# Phantom/Split Phantom/Interlocked Phantom Formation 

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In this paper I will attempt to explain the general Phantom/Split Phantom/Interlocked Phantom any formation concepts. These concepts are a generalization of the Phantom/Split Phantom/Interlocked Phantom Line/Column concepts. All of these concepts involve dividing the square up into 4 similar groups of dancers and/or phantoms. The only difference between working Phantom, Split Phantom and Interlocked Phantom is in how the groups of four are paired up to work with each other in phantom groups of eight.

Suppose we have four groups of four dancers and/or phantoms as follows:

> (GROUP-A)
> (GROUP-B)
> (GROUP-C)
> (GROUP-D)

To work Split Phantom formation, GROUP-A works with GROUP-B, and GROUP-C works with GROUP-D. In other words, the square is SPLIT in the middle, and the two groups on the same side of the square work with each other.

To work Phantom formation, GROUP-A works with GROUP-D, and GROUP-B works with GROUP-C. In other words, the two center formations work with each other, and the two outside formations work with each other.

To work Interlocked Phantom formation, GROUP-A works with GROUP-C, and GROUP-B works with GROUP-D. In other words, the center formations work with the outside formations furthest from them, and the outside formations work with the center formations furthest from them.

Note that there are no other ways to pair up the four groups. GROUP-A must be paired up with GROUP-B (Split Phantom), with GROUP-C (Interlocked Phantom) or with GROUP-D (Phantom). Note also that I have said nothing about what formation each group of four is in. They may, in fact, be in ANY formation of four, as long as all four groups are in the same kind of formation. The groups may be Lines, Columns, Boxes, Diamonds, Quarter Tags or anything else.

In the following examples I will use "く", ">", "^" and "v" to indicate dancers facing left, right, up and down respectively. I will indicate phantoms by "*". In some cases I will not differentiate between live dancers and phantoms, but will simply show all spaces as if they were occupied by live dancers. In these cases, of course, half of the spaces must be occupied by phantoms since there are only eight live dancers in a square!


Example 1 can be viewed as lines or as columns. Viewed as lines, each group of four runs horizontally, and the groups are stacked vertically on the page. Viewed as columns, each group or four runs vertically, and the groups are lined up horizontally across the page.

Example 2 is the same as example 1 rotated 90 degrees. The groups could be either lines or columns depending on what concept is called (Split Phantom Lines, or Interlocked Phantom Columns, for example).

Example 3 shows four lines arranged end-to-end. From this formation we can work Split Phantom Lines (or Waves), Phantom Lines (or Waves) or Interlocked Phantom Lines (or Waves). The tricky part here is to know exactly where you are in the 1 x16 matrix so you know which group of four you are in, and where you are in that group of four (end or center, etc.)

Example 4 is simple four end-to-end columns. Everything I said about Example 3 applies here as well.

It gets interesting when the groups of four become something else, like boxes, diamonds, or quarter tags. For example:


Example $5 \quad$ Example 6
Example 5 shows four phantom diamonds. These can be paired up Phantom, Split Phantom or Interlocked Phantom. Note that the diamonds may also be point-to-point. Note also that once the diamonds are paired up, we are working in a phantom formation of eight spots, and so in that formation we can work interlocked, magic, etc. Split Phantom Diamonds, Interlocked Diamond Circulate is NOT the same as Interlocked Phantom Diamonds, Diamond Circulate.

Example 6 shows four phantom quarter tag formations. This can be particularly hard to see on the dance floor because of square breathing and the equivalency of diamond and quarter tag footprints. For example, the square might look like this:
$>$
$>\ll$
$\gg<$
$<$
If the caller calls Split Phantom Quarter Tag, Chain Reaction, you must first find the four groups of four dancers, and realize that they are four single quarter tag formations. Breath to the "diamond" footprints to see this more clearly. Then add the phantom quarter tag formations to the outside as follows:


Now "pair up" with the outside phantom quarter tag formations (the phantoms, as usual, won't offer any help), and realize that you really want to be on the "quarter tag" footprints instead of the "diamond" footprints, so adjust accordingly to make the following:
*

| $*$ | $*$ | $*$ |
| :--- | :--- | :--- |
| $>$ | $>$ | $<$ |
|  | $<$ |  |
|  | $>$ |  |
| $>$ | $<$ | $<$ |
| $*$ | $*$ | $*$ |
|  |  |  |
|  |  |  |

Now you are ready to do the Chain Reaction with those phantoms. Note that the outside dancers are now facing entirely different centers than they were before doing all that breathing. With all that breathing, be careful you don't hyperventilate!

Example 7 shows four boxes, which can be paired up as Phantom Boxes, Interlocked Phantom Boxes or Split Phantom Boxes. Yes, it should now be clear why Split Phantom Boxes are called Split Phantom Boxes.

There are several things which can make it difficult to find your Phantom/Split Phantom/Interlocked Phantom formation. First of all, you might not have any phantoms, and you have to figure out where to add them. Secondly, you may have just used one concept or matrix for the last call, and now have to re-evaluate the matrix for the next call. Changing from Triple Boxes Working Apart on one call to Interlocked Phantom Boxes on the next call can be a little disorienting at first. And lastly comes the most interesting part of all, SHAPE CHANGING CALLS!

To survive shape changing calls in Phantom/Split Phantom/Interlocked Phantom concepts, remember that the concepts always involve four groups of four paired up in a specific way. The call may change the shape of the groups of four, but when the dust settles there will still be four groups of four, and they must still be paired up with each other in the same way they were at the start of the call. For example, Interlocked Phantom Diamonds, Unwrap the Diamond. Assume we start like this:

```
\begin{tabular}{lll}
\(\wedge\) & \(>\) & \\
& \(<\) & \\
& & \\
& & \\
& &
\end{tabular}
```

Step 1, add the phantoms, and pair up the groups of four as follows:


Then think about how an unwrap changes twin diamonds into columns, as follows:


The resulting $2 \times 4$ matrix must be divided into two boxes to make the groups of four. Moving into the final spots with the flow of the call helps the dance flow. The ending formations is as follows:

```
^ *
(GROUP-A)
^ *
* V
* V
* *
(GROUP-C)
^ *
* V
* V
```

Note that some live dancers ended up in the far outside groups of four, while some remained in the same group where they started.

