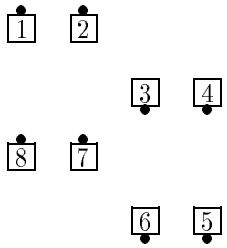
Dancing the Matrix Concept

Sue Curtis
26 Hammond Place
Woburn, MA 01801

October 1990
Last Revised November 17, 1990

This paper describes a method of thinking about the Matrix concept that (I think) makes it much easier to dance the more difficult or unusual examples. It assumes that you accept "keep the center of your setup fixed" as the definition of the Matrix concept. This paper is not written to encourage callers to use Matrix more often or to use the more difficult examples more often; it is written only to help dancers cope with whatever is called.

In this method, the first thing you do when you hear a Matrix call is to determine the distance between your setup (e.g., your set of Split Phantom Lines) and the other setup. What do I mean by distance between the setups? Well, you take any spot in your setup and count how many spots away it is from the corresponding spot in the other setup. In the case of Split Phantom Lines, the distance is 2 because (for example) dancer #1 is 2 spots away from dancer #8:



possible starting setup

After noting the distance between your setup and the other setup, do the call in your setup, then position the two setups (overlapping if necessary) *so that they stay the same distance apart* as they were at the beginning of the call. Thus, dancers #1 and #8 will finish 2 spots apart, dancers #2 and #7 will finish 2 spots apart, etc. This algorithm works because the definition of the Matrix concept requires the center point of each setup to remain fixed, and therefore the center points of the two setups will be the same distance apart before and after the call. If the center points remain the same distance apart, all corresponding spots must remain the same distance apart also.

There are two ways you can use this information when dancing. One is to notice whether there is a real person who is your counterpart in the other setup. If so, remember who this person is, and make sure you end the appropriate number of spots away. Another is to quickly figure out the size of the overall ending setup, which may not be obvious otherwise. For example, suppose you know that the separation is 2 and your side of the square (e.g., your set of Split Phantom Lines) has

ended in a 1x8 with its long axis toward the other side of the square. The overall setup will look something like this:

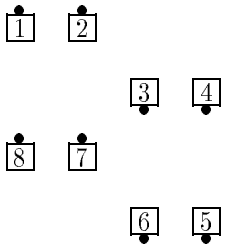
possible ending setup

Assume that the 8 numbered dancers represent the 8 dancers from your side of the square. Overlay another set of 8 dancers on top of your set, but offset by 2 spots. Then two dancers from the other group will be left sticking off the end, making the overall setup a 1x10.

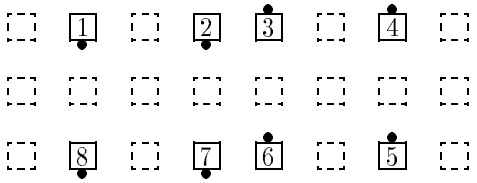
Split Phantom Line Examples

Now let's consider some specific calls. Using the starting setup given earlier, we discuss three Split Phantom Line Matrix calls that change shape in different ways: (a) Leads Roll Right to a Wave, (b) Counter Rotate, and (c) Lockit.

Split Phantom Lines Matrix Leads Roll Right to a Wave. Clark called something like this once. Each set of Split Phantom Lines ends in a 1x8. For these setups to be 2 spots apart (and for dancers #1 and #8 to be 2 spots apart), the overall ending setup must be a 3x8:

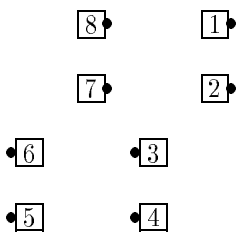


starting setup

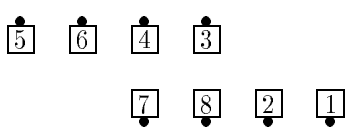


3x8 ending setup

Split Phantom Lines Matrix Counter Rotate. Here each set of Split Phantom Lines ends in a 2x4 oriented the other way. This is the sort of Matrix call you are most familiar with. You probably dance it as "finish like Triple Boxes Working Together," but do you know why this works? It works because Triple Boxes Working Together is another setup with a distance of 2 spots between the two 2x4s—only here the separation is in the long direction of the 2x4 instead of the short direction. Note that, after the call, dancers #1 and #8 are still 2 spots apart.

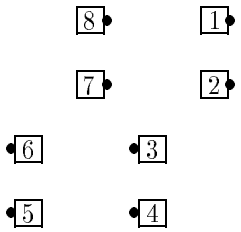


starting setup

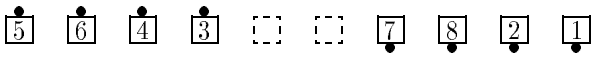


2x6 ending setup

Split Phantom Lines Matrix Lockit. Here each set of Split Phantom Lines ends in a 1x8 with the long axis in the other direction. Since the two setups are 8 spots long but only separated by 2 spots, the overall setup is a 1x10. Note again that dancers #1 and #8 are 2 spots apart.



starting setup



1x10 ending setup

It's also worth noting that Matrix calls can be used in the inverse way of the examples given here—i.e., you could do a Triple Boxes Working Together Matrix call that finished like Split Phantom Lines. You could also do a Triple Tidal Lines (3x8) Matrix call that finished like Split Phantom Lines. In theory, you could also do some type of 1x10 Matrix call that finished like Split Phantom Lines, but we don't currently have any words to identify two tidal lines overlapped by 6 spots from a 1x10 setup!

Other Separations

This approach to dancing the Matrix concept can be used with a variety of other setups with separations other than 2, although these are currently less commonly used than Split Phantom Lines. For example, Split Phantom Boxes has a separation of 4 spots, so all Split Phantom Boxes Matrix calls maintain a 4-spot separation, just as Split Phantom Lines Matrix calls maintain a 2-spot separation. I thought it might be interesting to make up a chart of all the possible starting and ending setups for each of the separations 1, 2, 3, and 4 spots. This chart is given below.

Separation	Setup (each side)			
	1x8	2x4	4x2	8x1
1 spot	split phantom tidal lines (2x8)	triple lines work. tog. (3x4)	2x5	1x9
2 spots	3x8	split phantom lines (4x4)	triple boxes work. tog. (2x6)	1x10
3 spots	4x8	quintuple lines work. tog. (5x4)	2x7	1x11
4 spots	5x8	triple twin lines (6x4)	split phantom boxes (2x8)	triple lines work. tog. (1x12)

Each entry in this chart describes the overall setup, given the setup on each side and the separation between the setups. The column specifies the setup on each side, and the line specifies the separation. For example, Split Phantom Lines is in the column labeled "2x4" (since you are working in a 2x4 on each side) and the line labeled "2 spot separation." Triple Lines Working Together (1x12) is in the column labeled "8x1" (since you are working in an 8x1 on each side) and the line labeled "4 spot separation." (I use the term "8x1" when the long axis of your setup is towards the other side of the square, and "1x8" otherwise.)

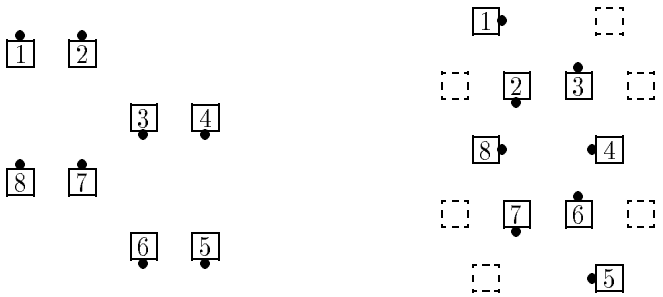
Note that each line in this chart contains a list of the setups that have the same separation. Since the Matrix concept preserves the number of spots of separation, when dancing a matrix call you will always stay on the same line on this chart. We have already seen how Split Phantom Lines

Matrix calls may end in a 3x8, Triple Boxes Working Together (2x6), or a 1x10. Note that these four setups are all listed on the same line.

The purpose of this chart is not for you to memorize all of its entries, but to show that you can apply the algorithm given in this paper to many different setups. You might want to practice this algorithm by arbitrarily choosing a separation and setup on each side, using the algorithm to figure out the size of overall setup, and verifying your answer by comparing with the chart.

Other Ending Setups

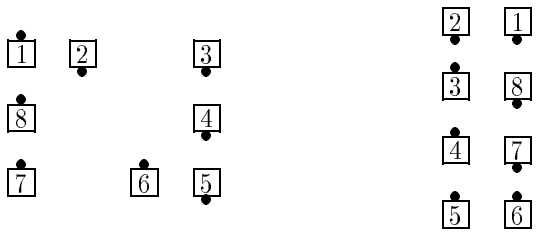
You can also use the approach in this paper to figure out calls that end in diamonds, hourglasses, galaxies, and other non-rectangular setups. For example, consider Split Phantom Lines Matrix Right Roll The. First do the Right Roll The on each side, then adjust so dancers #1 and #8 are 2 spots from each other (assuming diamonds are 3 spots long):



before after

Four-person setups

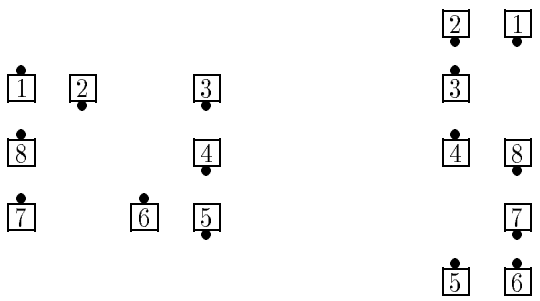
So far we have only discussed Matrix calls where each setup consists of eight people. You can also do Matrix calls where each setup consists of only four people. For example, consider Triple Lines Matrix Recycle:



before after

Lynette called something like this once. One way to look at this example is that you start with the outside lines separated by 2 spots from each other, so you must finish with the outside boxes separated by 2 spots from each other—or in other words, a 2x4. Another way to look at it is that you start in three lines all separated by 1 spot, and finish in three boxes all separated by 1 spot. Note that dancers #1, #8, and #7 are all counterparts of each other, so they start and finish separated by 1 spot.

It is important to understand the difference between this call and Triple Lines *Working Forward* Matrix Recycle. The phrase "Working Forward" might appear redundant because Recycle is a 4-person call, but it is not redundant when Matrix is used. These calls are different because in the first case, we have three 4-person setups separated by 1 spot, and in the second case, we have two 8-person setups separated by 1 spot. The ending setup of Triple Lines Working Forward Matrix Recycle is two 2x4s separated by 1 spot, or in other words, a 2x5:



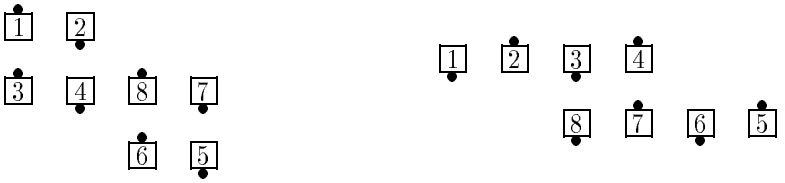
before after

Here dancers #1 and #8 do not end separated by 1 spot because they are working in the same 8-person setup; they are not counterparts in different setups. However, dancers #7 and #8 *are* counterparts because dancer #8 is the trailing end of the upper pair of lines and dancer #7 is the trailing end of the lower pair of lines.

Separations in two directions

Occasionally you will hear something like "Each Box Matrix Peel and Trail" where the two boxes are offset from each other in two directions. How can you do these calls using the method in this paper? First note how many spots separate your box from the other box *in each direction.* Then do the call in each box, and put the offset back *in both directions.*

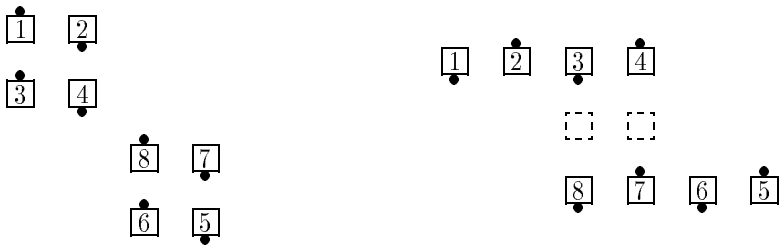
Each Box Matrix Peel and Trail:



before after

Note that before the call, the boxes are 2 spots apart horizontally and 1 spot apart vertically; the same is true for the lines after the call.

Unfortunately, I have also heard some callers use the name "Each Box Matrix Peel and Trail" from a *16 Matrix* and want the dancers to finish in a parallelogram. This is incorrect; in this case the ending setup should be a 3x6:



In this example, the original boxes are offset by 2 spots in each direction, so the resulting lines must be offset by 2 spots in each direction also.

Note that in the above example, the ending setup *would* be a parallelogram if the call were *Split Phantom Column* Matrix Peel and Trail, since then each Split Phantom Column ends in a 2x4, making the overall setup a 2x6. On Split Phantom *Line* Matrix Peel and Trail, each Split Phantom Line would finish in a 1x8, making the overall setup a 3x8. In this type of example, you must carefully identify which set of people and/or phantoms constitutes "your setup" to figure out the correct overall setup at the end of the call. To avoid potential ambiguities, I think the setup name should always be specified explicitly (e.g., "Each Box Matrix Peel and Trail" rather than just "Matrix Peel and Trail.")

Final Comments

This paper presents a method of thinking about the Matrix concept that is equivalent to the "fixed center point" definition, but easier to apply. My purpose in writing this paper is to share this method with other dancers, not to encourage callers to use Matrix more. Any callers reading this paper should be aware that some C4 dancers may not agree with this definition of Matrix, and some of those who do agree do not necessarily want to see it called more often.