

Broken Symmetry

A 48 bar reel for three couples in a longwise set.

Bars

- 1-4 1st and 2nd couples dance half left hands across then each half turn their partner left hand.
- 5-8 1st couple dance half diagonal rights and lefts with 1st woman crossing up and 1st man crossing down.
- 9-12 All dance half reels of three on the sides with 1st couple giving right shoulder to their 2nd corners and ending back on the sidelines in 2nd place opposite sides.
- 13-16 All dance half reels of three across with 1st couple giving left shoulder to their 3rd corner positions and ending in 2nd place on their own sides.
- 17-20 1st couple dance half a figure of eight ("fish hook") out of the ends of the set passing their 1st corner position left shoulder and ending in 2nd place on opposite sides while their 1st corners half turn left hand and twirl away to the opposite corner. All are now on opposite sides in the order 312.
- 21-24 1st couple dance half a figure of eight on the side round their 2nd corner, passing them right shoulder to end back in 2nd place still on opposite sides.
- All now repeat bars 5-24 (reflected) from opposite sides with opposite hands.
- 25-28 1st couple dance half diagonal lefts and rights with 1st woman crossing up and 1st man crossing down, both starting by giving left hands to cross and right hands on the sides.
- 29-32 All dance half reels of three on the sides with 1st couple giving left shoulder to their 3rd corner positions and ending back on their own sides in 2nd place.
- 33-36 All dance half reels of three across with 1st couple giving right shoulder to their 2nd corner positions and ending in 2nd place on opposite sides.
- 37-40 1st couple dance half a figure of eight ("fish hook") out of the ends of the set passing their 4th corner position right shoulder and ending in 2nd place on their own sides while their 4th corners half turn right hand and twirl away to the opposite corner. All are now back on their own sides in the order 213.
- 41-44 1st couple dance half a figure of eight on the side round their 3rd corner, passing them left shoulder to end back in 2nd place on their own sides.
- 45-48 1st and 3rd couples each half turn their partner right hand then dance half right hands across. The final order is 231 and 3rd couple, now in 2nd place, are ready to flow into the repeat with the new 1st couple.

Notes

The "CPT Theorem" requires that theories of particle physics should be symmetric if (a) all particles are switched to their antiparticles, (b) "parity" (left/right handedness) is inverted and (c) the direction of time is reversed. Experiments show that nature is not symmetric if only one or two of the three are swapped at the same time, ie these symmetries are broken.

This dance is not symmetric under all three transformations so totally fails to illustrate the CPT Theorem (which would be incompatible with a progression). However taking men and women as particles and antiparticles (or vice versa) it does show swapping of pairs of these symmetries. The first and last four bars have inverted time order and handedness but are danced from the same side, whereas the repeated sections of bars 4-24 and 25-40 are in the same time order but have gender and handedness reversed.

Music (Example Tracks)

A Special Occasion (Marian Anderson: *The Other Kangaroo Paw*)

Lauraine's Delight (Marian Anderson: *Kangaroo Paw*)