

# Miscellaneous C4 Notions

Bill Ackerman

4 Apr 2015

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 July 2014	Discuss $3 \times 3 / 4 \times 4 / 3 \times 1 / 1 \times 3$ Cross and Divide and Load the Boat.
4 Apr 2015	Discuss overuse of “Single”.
5 Jun 2016	Cut out wasteful whitespace.

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This is the third of three books about C4. The first covers calls, the second covers concepts, and the third covers miscellaneous “notions”.

# Chapter 1

## Fractions and Parts

The use of fractions and parts is familiar to dancers starting somewhere between Mainstream and C1. There are a few special aspects we will discuss here.

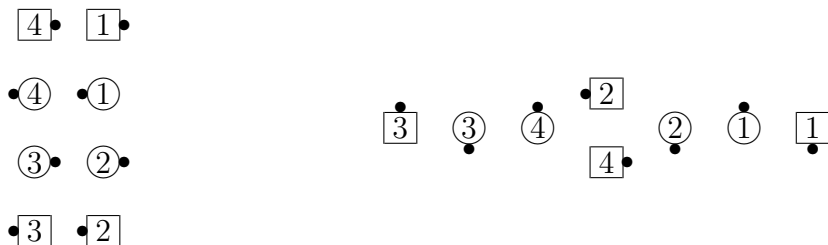
### How Parts of a Compound Call are Divided

If a call is defined as having four parts done in sequence, one can do  $1/4$ ,  $1/2$  or  $3/4$  of that call in a natural way. For example, Split the Difference has four parts, so  $3/4$  of Split the Difference is clear.

Beware: Some calls naturally have a fraction at the beginning of their name.  $3/4$  Mix is not the same as  $3/4$  of a Mix. The caller must be careful to make the meaning clear.

Some calls (Hot Foot Spin and Settle Back, for example) are defined as a sequence of parts, some of which are themselves sequences of parts. When this happens, the parts subdivide uniformly at each level. The last  $1/3$  of Hot Foot Spin is Spin the Top. The last  $1/2$  of that last  $1/3$  is Fan the Top. That's the last  $1/6$ , even though the call doesn't have 6 parts.

If we do  $1/2$  of a Hot Foot Spin, we stop halfway through the middle third.



before  $1/2$  Hot Foot Spin

after

If we do  $5/6$  of a Hot Foot Spin, we stop halfway through the final third, that is, after the first half of the Spin the Top.

As a somewhat extreme example, we could do  $9/12$  of a Hot Foot Spin, that is,  $3/4$ . That would be  $2/3$  (the first two parts) followed by  $1/4$  of the final part.  $1/4$  of the Spin the Top is  $1/2$  of the initial trade, that is, Hinge. The result is columns. This application would have to be considered obnoxious. An even more extreme example would be (from waves with boys on the end) Boys work  $17/18$ , Hot Foot Spin. The boys would change their final Cast Off  $3/4$  to a Cast Off  $1/2$ .

Some parts of compound calls are, by convention, a single part, even though they consist of doing something twice. These are the two “O” Circulates of Bits and Pieces, Outpost, and Settle Back, and the two “Diamond Counter Rotates” of Alter the Wave and Alter the Diamond. Of course, those two items can be broken apart with the correct fractionalization. For example,  $5/8$  Alter the Wave, or Boys Work  $5/6$ , Outpost.

There used to be an alternative formulation for breaking calls apart, called “flattening”. Under flattening, all parts at all levels were simply strung out in one list. Hot Foot Spin would have 4 parts. Flattening had logical problems—one needed to analyze a call all the way to the bottom before one could do anything, and it didn’t work properly with meta-concepts like Initially. It is no longer used. One notable exception to the rule that we don’t flatten is the call Swing and Mix. If it logically followed the conventions that we make for compound calls of this type, it ought to have two parts—Swing, and Mix, the second of which has 2 parts. However, by long-standing convention this call is construed to have 3 parts.

## How Parts and Fractions Differ

One can do a Grand Swing Thru  $1-1/4$ , resulting in columns. Does that mean that Grand Swing Thru has 4 parts? No. In addition to the natural subdivision of calls that have parts, a call that doesn’t have parts can be stopped or interrupted at a fractional part, if that is sensible in terms of the call’s action. For example, one can do  $1/2$  of a Wheel Around,  $3/4$  of a Do-Sa-Do, or  $3/4$  of a Mix. One can also stop non-compound parts of compound calls, as we saw with the  $1/2$  Hot Foot Spin.

When we fractionalize a call in a way that doesn’t divide it on part boundaries, the number of parts in the result is not well defined.  $1/2$  Change the Centers has two parts, but the number of parts of  $3/8$  Change the Centers is not well defined. As another example, Initially Stable  $3/4$  Run Wild is improper.

## How These Things Interact with Other Concepts

Some concepts work with parts, but not with fractions. The Interlace concept is a good example. You can’t interlace a Do-Sa-Do, but you can interlace a Hot Foot Spin. The interlace occurs at the top level only—no interlaced call can come between the parts of the final Spin the Top.

Some operations, like Interrupt, can exploit either parts or fractions—one can interrupt Alter the Wave after 2 parts, or after  $1/2$ . (But if you want to interrupt after  $5/8$ , that is, between the Diamond Counter Rotates, you must specify it by fraction or use a powerful concept like Thirdly.)

The “Replace” concept is only specified by parts, because it is too cumbersome to say “Hot Foot Spin, but replace the material between  $2/3$  and  $5/6$  with an Ah So.”

There are also meta-concepts that direct the application of some other concept over some part of a call. These can be done by parts:

Do the 3rd part Stable, Split the Difference

or by fraction:

Do the first 1/6 Tandem, Turn the Key (or just First 1/6 Tandem, Turn the Key)

Last 7/8 Tandem, Change the Centers

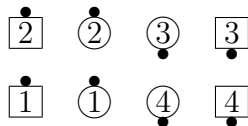
The meta-concepts “First M/N”, “Middle M/N”, and “Last M/N” mean to apply the concept to the indicated part of the call. They can, of course, break up parts.

## Nested Meta-Concepts

The meta-concepts “Initially”, “Finally”, “Evenly”, “Oddly”, “Random”, “Reverse Random”, “Piecewise”, “Firstly”, “Secondly”, and so on, are extremely powerful and extremely complex. They go down one level in the structure of a compound call, and cause the concept to be applied to the selected part or parts. When nested, they can go down multiple levels. If the concept after the meta-concept operates on parts or fractions, it operates on the parts or fractions of that subcall, and things can become quite complex.

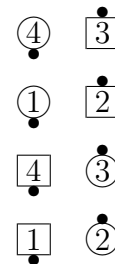
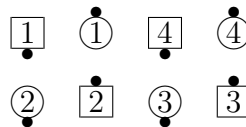
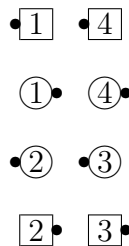
Consider the case of “Initially Finally Echo Concentric Settle Back”. The meta-concepts nest as though it were “Initially (Finally Echo Concentric) Settle Back”.

Settle Back has two parts. The second of those (Cross Back and two O Circulates) will not be affected. But the first part is Reset 1/2, and has “Finally Echo Concentric” applied to it. Reset 1/2 has two parts—1/2 Zoom and Hinge. The second of those parts, Hinge, has “Echo Concentric” applied to it.



before Initially Finally  
Echo Concentric  
Settle Back

1/2 Zoom



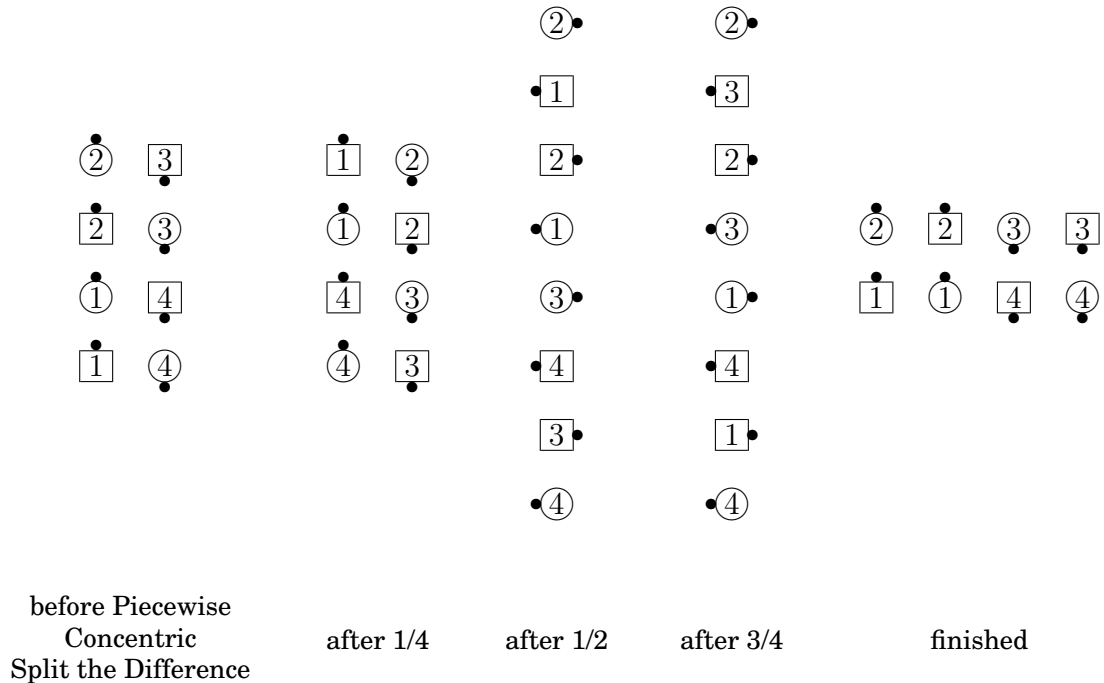
Concentric Hinge

Hinge

finished

## Re-evaluation

When the application of a concept is broken up through the use of a meta-concept such as “Random”, we say that the concept is “Re-evaluated”. This means that any special things that we needed to think about for the concept (lines-to-lines, the Once-Removed axis, the Split Phantom Lines axis, with whom one is in a Twosome or a Tandem, etc.) are completely evaluated and processed at each interruption point. Normally we think about the lines-to-lines rule for Concentric only at the beginning and ending of the complete call. We don’t apply it to each part of a Split the Difference. To do so would be incorrect.



By applying the Concentric rule specifically to the last part of the call, we got 2-faced lines instead of the columns that we would get on a normal Concentric Split the Difference.

Under normal circumstances, we don’t re-evaluate between parts of a call. But, if we interrupt the call, we have to re-evaluate.

While dancers are doing a Concentric Split the Difference, if we ask someone where she is at some intermediate point, she might say “I’m working around the outside, and I’m going to make columns when I’m finished”. Now suppose we interrupt after 1/4 with a Transfer the Column. The preceding answer isn’t good enough. She has to make precise columns after part 1, applying the “columns to columns” rule. After the Transfer the Column, people need to re-evaluate the setup again and proceed from there.

Similarly, the Once Removed axis might change, or whether a person’s Twosome is Tandem or As Couples might change. During an interruption, or during a part of the call without the concept, these things are meaningless, so they need to be re-evaluated when the concept is resumed.

The Piecewise meta-concept forces a re-evaluation on every part, as well as causing the concept to be applied to each part separately. For example, Piecewise Twice Change the Wave is not the same as Change the Wave Twice.

## Concepts That Present Parts

Since knowing exactly how things are broken into a tree structure of parts and sub-parts is so important, one needs to be aware of some concepts that themselves impose part structure. A prime example of the is “Crazy”.

The Crazy concept, applied to anything, always has 4 parts.

N/4 Crazy has N parts.

Echo and Reverse Echo have 2 parts.

Initially, Finally, Random, etc. have as many parts as the underlying call.

Interlace has the sum of the parts of the constituents.

So, if we interlace a Crazy Circulate with The Difference, we do a total of 7 things—4 Circulates in various places, interlaced with the 3 parts of The Difference.

If we do an Initially Echo 1/2, 3/4 Crazy Roll Away, from a tidal 1-faced line, there are “officially” 3 parts, but we do 4 things:

1/2, Roll Away (now in facing lines, re-evaluate)

Roll Away

centers Roll Away

Roll Away

The first two of those things constitute the first part.

How about Random Crazy Change the Centers?

The Random concept picks out the first and third of the four parts of Change the Centers for special treatment. The fact that doing those parts Crazy turns those actions into 4 actions makes no difference—Random doesn’t see them. It sees only four things. There are a total of ten things to do, but the whole operation has four parts: Crazy Trade, Slip, Crazy Centers Cross Run, Slip.

The “initially” meta-concept (and others like it) give rise to similar issues. These meta-concepts do not change the number of parts of the subject call, even if the concept is something like “twice” or “crazy”. “Initially Twice Mix” has 2 “official” parts:

Centers Cross Run twice

Centers trade

So Initially As Couples, Initially Twice, Mix is done as:

As Couples do a Centers Cross Run twice

normally do a centers trade

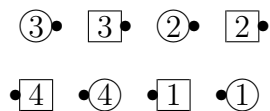
Things like this can be quite confusing.



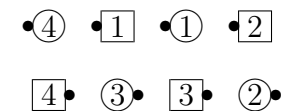
## Chapter 2

# Grand Working <direction>

There is a call Grand Cross Back:



before Grand Cross Back



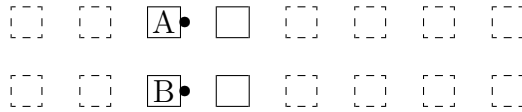
after

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.

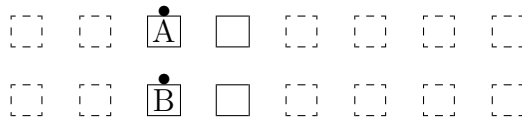
## Starting from a 2x4

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:

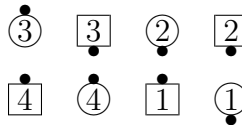


On Grand Working Right, if you are person A or B,  
do the call in the 4 solid spots.

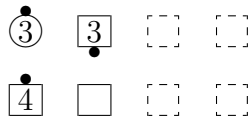
Grand Working Backward and Left mean the obvious thing.

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.

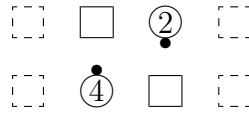
The thing that makes this concept (and the Multiple Formations Working <direction> concept) difficult is that the center subsetup and each split subsetup overlap by 50%. One has to get used to doing a call in the presence of people who are doing something apparently unrelated. It is of course the caller's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



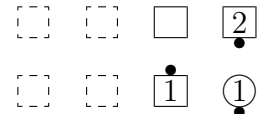
before Grand Working Right Bingo



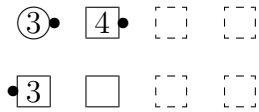
3 people think this



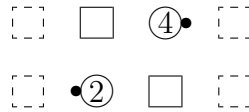
2 people think this



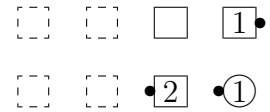
3 people think this



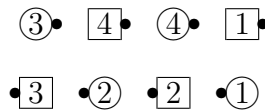
resulting in this



resulting in this

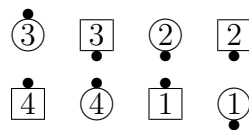


resulting in this

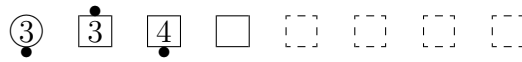


Finished

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%:



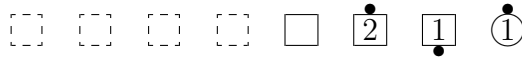
before Grand Working Right Peel and Trail



result on the left side



result in the center



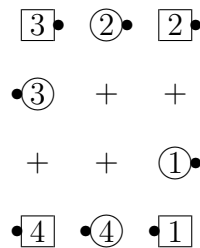
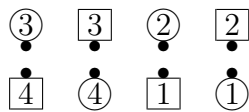
result on the right side



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”.



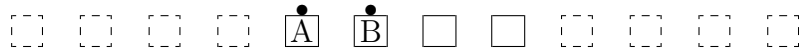
before Grand Working Right  
Swap the Top

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, her interpretation of “right” will be different, but her 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.

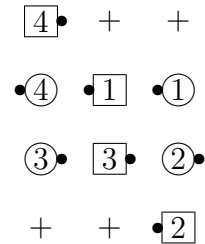
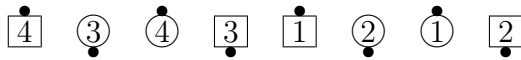


before Grand Working Right, or Apart,  
or As Ends, Swing Thru

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

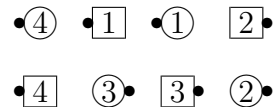
The dancers don't even need to think too hard about whether they are in the outer miniwaves and the direction therefore doesn't apply to them. The rule that everyone uses is "Pick a wave (center wave or split wave) that makes me an end, if possible. If not possible, pick the only wave that works." In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



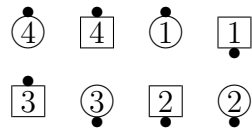
before Grand Working as Centers  
Single Polly Wally

after

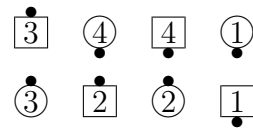
The latter is also called just Grand Single Polly Wally. As we have seen, many plain "grand" calls can be reformulated in terms of "grand working". These reformulations may or may not be helpful to you.

## 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

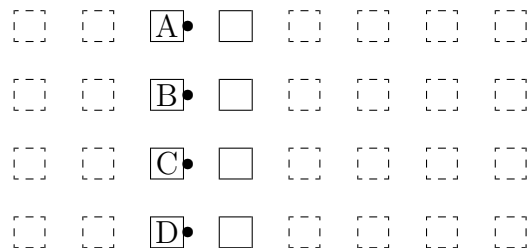
## Chapter 3

# Multiple Formations Working <direction>

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

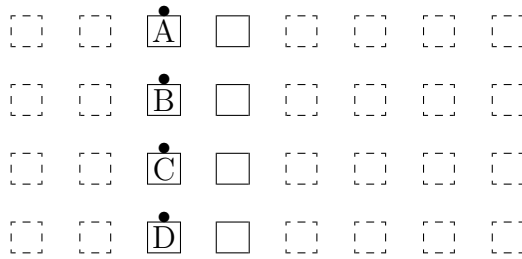
On a Grand Working call, one associates one's 2-person group with another group to form a 4-person setup in which to do a 4-person call. On a Multiple Formations Working call, one associates one's 4-person group with another group to form an 8-person setup in which to do an 8-person call.

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.)



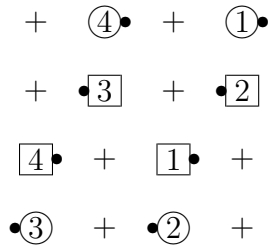


On Multiple Columns Working Right, if you are person A, B, C, or D, do the call in the 8 solid spots.

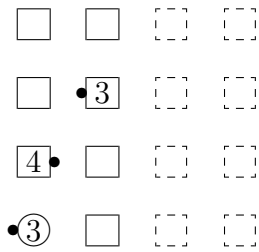
### Starting from a 4x4

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.

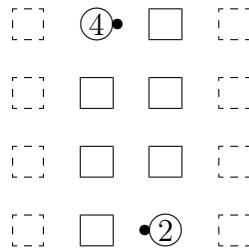
As with Grand Working, the center pair of lines, and the sets of Split Phantom Lines, overlap by 50%, which can be difficult to handle. It is helpful to concentrate on whether you are working in Split Phantom Lines or the Center Phantom Lines, and use your breathing and shape-changing skills.



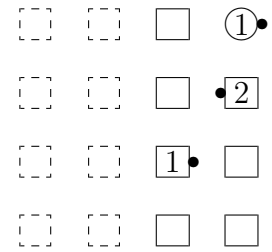
before Quadruple Lines Working Forward  
Trade the Deucey



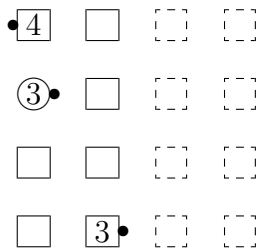
3 people think this



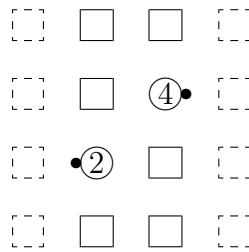
2 people think this



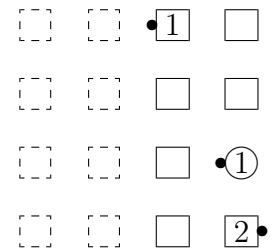
3 people think this



resulting in this



resulting in this



resulting in this

$$\begin{aligned}
 &\bullet 4 + \bullet 1 + \\
 &\textcircled{3} + \textcircled{4} + \\
 &+ \bullet 2 + \bullet 1 \\
 &+ \bullet 3 + \bullet 2
 \end{aligned}$$

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.

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

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.

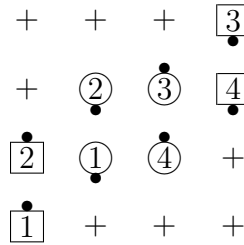
$$\begin{array}{cccc}
 \textcircled{3} & + & \boxed{3} & + \\
 \textcircled{2} & + & \boxed{4} & + \\
 + & \boxed{2} & + & \textcircled{4} \\
 + & \boxed{1} & + & \textcircled{1}
 \end{array}$$

before Quadruple Columns Working Right  
Strut Right

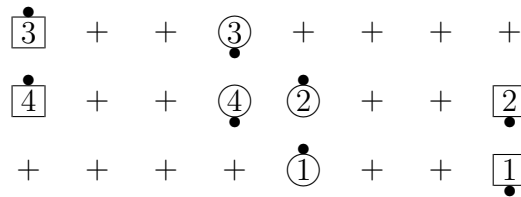
$$\textcircled{2} \textcircled{3} + + + + \boxed{4} \boxed{3} \boxed{1} \boxed{2} + + + + \textcircled{1} \textcircled{4}$$

after

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



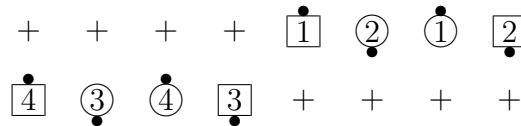
before Quadruple Waves Working Forward  
Flip the Top



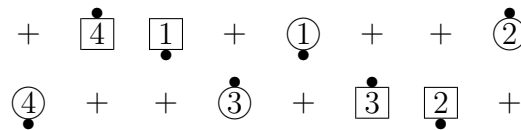
after

## 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.



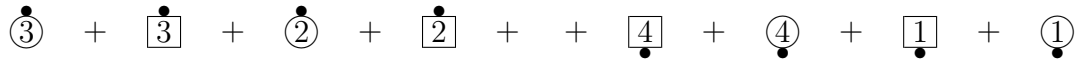
before Quadruple Boxes Working Together  
Trade the Deucey



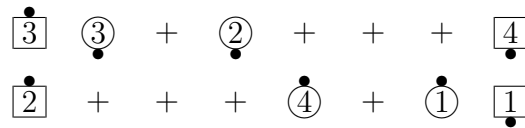
after

## 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

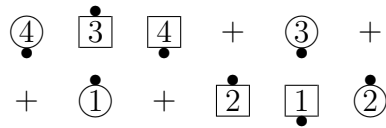


after

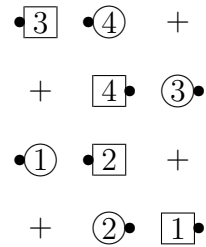
Each side girl, who is in one of the center 1x4's, works with the other center 1x4, to their right, because that 1x4 is farther from their own 1x2. The side boys are also in the center 1x4's, work with the outer 1x4 to their left. That is because that 1x4 is farther from their own 1x2 within their own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

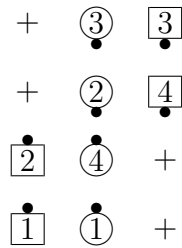


before Triple Boxes Working Together  
Flip Back

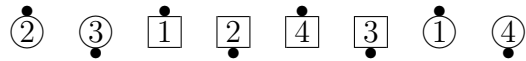


after

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

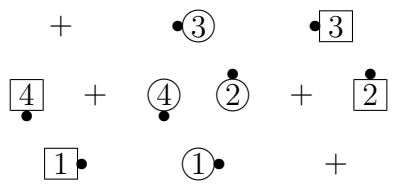
If the number of formations is 5 or more, things become extremely difficult.

## Additional Directions

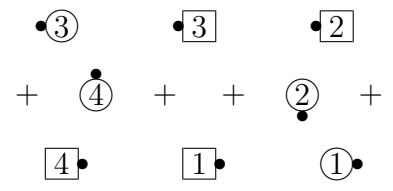
The meaning of "Working Toward the Center" and "Working Clockwise" is the same as for Grand Working.

## Multiple Diamonds Working <direction>

Directions like "forward" or "right" can't be consistently used when the formations are diamonds. By convention, if the given direction can't apply to you because of your facing direction, use "together" or "forward" instead.



before Triple Diamonds Working Together  
6x2 Acey Deucey



after

# Chapter 4

## Supercalls

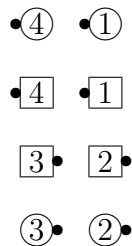
If a call takes a “but” modifier and another call, it can be considered to be a “function” or “mathematical operator” on that other call. That makes it effectively the same as a concept. Such a usage is known as a “supercall”.

Under normal circumstances, it doesn’t make any difference whether one thinks of a call with a “but” modifier 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.

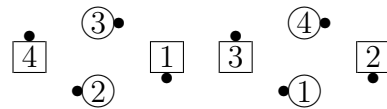
However, when used with meta-concepts, the role of a supercall as a concept becomes very complex. Among the problems is that they are grammatically peculiar. The command “Initially Tally Ho but Flip Back” is hard to parse. Once one realizes that “Tally Ho but” is essentially a concept, one can apply the “Initially” meta-concept to it. So one applies “Tally Ho but” to the first part of Flip Back.

Tally Ho but Flip the Line 1/2  
Scoot Back

Also, the order in which things are done can be quite non-intuitive. It is necessary to think carefully.



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

## 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.

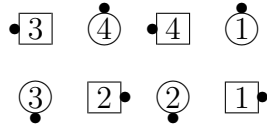
A thing to be very clear about is that “collide and take right hands” applies only when a call **finishes** with two people sent to the same spot as a result of the complete execution. There is a similar-appearing situation when a call is stopped prematurely, because of an interruption or fractionalization. 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.



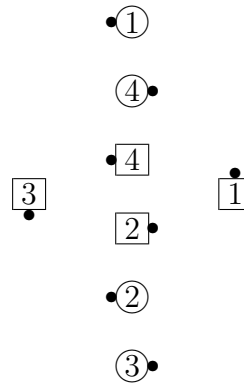
before 3/4 Run Wild

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

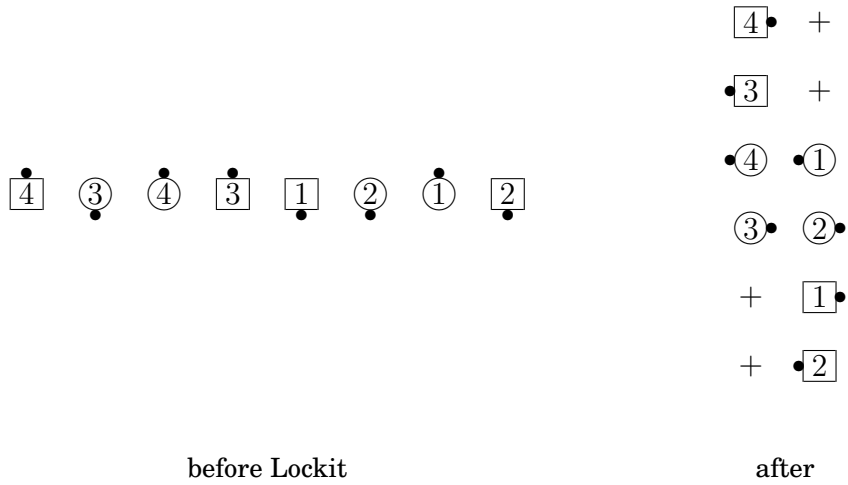
In all cases the people who come to the same spot must be facing opposite directions. The rule is that they take right hands even if the call had the word “Left” in it, as in Left Chain Reaction. (Left Chain Reaction calls for a left Hinge.) However, if the “Mirror” concept is in force, everything is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

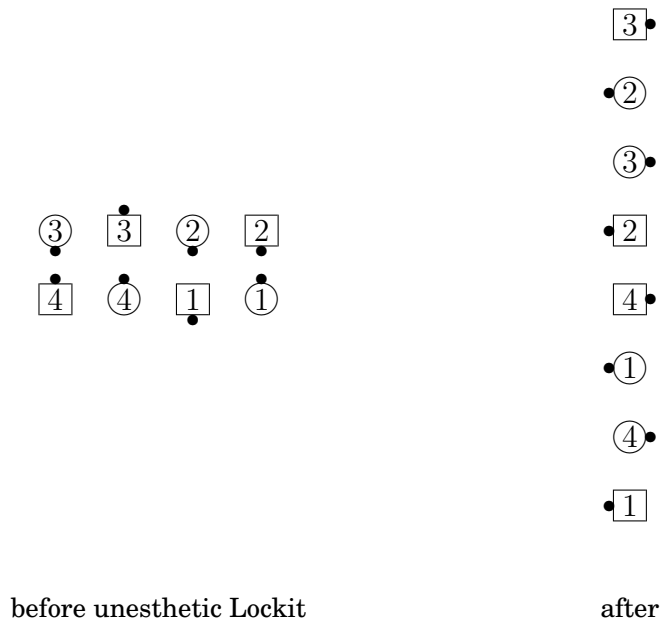


before Chain Reaction,  
Turn the Star 1/2

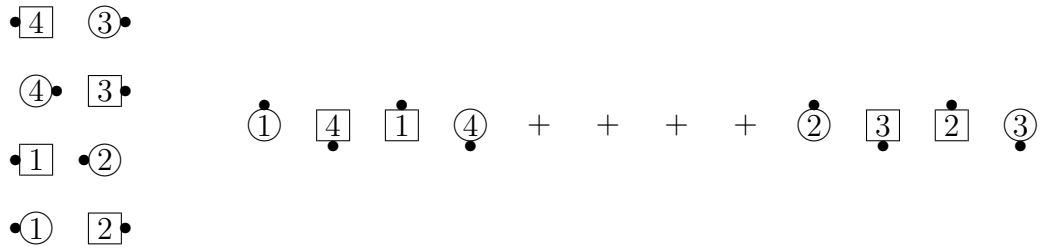
after



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



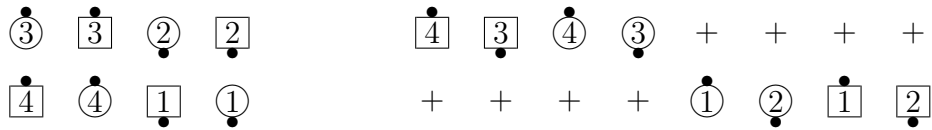
Sometimes people might be tempted to “leave space for the phantoms”, or “maintain symmetry” but this is often wrong.



before Lockit

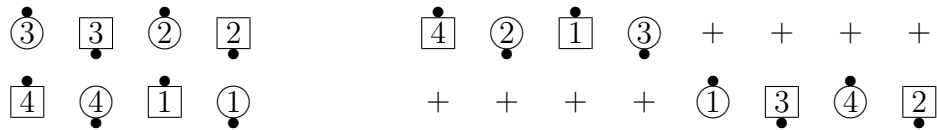
after doing it wrong; there are no  
phantoms going into the center spots;  
result should be a 1x8

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



before Split Circulate

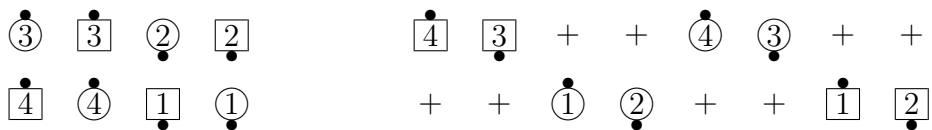
after



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 starting DPT, and those who do not.

## Chapter 6

# 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.

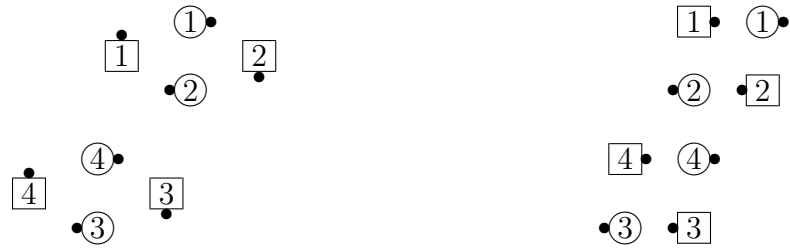
For Offset concepts to deal with shape-changing calls, they use a notion of “offset percentage” or “offset fraction”, which is the fraction of one of the offset sub-setups that overhangs and does not line up with the other. For normal parallelograms or offset lines, it is 50%.



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.)

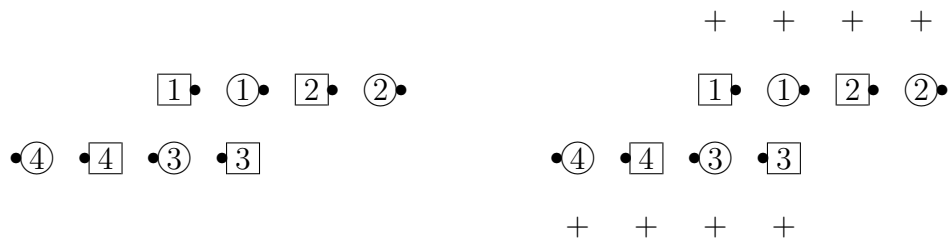


before “Parallelogram Diamonds” Drop In

after

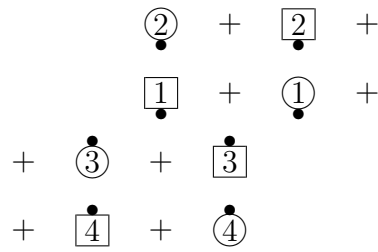
Phantom concepts can involve what is generally considered to be a change in the formation size as phantoms are placed at the start of the call and removed at the end. This can lead to serious problems in measuring offset percentages.

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.

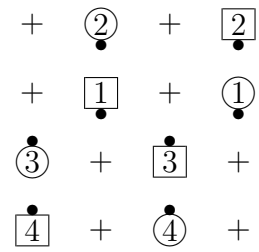


before Parallelogram  
Split Phantom Columns  
Transfer the Column

place phantoms

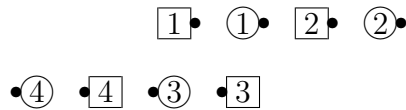


do the call,  
maintain 50% offset

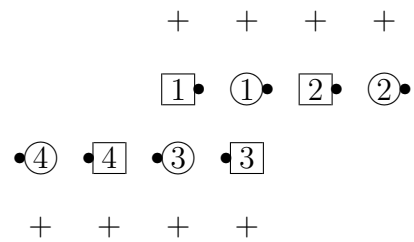


actual result

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

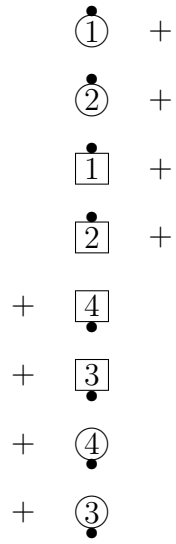


before Parallelogram  
Split Phantom Columns  
Settle Back

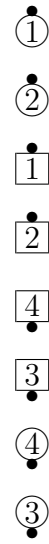


place phantoms

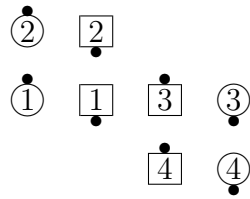




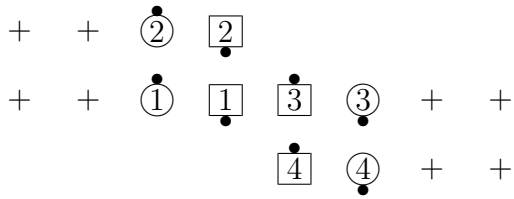
do the call,  
maintain 50% offset



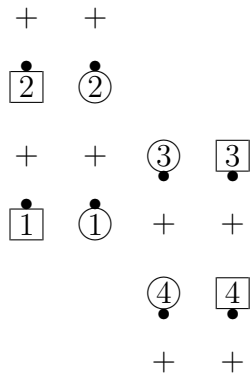
actual result



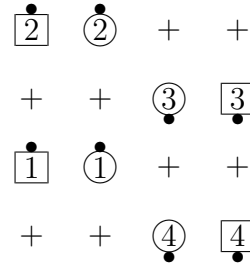
before Offset Waves  
Split Phantom Boxes  
Recycle



place phantoms

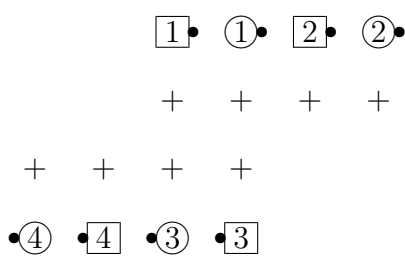


do the call,  
maintain 50% offset

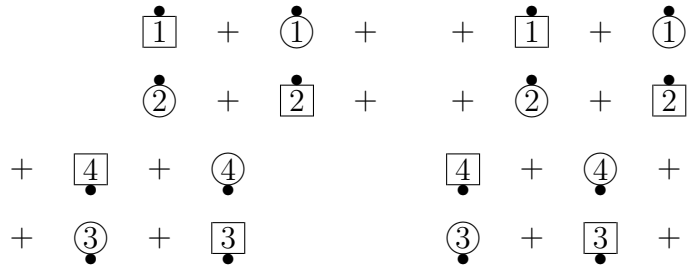


actual result

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.



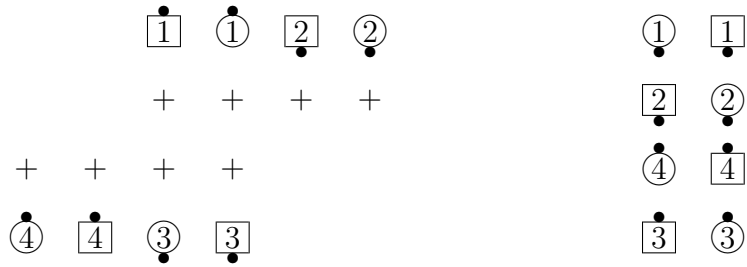
before Parallelgram  
Split Phantom Columns  
Transfer the Column



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 Parallelgram Split Phantom Columns/Lines/Waves and Offset Split Phantom boxes, the offset is always 50%.



before Parallelogram  
Split Phantom lines  
Trade Circulate

after

When the direction in which the phantoms are placed is parallel to the offset direction, one needs to be especially careful. The individual subsetups 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 subsetup. As before, the direction of the offset must be able to be determined unambiguously from the locations of the people.



before Offset Triple  
Waves Switch the Wave;  
each line is sheared by  
one matrix position, or 100%

after

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

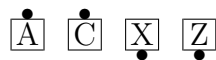
# Chapter 7

## 3x3, 4x4, etc.

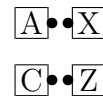
The official definition of 3x3 and 4x4 (and NxN for higher values of N) says something like this:

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:

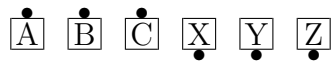


before Bend the Line

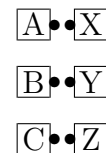


after

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



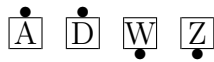
before 3x3 Bend the Line



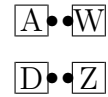
after

This case is easy, because the pairs are trivial to identify, are clearly related in the call definition (“as couples 1/4 in”), and are adjacent both before and after the call. That won’t always be the case.

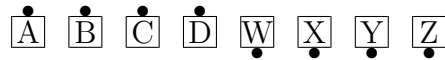
For 4x4, interpolate two people between the people in each pair, all equally spaced, maintaining the correct order at all times.



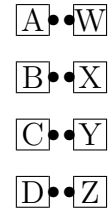
before Bend the Line



after



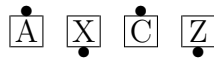
before 4x4 Bend the Line



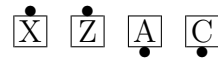
after

And similarly for higher numbers.

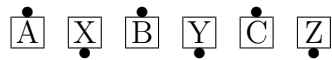
Things quickly become more complicated. The paired people might not be adjacent at the start of the call:



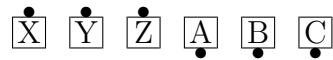
before Switch the Wave



after

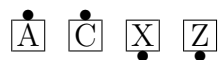


before 3x3 Switch the Wave



after

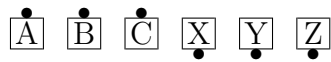
Or they might not be adjacent at the end of the call:



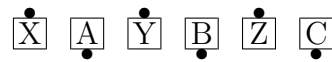
before Cross Roll



after

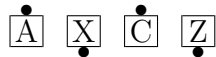


before 3x3 Cross Roll

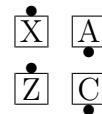


after

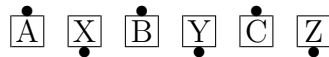
Or they might be along different axes before and after the call:



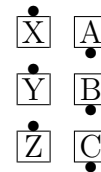
before Ah So



after



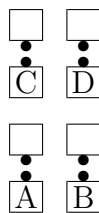
before 3x3 Ah So



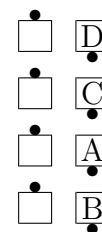
after

or the pairs might be made of people who just happen to go through similar motions but aren't logically related by the definition. 3x3 Split Transfer is an example of this.

Furthermore, there might be multiple ambiguous pairings. In an 8-person call, there are usually 4 people facing in the same direction. How do we decide on the pairings?

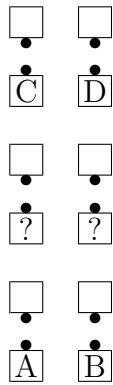


before Beaus Advance  
to a Column

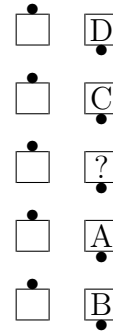


after

Let's try pairing A with C and B with D.

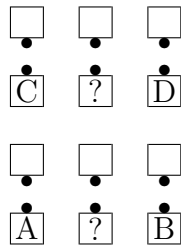


before 3x3 Beaus Advance  
to a Column

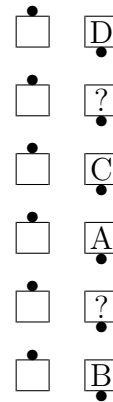


after

The interpolated people for the two pairs would be on the same spot. So this can't work. If we pair A with D and B with C, we get a similar paradox. So we try A with B and C with D.



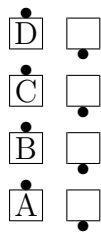
before 3x3 Beaus Advance  
to a Column



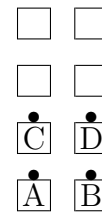
after

So that's the correct way to do the call. (In practice, the caller needs to say "12 Matrix Beaus Advance to a Column" or "3x4 Matrix Beaus Advance to a Column" in order to legitimize the phantoms.)

Now try another case.

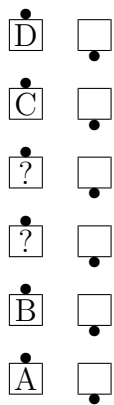


before Scoot and Fancy

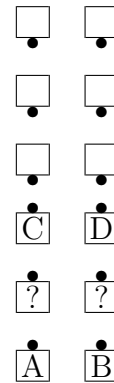


after

Try pairing A with C and B with D.

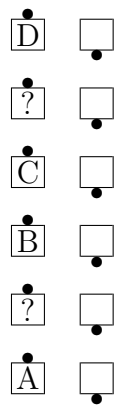


before 3x3 Scoot  
and Fancy

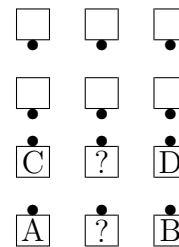


after

Or we could pair A with B and C with D.



before 3x3 Scoot  
and Fancy



after



Both would be legal, so this call would appear to be ambiguous.

The definition says that, in cases like this, the ambiguity is broken by pairing the people that are physically closer. So the second of the above examples is the correct one.

Another call that shows the ambiguity, and the need to resolve it this way, is 3x3 Vertical 1/2 Tag. We will discuss that below.

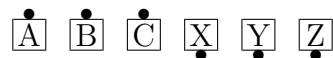
The reader should have noticed a fundamental truth: Knowing the official definition of the NxN concept, and being able to execute the concept in real time, are very different things. The official definition is suitable for careful analysis and for theoretical discussions, but it isn't enough:

1. It requires dancers to undergo mental execution of multiple parts of a call, rather than the usual method that is based on people doing just one part of a call.
2. It requires proposing alternative theories about the pairings.
3. It requires mentally testing those theories with "thought experiments", noting whether they are unsound for various reasons, and picking the correct theory.

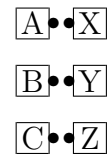
To do the concept in practice, one needs a lot of experience, and one needs to know a lot of tricks.

## Overview of the Tricks

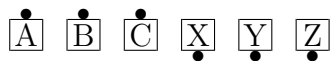
The first thing we notice is that, for many calls, the paired people are obvious, and work together in an obvious way:



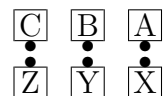
before 3x3 Bend the Line



after

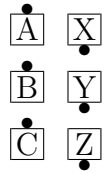


before 3x3 Wheel and Deal

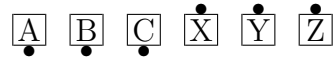


after

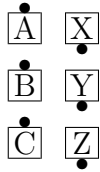
Some are not quite so trivial, but one can quickly develop a sense for how to do them:



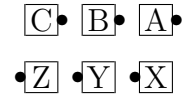
before 3x3 Peel Off



after

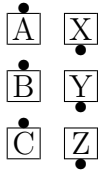


before 3x3 Box Counter Rotate

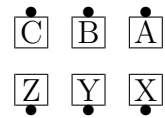


after

A few are more complex:

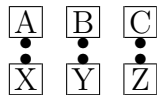


before 3x3 Walk and Dodge

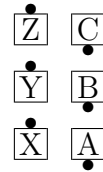


after

(Note that one's intuition about shape-changers and breathing needs to be re-learned.)



before 3x3 Vertical 1/2 Tag



after

(And similarly for 3x3 Vertical Tag Zero and 3x3 Vertical Tag Full. Only the facing couples version of Vertical Tag can be used with 3x3.)

We mentioned earlier that this call could be ambiguous. This occurs when the starting setup is thought of as facing lines of 6. If a Triple Box Vertical 1/2 Tag is done from that setup, one can see that it satisfies the pairing requirement for 3x3. This shows once

again the correctness of the “closest possible pairing” rule, and the need to analyze the call in the smallest possible setup, facing lines of 3 rather than lines of 6.

And a few are serendipitous and surprising:

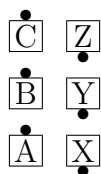


before 3x3 Mesh

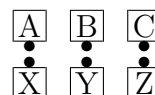


after

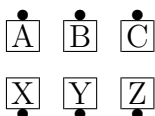
(Only the all-facing-same version of this call works. Note that it is a 3-person call, not 6, and not 12.)



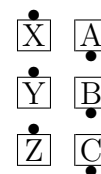
before 3x3 Couple Up



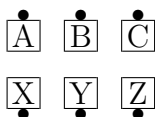
after



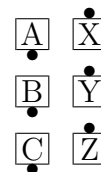
before 3x3 Leads Wheel the Ocean



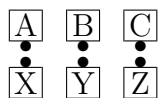
after



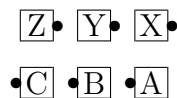
before 3x3 Leads Wheel the Sea



after



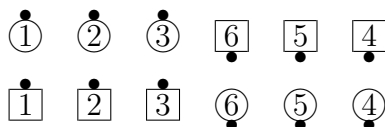
before 3x3 Circle to a Wave



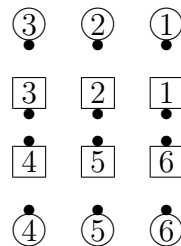
after

## The Tricks

1. If a call has people obviously working together in groups of 2, work in the equivalent groups of 3 or 4 or whatever. This covers things like Bend the Line, Wheel and Deal, Turn and Deal, and Ferris Wheel from a 2x6 matrix.



before 3x3 Ferris Wheel



after

(In an actual situation, there would be 4 phantoms present, of course.)

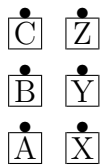
(But beware: 3x3 Ferris Wheel can also be done from triple 2-faced lines (3x4 matrix.) We will revisit this.)

Notice that we have lost some of the generality of some calls. We can't do a 3x3 Turn and Deal from a wave of 6. This loss of generality occurs for many calls and works in the dancers' favor.

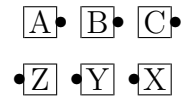
2. If a call is defined, or could have been defined, in terms of couples or tandems, turn them into couples or tandems of 3. Do this even if the definition isn't actually in terms of couples or tandems. Do it even if this "cheat" loses some of the generality of the call—the fully general version can't be done 3x3 anyway.

This gets Bend the Line and Wheel and Deal again. It also gets Drift Apart. We know that Drift Apart isn't defined as Tandem Cross Roll, and has more generality than that. But 3x3 Drift Apart loses that generality. It's just tandems of 3 Cross Roll.

This also gets 3x3 Counter Rotate from columns of 6. Box Counter Rotate is just Tandem Hinge. It also gets 3x3 Stack the Line.



before 3x3 Stack the Line

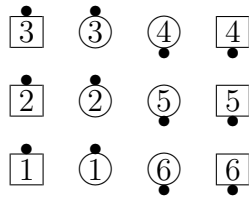


after

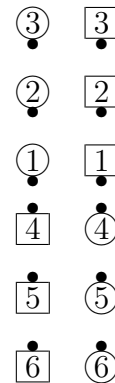
In order to do 3x3 well, one needs to know a lot of “cheats”.

3. If a call can be defined in terms of Couples Twosomes or Tandem Twosomes, turn them into Threesomes. This gets Turn and Deal and Turn to a Line. It also gets By Golly, which is a Couples Twosome (natural) Touch 1/4. It also gets suitably restricted Tag the Line and Follow Thru.

This also shows that there is another another version of Ferris Wheel. Ferris Wheel could be defined as “As Couples, Tandem Twosome, Single Wheel”. We have already seen the version in which the Couples were turned into couples of 3. When we turn the Tandem Twosomes into Tandem Threesomes, we get this:



before 3x3 Ferris Wheel



after

4. If a call can be defined in terms of Fractional Twosome, or Twosome Fractional Solid, do the same thing. This gets Peel Off, Trail Off, and a suitably restricted version of Crossfire.

One needs to be **really** good at seeing things in terms of geometrical patterns of this sort.

5. Learn things like Beau Walk / Belle Dodge, or With the Flow, or Vertical, or Finish Wheel the Ocean / Sea. They don’t actually fit into the above Couples / Tandem / [Fractional] Twosome categories, but they are geometrically very similar.

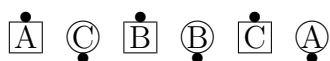
6. If a call (or restricted version of same) can be formulated in terms of a sequence of other calls that can be done 3x3, do so.

Know that Ah So is Hinge and Counter Rotate, Split Recycle is Counter Rotate and Hinge, Wheel the Ocean / Sea is Wheel Around and Finish Wheel the Ocean / Sea, Vertical 1/2 Tag is Vertical and Tandem Touch, and similarly for Circle to a Wave, Circle the [1/2] Tag, etc. (Note that 3x3 Split Recycle is an extremely nonintuitive call.)

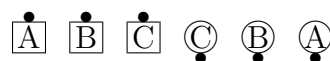
7. 3x3 Arm Turn any amount (i.e. miniwave Hinge / Trade / Cast) is just Arm Turns in the individual miniwaves. This is why 3x3 Ah So and Split Recycle work. Touch, Pass Thru, and Step Thru are similar.

The same is true for Quarter Left or Right, or Roll, or doing anything Stable. For example, Walk and Dodge is Stable Counter Rotate, and Counter Rotate is Tandem Hinge, so one can deduce how to do a 3x3 Walk and Dodge. Similarly, Couple Up can be reformulated as Counter rotate and Roll. Shakedown is Quarter Right, Counter Rotate, and Roll.

8. 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.



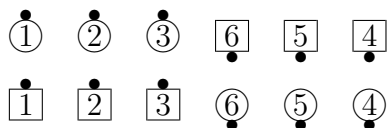
before or after 3x3 Slither



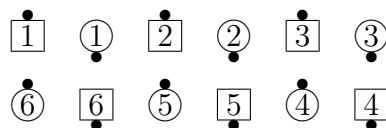
after or before 3x3 Slither

This gets 3x3 Switch the Wave and 3x3 Cross Roll, because they can be formulated in terms of Trade and Slither.

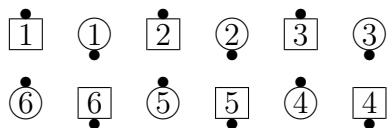
Also, Scatter Circulate is Couples Twosome Circulate and Slither, so 3x3 Scatter Circulate is Couples Threesome Circulate and 3x3 Slither. Go First Class is Slither and Couples Twosome Circulate, so 3x3 Go First Class is 3x3 Slither and Couples Threesome Circulate.



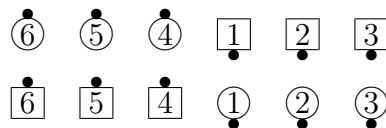
before 3x3 Scatter Circulate



after



before 3x3 Go First Class

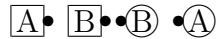


after

Also, Cross and Divide, from a wave, is Slither and Retreat the Line, so 3x3 Cross and Divide, from a wave of 6, is 3x3 Slither and 3x3 Retreat the Line (couples of 3 1/4 Out.) (Cross and Divide can also be done from a 2-faced line, but the turning motions are such that it can't be done 3x3 or 4x4.)

These calls don't arise with 12 people in real dancing, but the 1x3 versions do arise with 8 people, so it is useful to be aware of the 3x3 Slither.

9. There is a kind of "vertical Slither" that shows up as a building block in some calls.



before or after Vertical Slither



after or before Vertical Slither

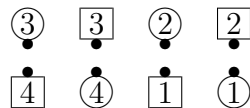


before or after 3x3 Vertical Slither



after or before 3x3 Vertical Slither

For example, Dixie Style to a Wave can be formulated as Vertical, Vertical Slither, and Left Touch 1/4. So 3x3 Dixie Style to a Wave can be formulated as 3x3 Vertical, 3x3 Vertical Slither, and Left Touch 1/4. That is, do a 3x3 Vertical, everyone except the very ends walk forward until everyone is facing someone (but no farther!), and all Left Touch 1/4. This is rather difficult.

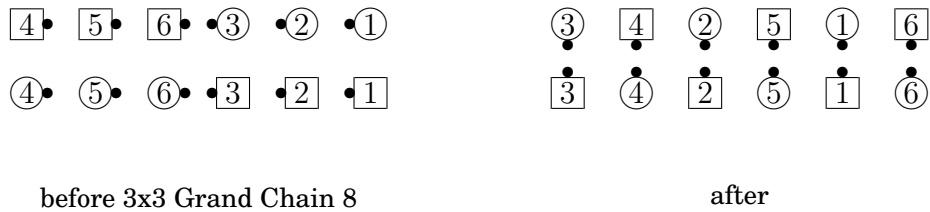


before 4x4 Dixie Style to a Wave



after

This also shows up in the starting-DPT variety of Grand Chain 8. This can be formulated as a centers Pass Thru (Vertical Slither), Quarter Out, and Courtesy Turn.



This is another difficult call.

10. There are a few calls that could be formulated in terms of a nonexistent “fractional anti-twosome” concept, in which the people in each group orbit around each other opposite the direction they would if working solid. (Such a concept was proposed once, but, fortunately, no one could figure out how to express it.)

Scout Apart could be thought of as a sort of Tandem 1/4-Anti-Twosome Trade. So 3x3 Scout Apart is a Tandem 1/4-Anti-Threesome Trade.

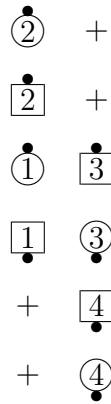


3x3 Split Swap is analyzed similarly.

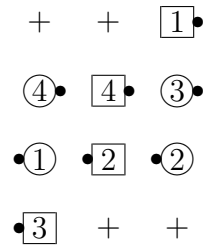
This covers almost all situations that will arise. The rest can usually be covered by redefining [a restricted version of] the call in terms of other calls.

Here is a hard example. We know that Countershake is not properly defined as Quarter Right, Counter Rotate, Roll, and Solid Box of 4 Touch—The real definition can be done from other setups, and fractionalizes differently. But this cheat shows how to do a 3x3 Countershake. In fact, the cheat shows that there are two different 3x3 versions of the call. The groups can be paired laterally or front-to-back. It’s too complicated to figure out the pairing with the definition, especially with front-to-back pairing. Instead, just know the cheat, and do the call in whatever shaped groups you have.

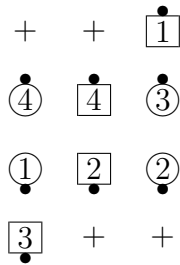




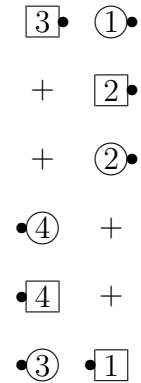
before 3x3 Countershake



after



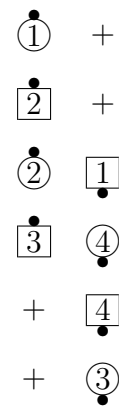
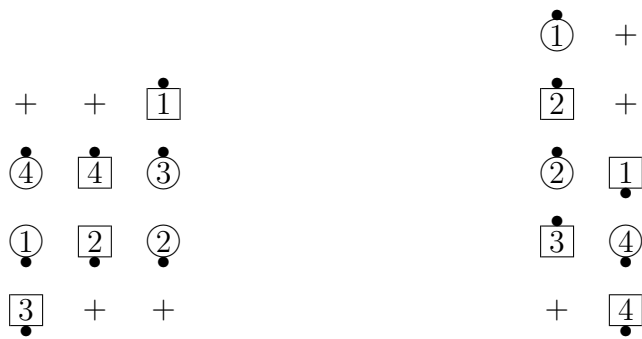
before 3x3 Countershake



after

Here is another one that does violence to the proper definition. From a completed DPT, Roll Out to a Column could be described as Couples 1/4 Twosome, Tandem Twosome, Roll Right to a Wave. So 3x3 Roll Out to a Column is either

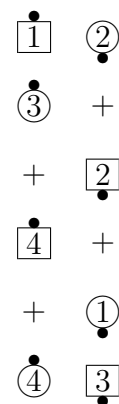
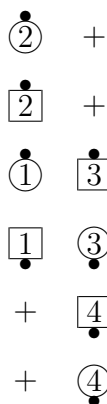
Couples 1/4 Threesome, Tandem Twosome, Roll Right to a Wave



before 3x3 Roll Out to a Column

after

or Couples 1/4 Twosome, Tandem Threesome, Roll Right to a Wave



before 3x3 Roll Out to a Column

after

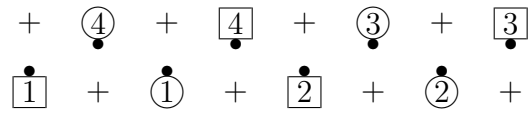
Here is one last one, which seems to be very common. Run the Wheel in general is a space-invader. But Leads Run the Wheel can be considered to be equivalent to Box Counter Rotate 3/4. Hence 3x3 Leads Run the Wheel is just a Counter Rotate 3/4 in columns of 6.

## How Hard Can it Be?

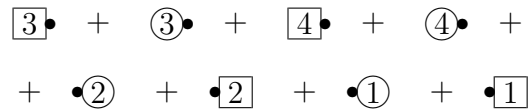
We have pointed out that these concepts are really not always suitable for dancing “cold” except in the simple cases, and that one needs to learn “tricks” to get through the hard cases without having the dance degenerate into a mathematics symposium. Perhaps the most notorious case of this, as of this writing, is 3x3 and 4x4 Load the Boat.

Load the Boat has the property that the person who is undergoing the same turning motion as you, whom you have to quickly locate, starts once removed from you, finishes once removed from you,

never interacts with you, and is following a definition completely different from yours. But the 3x3 and 4x4 concepts are indifferent to all of this, so 4x4 Load the Boat is legal.



before 4x4 Load the Boat



after

So what “trick definition” of Load the Boat does one use to get this result? A little checker pushing will show that Load the Boat is equivalent to a big line-of-4 Wheel Around followed by a 1/4 In to your immediate partner. Those “trick” components are suitable building blocks for doing the call 3x3 or 4x4. For a 4x4 Load the Boat, from facing lines of 8, do a huge line-of-8 Wheel Around, preserving phantom spots of course, followed by a 1/4 In. 3x3 Load the Boat is similar, with a line-of-6 Wheel Around.

If one really wanted to do this in a proper, stylish, elegant, and aesthetically pleasing manner, one would actually Pass Thru, Own the Belles for a big line-of-8 Wheel Around by big line-of-8 Reverse Wheel Around, Pass Thru, and then 1/4 In.

# Chapter 8

## 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. Hence Single Wheel can be thought of as the thing that Wheel and Deal is the As Couples version of.

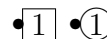
There is a rigorous “modern” meaning, often used at C4, that goes far beyond that. It can best be thought of as being like 3x3, but instead of the pairs of people being interpolated by a third person between them, they become a single person. One might think that would make this easier than 3x3. One would be wrong. With 3x3, the presence of people (or spots) in groups of 3 can be a clue indicating how the actual people in the square correspond to the virtual people doing the base (“2x2”) call. With Single, there is often no such clue.

All of the skills and tricks needed for 3x3 are needed for Single, and then some. So, assuming that the reader is familiar with the 3x3 tricks, we will cover some of the additional ramifications of Single.

### Reduction to Basic Parts

Because the clues regarding pairing are absent with Single, the trick of reducing the call to basic parts is comparatively more important. For example, Ah So is Hinge and Box Counter Rotate. 3x3 Ah So is Hinge and columns of 6 Counter Rotate. Single Ah So is Hinge and miniwave Counter Rotate, which is just another Hinge. This means that Single Ah So is just a Trade. Really? Really. Similarly, Single Follow Your Neighbor is just a Shazam, Single Leads Run the Wheel is Cast Off 3/4, and Single Split Recycle is Trade.

Single Shakedown is Quarter Right, Hinge, and Roll. This, Single Split Swap, and Single Shake and Rattle, are good calls to have a mental picture of.



before Single Shake and Rattle

after

Single Slither is “nothing”, so Single Switch and Single Cross Roll are both just Trade.

## Recognizing the Setup

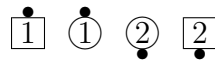
As previously mentioned, the clues about the setup in which to do the call are largely absent with Single. It’s often best not to try to recognize the setup first. Figure out the reduced call, and then apply that to the actual setup. For example, from parallel waves, one might wonder whether Single (Split) Recycle should be done in each wave or each box. That’s wasted effort. Single Recycle is a Trade. Once you have that figured out, how to do it in parallel waves is easy.

Sometimes you really *do* need to identify the setup, and sometimes that can be quite tricky. We know that 3x3 Ferris Wheel has two formulations. Single Ferris Wheel has two corresponding formulations, and they are harder to distinguish.

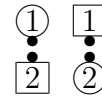


before Single Ferris Wheel

after



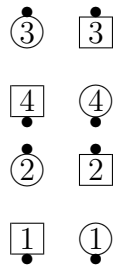
before Single Ferris Wheel



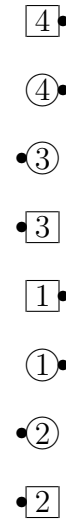
after

This means that, from parallel waves, Single Ferris Wheel gives a starting DPT, and from parallel 2-faced lines it gives an 8-chain setup. The only way to resolve the ambiguity between these markedly different calls is through people's facing directions.

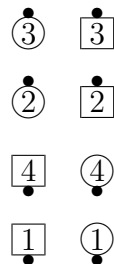
Here are a few more examples of the difficulty of resolving ambiguities:



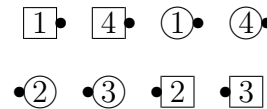
before Single Countershake



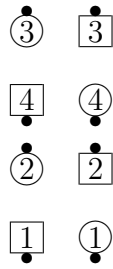
after



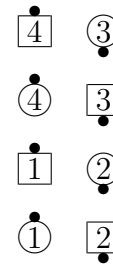
before Single Countershake



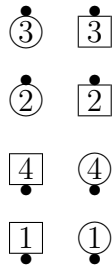
after



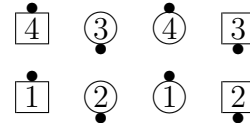
before Single Roll Out  
to a Column



after

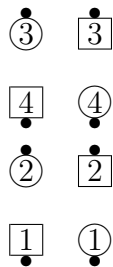


before Single Roll Out  
to a Column

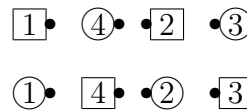


after

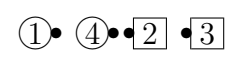
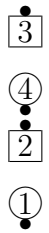
Single Sidetrack presents a special problem. Because it is flexible about people's starting facing directions, clues such as those presented above are absent. It is simply ambiguous.



before Sidetrack

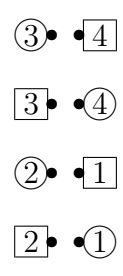
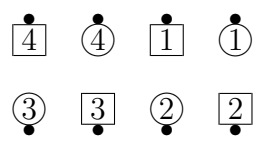


after



therefore, before  
Single Sidetrack #1

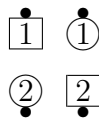
after



before Sidetrack

after





therefore, before  
Single Sidetrack #2



after

So, from a Trade by setup, which version is used? It could end in a tidal column or in facing lines.

## Overuse of the Rigorous “Mathematical” Meaning of Single

It is well accepted that “Split Sidetrack” describes case #2 described above, but the meaning of “Single Sidetrack” is less clear.

This ambiguity once broke down an entire Berkshires C4 dance, because the dancers were thinking too hard—harder than the caller wanted. The caller said “Single Sidetrack”, and wanted version #1 of the call. He would have said “Split Sidetrack” if he had wanted the other version.

There is an all-too-widely accepted doctrine that says that the word “Single” should be used in any case where the “rigorous” “mathematical” definition of Single can be applied. This is even imposed on calls like Split/Single Transfer and Split/Single Checkmate. While it’s true that the calls involved (the action of which everyone agrees on) could be described in terms of the mathematical meaning of Single, there is no reason to do so. Note in particular that Split Transfer is an A2 call; dancers simply learn that action, without making any mathematical analysis of it. While Single Checkmate is on the C3A list under that name instead of Split Checkmate, dancers undoubtedly learn that action without making any mathematical analysis of it. Telling them that they are learning a mathematically rigorous instance of the Single concept accomplishes nothing. It might as well be called Split/Box Checkmate, in line with their existing knowledge of Split/Box Transfer, Split/Box Circulate, and Split/Box Counter Rotate.

These ambiguities could be avoided by making the convention that “Single” suggests a 1x4 single file setup, while “Split” suggests a 2x2. The term “Single Sidetrack” should be used exclusively to describe the call shown above as “Single Sidetrack #1” (the 1x4 column version), and “Split Sidetrack” should be used exclusively to describe the call shown above as “Single Sidetrack #2” (the 2x2 version).

## How Hard Can it Be?

Of course, we have Single Load the Boat. It’s just a Trade and Roll from facing couples.



before Single Loat the Boat

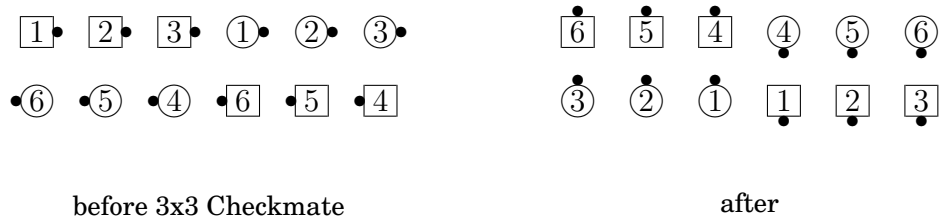


after

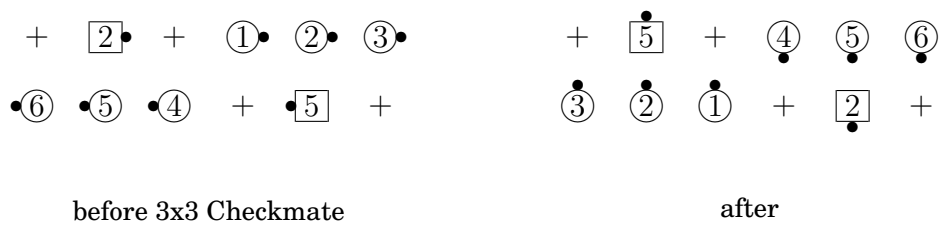
# Chapter 9

## 3x1, etc.

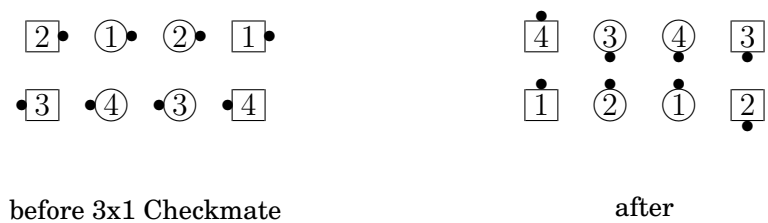
These concepts can often be analyzed in terms of some pairs of people in the original (“2x2”) call being expanded to three people while others are reduced to one. However, it is probably best to think in terms of 3x3, with some of the groups of three reduced to a single person. 3x1 Checkmate provides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



We reduce some of the groups to 1:



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



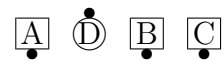
Of course the dancers don't actually have the luxury of making pictures and compressing them. So the principal problem in doing 3x1-types of calls is identifying what 3 real people remain the "real" 3x3 people and what individual person is associated with two phantoms to become the other 3x3 group. After 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:





do the 3x3 call

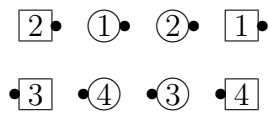


recompress

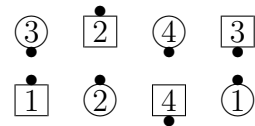
This is a good point to notice something tricky about calls like this—person “D” had to go into the center spot, that is, take hands with the centermost of the other 3 people. This is sometimes hard to see. This will show up in things like 1x3 Transfer.

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.

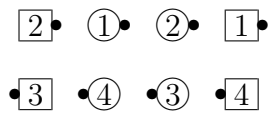


before 3x1 Transfer

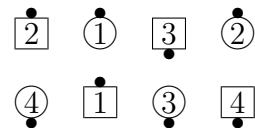


after

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.



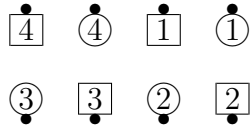
before 1x3 Transfer



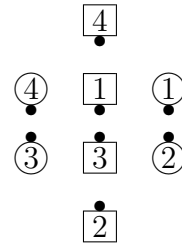
after

In this 1x3 Transfer, the head boys have to deal with the center of the 3 people extending to them.

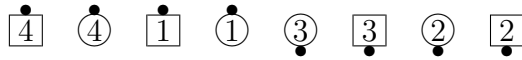
Recompression is sometimes necessary and sometimes not:



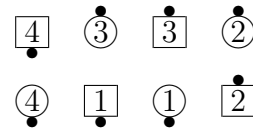
before 3x1 Turn and Deal



after



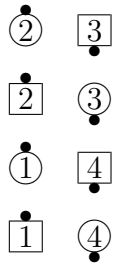
before 3x1 Turn and Deal



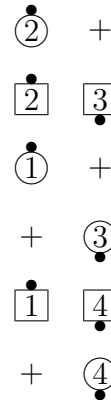
after

This last example shows that the recompression can be quite nonintuitive. Even though 3x1 Turn and Deal is a 4-person call, and there are conventions about gluing subformations together within non-overlapping rectangles, that rule is not followed when the 3x1 concept is in use. The side boys are **not** lined up with the 3 people with whom they were working.

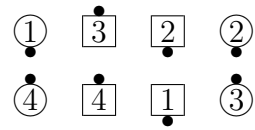
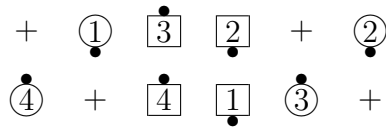
Here are some examples showing the need to be careful about identifying the group of people with whom you are working.



before 3x1 Split Recycle

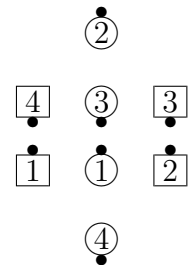
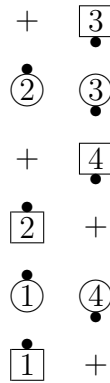
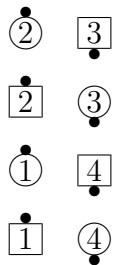


mentally spread out groups



do the 3x3 call—  
this is very hard!

recompress



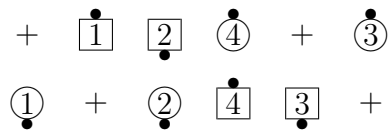
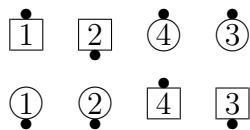
before 1x3 Walk and Dodge

mentally spread out groups

do the call

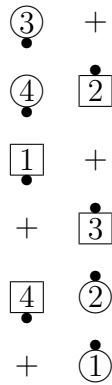
This is not the “obvious” thing people might be tempted to do when they hear 1x3 Walk and Dodge.

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.

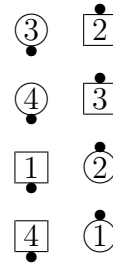


before 3x1 Ah So

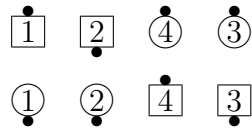
mentally spread out groups  
to match handedness of center 2



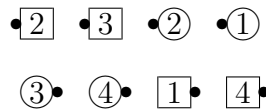
do the 3x3 call



recompress

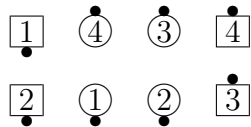


before 3x1 Follow Your Leader

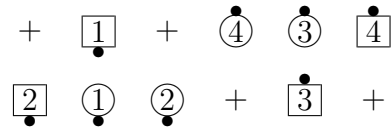


finished

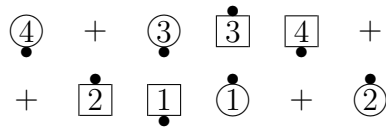
Here is an example that is just hard:



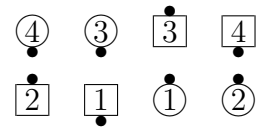
before 3x1 Scatter Circulate



mentally spread out groups

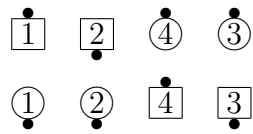


do the 3x3 call—head boy  
goes to center miniwave

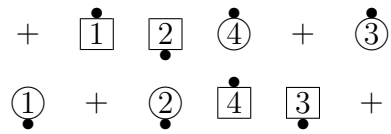


recompress

And another one. Only the wave version of Cross and Divide can be done with these concepts, so the people 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.

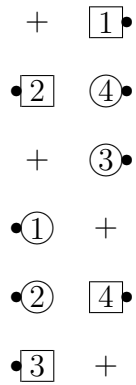


before 3x1 Cross and Divide

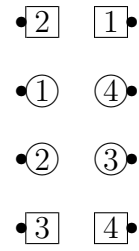


mentally spread out groups  
to match handedness of center 2





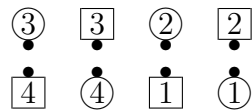
do the 3x3 call (3x3 Slither  
and 3x3 Retreat the Line)



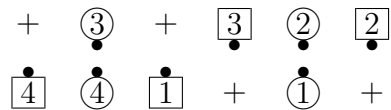
invasively recompress

## How Hard Can it Be?

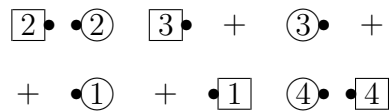
And of course no challenge dance is complete without this:



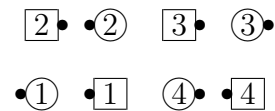
before 1x3 Load the Boat



mentally spread out groups



do the 3x3 call (huge Wheel Around  
and each couple 1/4 In)



recompress