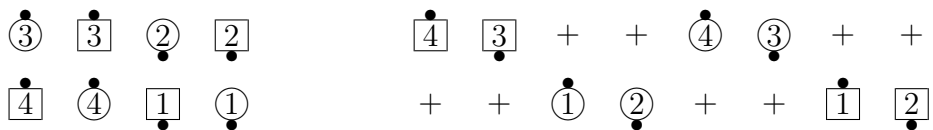
after



before Scatter Circulate

after

Here is a rather peculiar situation that seems to be accepted in common practice.



before Go First Class

after

The boys moved out farther than necessary, presumably to make the resultant setup nicer.

The subject of collisions is not completely logical, consistent, or free of controversy.

In addition to controversy over what collisions are appropriate, there is controversy over whether one should “re-evaluate” and continue from the new formation after a collision arising in part of a compound call. There are those who consider Split Motivate legal from a Double Pass Thru setup, and those who do not.

Chapter 7

Combining Offset Concepts and Phantom Concepts

Offset concepts (Parallelogram, Offset Lines) and Phantom concepts (Split Phantom Lines, Split Phantom Boxes) require special care, and do not work well together in all cases. This is because Offset concepts require a rigorously well-defined notion of the shape of the starting and ending formations, and Phantom concepts can conceal any offset by making “real” spots and “phantom” spots indistinguishable.

In fact, it is essentially meaningless (except in “gimmick” sequences) to nest a Phantom concept followed by an Offset concept. That is, “Triple Box Parallelogram” is meaningless. Whatever the actual occupation of the matrix, Triple Boxes turns it into a 2x6 in which all spots are equally important. The Parallelogram concept can’t do anything with the result. Therefore, the best we can do in terms of combining the concepts is to use an Offset concept first, followed by a Phantom concept.

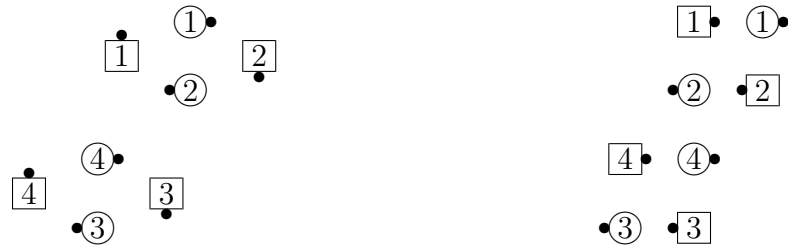
For Offset concepts to deal with shape-changing calls, they use a notion of “offset percentage” or “offset fraction”, which is the fraction of one of the offset sub-setups that overhangs and does not line up with the other. For normal parallelograms or offset lines, it is 50%.



50% offset (1/2 of each 1x4,
or 2 people, overhang)

75% offset

The rule for doing an offset concept is to do it as though the “shear direction” and offset percent were noted, the offset removed, the call executed, and the same percent offset re-imposed. If the offset is not an integer number of people in the new formation, or is otherwise not sensible, the call is illegal. (An exception to this is the “50% offset diamond” obtained by having the centers Hinge from a parallelogram. It is accepted that this is a meaningful setup.)

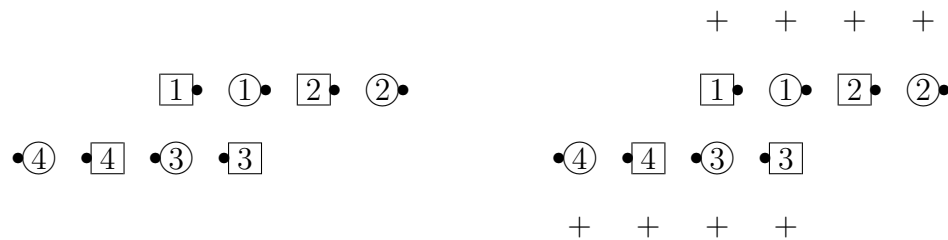


before “Parallelogram Diamonds” Drop In

after

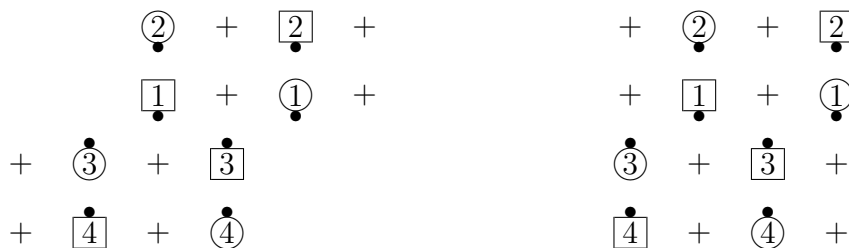
Phantom concepts can involve what is generally considered to be a change in the formation size as phantoms are placed at the start of the call and removed at the end. This can lead to serious problems in measuring offset percentages.

One case that is easy to deal with and fairly commonly used is the case in which the placement of new phantoms is perpendicular to the direction of the offset. The phantoms are placed directly outboard of the real people.



before Parallelogram
Split Phantom Columns
Transfer the Column

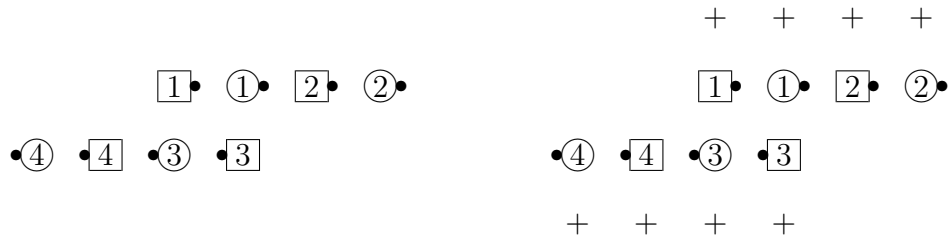
place phantoms



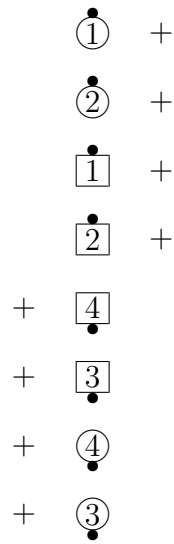
do the call,
maintain 50% offset

actual result

If the call is a shape-changer, the percent offset rule still works:

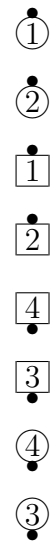


before Parallelogram
Split Phantom Columns
Settle Back

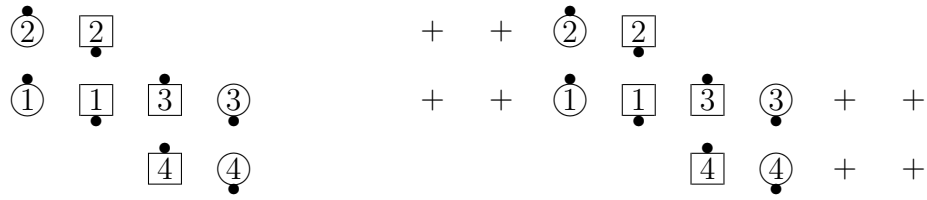


do the call,
maintain 50% offset

place phantoms

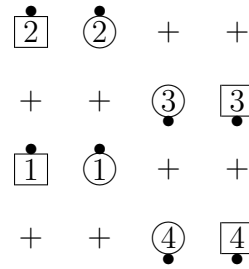
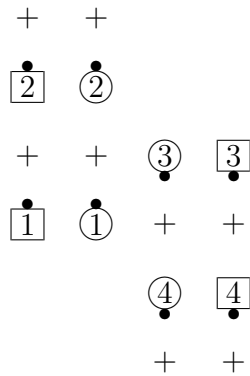


actual result



before Offset Waves
Split Phantom Boxes
Recycle

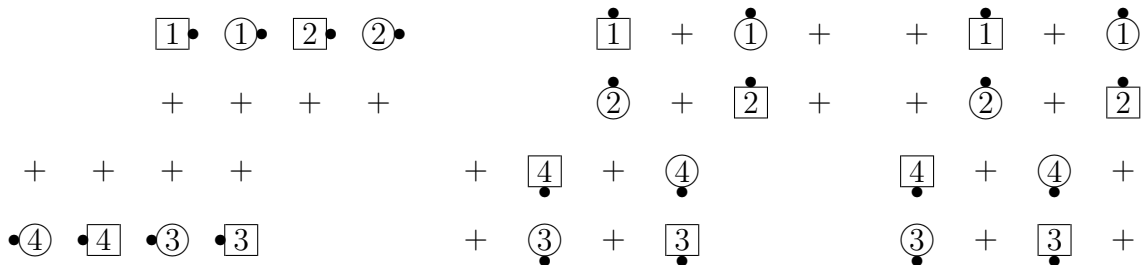
place phantoms



do the call,
maintain 50% offset

actual result

Of course, concepts like Split Phantom Columns don't always start with the real people in the "inboard" position; they can be anywhere in the matrix. The rule is that, when offsets are involved, the locations of the real people must be able to identify unambiguously which way the offset goes.

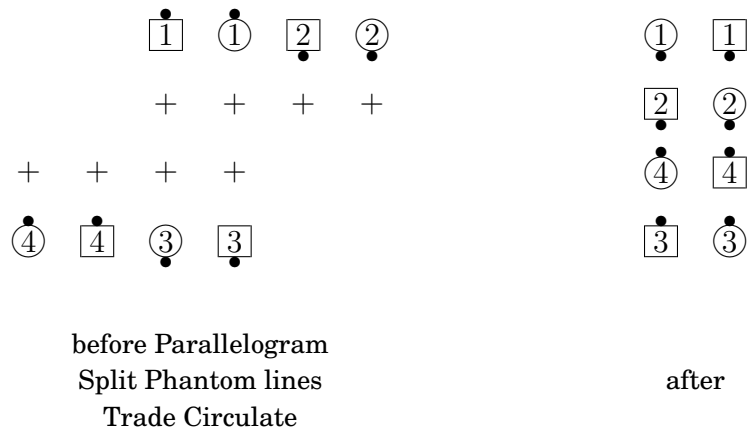


before Parallelogram
Split Phantom Columns
Transfer the Column

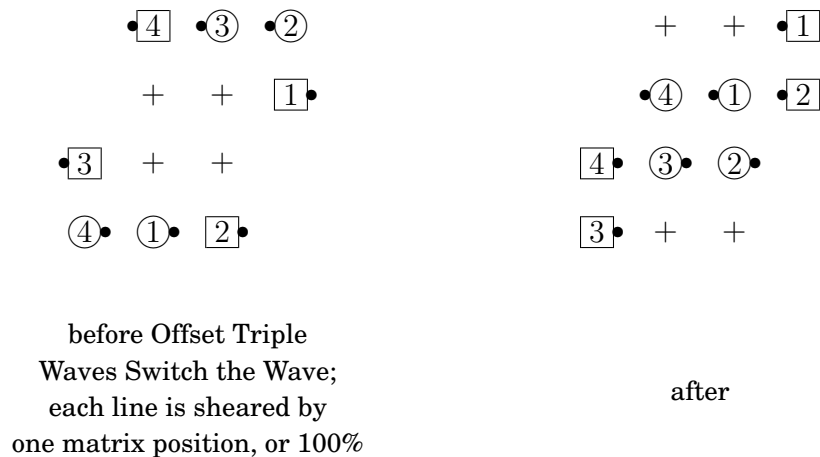
do the call,
maintain 50% offset

final result

The direction of the offset was clear, even though the people were not in their “inboard” positions. In order for this to work, the percentage offset must be determined by the concept itself; it isn’t possible in general to determine both the direction and the percentage offset from looking at the occupied spots. For Parallelogram Split Phantom Columns/Lines/Waves and Offset Split Phantom boxes, the offset is always 50%.



When the direction in which the phantoms are placed is parallel to the offset direction, one needs to be especially careful. The individual subsets are sheared. Once again, the amount of offset must be knowable from the concept itself. The only known workable cases of this use an offset of 100% within each subset. As before, the direction of the offset must be able to be determined unambiguously from the locations of the people.



The Offset Triple Boxes/Columns/Lines/Waves concepts are discussed in more detail in <http://www.challengedance.org/sd/book2.pdf>.

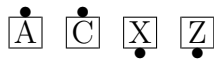
Chapter 8

3x3 / 4x4 / NxN

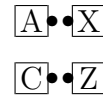
The official definition of 3x3 and 4x4 (and NxN for higher values of N) says something like this:

Find pairings of people in the original (“2x2”) version of the call, that start facing in the same direction, go through the same turning motions, and end facing in the same direction. For the 3x3 call, expand the setup so that each such pair has a person “interpolating” the two people in that pair, that is, halfway between them and facing in the same direction. (That person is commonly called the “cheese”, in analogy with a cheese sandwich.) The 3x3 call is done by having the people in each pair doing the normal call but with the extra space, and the interpolating person going through the same motions and staying halfway between them.

Consider Bend the line:

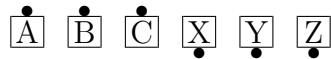


before Bend the Line

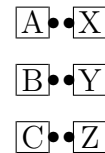


after

A and C form a pair, as do X and Z. Add dancer B between A and C, and Y between X and Z.



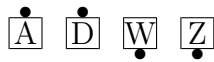
before 3x3 Bend the Line



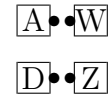
after

This case is easy, because the pairs are trivial to identify, they clearly work together in the call definition, and they are adjacent both before and after the call. That won't always be the case.

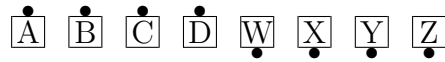
For 4x4, add two people between the people in each pair, all equally spaced, maintaining the correct order at all times.



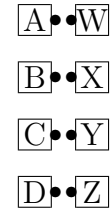
before Bend the Line



after



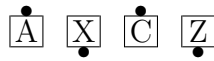
before 4x4 Bend the Line



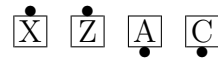
after

And similarly for higher numbers.

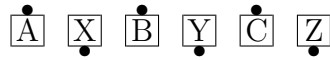
Things quickly become more complicated. The paired people might be once removed from each other (rather than adjacent) at the start of the call:



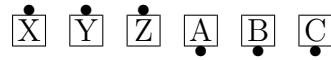
before Switch the Wave



after

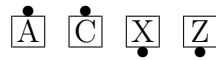


before 3x3 Switch the Wave

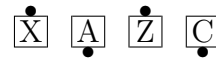


after

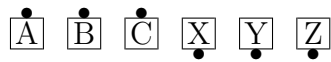
Or they might be once removed from each other at the end of the call:



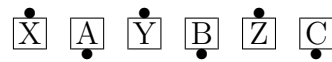
before Cross Roll



after

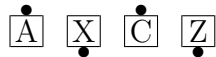


before 3x3 Cross Roll

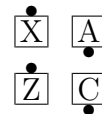


after

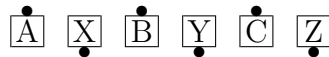
Or they might be along different axes before and after the call:



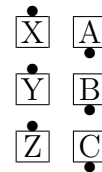
before Ah So



after



before 3x3 Ah So



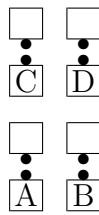
after

The pairs might also consist of people who just happen to go through similar motions but do not have the same verbal definition. 3x3 Split Transfer is an example of this.

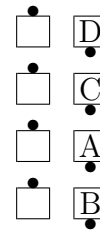
Selecting the Pairing

You might be wondering how to decide on the pairings if the base call is normally done from an 8-person setup with 4 people facing the same direction as each other and going through the same turning motions. This can be a non-trivial issue, but it is usually more of an issue for the caller than for the dancers.

As an example, let's consider the C4 call Beaus Advance to a Column, below. There are four dancers who start and end facing the same direction as each other and go through the same turning motions.

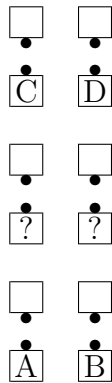


before Beaus Advance
to a Column

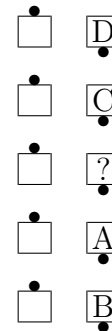


after

The correct pairing for this call would be called the “adjacent pairing”: A and B are paired together, and C and D are paired together. But let’s see what happens if we consider the “once removed pairing” instead, that is, pairing A with C and B with D. This would be



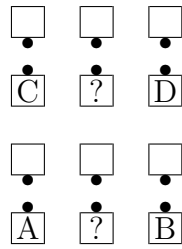
before 3x3 Beaus Advance
to a Column



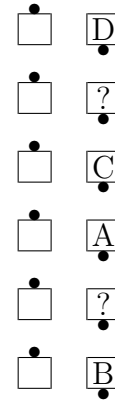
after

The interpolated people (or “cheese dancers”) for the two pairs would be on the same spot. So, this can’t work. If you’re thinking we could also pair A with D and B with C, just don’t go there. Pairings that “cross” in that way never produce a suitable location for the interpolated people.

Going back to the adjacent pairing, we pair A with B and C with D, and create the 3x3 call this way:



before 3x3 Beaus Advance
to a Column

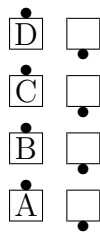


after

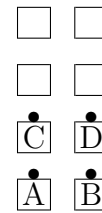
From a dancer's perspective, it is not necessary for you to think through the possible pairings above. When you are standing in a 3x4 matrix, and any 3x3 call is given, the pairing that the caller chose is in the direction of the "3" in "3x4". Just look for your groups of 3. If you are confused, mentally remove the centers of each group of 3 (the "cheese"), do the call in the resulting 2x4, and then put the "cheese" dancers back between the same two dancers later.

One further note: In practice, the caller will usually say "12 Matrix, 3x3 Beaus Advance to a Column" or "3x4 Matrix, 3x3 Beaus Advance to a Column" to make it clear that you are working in a setup with phantoms.

Now let's try another example, which will (at first) appear to be ambiguous to the dancers.

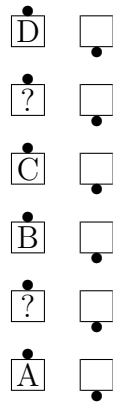


before Scoot and Fancy

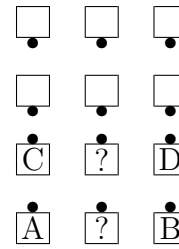


after

First, consider the adjacent pairing (A with B and C with D):

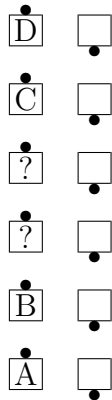


before 3x3 Scoot
and Fancy

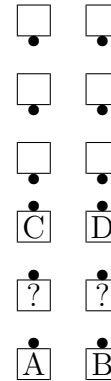


after

Next, consider the once removed pairing (A with C and B with D):



before 3x3 Scoot
and Fancy



after

Both the adjacent pairing and the once removed pairing fit the definition and seem to work. Also, both of the resulting 3x3 calls would be done from a 2x6 column setup, and they each end in different setups. So, this call (at first) appears to be ambiguous for the dancers.

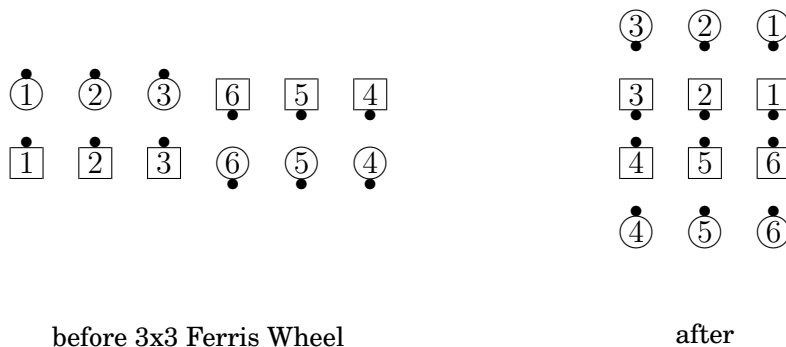
The 3x3/4x4 definition states that, in cases like this, the ambiguity is resolved by pairing the people that are physically closer, that is, the adjacent pairings. So the first of the above examples is the correct way to do 3x3 Scoot and Fancy.

Learning Typical Calls

To do the 3x3/4x4 calls smoothly and confidently at dance speed, it is helpful to gain experience with the wide variety of examples that are typically used in practice. The remainder of this chapter

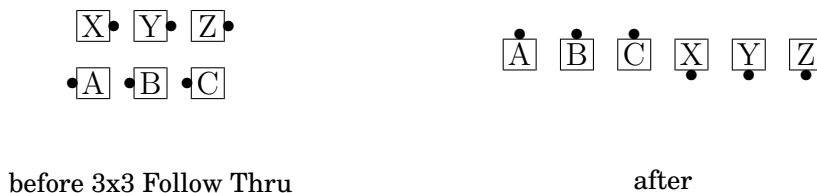
will list some of these call types and give a few examples. The examples show mostly 3x3 calls (and a few 4x4 calls), but keep in mind that the same reasoning applies to any NxN call. Larger NxN calls simply have more “cheese” dancers, and all of “cheese” dancers stay in the same order (from one end or “bread” dancer to the other one) as they started in.

1. If the call is obviously an “As Couples” or “Tandem” action, do the call in a Couple of 3 or Tandem of 3. We already discussed 3x3 Bend the Line at the beginning of this chapter. Other examples include 3x3 Wheel and Deal, 3x3 Couples Circulate, 3x3 Cross and Wheel, and 3x3 Ferris Wheel. Here is 3x3 Ferris Wheel from a 2x6:



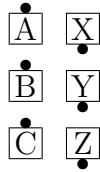
Later we will discuss doing 3x3 Ferris Wheel from a 3x4.

2. Sometimes you are clearly working with another dancer, but the action can't be described as As Couples or Tandem. Perhaps it can be described as Twosome or Fractional Twosome, but it is not necessary for you to put a name to it. It is sufficient to notice that (for example) you start in Tandem with a dancer and finish as a Couple with the same dancer. On the 3x3 call, start with your Tandem of 3 and finish as a Couple of 3.

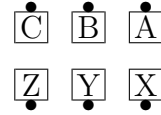


3. Some 3x3 calls will change shape, even when the base call starts and ends in a 2x2 Box. This can happen when the person you were paired with moves from being paired in one direction

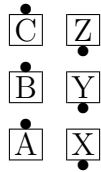
to being paired in another direction. A lot of calls fall into this category. It is worthwhile to look at these examples carefully and get accustomed to this type of shape-changer.



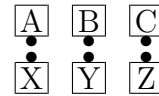
before 3x3 Walk and Dodge



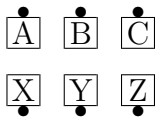
after



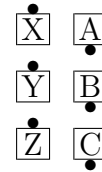
before 3x3 Couple Up



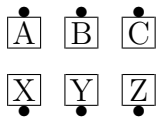
after



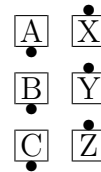
before 3x3 Wheel the Ocean



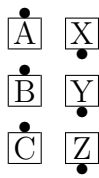
after



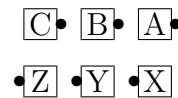
before 3x3 Wheel the Sea



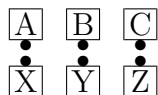
after



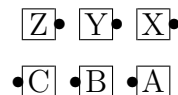
before 3x3 Box Counter Rotate



after

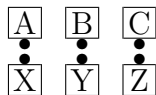


before 3x3 Circle to a Wave

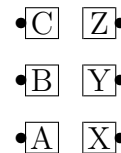


after

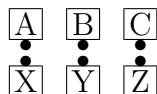
In the example above, the call does not actually change shape, but it feels like it changes shape twice.



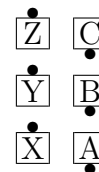
before 3x3 Split Swap



after



before 3x3 Vertical 1/2 Tag



after

Note that only the facing couples version of Vertical Tag can be used with 3x3, as that is the only case that meets the requirements on facing directions and turning motions.

- The 3x3 versions of 2-dancer calls are 3-dancer calls. Don't try to do them in a larger setup. Find your group of 3 and work with them only.



before 3x3 Half Sashay



after



before 3x3 Mesh

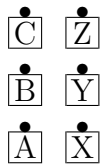


after

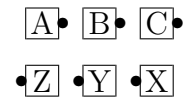
In general, Mesh can be done with other facing directions, but 3x3 Mesh requires all 3 dancers to be facing the same direction.

- Sometimes a common “cheat” for doing the call will be helpful. For example, some people do Drift Apart (from lines) as Tandem Cross Roll to a Wave. 3x3 Drift Apart is Tandems of 3 Cross Roll to a Wave.

Some people think of Stack the Line (from Tandem Couples) as a Tandem Partner Hinge.



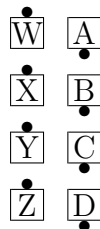
before 3x3 Stack the Line



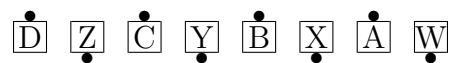
after

It is not necessary to know these “cheats” to do 3x3, but they make it easier for some dancers.

- Some calls that normally start or end in a Wave, such as Ah So or Box Recycle, can essentially be done Concentric (particularly with 4x4). This works because the “cheese” dancers must remain in the center. We showed 3x3 Ah So earlier. Here is 4x4 (Box) Recycle:



before 4x4 Recycle

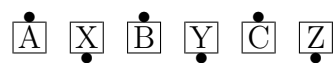


after

The caller may say “4x4 Box Recycle” or they may just say “4x4 Recycle”. The wave-type Recycle cannot be done NxN, so NxN Recycle will always mean the box type.

- Learn the calls 3x3 Switch the Wave (from waves), 3x3 Cross Roll to a Wave (from two-faced lines), 3x3 Scatter Circulate (from 2x6 two-faced lines), and 3x3 Go First Class (from 2x6 waves).

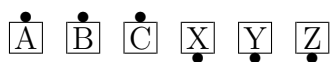
Let’s start with 3x3 Switch and 3x3 Cross Roll, which we mentioned earlier.



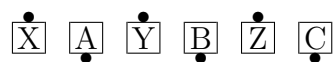
before 3x3 Switch the Wave



after



before 3x3 Cross Roll



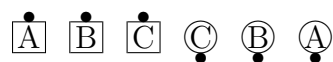
after

Some dancers do these as heading in the “obvious” direction (towards their partner or towards the center) and then making a setup of the appropriate type (waves or two-faced lines), consistent with the base call.

Some dancers divide them into parts with “cheats” such as “Swing and Slither”. If you like this method, then learn how to do 3x3 Slither. From a wave of 6, go past everyone who is facing opposite you, until everyone facing in the same direction is in one adjacent group. To go the other way, from couples of 3, spread yourselves all the way out until everyone is in a miniwave.

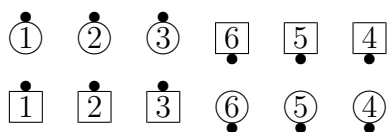


before or after 3x3 Slither

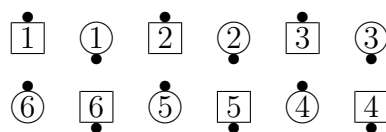


after or before 3x3 Slither

Now let’s move on to Scatter Circulate and Go First Class. The leads’ parts of these calls are similar to Cross Roll or Switch. The trailers’ parts can be perceived as moving forward and either “spreading out to waves” (in the case of Scatter Circulate) or “collapsing to couples” (in the case of Go First Class). Make sure that you end in the correct handedness. All of these calls “preserve handedness”, in the sense that if you start in a Right-Hand setup, you will end in an Right-Hand setup.



before 3x3 Scatter Circulate



after

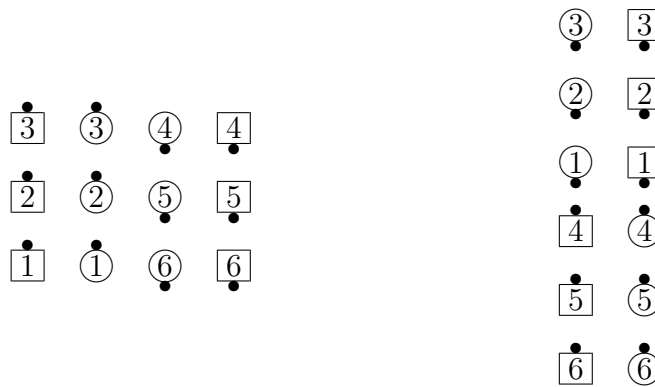


before 3x3 Go First Class

after

8. Become aware of calls where a box of four “works together” in a loose way, even if the call’s definition isn’t written that way. This will typically result in multiple starting setups for the 3x3 version, where one of the starting setups is obvious to you and the other one isn’t.

Consider the call Ferris Wheel. You would probably first think of being paired with the person you are a Couple with. However, in fact, the box of four that starts together on one side of the square goes through the same turning motions and ends together on a different side of the square. For 3x3, we could actually pair people “Tandemly” instead of As Couples, and producing a new version of 3x3 Ferris Wheel from a 3x4:



before 3x3 Ferris Wheel

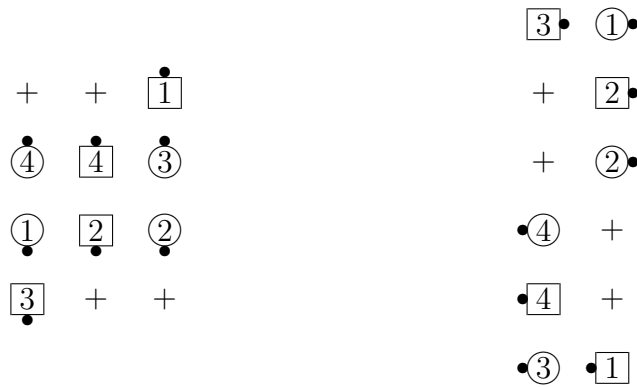
after

Note that while the Tandem dancers can be paired, they do not work Solidly (Tandem) with each other. Rather, they effectively work Tandem Twosome, although you probably don’t think of the base call that way. Just remember that the original leads in Ferris Wheel become ends, and the original trailers in Ferris Wheel become centers. Make sure to keep that relationship when doing the 3x3 call.

Notice that we now have two possible starting setups for 3x3 Ferris Wheel. However, this does not cause an ambiguity for the dancers. If you start in a 2x6 setup, do the version shown earlier (with Couples of 3). If you start in a 3x4 setup, do the version shown here (with 3 Couples of 2).

Another call that works this way is Polly Wally. You can do 3x3 Polly Wally from either a 3x4 or 2x6 column setup. (In the case, of a 2x6, it must be a Completed Double Pass Thru.) See if you can figure out this call from both of these setups.

Now consider the C4 call Countershake. The call is formally defined in terms of centers and ends, so you might expect it to be done from 3x4 setup with 6 centers and 6 ends. That is indeed one possibility.



before 3x3 Countershake

after

However, from a Completed Double Pass Thru, it is also possible to pair the original beaus with each other and the original belles with each other, producing a 2x6 starting setup:



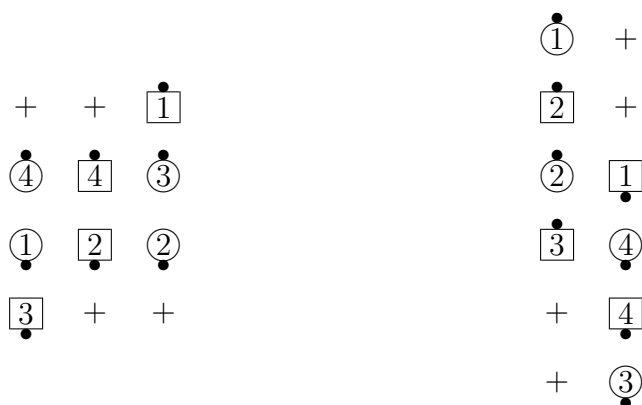
before 3x3 Countershake

after

There are several ways to approach dancing the 2x6 version:

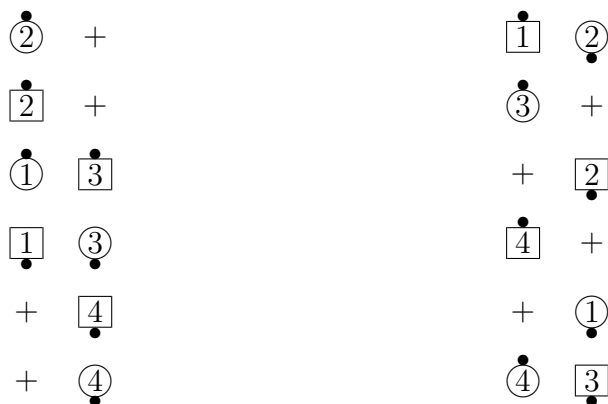
- Visualize the base call as first doing a Concentric Shakedown, then having the Boxes of 4 work Solid for a Touch. Then, the 3x3 call starts with having 3 Concentric groups doing a 3x3 Concentric Shakedown, and a Box of 6 working Solid for the Touch.
- Visualize the original call as starting with everybody 1/4 Right, Counter Rotate, and Roll, and then having the Boxes of 4 work solid for a Touch. Then, do the 3x3 call with the same definition but finishing with a Box of 6 as above.
- Find your groups of 3 facing the same direction, which is unambiguous from this starting setup. If you are an end of one of those groups, do your part normally as if the “cheese” dancers are not there (but allowing for the setup to be a little bigger). If you are a center of one of those groups of 3, then you can choose whether to start with a 1/4 Right and Counter Rotate (resembling the ends’ definition) or a Shakedown action (resembling the centers’ definitions), but make sure to stay between your two ends.

You might want to also think about 3x3 Roll Out to a Column from both a 3x4 and a 2x6.



before 3x3 Roll Out to a Column

after



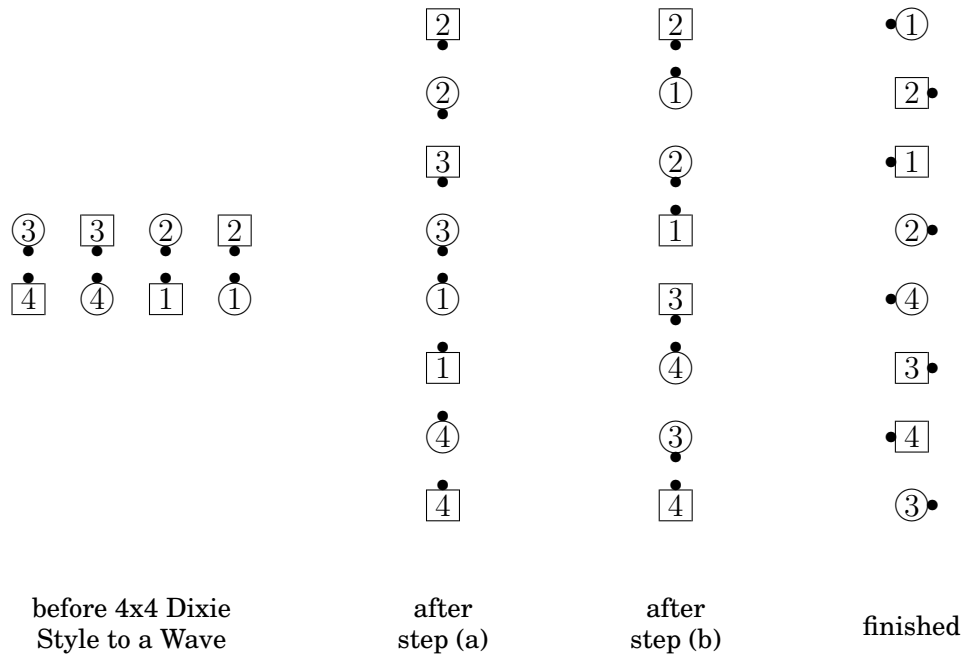
before 3x3 Roll Out to a Column

after

9. Learn the calls 3x3 (or 4x4) Dixie Style and Dixie Sashay.

The first time you do these calls, think about each motion individually. We'll describe 4x4 Dixie Style:

- (a) From Facing Lines of 4, first put the end belle in the lead, so that you have a 1x8 column.
- (b) The original end belles do a Right Pull By, and everyone except the original end beaux moves forward as necessary to make a 1x8 Single Eight Chain Thru setup.
- (c) Everyone Left Touch 1/4 to create a 4x4 Left Hand Wave.

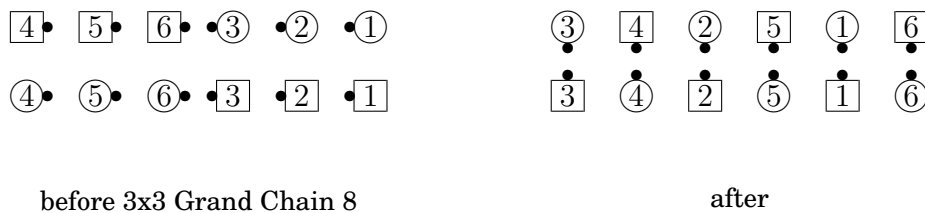


If the call is 4x4 Dixie Sashay, then do the 4x4 Dixie Style, followed by a “4x4 Slither” to create a 4x4 Left-Hand Two-Faced Line. This will flow naturally from the Left Touch 1/4. Make sure you go far enough so that you have everybody on one side facing the same direction.

Step (b) above in 4x4 Dixie Style resembles 4x4 Slither except that it is done forward instead of sideways. Some dancers think of it informally as “Vertical Slither”, although this is not a real call. You can also think of it as the same as the Once Removed adjustment that we typically do by “Drag and Drop”. You could have the center 4 do a Double Pass Thru, then the centers of each side do a Pass Thru. That will give you the required setup for the Left Touch 1/4.

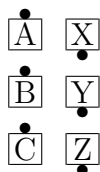
In practice, most dancers don’t do these calls slowly by pieces. They know where they are going to end, and they just go there. Just make sure you end in a Left-Hand Tidal Wave (for Dixie Style) or a 4x4 Left-Hand Two-Faced Line (for Dixie Sashay).

After you are comfortable with Dixie Style, think about Grand Chain 8 from a Double Pass Thru setup. The “centers pull by” is similar to the “original belles pull by” in Dixie Style. Then Left Touch 1/4 like a Couple Up (or Quarter Out, and Courtesy Turn, if you prefer).

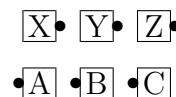


3x3 and 4x4 Grand Chain 8 are difficult calls, and are not commonly used. However, 3x3 and 4x4 Dixie Style (and Dixie Sashay) are commonly used.

10. Finally, learn the calls 3x3 Leads Run the Wheel and 3x3 Cross and Divide. These have both been used in the past, and dancers don't always do them well. On the call 3x3 Leads Run the Wheel, you can almost do the definition, but it helps to recognize in advance that the call will change shape from a 2x3 one direction to a 2x3 the other direction.



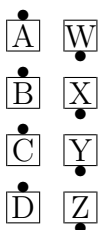
before 3x3 Leads Run the Wheel



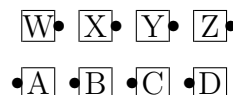
after

If you are the lead end, do the Run and Wheel Thru, but become #1 in a 2x3 column oriented in the other direction. If you are the trailing end, do the Trade and Roll, but back up a bit (and inward) to become #3 in a 2x3 column. If you are the center person, your part will feel like Trade and Hinge. The "Hinge" is halfway between the actions of "Wheel Thru" and "Roll", being done by your two ends.

On 4x4 Leads Run the Wheel, the Centers can do the call normally in the center box (and in fact, everyone can work Concentric):

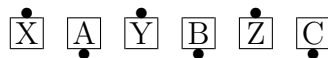


before 4x4 Leads Run the Wheel

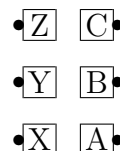


after

On the call 3x3 or 4x4 Cross and Divide (from a 1x6 or 1x8 wave), some people are tempted to head in the incorrect direction. Remember that the centers normally head towards the far ends, which would be to the *left* from right-hand waves.



before 3x3 Cross and Divide



after

One final note on 3x3/4x4: The astute reader may have noticed that any four-person call can technically meet the definition of 3x3 by doing the call in Triple Boxes, Triple Waves, or Triple Diamonds.

That could result by starting with a 2x4 setup (for example), pairing the corresponding people in each box with each other, spreading the boxes apart to make Triple Boxes, and considering the “cheese” dancers to be in the center Triple Box. These examples are generally not called with the 3x3 concept because we already have better names (e.g. Triple Boxes) that are more clear.

If you are concerned that one of the 3x3 box calls we mentioned earlier might be ambiguous from a 2x6 because we could either do it in each 2x3 or in Triple Boxes, then remember the “closest possible pairing” rule. The 2x3 version comes from pairing adjacent dancers and the Triple Box version comes from pairing once removed dancers. Thus, the 2x3 version is chosen if both are theoretically possible.

Additional Examples

At this point, you probably understand what we mean when we say that not all 3x3 examples are suitable for dancing “cold”, that is, without prior experience with this call or a similar call. In the past, some callers and dancers searched through call lists, trying to find unexpected examples where dancers were paired in a surprising or non-intuitive way. Often these calls were defined with separate centers’ and ends’ parts (such as Trip the Set, Regroup, or Load the Boat) and required once removed pairings to be done 3x3 or 4x4. These examples are no longer considered interesting or entertaining today, as most dancers only understand them if they have thought about that specific call before.

That said, it is not sufficient to only learn the calls listed earlier. It is still important to have a general understanding of the 3x3/4x4 definition and to be able to apply it in new situations. In particular, you may hear 3x3/4x4 used in combination with other concepts, such as the following examples:

- From Lines Facing Out: 4x4 Stable Chase Right.
- From One-Faced Right-Hand Tidal Line: 4x4, 1/4 Stable, Soft Touch.
- From 2x6 Completed Double Pass Thru: 3x3, Concentric Shakedown.
- From 2x6 Parallel Two-Faced Lines: 3x3, Trapezoid Circulate.

If you don’t see how to do these right away, imagine having the ends of your group of 3 or 4 doing the call normally, and the “cheese” dancers remaining in between the ends. (And, in the case of 4x4, the “cheese” dancers must remain closer to the same end that they started closer to.)

Chapter 9

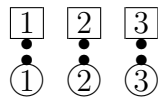
Single

The informal meaning of this is well known—for a call that has people working in obvious pairs (As Couples, for example), they work individually, with each person doing the part of one of the pairs in the base call. For example, in Single Wheel, each person does the part of one of the Couples doing Wheel and Deal.

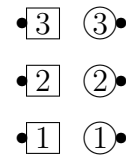
The more precise definition of Single used at C4 today allows people to be paired in a variety of ways (not just Couples) the same way we allow a variety of pairings for 3x3/4x4. The formal definition of Single states that you replace each of the pairs of dancers with a Single dancer located halfway between the two in each pair (and compress the setup if necessary). However, there is another way to look at Single, now that you are already familiar with 3x3/4x4.

To create the Single version of a call you know how to do 3x3, start with a diagram of the 3x3 call, remove the ends of each group of 3 from both the “before” and “after” pictures, and compress the setup if necessary. (That is, move the remaining dancers closer together if necessary to remove gaps). You’ll be left with the center (or “cheese”) person from each group of 3. Their dance action is the same as doing the call Single.

Let’s consider an example. Recall that we discussed 3x3 Split Swap earlier.



before 3x3 Split Swap

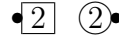


after

Below is Single Split Swap. Note the similarity between part of the center 2 dancers in 3x3 Split Swap and the two dancers in Single Split Swap.



before Single
Split Swap

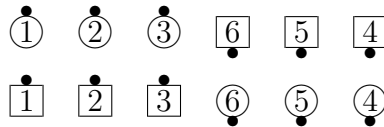


after

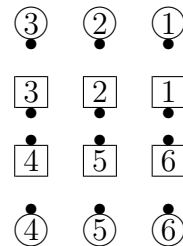
Now that you know Single Split Swap and Single Shakedown (C3A), see if you can figure out Single Shake and Rattle.

There are quite a few lower level calls that contain the word “Single”. Many of these calls do follow the C4 Single definition (and in fact, inspired the definition). Examples include Single Checkmate, Single Ferris Wheel, Single Polly Wally, Single Rotary Spin, Single Shakedown, Single Strut Right/Left, Single (or Split) Transfer, and Single Turn to a Line. You can verify that these follow the Single definition if you want to, but it is not necessary since you have already learned these calls. You might find it helpful to think about other calls that are similar to these, such as Single Cross Chain Thru or Single Cross Chain and Roll.

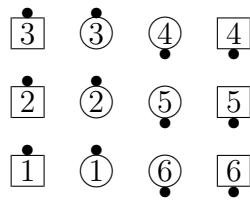
Single Ferris Wheel is worth a longer discussion. Ferris Wheel presents an interesting challenge because the dancers can be paired in multiple ways in order to do Single, 3x3, or 4x4. First, recall the two ways of doing 3x3 Ferris Wheel:



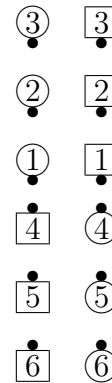
before 3x3 Ferris Wheel



after

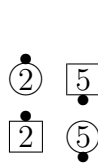


before 3x3 Ferris Wheel



after

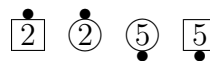
When you remove the ends of each group of 3 in the first example (and compress the setup), you get the Single Ferris Wheel you are familiar with from C3A. When you remove the ends of each group of 3 in the second example (and compress the setup), you get a call that looks like Wheel and Deal from Two-Faced Lines.



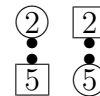
before Single
Ferris Wheel (C3A)



after



before Single
Ferris Wheel (C4 only)



after

Both of these are valid interpretations of “Single Ferris Wheel” at C4. However, only the first one (the C3A call) is commonly used. The second one often causes dancer confusion because dancers are expecting to do the C3A call. Also, the second one has another name (Wheel and Deal), and it is much simpler to just use that name. As a result, the second interpretation of Single Ferris Wheel is not very useful in practice.

You might also wonder if the call Single Ferris Wheel is actually ambiguous from a 2x4, as you have both a box and a line you could conceivably work in. It turns out that this call is not ambiguous because different facing directions are required for each version of this call. If you are in Parallel Waves, then only the standard C3A version is possible; you need Couples for the alternate version. If you are in Parallel Two-Faced Lines, then only the alternate version is possible; you need a Mini-Wave Box for the C3A version.

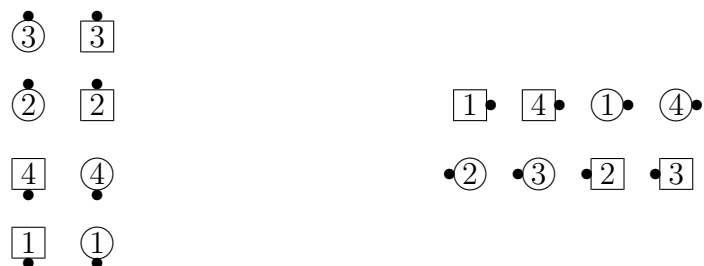
There are several other calls that permit multiple pairings of this type. Consider the C4 call Hang a Right. ‘Single Hang a Right’ is usually called from a 1x4 Completed Double Pass Thru, and it is “Tandem Right Roll to a Wave”. However, under the C4 Single definition, it is equally valid to use “Single Hang a Right” from Couples Back-to-Back, where it would be “As Couples Right Roll to a Wave”. It turns out that this call is also unambiguous from a 2x4 because each dancer must be

facing out of the setup they are working in. From a 2x4 completed Double Pass Thru, you can only do it in each 1x4 column. From Lines Facing Out or a Trade By formation, you can only do it in each box.

The call “Sidetrack” causes confusion for some dancers if they try to apply the Single concept. The challenge on this call is that many facing directions are valid, and we cannot disambiguate based on facing directions. Instead, the convention established at C3B for Sidetrack is that “Split Sidetrack” always means work in each box, and “Single Sidetrack” always means work in each 1x4 column. Just do the definition in the implied setup, and don’t think too hard about Single.

Below are a few more examples where multiple pairings produce multiple ways of applying Single to a given call. In each case, think carefully about the facing directions of the dancers to determine which setup to work in.

On Single Countershake (below), the first setup is more commonly used but the second setup is also valid.



before Single Countershake

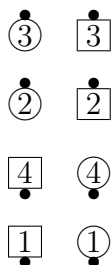
after



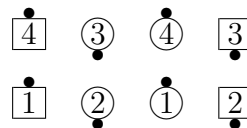
before Single Countershake

after

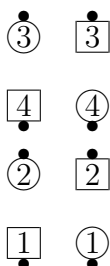
On Single Roll Out to a Column (below), the first setup is more commonly used but the second setup is also valid.



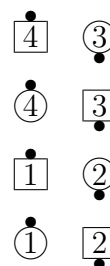
before Single Roll Out
to a Column



after



before Single Roll Out
to a Column



after

Some Single calls in relatively common use at C4 are included in Book 1. See the calls Bridge the Gap, Bring Us Together, Mark Time, and Shuffle the Deck/Single Shuffle for examples. Some other Single calls you might want to think about include: Single Slimdown (from a diamond), Single Turn Away (from a box or 1x4 Completed Double Pass Thru), and Single Turntable (from a 1x4 column).

There are a few lower level calls containing the word “Single” that do not follow the C4 Single concept exactly (although they may include working Single for a portion of the call):

1. Single Rotate is not the “Single” concept applied to Rotate. If it were, Single Rotate would always be done in a 4-person setup. It isn’t.
2. Single Cross and Wheel is the “Single” version of Cross and Wheel, but Single Cross Trade and Wheel is not the “Single” version of Cross Trade and Wheel.
3. Single Circle to a Wave is not the same as applying the Single Concept to Circle to a Wave.

Additional Examples

There was a period of time when some callers tried various Single calls such as “Single Ah So”, “Single (Box) Recycle”, “Single Cross Roll to a Wave”, and others, which all turned out to be equivalent to “Trade”. Even some more difficult calls such as “Single Trip the Set” turned out to be equivalent to “Trade and Roll”. Some dancers ended up deciding to do a Trade (or Trade and Roll, if needed) whenever they heard a Single call they didn’t know how to do. These calls are no longer considered interesting.

One other thing to be aware of with Single is that if the caller uses it in combination with a meta-concept such as Initially or Finally, they generally mean the Single Concept, and not some arbitrary use of the word Single as part of a name.

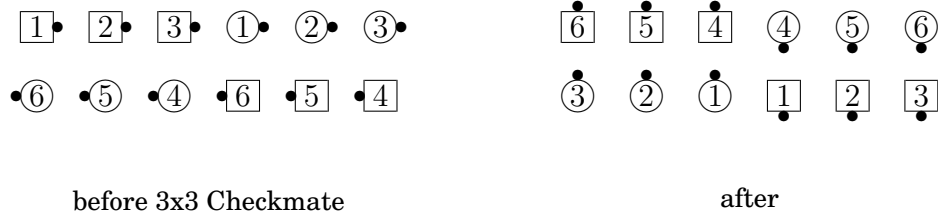
Initially Single, Circle to a Wave:

- Single Circle Left $1/4$ (*not* $1/2$)
- Beaus Walk, Belles Dodge

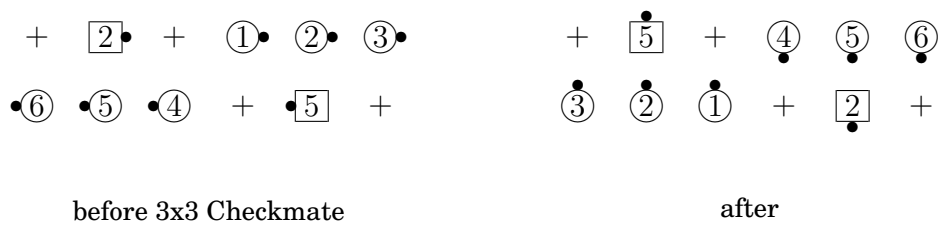
Chapter 10

3x1 / 1x3

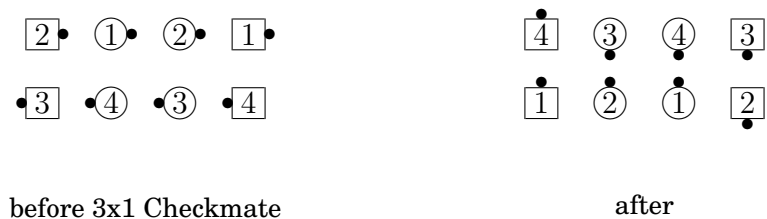
These concepts can often be analyzed in terms of some pairs of people in the original (“2x2”) call being expanded to three people while others are reduced to one. However, it is probably best to think in terms of 3x3, with some of the groups of three reduced to a single person. 3x1 Checkmate provides an example:



We reduce some of the groups to 1:

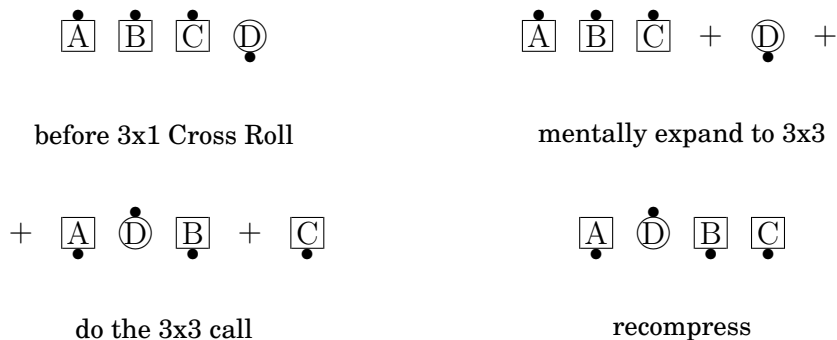


The 3x1 version is formed by compressing both the “before” and “after” pictures:



Of course the dancers don't actually have the luxury of making pictures and compressing them. So the principal problem in doing 3x1-types of calls is identifying what 3 real people remain the "real" 3x3 people and what individual person is associated with two phantoms to become the other 3x3 group. After making that determination, do the 3x3 call, and then compress out the extra phantoms to make the final setup.

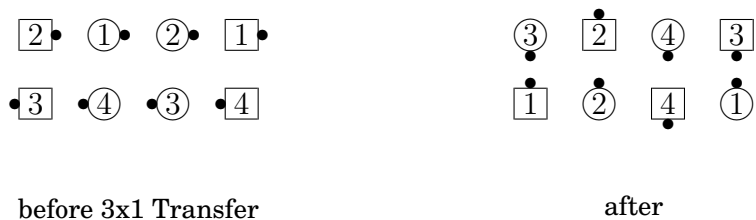
First, there is a convention about how to choose the "3" people and the "1" person. For many calls it is easy to make the determination based on facing direction. 3x1 Cross Roll is an example:



This is a good point to notice something tricky about calls like this—person "D" had to go into the center spot, that is, take hands with the centermost of the other 3 people. This is sometimes hard to see. This will show up in things like 1x3 Transfer.

In cases like Cross Roll, in which the facing direction determined how people were grouped, it doesn't matter whether the caller says "3x1" or "1x3".

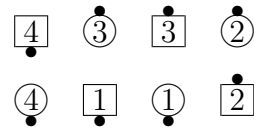
The other situation is the one in which the 3 people who are grouped and the one who is single are facing the same direction. In that case the convention is that, if they are in tandem, they count from the front to the back, and if they are side-by-side they count from right (belle side) to left (beau side.) That is, 3x1 in columns means that the front 3 people are grouped and the last person is single, whereas 1x3 means that the front person is single and the remaining 3 are grouped. From back-to-back lines, 3x1 means that the 3 rightmost people are grouped and the leftmost one is single.



Notice that the side boys had to be very careful here. After the Cast Off 3/4, they are facing 3 people. They come out to the center of those people, and take right hands. Compare this with the 3x1 Checkmate shown previously.

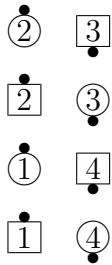


before 3x1 Turn and Deal

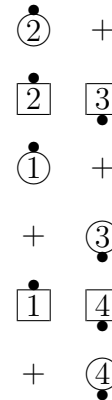


after

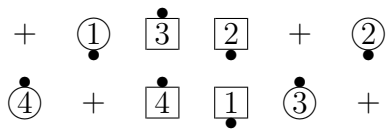
Similarly, when starting a 3x1 call, you will not necessarily begin with the “single” and “cheese” dancers lined up. Be careful about identifying the group of people with whom you are working.



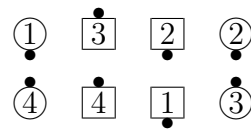
before 3x1 Split Recycle



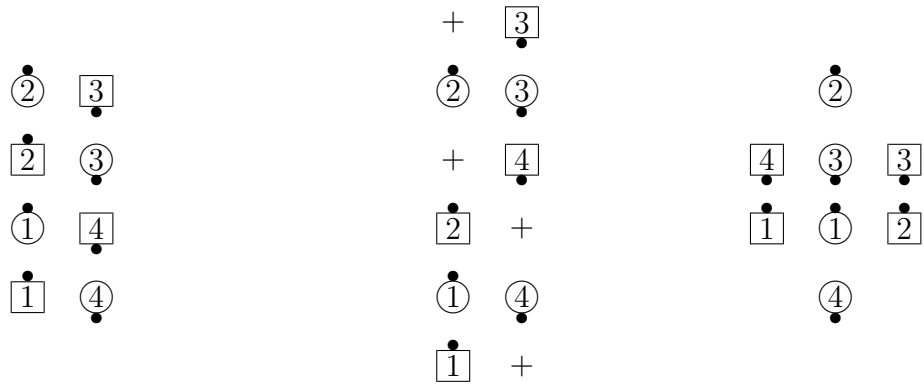
mentally spread out groups



do the 3x3 call



recompress



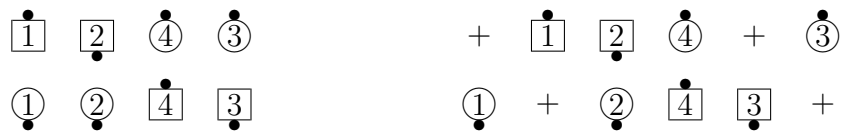
before 1x3 Walk and Dodge

mentally spread out groups

do the call

This is not the “obvious” thing people might be tempted to do when they hear 1x3 Walk and Dodge.

When doing a 3x1 or 1x3 version of a call that normally starts in a wave, the center 2 people of the actual line determine the handedness of the 6-person wave that people need to think about. Those people will often say “right” or “left” to indicate the handedness that the end people should infer. Those end people then spread out appropriately to make a wave of 6 with the correct handedness, and do the 3x3 version of the call.



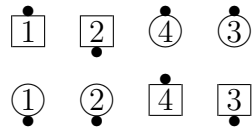
before 3x1 Ah So

mentally spread out groups
to match handedness of center 2

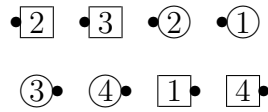


do the 3x3 call

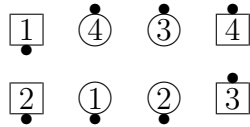
recompress



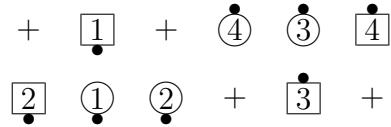
before 3x1 Follow Your Leader



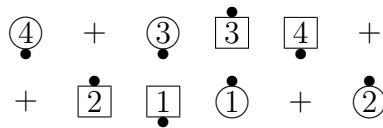
finished



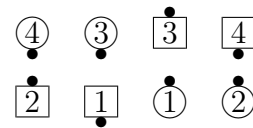
before 3x1 Scatter Circulate



mentally spread out groups

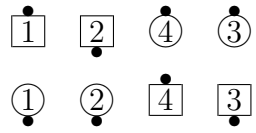


do the 3x3 call—head boy
goes to center miniwave

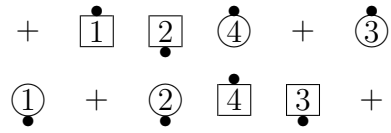


recompress

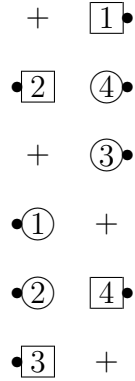
In the example below, note that because the dancers start in a 3x1 wave, we are doing the “wave” version of Cross and Divide. Again, the dancers spread out into 3 miniwaves. As usual for calls that start in waves, the handedness of the center 2 determine the handedness of these miniwaves.



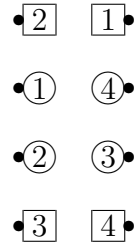
before 3x1 Cross and Divide



mentally spread out groups
to match handedness of center 2



do the 3x3 call



recompress

Additional Examples

As you might expect by now, some callers and dancers have historically tried to “push the limits” of this concept by applying 3x1 or 1x3 to calls where 3x3/4x4 or Single are already too confusing or otherwise in poor taste. None of these are in use today.

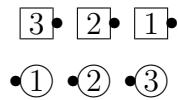
Below are some examples you might actually hear at a dance today, which build on the same principles we discussed earlier.

- From 3x1 Parallel Two-Faced Lines: Oddly 3x1, Spin a Wheel.
- From Lines Facing Out: Piecewise 3x1, Wheel the Ocean. (Hint: Don’t forget to re-evaluate after the first part.)
- From 3x1 Parallel Two-Faced Lines: 3x1, Stretch, Couples Hinge.
- From 3x1 Parallel Two-Faced Lines: Stretch, 3x1 Couples Hinge. (Hint: this is different from the previous example.)

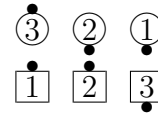
Chapter 11

2x1 / 1x2

The 2x1/1x2 concepts work similarly to 3x1/1x3, except that there are groups of 2 along with the groups of 1. The groups of 1 work Single, as before. The groups of 2 can often work normally, without thinking too much about 3x3, but in a slightly different size setup.



before 2x1 Checkmate



after

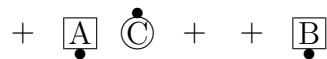
There is another, more complicated way of doing 2x1, that may be helpful on some harder calls. That is to replace the groups of 2 with a group of 3 (by adding a phantom between the two real dancers) and replace the group of 1 with a group of 3 (by adding phantoms on each side of the real dancer). Then, do the call 3x3, and remove the phantoms.



before 2x1 Cross Roll



mentally expand to 3x3



do the 3x3 call



recompress

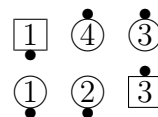
After you have done a few of these, you will realize that they are actually easier than the corresponding 3x1 calls. If the call normally ends a wave, the Single dancers ends between the other two, and do not need to think carefully about the handedness.

Calls starting in 2x1 waves are usually not suitable for 2x1/1x2 calls (such as Follow Your Leader) because the handedness is ambiguous.

2x1/1x2 calls done in a 6-dancer setup can require the same adjustments adjustments as 3x1 calls done in an 8-dancer setup.



before 2x1 Turn and Deal



after

2x1 calls can also start in a Wave-Based or Tandem-Based Triangle, as long as the base dancers are facing the same direction. The base dancers are always the group of 2 (doing the call normally) and the apex dancers are always the group of 1 (working Single). Examples of this are presented in Book 2 as an alternative to Triangle Working as a Box (at the end of the section on that topic).

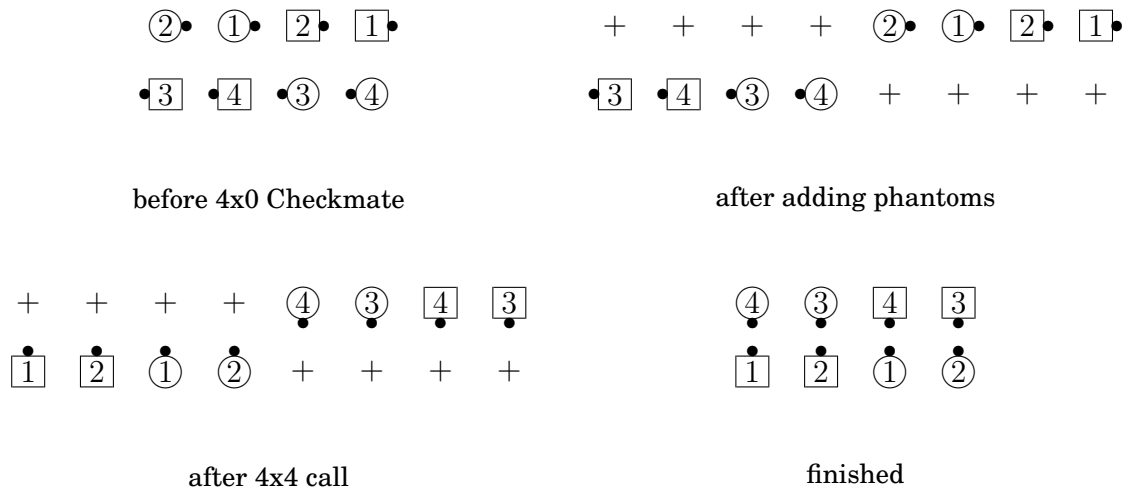
Chapter 12

4x0 / 0x4

These concepts take the MxN idea to a greater extreme. Some pairs of dancers in the original (“2x2”) call are expanded to four dancers while the others are reduced to zero (that is, removed entirely).

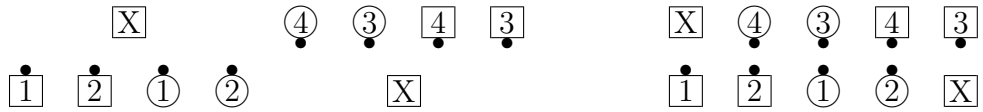
One way to think about these calls is as 4x4 calls with some groups of dancers removed. To dance the 4x0 call, add 4 phantoms to represent each missing group, do the call 4x4, and then adjust to a compact formation by removing the added phantoms. We’ll call this the “4x4 method”.

4x0 Checkmate:



Unfortunately, the correct way of removing phantoms at the end is not immediately obvious in the diagram above. The dancers could move forward/backward to make a 1x8 or sideways to make a 2x4.

The general rule is to adjust in the same direction as you would for positive values of MxN, such as 4x1 or 3x1. Consider, for example, if we started with the phantom groups of 4 in the “after 4x4 call” diagram above, replaced each of those groups with a single dancer, and compacted the setup. All the dancers would slide over sideways into a 2x5.



dancer X replaces
phantom groups of 4

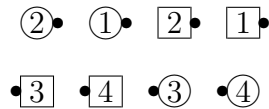
adjust to compact formation

So, when all the phantoms are removed, the real dancers also slide over sideways into a compact formation, in that case creating a 2x4.

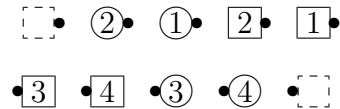
This type of adjustment is quite common, and many 4x0/0x4 calls will end in a 2x4.

Epsilon Method

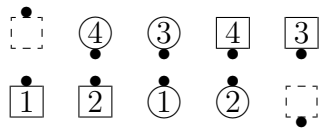
There is another method of dancing 4x0 calls, which can be called the “4x1 method” or the “epsilon method”. First, add only *one* phantom to represent each missing group, while keeping the same groups of 4. Then, do the call with the 4x1 concept. Finally, remove the added phantoms and compact the formation (which will be unambiguous in this case).



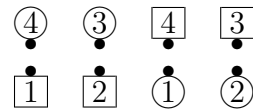
before 4x0 Checkmate



after adding phantoms



after 4x1 call



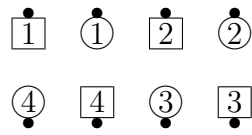
finished

The name “epsilon method” comes from the typical use of epsilon in mathematics as indicating a small number that approaches zero. Dancers using this method think of the added phantom dancer as the “epsilon” that starts as size one but approaches size zero as the formation is compacted.

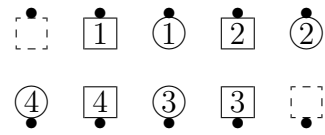
If the 4x1/epsilon method works for you, it is preferable because it tends to be smoother and involve less of an adjustment. In fact, some dancers just mentally track the “epsilon dancer”, and do not need to do any physical adjustment at all.

Whichever method you use, the same approach can be applied to 0x4, but the added phantoms would be placed in front of each column of 4. If you are using the 4x1 method, the 4x1 concept would also be replaced with 1x4.

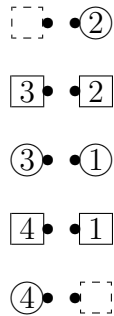
Both 4x0 and 0x4 can also be used with Line-type calls, in which case the Belle/Beau rule is used.



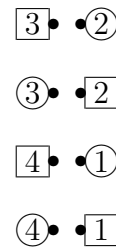
before 4x0 Bend the Line



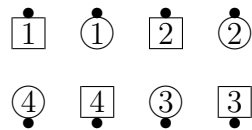
after adding phantoms



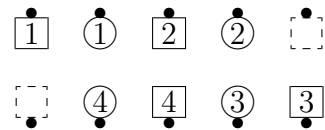
after 4x1 call



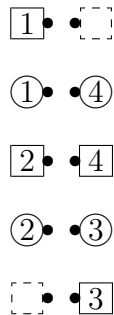
finished



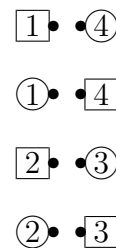
before 0x4 Bend the Line



after adding phantoms



after 1x4 call

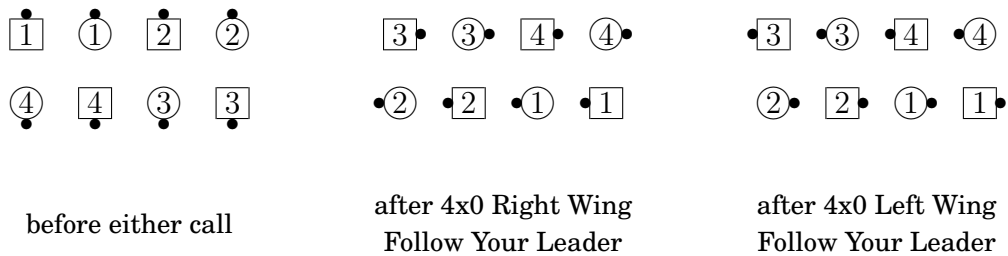


finished

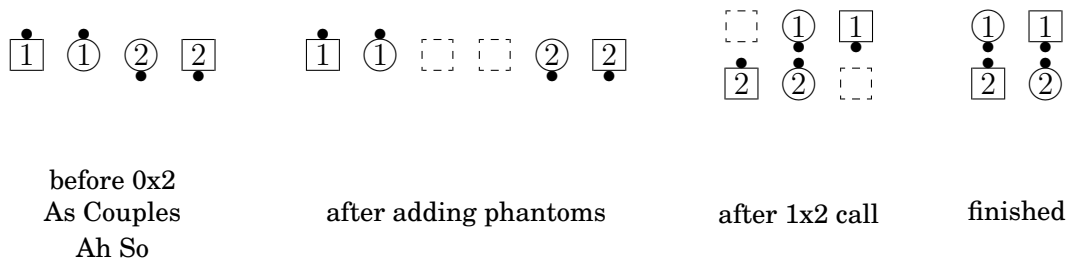
A challenge with some 4x0 calls is that because some positions of the formation are not represented

at all, it can be ambiguous where to place the added phantoms. In the examples that have been used in practice, the added phantoms are always placed in the same Line or Column with each group of 4. The 3x1 calls that are not aligned this way have no direct 4x0 counterpart. (For example, from an H, we can call “3x1 Drift Apart”, but there is no corresponding 4x0 / 0x4 example.)

A challenge in using 4x0 with calls normally done from Waves is that the handedness is ambiguous. Recall that on calls such as 3x1 Follow Your Leader, everybody takes the handedness from the Center Mini-Wave. This Mini-Wave does not exist when the call is done 4x0 and all dancers are facing the same direction. One well-known caller has used Right/Left Wing in combination with 4x0 to resolve this ambiguity.



Other values of “N by zero” or “zero by N” can be used.



History of Document Changes

Date	Change
21 Oct 2012	Fix typo in explanation of parts.
30 Apr 2014	Create change log.
6 Jun 2014	Add table of contents.
30 Jul 2014	Discuss 3x3/4x4/3x1/1x3 Cross and Divide and Load the Boat.
4 Apr 2015	Discuss overuse of “Single”.
5 Jun 2016	Cut out wasteful whitespace.
24 Jun 2023	This begins a series of updates by Sue Curtis. Added section on Expanded Supercalls (“It”). Modified 3x3/4x4 to remove references to non-existent concept.
2 Jul 2023	Replaced references to Random and Reverse Random with Oddly and Evenly.
6 Jul 2023	Modified “Single” to focus more on the relationship to 3x3. Also removed some out-of-date comments. Removed reference to Run the Wheel as a space-invader.
9 Jul 2023	Removed some unnecessary gender-specific wording. 3x3/4x4: Changed section to focus less on “tricks” and more on becoming comfortable with the 3x3/4x4 calls in use today. Also now using the terms “cheese”, “adjacent pairing”, and “once removed pairing” where appropriate. Changed heading to be “3x3 / 4x4 / NxN” instead of “3x3, 4x4, etc”. 3x1: Changed heading to be “3x1 / 1x3” instead of “3x1, etc.”.
12 Jul 2023	Changed the “How Hard Can it Be?” sections in 3x3, Single, and 3x1 to reduce focus on unpopular theoretical examples and instead focus on examples more likely to be used today. Changed discussion of “recompression” of 3x1 Turn and Deal for clarity. Made a few formatting improvements, such as removing excess white space, improving capitalization, and replacing abbreviations with the full setup name.
13 Jul 2023	Changed “How Hard Can It Be?” sections to be named “How Hard Might It Be?” to match the new focus. Minor wording changes.
16 Nov 2023	Rewrote entire chapter on fractions and parts to focus on specific ideas: the tree structure of parts, calls with fractions but not parts, calls with poorly-defined parts, re-evaluation, the parts of concepts, and the stacking of meta-concepts. Modified section on supercalls to include examples without “But”, such as Rotary <anything>. Added section on 2x1/1x2 after the section on 3x1/1x3. Minor wording and heading changes.
17 Nov 2023	Changed book title and introductory description. Improved wording in the section on the parts of concepts. Fixed a few typos.

Date	Change
28 Nov 2023	Added section on 4x0/0x4. Changed spelling of “Checker Board” to use 2 words instead of 1, for consistency with Callerlab and Vic Ceder’s web site. Moved the History of Document Changes to the end of the document, and put some introductory paragraphs and the copyright statement on the first page.
19 April 2024	Changed wording in section on Multiple Diamonds Working to better reflect current usage.