Passing Pattern Anthology

Markus Walter

December 26, 2024

The latest revision can be found at `https://houseofsuns.org/ppa/ppa.html`.

The Passing Pattern Anthology is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License (see `http://creativecommons.org/licenses/by-sa/4.0/`).

Contents

Introduction v
1. Notation . . . v
2. How to use . . . v
3. Points of interest . . . vi
4. Causal diagrams . . . vii
5. Notes on dynamic patterns . . . vii
6. Notes on manipulator patterns . . . vii
7. Siteswaps . . . viii
8. Passing pattern families and further comments . . . viii

I. Static Patterns 1

1. 2 jugglers 3
1.1. 4 clubs . . . 3
1.1.1. Zaps . . . 3
1.1.2. Various . . . 3
1.2. 5 clubs . . . 3
1.2.1. Basics . . . 3
1.2.2. Various . . . 3
1.2.3. Zaps . . . 4
1.2.4. Why not family . . . 6
1.2.5. Asymmetric patterns . . . 6
1.3. 6 clubs . . . 7
1.3.1. Basics . . . 7
1.3.2. Why not family . . . 8
1.3.3. Zaps . . . 9
1.3.4. Non-default rhythm . . . 10
1.3.5. Various . . . 11
1.3.6. Asymmetric patterns . . . 14
1.4. 7 clubs . . . 15
1.4.1. Basics . . . 15
1.4.2. Popcorns . . . 15
1.4.3. Why not family . . . 16
1.4.4. Non-default rhythm . . . 17
1.4.5. Zaps . . . 17
1.4.6. Asymmetric patterns . . . 18
1.4.7. Various . . . 19
1.5. 8 clubs . . . 23
1.5.1. Basics . . . 23
1.5.2. Asymmetric patterns . . . 23
1.5.3. Non-default rhythm . . . 24
1.5.4. Various . . . 24
1.6. 9 clubs . . . 26
1.6.1. Basics . . . 26
1.6.2. Asymmetric patterns . . . 26
1.6.3. Various . . . 26

2. 3 jugglers 27
2.1. 5 clubs . . . 27
2.1.1. Various . . . 27
2.2. 6 clubs . . . 27
2.2.1. Various . . . 27

2.3. 7 clubs . . . 28
2.3.1. Feeds . . . 28
2.3.2. Various . . . 28
2.4. 8 clubs . . . 28
2.4.1. Various circular patterns . . . 28
2.5. 9 clubs . . . 29
2.5.1. Basic feeds . . . 29
2.5.2. Feeds . . . 29
2.5.3. Pulsars . . . 29
2.5.4. Various circular patterns . . . 30
2.6. 10 clubs . . . 30
2.6.1. Various feeds . . . 30
2.6.2. Various circular patterns . . . 31

3. 4 jugglers **31**
3.1. 12 clubs . . . 31
3.1.1. Various . . . 31

4. 5 jugglers **31**
4.1. 10 clubs . . . 32
4.1.1. Various . . . 32
4.2. 12 clubs . . . 32
4.2.1. Various . . . 32
4.3. 15 clubs . . . 33
4.3.1. Various . . . 33

5. 6 jugglers **33**
5.1. 18 clubs . . . 33
5.1.1. Various . . . 33

6. n jugglers **33**
6.1. $3n$ clubs . . . 33
6.1.1. Feasts . . . 33

II. Walking Patterns 35

7. 2 jugglers **37**
7.1. 3 clubs . . . 37
7.1.1. Various . . . 37
7.2. 4 clubs . . . 37
7.2.1. Various . . . 37

8. 3 jugglers **37**
8.1. 6 clubs . . . 37
8.1.1. Various . . . 37
8.2. 9 clubs . . . 37
8.2.1. Various . . . 37
8.3. 10 clubs . . . 39
8.3.1. Various . . . 39

9. 4 jugglers **40**
9.1. 11 clubs . . . 40
9.1.1. Various . . . 40
9.2. 12 clubs . . . 40
9.2.1. Various . . . 40

9.3. 13 clubs . . . 49
9.3.1. Various . . . 49

10.5 jugglers **50**
10.1. 15 clubs . . . 50
10.1.1. Various . . . 50

11.6 jugglers **50**
11.1. 18 clubs . . . 51
11.1.1. Various . . . 51

III. Manipulator Patterns 53

12.3 jugglers **55**
12.1. 5+1 clubs . . . 55
12.1.1. Exchange patterns . . . 55
12.2. 6 clubs . . . 55
12.2.1. Exchange patterns . . . 55
12.3. 6+1 clubs . . . 55
12.3.1. Roundabout family . . . 55
12.3.2. Various . . . 56
12.3.3. Exchange patterns . . . 57
12.4. 7+1 clubs . . . 58
12.4.1. Exchange patterns . . . 58
12.4.2. Various . . . 59
12.5. 8+1 clubs . . . 59
12.5.1. Various . . . 59

13.4 jugglers **59**
13.1. 6+2 clubs . . . 60
13.1.1. Various . . . 60
13.1.2. Lazy patterns . . . 60
13.2. 7+2 clubs . . . 60
13.2.1. Lazy patterns . . . 60
13.3. 9+0 clubs . . . 61
13.3.1. Exchange patterns . . . 61
13.4. 9+1 clubs . . . 61
13.4.1. Scrambled-V family . . . 61
13.4.2. Exchange patterns . . . 65
13.4.3. Various . . . 65
13.5. 10+1 clubs . . . 67
13.5.1. Ambled-V family . . . 67
13.6. 11+1 clubs . . . 69
13.6.1. Exchange patterns . . . 69

14.5 jugglers **69**
14.1. 6+1 clubs . . . 69
14.1.1. Various . . . 69
14.2. 6+3 clubs . . . 69
14.2.1. Lazy patterns . . . 69
14.2.2. Various . . . 69
14.3. 7+3 clubs . . . 70
14.3.1. Various . . . 70
14.4. 9+2 clubs . . . 70
14.4.1. Various . . . 70

14.5. 10+2 clubs . . . 71
14.5.1. Various . . . 71
14.6. 12+1 clubs . . . 71
14.6.1. Various . . . 71

15.6 jugglers **72**
15.1. 12+2 clubs . . . 72
15.1.1. Various . . . 72

16.7 jugglers **72**
16.1. 12+3 clubs . . . 72
16.1.1. Various . . . 72

17.20 jugglers **72**
17.1. 24+12 clubs . . . 72
17.1.1. Various . . . 72

IV. Additional Topics 75

18. Interfaces **77**

19. Programming **78**
19.1. Period five patterns (6 clubs) . . . 78
19.2. Period five patterns (7 clubs) . . . 81
19.3. Period three patterns (5 clubs) . . . 82
19.4. Period three patterns (6 clubs) . . . 83
19.5. Period three patterns (7 clubs) . . . 83
19.6. Period seven patterns (7 clubs) . . . 84
19.6.1. Variant A . . . 84
19.6.2. Variant B . . . 84
19.7. Various . . . 85
19.7.1. Jonix . . . 85
19.7.2. Coral A and B . . . 85
19.7.3. Dash 3 . . . 86
19.7.4. Ariel Ultra . . . 86
19.7.5. Persil Mega Pearls . . . 86
19.7.6. Skip and Hop feed . . . 87
19.7.7. La Vache Qui Rit . . . 87

Introduction

1. Notation

The most important part are the throws so we start with how they are written down.

- Self throws are denoted by s or in the verbose variant s^n (with s being equal to s^1). The superscript n denotes how long the throw has to fly and most of the time denotes the best number of spins to use. The common s is equivalent to a throw of a three club cascade, while s^2 is caught with the same hand as it is thrown (a heff).

- Zips (or hand-acrosses) are denoted by z. This is kind of a degenerate self and equivalent to s^{-1}.

- Holds where the club is not throw but kept in the hand are denoted by h. This is also a degenerate self and equivalent to s^0. (To keep it interesting and not mess up the timing it is advised to do a flip instead of simply holding the club in the hand.)

- Passes are denoted by p and can possess various additional attributes. Like selves they can have an superscript p^n denoting higher throws, where p is equal to p^1, again often indicating that n spins are good. Additionally the can have a subscript p_X denoting the juggler to which to pass (in this case X). So a general pass looks like this: p^n_X. Note that p^0 is a zap or joe pass.

Furthermore there are some additional instructions that are for manipulator patterns.

- First the passes can not only have their height as superscript, but also the juggler from which the pass originates. Thus a general pass actually looks like this: $p^{X,n}_Y$.

- Manipulated throws or subtitutes are denoted by m^X_Y. This means taking a club from X and giving it to Y. This can be shortened to m_Y if the source is implied by context. They are listed at the time, where the take-out is made.

- Intercepts are denoted by i^X_Y. This means taking a club from X and becoming juggler Y; in turn juggler Y takes the manipulator position. They are listed at the time, where the catch is made.

- Carrys are denoted by c^X_Y. This is like a substitute, but the manipulator is already holding the club (happens after an intercept). So the manipulator virtually takes a club from X and gives it to Y. They are listed at the time, where the hand-in is made.

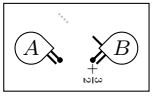
- Throws can have one or two dots above them ($\dot{p}$ or $\ddot{p}$), to signal that they are being manipulated. In the case of two dots the corresponding club is not held by the juggler but already in the hands of the manipulator (happens with carries).

2. How to use

The jugglers are denoted by capital letters, most of the time consecutively starting at A.

Each pattern has first some general information given as a structured list. Each possible entry in this list is described in detail in the next section.

How to start each pattern can either be described in the structured list, or via one or more starting diagrams like the following.



Each shape describes the corresponding juggler. For each juggler the number of clubs in each hand, starting hand, starting offset and magicality is displayed. In this case A has two clubs in the right hand and zero clubs in the left hand. She starts with the right hand (indicated by the

small dot on a right hand club) on beat zero. Now B has one club in the right hand and two clubs in the left hand. She starts with the left hand, but $3/2$ beats later than the first juggler which is A (denoted by the fraction next to the starting hand indication dot). The club in B's right hand is magic (indicated by the striped pattern), that is it always does the same throw and can be color-coded.

Afterwards there is most of the time either a causal diagram or for dynamic patterns (where the jugglers move around) a table. Both are explained below.

3. Points of interest

sequence The sequence of throws each juggler has to perform. This does not indicate how to start the pattern.

global This is the global four-handed siteswap of the pattern. This is used for static asynchronuous patterns.

local This is the local siteswap of the pattern accompanying a global siteswap. Subscripts indicate the starting positions of the different jugglers. So than in ${}_A7_B65$ the juggler A starts with a 7 while B starts with a 6.

préchac This is the préchac notation of the pattern. This is used for static synchronuous patterns. Subscripts indicate the starting positions of the different jugglers. So than in ${}_A4p_B3$ the juggler A starts with a $4p$ while B starts with a 3.

type If not already indicated by the name of the pattern or the section this gives the family this pattern belongs to. They are explained in section 8.

start How to start this pattern. If no explicit starting diagram is given, there exists one for the general type of passing pattern this pattern belongs to or one covering the entire section and here you find the information building one for this specific pattern. If we have A: L1+$\frac{1}{2}$/R2 then this says, that juggler A has one club in her left hand and two clubs in her right hand. Furthermore she starts with the left hand (since it comes first) and half a beat later (that's the $+\frac{1}{2}$). More than one start can be given.

throws This specifies how the throws should be thrown. Which spin and whether passes should be crossing or straight. If nothing is said passes are straight with a single spin.

preparation Here are references to patterns which are similar but easier and hence can be used for preparation.

symbols Explains the meanings of additional symbols like asterisk which appear as superscripts or subscripts.

color coding Groups the clubs so that all clubs of one color have the same throws happening to them. This is done by associating colors (or in mathematicians terms numbers) to each throw of the sequence of the pattern.

For example the instruction $p_1\ s_2\ z_3\ p_3\ s_2\ p_1$ tells you that there are three colors (say red, green, and blue). The first and last pass are done by a red club, the selfs are done by green clubs and the zip together with the following pass are done by the blue clubs.

interface Patterns with equal interface are compatible and may be juggled against each other. The interface describes on which beats what happens. If nothing special happens (e. g. a self) a • is notated. If a pass is caught by oneself this is marked with an O. If a pass lands with the partner this is marked by an X. And if the preceding two coincide they fuse to an ⊗. For asynchronuous patterns the indications alternate between persons (so there can never be a ⊗). Furthermore for many asynchronuous

patterns the interface consists of two repeating halves where the second half switches the roles (i. e. O and X swap); in these cases the second half is omitted and replaced by ✠ (meaning O X ● X O ● equals O X ● ✠). However if an asynchronuous pattern does not specify ✠ it will be asymmetric with the two jugglers doing different things so that the correct halves of two patterns with this interface have to be joined to give another working pattern. Note that the interface may be rotated in relation to the other presentations of the pattern.

transition Specifically for manipulator patterns this gives the information to which position each juggler transitions after one round of the pattern.

This is especially useful for practice as this information can simply be read backwards as instruction for how to turn back one round.

hint Gives hints how to juggle or understand the pattern. For example mnemonics to remember the actions.

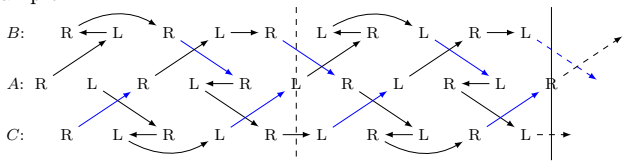
remark Gives miscalleanous information pertaining to the pattern.

4. Causal diagrams

These represent the throws of all jugglers by arrows; one row for each juggler. In the rows the hands are listed as R and L. An arrow starts, where a club is thrown. However it does not end where the club lands. Instead it ends where the hand is freed.

A different way to think about this is, that every hand is holding a club and never releasing it. The passed clubs are now bounced off the hands – never being grabbed, instead being hit like baseballs. Then the causal diagrams give the actual paths of the clubs in the air.

Here is an example.



Note that crossing passes are blue. Furthermore hurries, where one hand throws twice are marked red (not shown). Arrows representing empty hands are dotted.

5. Notes on dynamic patterns

Moving patterns are mostly described by using tables like the following. However some static patterns are also described with these tables (but then of course no change of position happens).

$$\begin{array}{ll} A\colon & p_B \; \_ \; p_C \; \_ \; p_B \; \_ \to B \\ B\colon & p_A \; \_ \; \_ \; \_ \; p_A \; \_ \to C \\ C\colon & \_ \; \_ \; p_A \; \_ \; \_ \; \_ \to A \end{array}$$

Each row describes one juggler, named at the start of the row. Then the throws each juggler performs are listed. Finally the transition for each juggler is indicated with an arrow. In this case A becomes B, B becomes C and C becomes A after six beats. The corresponding walking paths are given in the starting diagram.

6. Notes on manipulator patterns

Manipulator patterns are described quite similar to walking patterns, but their tables additionally include manipulation instructions like the following.

$$\begin{array}{lllllllllll} A\colon & \dot{p}_B & \_ & \_ & \_ & \dot{p}_B & \_ & \_ & \_ & \to B \\ B\colon & p_A & \_ & \dot{s} & \_ & p_A & \ddot{s} & \ddot{s} & \_ & \to A \\ M\colon & m_B^A & & m_B^B & & & i_B^A & & c_B^B & \to M \end{array}$$

First note, that selfes if uninteresting are replaced by underscores for readability and second note that the manipulator line contains blanks, which most of the time are used to prepare the next move or are otherwise spent waiting. Furthermore we give some general hints on manipulator patterns.

- Interactions are generally with opposite hands. A club which is thrown by a right hand is by default taken with the left hand. A club is put into a left hand by default from a right hand.
- A consequence of this is that by default most manipulations are followed by a zip.
- Intercepts are generally done on a pelf (i. e. a non-rotating floaty self), although preferences vary.
- If a pattern requires, that the first throw has to be manipulated and this throw is from a hand with more than one club the general protocol is that the manipulator holds this club instead at the beginning.

  An alternative is to do a round of the unmanipulated base pattern.

Finally one technical detail about the manipulator notation. Let Anne be juggler M and Ben be juggler Y. The intercept i_Y^X by manipulator M imediately switches the roles of M and Y. So that after the intercept Anne is juggler Y and Ben is juggler M. This is accompanied by a relabeling of clubs. All clubs Anne has are relabeled to belong to position Y, whereas one of Ben's clubs is relabeled to belong to the manipulator position M. Almost always this causes Ben to still hold a second club still owned by Y which he then has to carry.

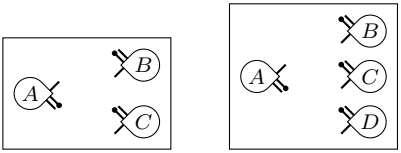
7. Siteswaps

A four-handed siteswap assumes that the four hands throw in regular beats. So that the sequence right hand of A, right hand of B, left hand of A, left hand of B repeats infinitely with beats being equally spaced in time. A number now says in how many beats a club is thrown again. This means a 4 is a hold, since the next throw will be by the same hand with nothing else to do for the hand in between.

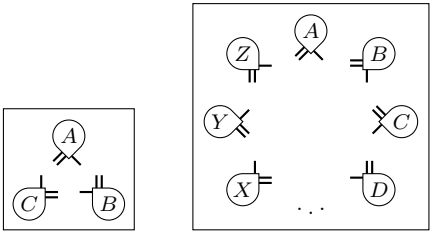
8. Passing pattern families and further comments

- **Feed:** A feed is a multi-person pattern, where one person is the feeder and everybody else is feedee. Every feedee passes to the feeder. The feeder alternates between the feedees with her passes.

  We give the general starting diagram for feeds with three and four persons as these are the most common ones; more feedees can be added in the obvious manner.



- **Circular patterns:** A circular pattern is pretty much self-describing. The general starting diagram is as follows (with three jugglers on the left and in general with n jugglers on the right).



- **Feast:** A feast is a special circular pattern. Each juggler switches partner with each pass (including herself – meaning, that some of the passes are converted to selfs).

- **Pulsar:** A pulsar is a circular pattern based on a specific passing pattern. This pattern is converted into a feed by alternating the passes to the feedees. Now the feeder changes every two (or in general $n-1$, where n is the number of jugglers) passes in a clockwise direction. The feeders alternate feeding the feedees in a clockwise and anticlockwise manner.

- **Jim's:** A Jim's variant of a pattern means that one passer throws always straight and the other always crosses, but both keep the original sequence of throws. This frequently causes mismatches with the hands, which are compensated by hurries.

- **Martin's:** A Martin's variant of a pattern means that one passer throws always straight and the other always crosses, but both keep the original sequence of throws. This frequently causes mismatches with the hands, which are compensated by extra zips (which are disregarded concerning the originial sequence).

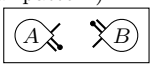
- **on socks:** An on socks variant of a manipulator pattern is done by adding a person. Now when normally becoming the manipulator you instead become the on socks person. As on socks person you run around the pattern and become manipulator after an additional cycle.

Part I.

Static Patterns

1. 2 jugglers

The general starting diagram for this section looks as follows (of course number of clubs and such has to be adjusted to the particular pattern).



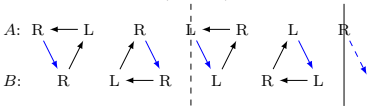
1.1. 4 clubs

1.1.1. Zaps

552

sequence: p^0 z p^0
global: 552
local: ${}_A52_B5$
start: A: R1/L1; B: R1+$\frac{1}{2}$/L1
throws: A crossing; B straight

interface: O X ● ✠ (async)

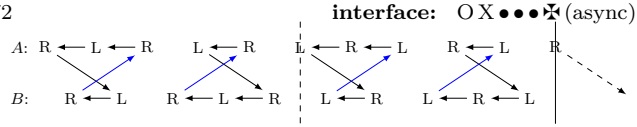


1.1.2. Various

Inverted parsnip

sequence: p z z p z
global: 77222
local: ${}_A722_B72$

start: A: R1/L1; B: R1+$\frac{1}{2}$/L1
throws: A straight singles; B crossing singles
interface: O X ● ● ● ✠ (async)



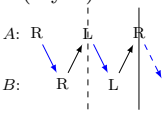
1.2. 5 clubs

1.2.1. Basics

1-count (5 clubs)

sequence: p^0
global: 5
local: ${}_{AB}5$
start: A: R2/L1; B: R1+$\frac{1}{2}$/L1
throws: A crossing; B straight

interface: O ✠ (async)

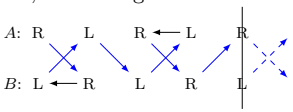


1.2.2. Various

Kraken

sequence: p p p z
préchac: ${}_A3p3p_B3p1$

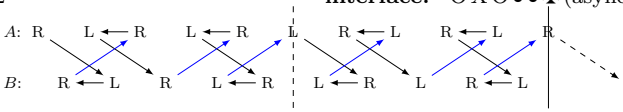
throws: A, B crossing



Parsnip

sequence: p p z p z
global: 77722
local: ${}_A772_B72$

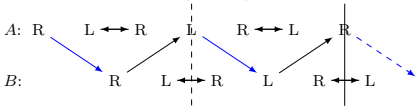
start: A: R2/L1; B: R1+$\frac{1}{2}$/L1
throws: A crossing; B straight
interface: O X O ● ● ✠ (async)



Hop

sequence: p s z
global: 726
local: ${}_{AB}762$
start: *A*: R2/L1; *B*: R1+$\frac{3}{2}$/L1
throws: *A* crossing; *B* straight

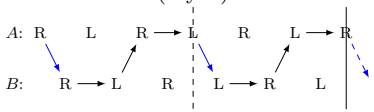
interface: O●●✠ (async)



Killer bunny

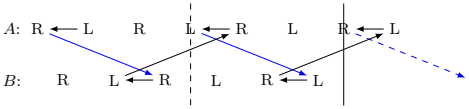
sequence: p^0 h s
global: 456
local: ${}_{A}54{}_{B}6$
start: *A*: R2/L1; *B*: R1+$\frac{3}{2}$/L1
throws: *A* crossing; *B* straight

interface: O●●✠ (async)

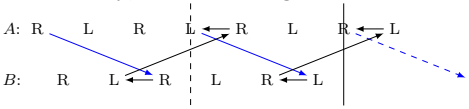


Glass elevator

sequence: p^2 z h
global: 942
local: ${}_{A}92{}_{B}4$
start: *A*: R2/L1; *B*: R1+$\frac{1}{2}$/L1; *A* converts the first zip into a hold
throws: *A* crossing doubles; *B* straight doubles
interface: O●●✠ (async)



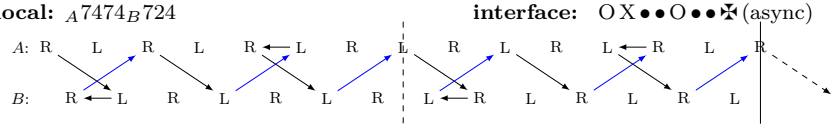
above: theory; below: working start



Flipalot

sequence: p h p h p z h
global: 7742744
local: ${}_{A}7474{}_{B}724$

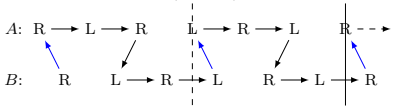
start: *A*: R2/L1; *B*: R1+$\frac{1}{2}$/L1
throws: *A* straight singles; *B* crossing singles
interface: O X●● O●●✠ (async)



663

sequence: s s p^{-1}
global: 663
local: ${}_{A}66{}_{B}3$
start: *A*: R1/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight; *B* crossing
remark: Be careful not to fall into 64645.

interface: O●●✠ (async)

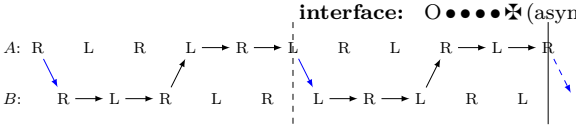


1.2.3. Zaps

First zap

sequence: s s p^0 h h
global: 64645
local: ${}_{A}544{}_{B}66$

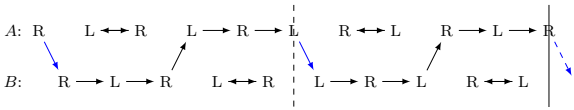
start: *A*: R2/L1; *B*: R1+$\frac{1}{2}$/L1
throws: *A* crossing; *B* straight
interface: O●●●●✠ (async)



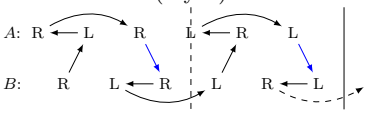
56662

sequence: p^0 s z s s
global: 56662
local: ${}_{A}562{}_{B}66$

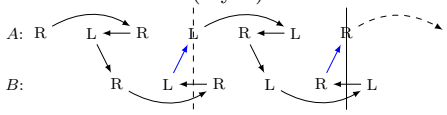
start: *A*: R2/L1; *B*: R1+$\frac{1}{2}$/L1
throws: *A* crossing; *B* straight
interface: O●●●●✠ (async)



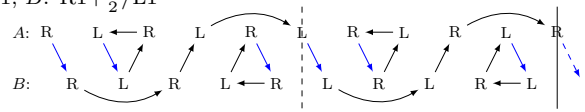
Argonaut
sequence: s^2 z p^0
global: 852
local: ${}_A82_B5$
start: A: R1/L1; B: R2+$\frac{1}{2}$/L1
throws: A crossing; B straight
interface: O●●✠(async)



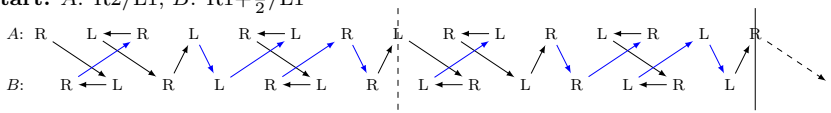
Inverse Argonaut
sequence: s^2 p^0 z
global: 825
local: ${}_{AB}852$
start: A: R2/L1; B: R1+$\frac{3}{2}$/L1
throws: A straight; B crossing
interface: O●●✠(async)



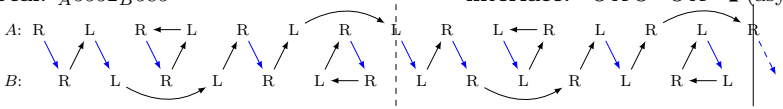
Nestor
sequence: p^0 p^0 p^0 z s^2
global: 58552
local: ${}_A552_B85$
start: A: R2/L1; B: R1+$\frac{1}{2}$/L1
throws: A crossing; B straight
color coding: p_1^0 p_1^0 p_1^0 z_2 s_2^2; 1 pass; 2 heff
interface: OX●X●✠(async)



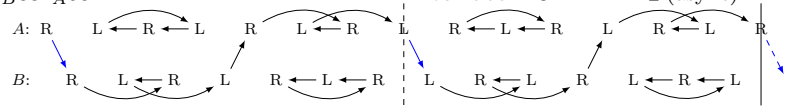
7772255
sequence: p p z p^0 p z p^0
global: 7772255
local: ${}_A7725_B725$
start: A: R2/L1; B: R1+$\frac{1}{2}$/L1
throws: A crossing zaps, straight singles; B straight zaps, crossing singles
interface: OXOXO●●✠(async)



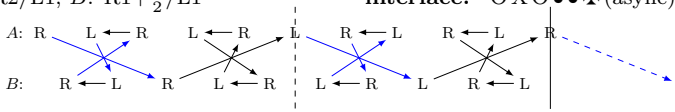
Theseus
sequence: p^0 p^0 p^0 z p^0 s^2 p^0
global: 5558552
local: ${}_A5552_B585$
start: A: R2/L1; B: R1+$\frac{1}{2}$/L1
throws: A crossing; B straight
interface: OXO●OX●✠(async)



Heffalot
sequence: s^2 s^2 z p^0 s^2 z z
global: 8882225
local: ${}_B882_A5822$
start: A: R2/L1; B: R1+$\frac{1}{2}$/L1
throws: A crossing; B straight
interface: O●●●●●●✠(async)

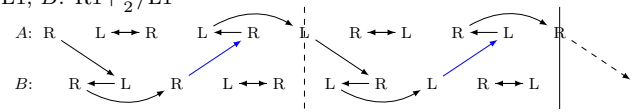


97522
sequence: $p^2\ p^0\ z\ p\ z$
global: 97522
local: ${}_A952_B72$
start: *A*: R2/L1; *B*: R1+$\frac{1}{2}$/L1
throws: *A* crossing zaps, straight singles, crossing doubles; *B* straight zaps, crossing singles, straight doubles
interface: O X O ●● ✠ (async)

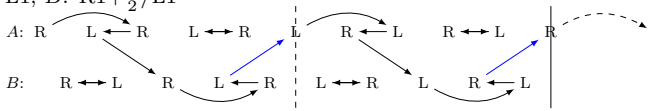


1.2.4. Why not family

Why not (5 club)
sequence: p s z s^2 z
global: 78622
local: ${}_A762_B82$
start: *A*: R2/L1; *B*: R1+$\frac{1}{2}$/L1
throws: *A* straight; *B* crossing
color coding: $p_1\ s_1\ z_2\ s_2^2\ z_1$; 1 pass; 2 heff
interface: O ●●●● ✠ (async)

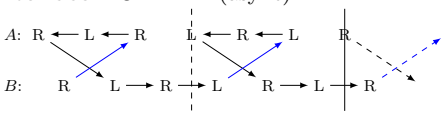


Not Why (5 club)
sequence: p z s z s^2
global: 86722
local: ${}_A872_B62$
start: *A*: R2/L1; *B*: R1+$\frac{1}{2}$/L1
throws: *A* straight; *B* crossing
color coding: $p_1\ z_1\ s_1\ z_2\ s_2^2$; 1 pass; 2 heff
interface: O ●●●● ✠ (async)

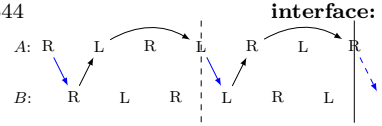


1.2.5. Asymmetric patterns

Skip
sequence: *A*: p z z / *B*: p s s
global: 772626
local: *A*: 722 / *B*: 766
start: *A*: R1/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight; *B* crossing
interface: O X ●●●● (async)



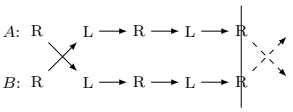
558444
sequence: *A*: $p^0\ s^2$ h / *B*: p^0 h h
global: 558444
local: *A*: 584 / *B*: 544
start: *A*: R2/L1; *B*: R1+$\frac{1}{2}$/L1
throws: *A* crossing zaps; *B* straight zaps
interface: O X ●●●● (async)



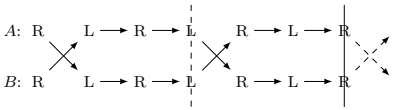
1.3. 6 clubs

1.3.1. Basics

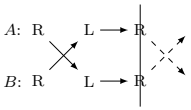
4-count (6 clubs)
sequence: p s s s
préchac: $_{AB}3p333$
start: A: R2/L1; B: R2/L1
interface: $\otimes\bullet\bullet\bullet$(sync)



3-count (6 clubs)
sequence: p s s
préchac: $_{AB}3p33$
start: A: R2/L1; B: R2/L1
color coding: p_1 s_2 s_2; 1 pass; 2 self
interface: $\otimes\bullet\bullet$(sync)

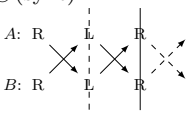


2-count (6 clubs)
sequence: p s
préchac: $_{AB}3p3$
start: A: R2/L1; B: R2/L1
interface: $\otimes\bullet$(sync)

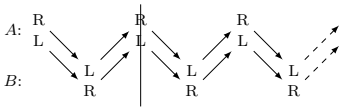


1-count (6 clubs)
sequence: p
préchac: $_{AB}3p$
start: A: R2/L1; B: R2/L1
remark: Switch to synchronous 1-count (6 clubs) (1.3.1) by throwing a double.

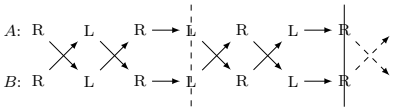
interface: $\otimes$(sync)



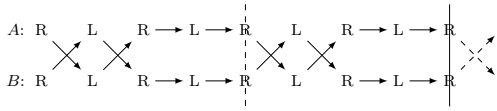
synchronous 1-count (6 clubs)
sequence: p+p
start: A: R2/L2; B: R1/L1
remark: Switch to 1-count (6 clubs) (1.3.1) by throwing a double.



pass pass self (6 clubs)
sequence: p p s
préchac: $_{AB}3p3p3$
start: A: R2/L1; B: R2/L1
color coding: p_1 p_1 s_2; 1 pass; 2 self
interface: $\otimes\otimes\bullet$(sync)

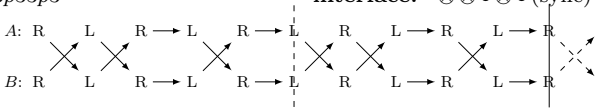


Chocolate bar
sequence: p p s s
préchac: $_{AB}3p3p33$
start: A: R2/L1; B: R2/L1
interface: $\otimes\otimes\bullet\bullet$(sync)



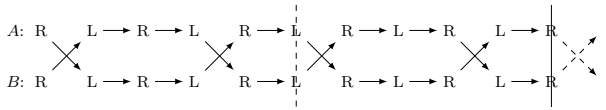
Bookends
sequence: p p s p s
préchac: $_{AB}3p3p33p3$

start: A: R2/L1; B: R2/L1
interface: $\otimes\otimes\bullet\otimes\bullet$(sync)

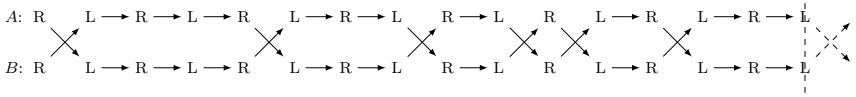


Inverted bookends
sequence: p s s p s
préchac: $_{AB}3p333p3$

start: A: R2/L1; B: R2/L1
interface: $\otimes\bullet\otimes\bullet\bullet$(sync)

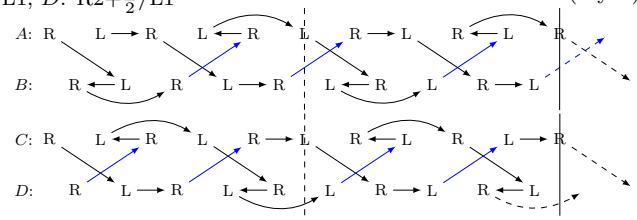


Countdown
sequence: p s s s p s s p s p p s p s s
préchac: $_{AB}3p3333p333p33p3p33p33$
start: A: R2/L1; B: R2/L1
interface: ⊗⊗●⊗●●⊗●●●⊗●●⊗●(sync)

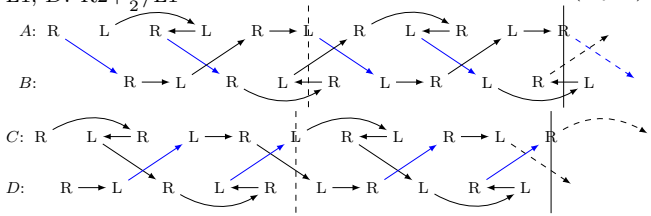


1.3.2. Why not family

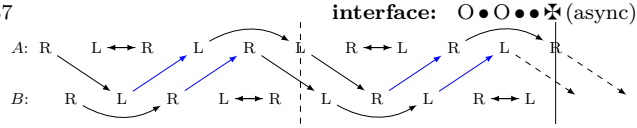
Why not
sequence: p s p s^2 z
global: 78627
local: $_{AD}76_C7_B82$
start: A: R2/L2; B: R1+$\frac{1}{2}$/L1
start: C: R2/L1; D: R2+$\frac{1}{2}$/L1
remark: Commonly the A/B start is used since it has no offset for A, however this causes an imbalance of starting clubs.
throws: A, C straight; B, D crossing
interface: O X●●✠(async)



Not Why
sequence: p s^2 p z s
global: 72867
local: $_A7_C872_{BD}6$
start: A: R2/L2; B: R1+$\frac{3}{2}$/L1
start: C: R2/L1; D: R2+$\frac{1}{2}$/L1
remark: No start is really satisfactory. For a third variant B can do heff zip instead of wait self.
throws: A, C crossing; B, D straight
interface: O X●●✠(async)



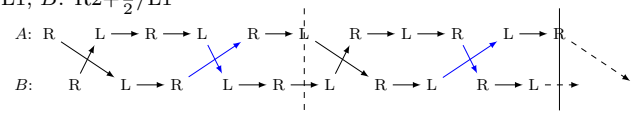
Maybe
sequence: p p s z s^2
global: 78672
local: $_A762_B87$
start: A: R2/L1; B: R2+$\frac{1}{2}$/L1
throws: A straight; B crossing
interface: O●O●●✠(async)



1.3.3. Zaps

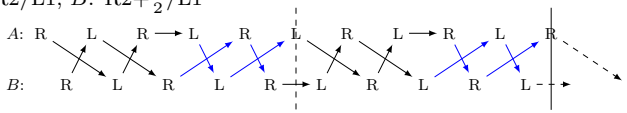
75666

sequence: p s s p^0 s
global: 75666
local: ${}_A766_B56$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles, crossing zaps; *B* crossing singles, straight zaps
interface: O X ● ● ✠ (async)



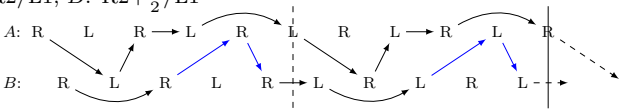
75756

sequence: p p s p^0 p^0
global: 75756
local: ${}_A776_B55$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* crossing zaps, straight singles; *B* straight zaps, crossing singles
interface: O X O X ● ✠ (async)



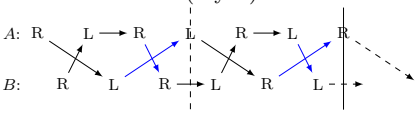
45678

sequence: p h s s^2 p^0
global: 45678
local: ${}_A746_B85$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* crossing zaps, straight singles; *B* straight zaps, crossing singles
interface: O X ● ● ✠ (async)



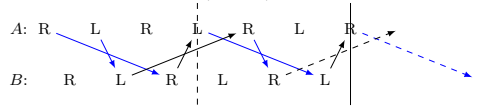
Baby dragon

sequence: p^0 p s
global: 756
local: ${}_A76_B5$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* crossing zaps, straight singles; *B* straight zaps, crossing singles
interface: O X ● ✠ (async)



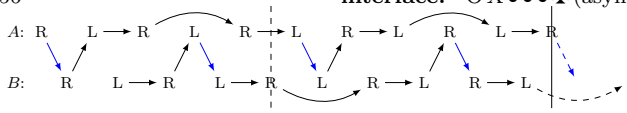
Dragon

sequence: p^2 p^0 h
global: 945
local: ${}_A95_B4$
start: *A*: R2/L2; *B*: R1+$\frac{1}{2}$/L1
throws: *A* straight; *B* crossing
interface: O X ● ✠ (async)



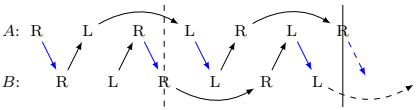
Why not zaps

sequence: s^2 p^0 s p^0 s
global: 85566
local: ${}_A856_B56$
start: *A*: R2/L1; *B*: R1+$\frac{1}{2}$/L2
throws: *A* crossing; *B* straight
interface: O X ● ● ✠ (async)



Jason

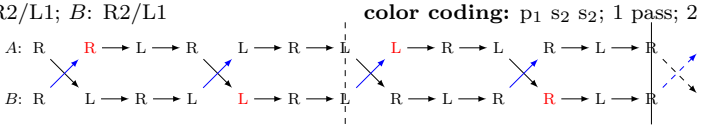
sequence: s^2 p^0 p^0
global: 855
local: ${}_A85_B5$
start: *A*: R2/L1; *B*: R1+$\frac{1}{2}$/L2
throws: *A* crossing; *B* straight
interface: O X ● ✠ (async)



1.3.4. Non-default rhythm

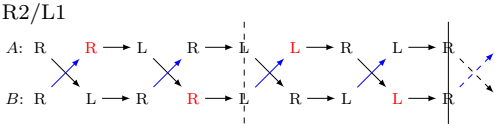
Jim's 3-count

sequence: p s s
start: *A*: R2/L1; *B*: R2/L1
throws: *A* straight; *B* crossing
color coding: p_1 s_2 s_2; 1 pass; 2 self



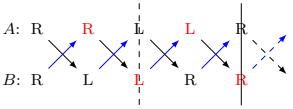
Jim's 2-count

sequence: p s
start: *A*: R2/L1; *B*: R2/L1
throws: *A* straight; *B* crossing



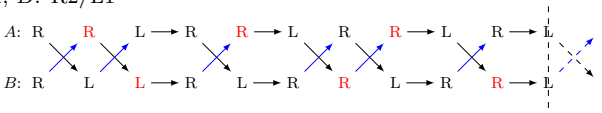
Jim's 1-count

sequence: p
start: *A*: R2/L1; *B*: R2/L1
throws: *A* straight; *B* crossing



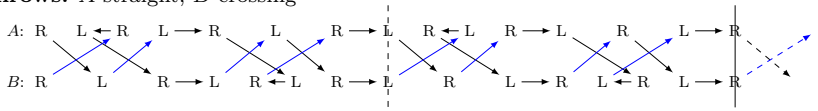
Brainstorm

sequence: p p s p s
start: *A*: R2/L1; *B*: R2/L1
throws: *A* straight; *B* crossing



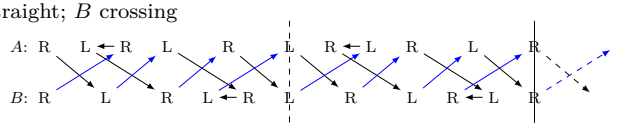
Mild Madness

sequence: p p z s p p s
start: *A*: R2/L1; *B*: R2/L1
throws: *A* straight; *B* crossing
remark: The combination p z can be contracted severely.



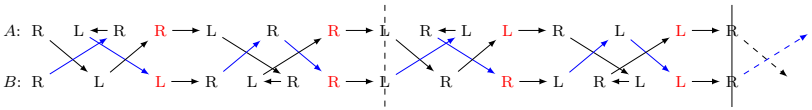
Martin's 1-count

sequence: p p p p z
start: *A*: R2/L1; *B*: R2/L1
throws: *A* straight; *B* crossing
remark: The combination p z can be contracted severely.

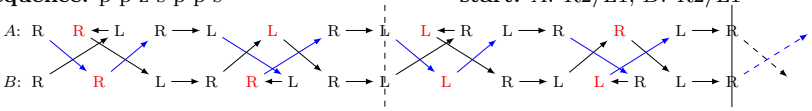


Spotlight

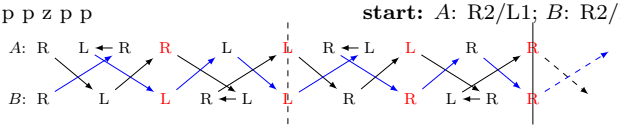
sequence: p p z s p p s
start: *A*: R2/L1; *B*: R2/L1



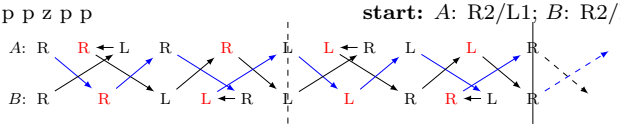
Reverse spotlight
sequence: p p z s p p s **start:** *A*: R2/L1; *B*: R2/L1



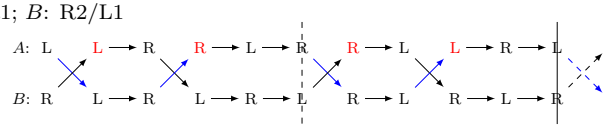
1-count spotlight
sequence: p p z p p **start:** *A*: R2/L1; *B*: R2/L1



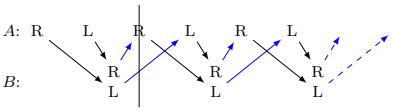
1-count reverse spotlight
sequence: p p z p p **start:** *A*: R2/L1; *B*: R2/L1



Hammy
sequence: p s p s s **remark:** *A* is harder than *B*
start: *A*: L2/R1; *B*: R2/L1

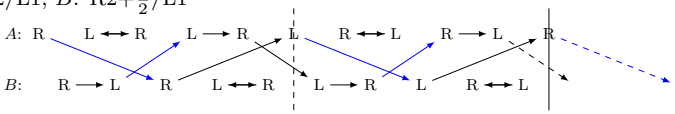


Blinky
sequence: *A*: p p^0 / *B*: p^0+p
start: *A*: R2/L2; *B*: R1+$\frac{3}{2}$/L1
throws: *A* straight; *B* crossing

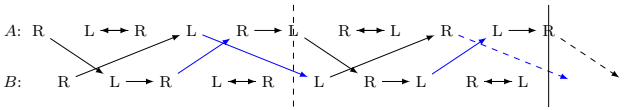


1.3.5. Various

Not likely
sequence: p p^2 s z s **throws:** *A* straight singles, crossing doubles;
global: 96672 *B* crossing singles, straight doubles
local: 7_A962_B6 **interface:** O X ● ● ● ✠ (async)
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1

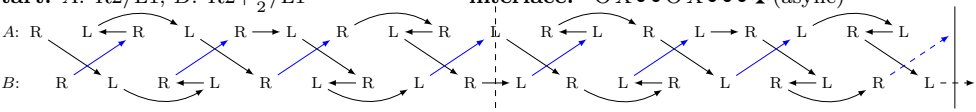


Maybe not
sequence: p^2 s p s z **throws:** *A* straight singles, crossing doubles;
global: 79662 *B* crossing singles, straight doubles
local: $_B96_A762$ **interface:** O ● O ● ● ✠ (async)
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1



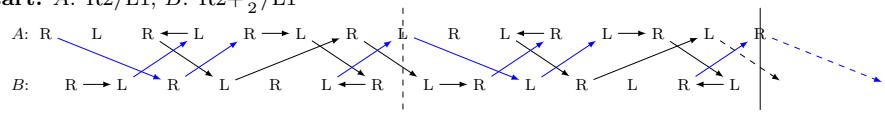
Self centered

sequence: p s p s^2 p z p s^2 z
global: 778827726
local: 76_B7872_A782
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight; *B* crossing
remark: A combination of Why not (1.3.2) and Not Why (1.3.2) into one pattern.
interface: O X ● ● O X ● ● ● ✠ (async)



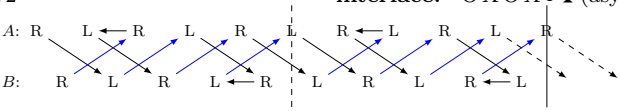
Odnom

sequence: p p p^2 h p z s
global: 9647772
local: $_A9472_B677$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles, crossing doubles; *B* crossing singles, straight doubles
interface: O X O X ● ● ● ✠ (async)



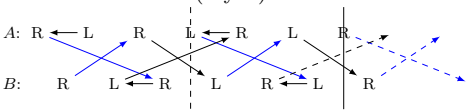
async Martin's 1-count

sequence: p p p p z
global: 77772
local: $_B77_A772$
start: *A*: R2/L1; *B*: R2/L1
throws: *A* straight; *B* crossing
interface: O X O X ● ✠ (async)



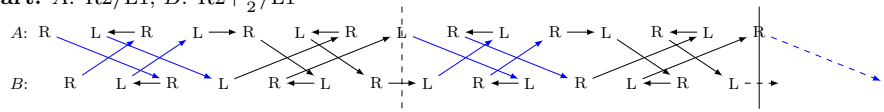
972

sequence: p p^2 z
global: 972
local: $_A92_B7$
start: *A*: R1/L2; *B*: R2+$\frac{1}{2}$/L1
remark: For a relaxed pace wait for the incoming passes before throwing passes back.
throws: *A* crossing doubles, straight singles; *B* crossing singles, straight doubles
interface: O X ● ✠ (async)



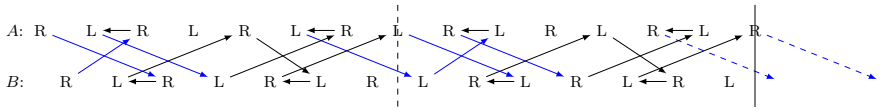
9797226

sequence: p^2 p^2 z s p p z
global: 9797226
local: $_A9926_B772$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles, crossing doubles; *B* crossing singles, straight doubles
interface: O X O X ● ● ● ✠ (async)

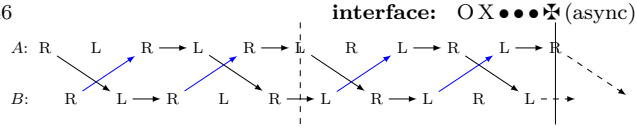


9799224

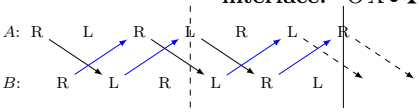
sequence: p^2 p^2 z h p p^2 z
global: 9799224
local: $_A9924_B792$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles, crossing doubles; *B* crossing singles, straight doubles
interface: O X ● X O ● ● ✠ (async)



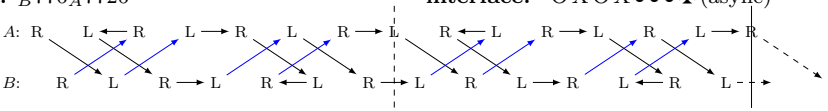
async Jim's 2-count
sequence: p s p h s
global: 77466
local: ${}_B76_A746$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles; *B* crossing singles
interface: O X ● ● ● ✠ (async)



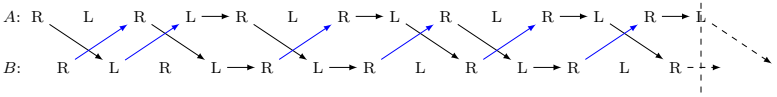
async Jim's 1-count
sequence: p p h
global: 774
local: ${}_B7_A74$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles; *B* crossing singles
interface: O X ● ✠ (async)



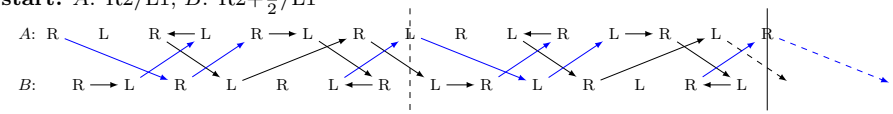
async Mild Madness
sequence: p p s p p z s
global: 7777266
local: ${}_B776_A7726$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles; *B* crossing singles
interface: O X O X ● ● ● ✠ (async)



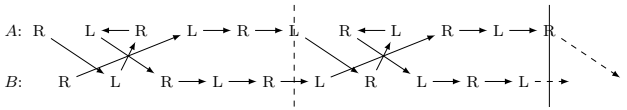
async Brainstorm
sequence: p p h s p s p h p s p h s
global: 7747746677466
local: ${}_B774676_A7476746$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles; *B* crossing singles
interface: O X ● X O ● ● ● O X ● ● ● ✠ (async)



9647772
sequence: p^2 h p z s p p
global: 9647772
local: ${}_A9472_B677$
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles, crossing doubles; *B* crossing singles, straight doubles
interface: O X O X ● ● ● ✠ (async)

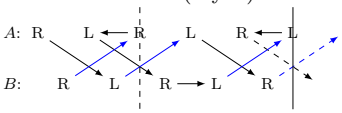


How to train your dragons
sequence: *A*: p p z s s / *B*: p^2 p^0 s s s
global: 7975266666
local: *A*: 77266 / *B*: 95666
start: *A*: R2/L1; *B*: R2+$\frac{1}{2}$/L1
throws: *A* crossing zaps, straight singles, crossing doubles; *B* straight zaps, crossing singles, straight doubles
interface: O X O X ● ● ● ● ● ● (async)

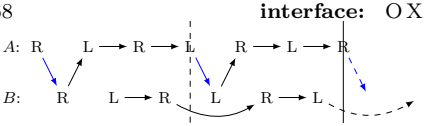


1.3.6. Asymmetric patterns

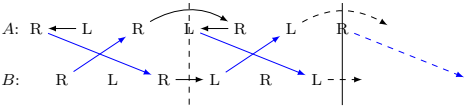
Jonix
sequence: A: p p z / B: p p s
global: 777726
local: ${}_A772/{}_B776$
start: A: R2/L1; B: R2+$\frac{1}{2}$/L1
throws: A straight; B crossing
interface: O X O X ● ● (async)



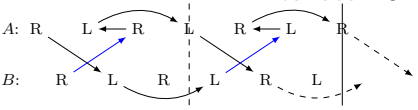
556668
sequence: A: p^0 s s / B: p^0 s s^2
global: 556668
local: A: 566 / B: 568
start: A: R2/L1; B: R1+$\frac{1}{2}$/L2
throws: A crossing zaps; B straight zaps
interface: O X ● ● ● ● (async)



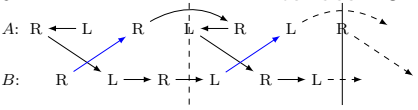
972486
sequence: A: p^2 z s^2 / B: p h s
global: 972486
local: A: 928 / B: 746
start: A: R1/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight singles, crossing doubles; B crossing singles, straight doubles
interface: O X ● ● ● ● (async)



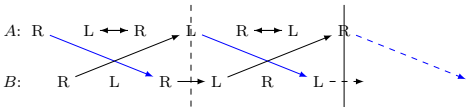
778824
sequence: A: p s^2 z / B: p s^2 h
global: 778824
local: A: 782 / B: 784
start: A: R2/L1; B: R2+$\frac{1}{2}$/L1
throws: A straight singles; B crossing singles
interface: O X ● ● ● ● (async)



772686
sequence: A: p z s^2 / B: p s s
global: 772686
local: A: 728 / B: 766
start: A: R1/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight singles; B crossing singles
interface: O X ● ● ● ● (async)



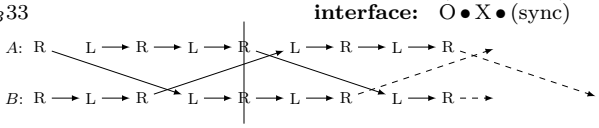
996426
sequence: A: p^2 s z / B: p^2 h s
global: 996426
local: A: 962 / B: 946
start: A: R2/L1; B: R2+$\frac{1}{2}$/L1
throws: A crossing doubles; B straight doubles
interface: O X ● ● ● ● (async)



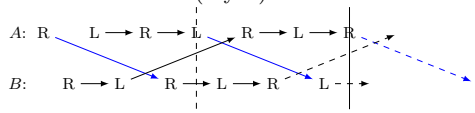
1.4. 7 clubs

1.4.1. Basics

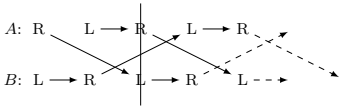
4-count (7 clubs)
sequence: p^3 s s s
préchac: ${}_A5p3_B33$
start: A: R2/L2; B: R2/L1
interface: O ● X ● (sync)



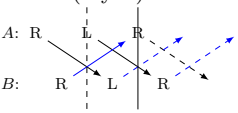
3-count (7 clubs)
sequence: p^2 s s
global: 966
local: ${}_A96_B6$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A crossing, B straight
interface: O ● ● ✠ (async)



2-count (7 clubs)
sequence: p^2 s
préchac: ${}_A4p_B3$
start: A: R2/L2; B: L2/R1
throws: A, B straight (singles or doubles)
interface: O X (sync)

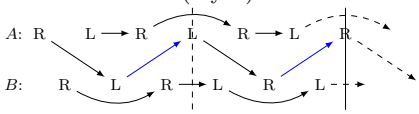


1-count (7 clubs)
sequence: p
global: 7
local: ${}_AB7$
start: A: R2/L2; B: R2+1/L1
throws: A straight, B crossing
interface: O ✠ (async)

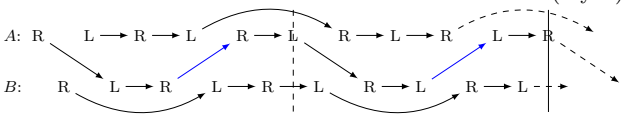


1.4.2. Popcorns

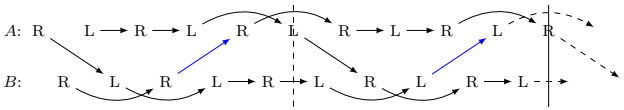
French 3-count
sequence: p s s^2
global: 786
local: ${}_A76_B8$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight; B crossing
interface: O ● ● ✠ (async)



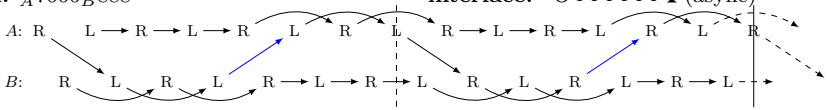
Popcorn (5-count, with triple)
sequence: p s s s^3 s
global: 7a666
local: ${}_A766_Ba6$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight; B crossing
interface: O ● ● ● ● ✠ (async)



Popcorn (5-count, with heffs)
sequence: p s s s^2 s^2
global: 78686
local: ${}_A766_B88$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight; B crossing
interface: O ● ● ● ● ✠ (async)

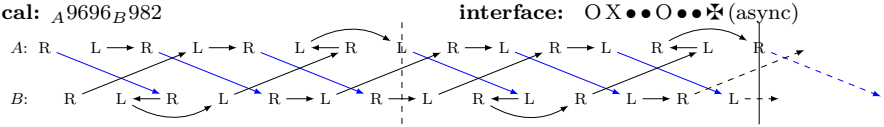


Popcorn (7-count)
sequence: p s s s s^2 s^2 s^2
global: 7868686
local: ${}_A7666{}_B888$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight; B crossing
interface: O●●●●●●✠(async)

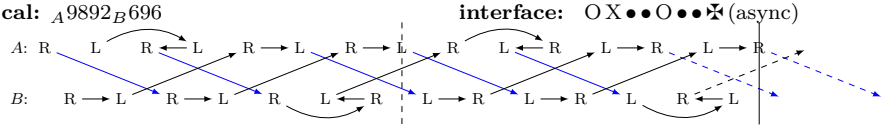


1.4.3. Why not family

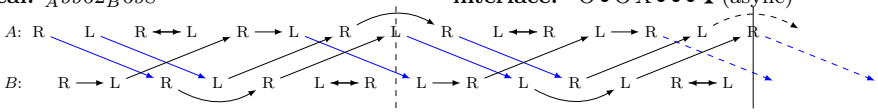
Why not (7 clubs)
sequence: p^2 s p^2 s p^2 s^2 z
global: 9968926
local: ${}_A9696{}_B982$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A crossing; B straight
interface: OX●●O●●✠(async)



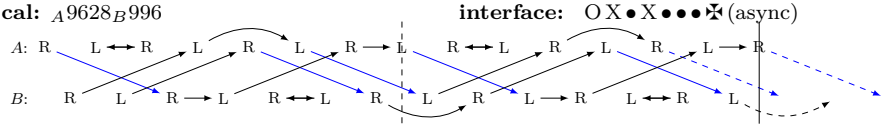
Not Why (7 clubs)
sequence: p^2 s p^2 s^2 p^2 z s
global: 9689962
local: ${}_A9892{}_B696$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A crossing; B straight
interface: OX●●O●●✠(async)



No More Why
sequence: p^2 s^2 p^2 p^2 s z s
global: 9699682
local: ${}_A9962{}_B698$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A crossing; B straight
interface: O●OX●●●✠(async)



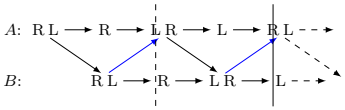
Maybe (7clubs)
sequence: p^2 p^2 s p^2 s z s^2
global: 9969268
local: ${}_A9628{}_B996$
start: A: R2/L1; B: R2+$\frac{1}{2}$/L2
throws: A crossing; B straight
interface: OX●X●●●✠(async)



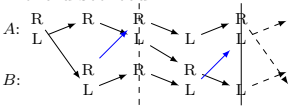
1.4.4. Non-default rhythm

Techno

sequence: p+s s
start: *A*: R2/L2; *B*: R2+1/L1
throws: *A* straight; *B* crossing
remark: A distorted variant of 3-count (7 clubs) (1.4.1).

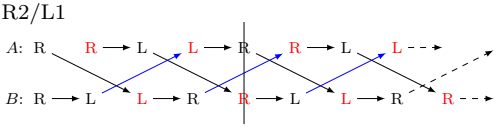


Or even more distorted.



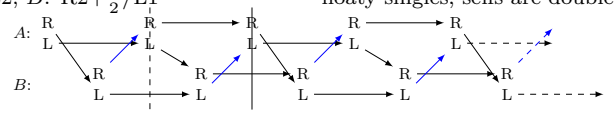
Oddz Godz

sequence: p^2 s
start: *A*: R3/L1; *B*: R2/L1
throws: *A* straight; *B* crossing



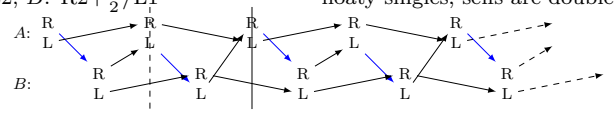
Scratch your head

sequence: p+s s+p
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight; *B* crossing; passes are floaty singles, selfs are double heffs



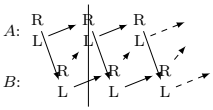
Scratch your nose

sequence: p+s s+p
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* crossing; *B* straight; passes are floaty singles, selfs are doubles



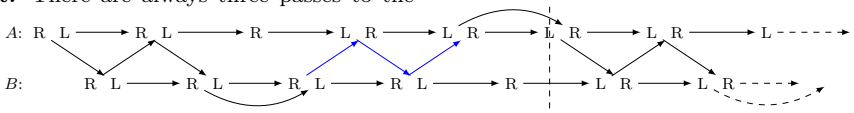
Dark side of 2-count

sequence: p+s^2
start: *A*: R2/L2; *B*: R2+1/L1
throws: *A*, *B* straight single passes, crossing double selfs
remark: A 2-count with hands rotated by 90°.



Maja

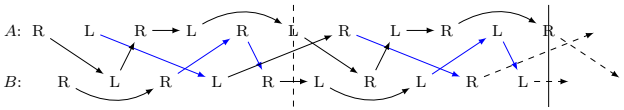
sequence: p s p s s p s s^2 s
start: *A*: R2/L2; *B*: R2+1/L1
hint: There are always three passes to the same hand.
hint: The first pass by *B* is magic.



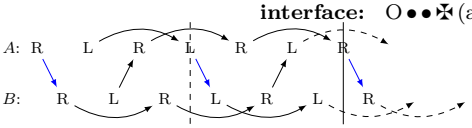
1.4.5. Zaps

56789

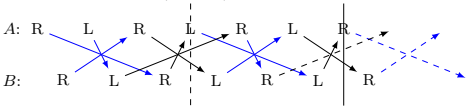
sequence: p^0 p^1 p^2 s s^2
global: 56789
local: 5_A796_B8
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* crossing doubles and zaps, straight singles; *B* straight doubles and zaps, crossing singles
interface: O X O ● ● ✠ (async)



Golden Fleece
sequence: $s^2\ s^2\ p^0$
global: 885
local: ${}_A885$
start: *A*: R2/L2; *B*: R1+$\frac{1}{2}$/L2
throws: *A* crossing; *B* straight
interface: O ● ● ✠ (async)

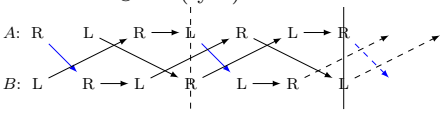


Holy grail
sequence: $p^0\ p\ p^2$
global: 975
local: ${}_A95_B7$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* crossing doubles and zaps, straight singles; *B* crossing singles, straight doubles and
zaps
interface: O ✠ (async)

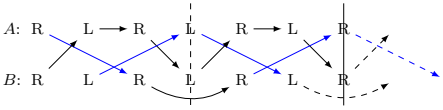


1.4.6. Asymmetric patterns

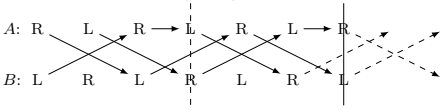
Pass pass self (7 clubs)
sequence: *A*: $p\ p^2\ s$ / *B*: $p^2\ p^2\ s$
préchac: *A*: 33*p*4*p* / *B*: 4*p*4*p*3
start: *A*: R2/L2; *B*: L2/R1
throws: *A* crossing singles, straight doubles; *B* straight doubles
remark: also works with floaty singles and
zaps
interface: ⊗ X O (sync)



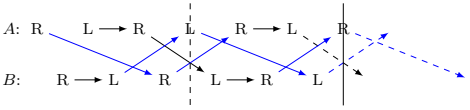
Not Pass pass self (7 clubs)
sequence: *A*: $p\ p^2\ s$ / *B*: $p\ p^2\ s^2$
préchac: *A*: 3*p*4*p*3 / *B*: 3*p*4*p*4
start: *A*: R2/L2; *B*: L2/R1
throws: straight singles, crossing doubles
interface: ⊗ X O (sync)



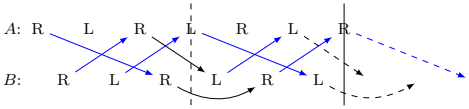
Frost's frenzy
sequence: *A*: p p s / *B*: p h p
préchac: *A*: 4*p*4*p*3 / *B*: 4*p*24*p*
start: *A*: R2/L2; *B*: L2/R1
throws: singles (which technically would be doubles)
interface: ⊗ X O (sync)



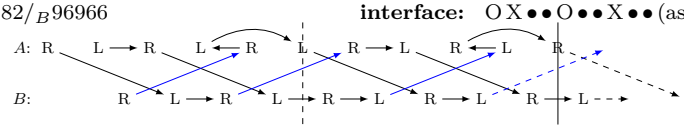
966777
sequence: *A*: $p\ p^2\ s$ / *B*: p p s
global: 966777
local: *A*: 796 / *B*: 776
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles, crossing doubles; *B* crossing singles, straight doubles
interface: O X O X ● ● (async)



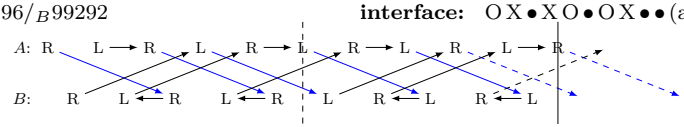
974778
sequence: A: p p^2 h / B: p p s^2
global: 974778
local: A: 794 / B: 778
start: A: R2/L1; B: R2+$\frac{1}{2}$/L2
throws: A straight singles, crossing doubles; B crossing singles, straight doubles
interface: O X O X ● ● (async)



Why Rei
sequence: A: p^2 s p^2 s^2 z / B: p^2 s p^2 s s
global: 9669968926
local: $_A$96982/$_B$96966
start: A: R2/L2; B: R2+$\frac{3}{2}$/L1
throws: A straight; B crossing
interface: O X ● ● O ● ● X ● ● (async)

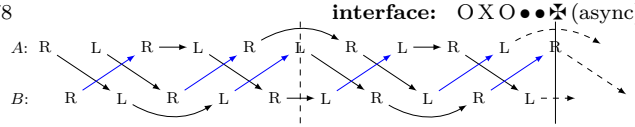


Dash 3
sequence: A: p^2 p^2 s p^2 s / B: p^2 p^2 z p^2 z
global: 9969929962
local: $_A$96996/$_B$99292
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A crossing; B straight
interface: O X ● X O ● O X ● ● (async)

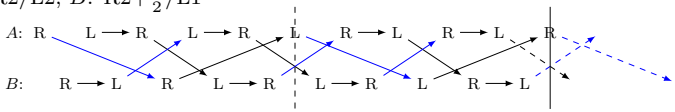


1.4.7. Various

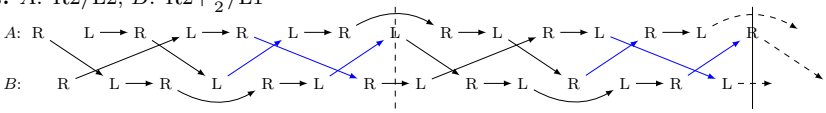
Funky bookends
sequence: p p s p s^2
global: 77786
local: $_A$776$_B$78
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight; B crossing
interface: O X O ● ● ✠ (async)



Funky bookfriends
sequence: s p s p p^2
global: 96677
local: $_A$967$_B$67
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight singles, crossing doubles; B crossing singles, straight doubles
interface: O X O ● ● ✠ (async)

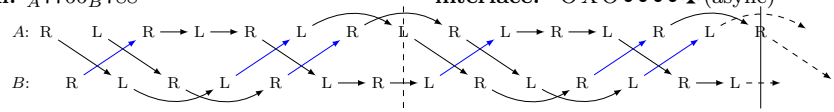


Aspirin
sequence: p s p s p^2 s s^2
global: 7966786
local: $_A$7676$_B$968
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight singles, crossing doubles; B crossing singles, straight doubles
interface: O X ● ● O ● ● ✠ (async)



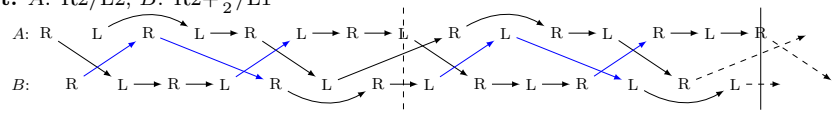
Vitoria

sequence: p p s s p s^2 s^2
global: 7778686
local: ${}_A7766_B788$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight; *B* crossing
interface: O X O ● ● ● ✠ (async)



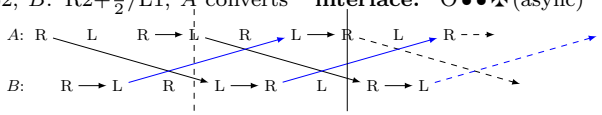
Gasteiz

sequence: p s s p s^2 p^2 s
global: 7786966
local: ${}_A7896_B766$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles, crossing doubles; *B* crossing singles, straight doubles
interface: O X O ● ● ● ✠ (async)

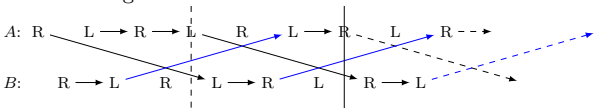


Odd scots

sequence: p^3 h s
global: *b*64
local: ${}_Ab4_B6$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1; *A* converts the first hold into a self (so she does not have to start with three clubs in one hand)
throws: *A* straight; *B* crossing
interface: O ● ● ✠ (async)

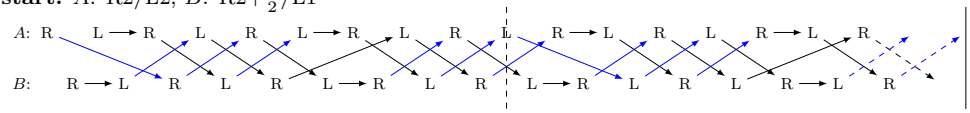


above: theory; below: working start



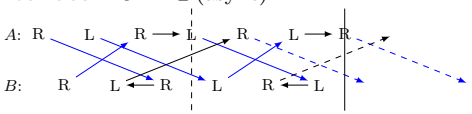
Double banana

sequence: p^2 s p p p s p p p
global: 966777777
local: ${}_A96777_B6777$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles, crossing doubles; *B* crossing singles, straight doubles
interface: O X O X O X O ● ● ✠ (async)



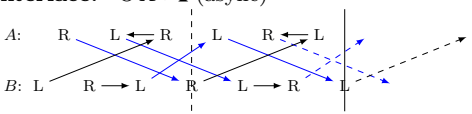
Coral A

sequence: *A*: p^2 p^2 s / *B*: p p^2 z
global: 979962
local: ${}_A996/_B792$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* crossing; *B* crossing singles, straight doubles
interface: O X ● ✠ (async)



Coral B

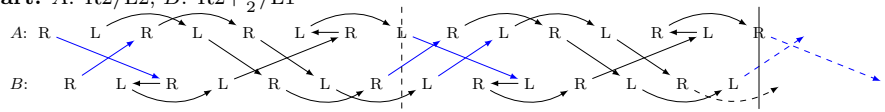
sequence: *A*: p^2 p^2 z / *B*: p p^2 s
global: 979926
local: ${}_A992/_B796$
start: *A*: R2+$\frac{1}{2}$/L1; *B*: L2/R2
throws: *A* crossing; *B* crossing singles, straight doubles
interface: O X ● ✠ (async)



9788827

sequence: $p^2\ s^2\ s^2\ p\ p\ s^2\ z$
global: 9788827
local: ${}_A9887_B782$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1

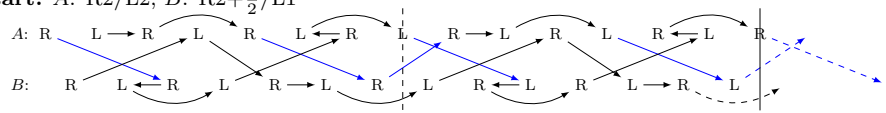
throws: *A* straight singles, crossing doubles; *B* crossing singles, straight doubles
interface: O●OX●●●✠ (async)



9968827

sequence: $p^2\ s\ s^2\ p\ p^2\ s^2\ z$
global: 9968827
local: ${}_A9687_B982$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1

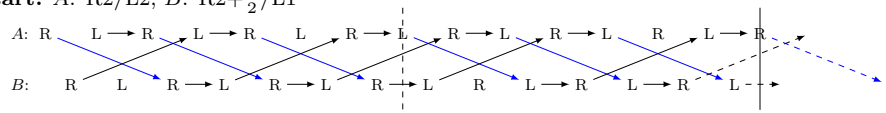
throws: *A* straight singles, crossing doubles; *B* crossing singles, straight doubles
interface: OX●●O●●✠ (async)



async Jim's 2-count, 7 clubs

sequence: $p^2\ s\ p^2\ s\ p^2\ h\ s$
global: 9964966
local: ${}_A9696_B946$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1

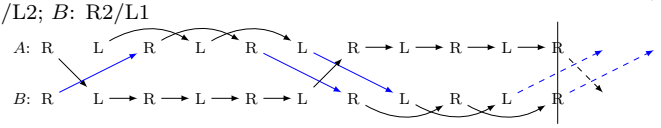
throws: *A* crossing doubles; *B* straight doubles
interface: OX●●O●●✠ (async)



Mute Dolby

sequence: $p\ s^2\ s^2\ s^2\ p^2\ p^2\ s\ s\ s\ s$
préchac: ${}_A3p4444p_B4p3333$
start: *A*: R2/L2; *B*: R2/L1

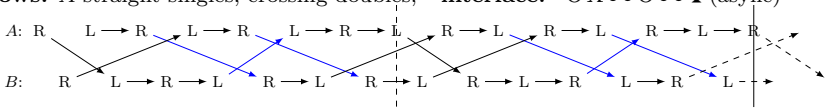
throws: straight singles and crossing doubles
interface: ⊗O●●●⊗X●●● (sync)



Gute Nacht

sequence: $p\ s\ p^2\ s\ p^2\ s\ s$
global: 7966966
local: ${}_A7696_B966$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles, crossing doubles;

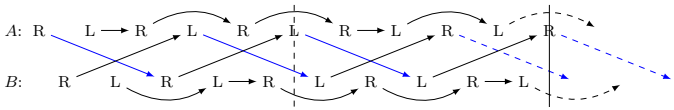
B crossing singles, straight doubles
remark: To make the combination crossing single answered by crossing double less likely to crash the single should be long and outside.
interface: OX●●O●●✠ (async)



99688

sequence: $p^2\ s\ s^2\ p^2\ s^2$
global: 99688
local: ${}_A968_B98$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L2

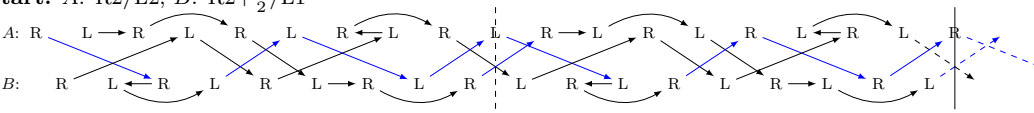
throws: *A* crossing doubles; *B* straight doubles
interface: OX●●●✠ (async)



Großes Chaos

sequence: p^2 s s^2 p p p^2 s^2 z p
global: 996882777
local: ${}_A96877_B9827$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1

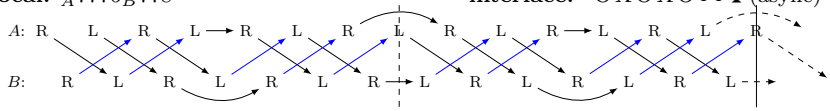
throws: A straight singles, crossing doubles;
B crossing singles, straight doubles
interface: O X O ● ● X O ● ● ✠ (async)



Mojito

sequence: p p s^2 p p p s
global: 7777786
local: ${}_A7776_B778$

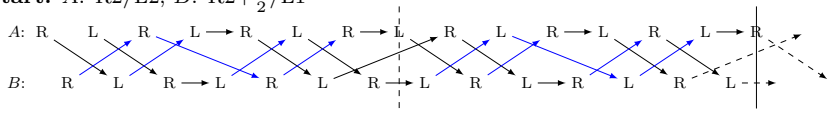
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight singles; B crossing singles
interface: O X O X O ● ● ✠ (async)



Caipirinha

sequence: p p p^2 s p p s
global: 7777966
local: ${}_A7796_B776$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1

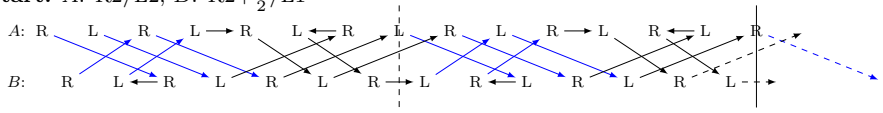
throws: A straight singles, crossing doubles;
B crossing singles, straight doubles
interface: O X O X O ● ● ✠ (async)



Moscow Mule

sequence: p^2 p^2 p^2 s p p z
global: 9797926
local: ${}_A9996_B772$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1

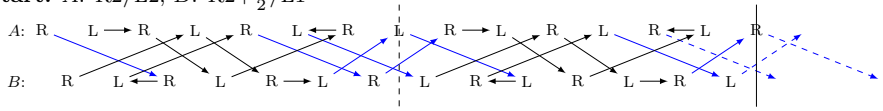
throws: A straight singles, crossing doubles;
B crossing singles, straight doubles
interface: O X O X ● X ● ✠ (async)



Cuba Libre

sequence: p p p^2 p^2 z p^2 s
global: 9969727
local: ${}_A9677_B992$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1

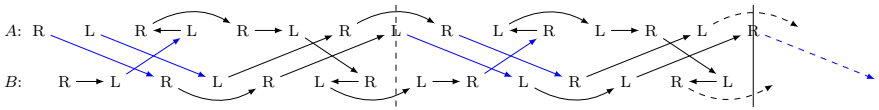
throws: A straight singles, crossing doubles;
B crossing singles, straight doubles
interface: O X O X O ● ● ✠ (async)



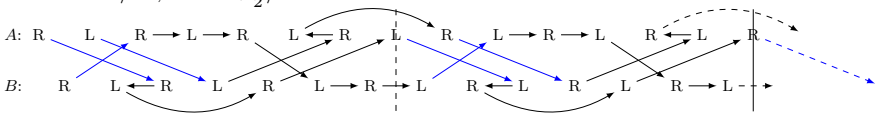
Espresso Martini

sequence: p s^2 p^2 p^2 s^2 z s
global: 9697882
local: ${}_A9982_B678$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L1

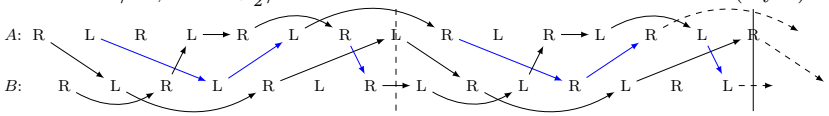
throws: A straight singles, crossing doubles;
B crossing singles, straight doubles
interface: O X O ● ● ● ● ✠ (async)



Tequila Sunrise
sequence: p^2 p^2 s s p s^3 z
global: 979a626
local: ${}_A9966{}_B7a2$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* straight singles, crossing doubles; *B* crossing singles, straight doubles
interface: O X ● X ● ● ● ✠ (async)



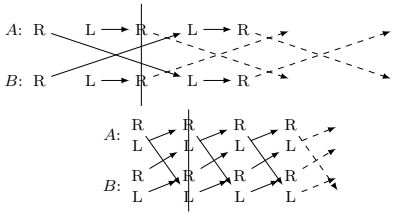
Long Island
sequence: p^0 p p^2 h s s^2 s^3
global: 456789a
local: ${}_A7946{}_B8a5$
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L1
throws: *A* crossing zaps, straight singles, crossing doubles; *B* straight zaps, crossing singles, straight doubles
interface: O X ● ● O ● ● ✠ (async)



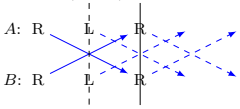
1.5. 8 clubs

1.5.1. Basics

2-count (8 clubs)
sequence: p^3 s
préchac: ${}_AB5p3$
start: *A*: R2/L2; *B*: R2/L2
throws: *A*, *B* straight (commonly doubles, alternatively triples for a relaxed rhythm or singles for a challenge in which case the second causal diagram applies)
interface: ⊗ ● (sync)

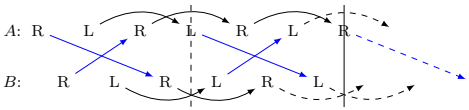


1-count (8 clubs)
sequence: p^2
préchac: ${}_AB4p$
start: *A*: R2/L2; *B*: R2/L2
throws: *A*, *B* crossing
remark: Throws start on the inside and target outside. Careful aiming is required to avoid collisions.
interface: ⊗ (sync)



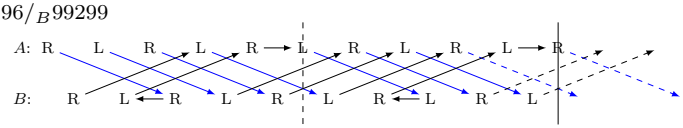
1.5.2. Asymmetric patterns

978888
sequence: *A*: p^2 s^2 s^2 / *B*: p s^2 s^2
global: 978888
local: *A*: 988 / *B*: 788
start: *A*: R2/L2; *B*: R2+$\frac{1}{2}$/L2
throws: *A* straight singles, crossing doubles; *B* crossing singles, straight doubles
interface: O X ● ● ● ● (async)



Ariel Ultra

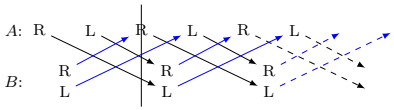
sequence: A: p^2 p^2 p^2 p^2 s / B: p^2 p^2 p^2 p^2 z
global: 9999929969
local: ${}_A99996/{}_B99299$
start: A: R3/L2; B: R2+$\frac{1}{2}$/L1
throws: A crossing; B straight
interface: O X O X O X • X O • (async)



1.5.3. Non-default rhythm

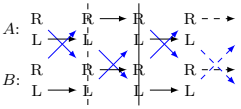
Blinky (8 clubs)

sequence: A: p^2 p / B: p+p^2
start: A: R2/L2; B: R2+$\frac{1}{2}$/L2
throws: A straight; B crossing



Scratch 8

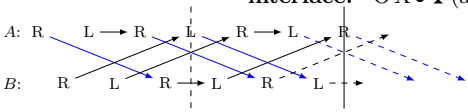
sequence: p+s
start: A: R2/L2; B: R2/L2
throws: crossing single passes, single heffs



1.5.4. Various

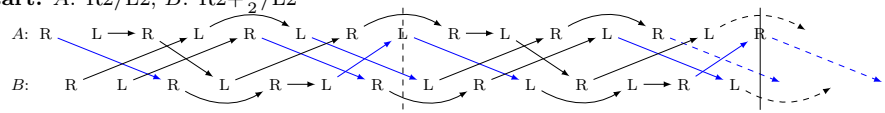
Pass pass self (8 clubs)

sequence: p^2 p^2 s
global: 996
local: ${}_B9{}_A96$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L2
throws: A crossing; B straight
interface: O X • ✠ (async)



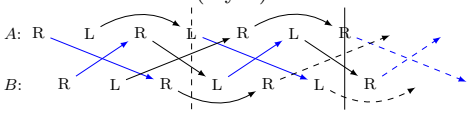
Das Gedicht

sequence: p^2 s p s^2 p^2 p^2 s^2
global: 9969788
local: ${}_A9678{}_B998$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L2
throws: A straight singles, crossing doubles; B crossing singles, straight doubles
interface: O X O X • • • ✠ (async)



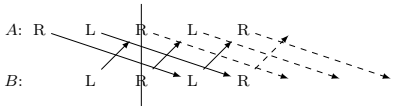
789

sequence: p p^2 s^2
global: 789
local: ${}_A98{}_B7$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L2
throws: A crossing doubles, straight singles; B crossing singles, straight doubles
interface: O X • ✠ (async)



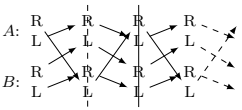
High-low (8 clubs)

sequence: A: p^3 / B: p
préchac: A: $5p$ / B: $3p$
start: A: R2/L2; B: L2+1/R2
throws: A straight doubles; B straight singles
interface: ⊗ (sync)



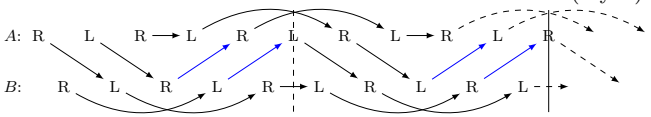
Swing

sequence: p+s s+p
start: A: R2/L2; B: R2/L2
throws: A, B straight singles



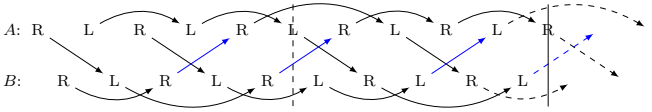
Call me

sequence: p p s s^3 s^3
global: $7a7a6$
local: ${}_A776_Baa$
start: A: R3/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight; B crossing
interface: O●O●●✠ (async)



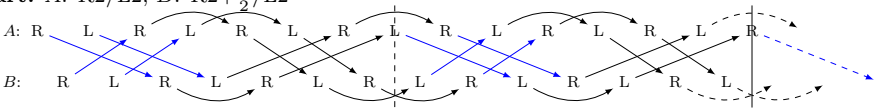
That's y

sequence: p s^2 p s^2 s^3
global: $788a7$
local: ${}_A787_B8a$
start: A: R3/L2; B: R2+$\frac{1}{2}$/L1
throws: A straight; B crossing
interface: OX●●●✠ (async)



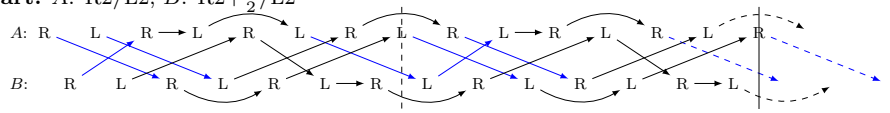
Vitoria (8 clubs)

sequence: p^2 p^2 s^2 s^2 p p s^2
global: 9797888
local: ${}_A9988_B778$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L2
throws: A straight singles, crossing doubles; B crossing singles, straight doubles
interface: OXOX●●●✠ (async)



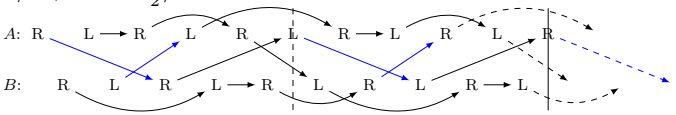
9968897

sequence: p^2 p^2 s s^2 p p^2 s^2
global: 9799688
local: ${}_A9968_B798$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L2
throws: A straight singles, crossing doubles; B crossing singles, straight doubles
interface: OX●XO●●✠ (async)

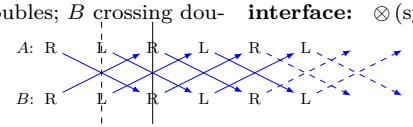


6789a

sequence: p^2 s s^2 s^3 p
global: $6789a$
local: ${}_A968_Ba7$
start: A: R2/L2; B: R2+$\frac{1}{2}$/L2
throws: A straight singles, crossing doubles; B crossing singles, straight doubles
interface: OX●●●✠ (async)



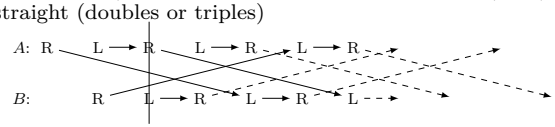
8 clubs crossing
sequence: p^2
préchac: $4p$
start: A: R2/L2; B: R2/L2
throws: A crossing doubles; B crossing doubles
hint: Typically the clubs pass each other so that they are closer to the thrower.
interface: ⊗ (sync)



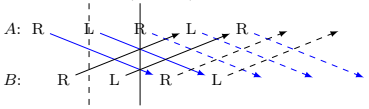
1.6. 9 clubs

1.6.1. Basics

2-count (9 clubs)
sequence: p^4 s
préchac: ${}_{AB}6p3$
start: A: R2/L3; B: R2+1/L2
throws: A, B straight (doubles or triples)
remark: With doubles the rhythm contracts and the self is close to simultaneous to the pass.
interface: O X (sync)

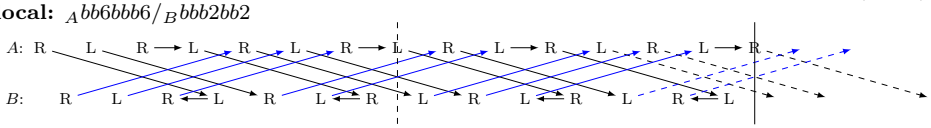


1-count (9 clubs)
sequence: p^2
global: 9
local: ${}_{AB}9$
start: A: R3/L2; B: R2+$\frac{1}{2}$/L2
throws: A crossing, B straight
hints: To avoid collisions the crossing passer may throw a bit higher.
interface: O ✠ (async)



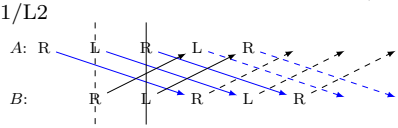
1.6.2. Asymmetric patterns

Persil Mega Pearls
sequence: A: p^3 p^3 p^3 s p^3 p^3 s / B: p^3 p^3 p^3 z p^3 p^3 z
global: *bbbb6bb2bbbb62*
local: ${}_{A}bb6bbb6/{}_{B}bbb2bb2$
start: A: R3/L2; B: R2+$\frac{1}{2}$/L2
throws: A straight; B crossing
interface: O X O X ● X O ● O X O X ● ● (async)

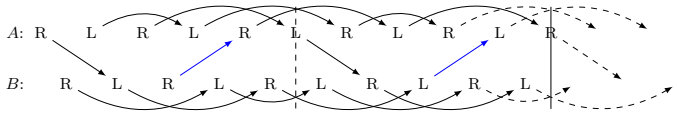


1.6.3. Various

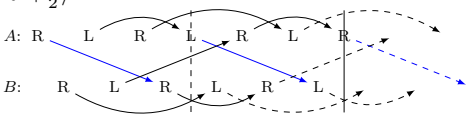
Ultimates high-low (9 clubs)
sequence: A: p^3 / B: p^2
préchac: ${}_{A}5px$ / ${}_{B}4p$
start: A: R3/L2; B: R2+1/L2
throws: A crossing doubles, B straight singles
interface: ⊗ (sync)



That's y (9 clubs)
sequence: p s^2 s^3 s^3 s^3
global: *7a8aa*
local: ${}_{A}78a{}_{B}aa$
start: A: R2/L2; B: R3+$\frac{1}{2}$/L1
throws: A straight; B crossing
interface: O ● ● ● ● ✠ (async)



89a
sequence: $s^3\ p^2\ s^2$
global: $89a$
local: ${}_A98_Ba$
start: A: R3/L2; B: R2+$\frac{1}{2}$/L2
throws: A crossing doubles; B straight doubles
interface: O●●✠(async)



2. 3 jugglers

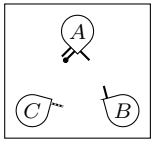
2.1. 5 clubs

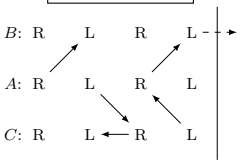
2.1.1. Various

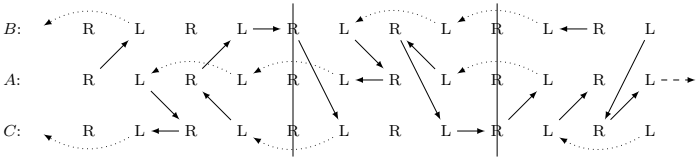
Kleeblatt

$$\begin{array}{lr} A\text{: } p_B\ p_C\ p_B & \to C \\ B\text{:} \qquad\quad s & \to A \\ C\text{:} \qquad z^*\ p_A^+ & \to B \end{array}$$

symbols: asterisk: grab the club at the body, for aesthetic bonus this can be done above the head; plus: directly put into the hand of A, so that A grabs the handle, do not throw
throws: A passes zaps
sequence: p p p s z p
remark: The club C initially holds is magic.
remark: First a causal diagram without empty hands annotated then a complete longer one.







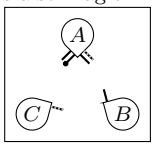
2.2. 6 clubs

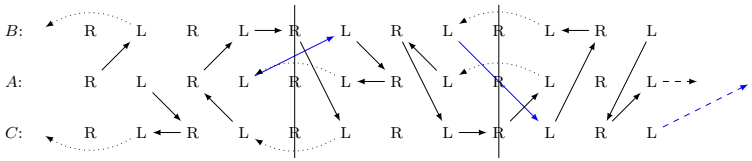
2.2.1. Various

Extrablatt

$$\begin{array}{lr} A\text{: } p_B\ p_C\ p_B\ p_B^2 & \to C \\ B\text{:} \qquad\qquad s & \to A \\ C\text{:} \qquad z^*\ p_A^+ & \to B \end{array}$$

symbols: asterisk: grab the club at the body, for aesthetic bonus this can be done above the head; plus: directly put into the hand of A, so that A grabs the handle, do not throw
throws: A passes zaps and a double or floaty single
sequence: p p p p p^2 s z p
remark: The club C initially holds is magic. The high pass is also magic.



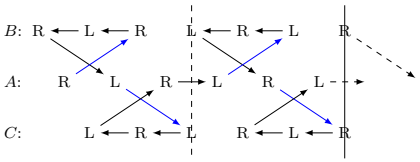


2.3. 7 clubs

2.3.1. Feeds

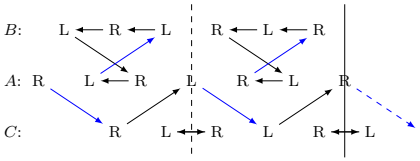
Skip feed

sequence: A: p_B p_C s / B, C: p_A z z
start: A: R2+$\frac{1}{2}$/L1; B: R1/L1; C: L1+1/R1
throws: A crossing; B, C straight



Skip/Hop feed

sequence: A: p_C p_B z / B: p_A z z / C: p_A s z
start: A: R2/L1; B: L1+$\frac{1}{2}$/R1; C: R1+$\frac{3}{2}$/L1
throws: A crossing; B, C straight

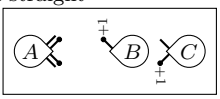


2.3.2. Various

Drunken sailor

sequence: A: p_B+p_C p_C+p_B / B: p_A z / C: p_A
remark: A split version of 6 club 1-count. B and C have to sway from one side to the other.

throws: all straight



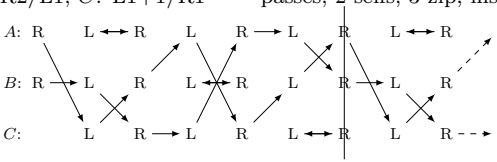
2.4. 8 clubs

2.4.1. Various circular patterns

La Vache Qui Rit

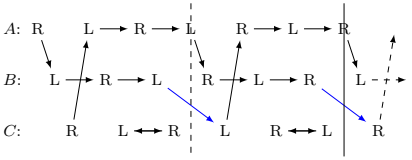
sequence: p p s z p s
start: A: R2/L1; B: R2/L1; C: L1+1/R1

color coding: p_1 p_1 s_2 z_3 p_3 s_2; 1 outside passes; 2 selfs; 3 zip, inside pass



Mayday zap

sequence: A: p^0_B s s / B: p_C s s / C: p^0_A s z
global: a379799999
local: A: 799 / B: a99 / C: 793
start: A: R2/L1; B: L1+$\frac{1}{3}$/R1; C: R2+$\frac{2}{3}$/L1
throws: A straight zaps; B crossing singles; C straight zaps

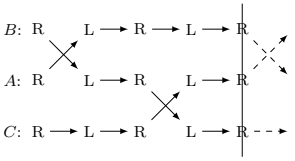


2.5. 9 clubs

2.5.1. Basic feeds

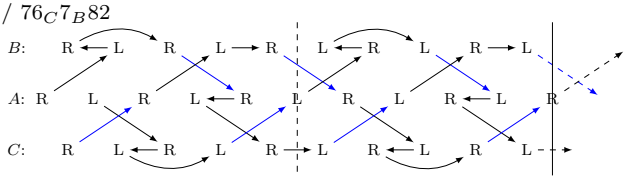
2-count/4-count feed

sequence: A: p$_B$ s p$_C$ s / B, C: p$_A$ s s s
préchac: ${}_A3p3$ / ${}_B3p3_C33$
start: A: R2/L1; B: R2/L1; C: R2/L1



Why not feed

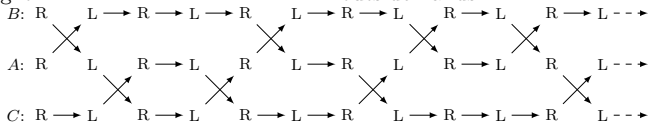
sequence: A: p$_B$ p$_C$ p$_B$ p$_C$ z / B, C: p$_A$ s p$_A$ s^2 z
lokal: ${}_A77772$ / 76_C7_B82
start: A: R2/L2; B: R1+$\frac{1}{2}$/L1; C: R2+$\frac{1}{2}$/L1
throws: A straight; B, C crossing



2.5.2. Feeds

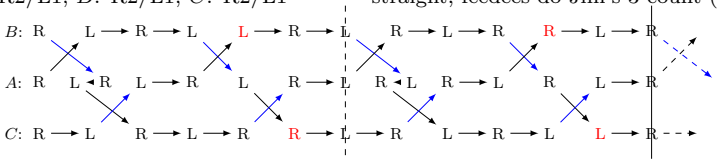
Civil war feed

sequence: A: p p s / B, C: p$_A$ s s
start: A: R2/L1; B: R2/L1; C: R2/L1
throws: straight
remark: The feeder does first four passes to the inside hands and then four passes to the outside hands.



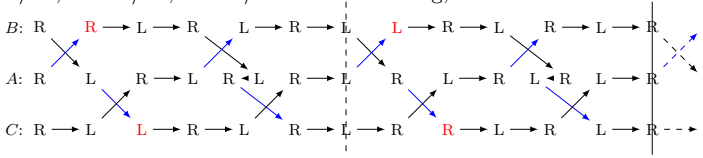
Martins Mildness

sequence: A: p$_B$ p$_C$ z s p$_B$ p$_C$ s / B, C: p$_A$ s s
start: A: R2/L1; B: R2/L1; C: R2/L1
throws: A straight; B, C crossing
remark: Feeder does Mild Madness (1.3.4) straight, feedees do Jim's 3-count (1.3.4).



Martins Madness

sequence: A: p$_B$ p$_C$ s p$_B$ p$_C$ z s / B, C: p$_A$ s s
start: A: R2/L1; B: R2/L1; C: R2/L1
throws: A crossing; B, C straight
remark: Feeder does Mild Madness (1.3.4) crossing, feedees do Jim's 3-count (1.3.4).



2.5.3. Pulsars

Pulsar (2-count)

sequence: p s p s p s s s p s s s p s p s s s p s s s s p s
préchac: ${}_A3p33p33p333_B3p3333p33p33_C33p3333p3$
start: A: R2/L1; B: R2/L1; C: R2/L1

A: p_B -p_C -p_B - - -p_C - - -p_C -p_B - - -p_B - - -p_C -→ A
B: p_A - - -p_A -p_C - - -p_C - - -p_A -p_C -p_A -p_C - - -→ B
C: - -p_A - - -p_B -p_A -p_B -p_A - - -p_B - - -p_B -p_A -→ C

Pulsar (pass pass self)
sequence: p p s p s s p s s p p s s p s s p s
start: A: R2/L1; B: R2/L1; C: R2/L1
préchac: ${}_A3p3p33p33{}_B3p333p3p3{}_C33p333p3$

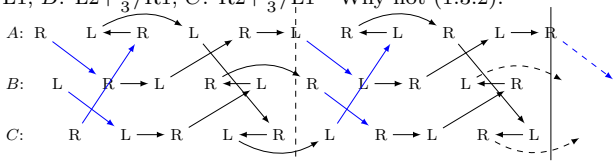
A: p_B p_C -p_B - -p_C - -p_C p_B - - p_B - - p_C -→ A
B: p_A - -p_A p_C - - p_C - - p_A -p_C p_A -p_C - -→ B
C: - p_A - - p_B -p_A p_B -p_A - -p_B - -p_B p_A -→ C

2.5.4. Various circular patterns

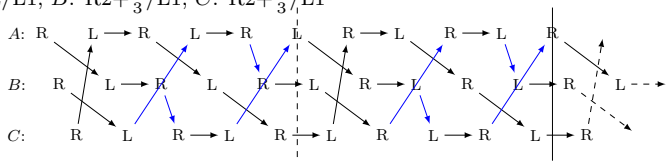
Quasar
sequence: p s p s s p s s s p s s p s p
start: A: R2/L1; B: R2/L1; C: R2/L1
préchac: ${}_A3p33p33{}_B3p3333p_C333p33p$
remark: Everybody does Countdown (1.3.1).

A: p_B -p_C - - p_C - - -p_B - -p_B -p_C → A
B: p_A - - -p_C - -p_C -p_A p_C -p_A - - → B
C: - -p_A -p_B p_A -p_B - - p_B - - -p_A → C

Why Not Triangle
sequence: p s p s^2 z
start: A: R2/L1; B: L2+$\frac{1}{3}$/R1; C: R2+$\frac{2}{3}$/L1
remark: A six-handed version of three times Why not (1.3.2).



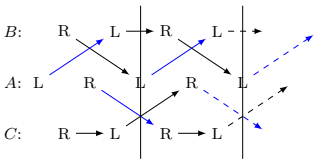
AA799
sequence: p s p s p^0
global: aa799
local: a9a97
start: A: R2/L1; B: R2+$\frac{1}{3}$/L1; C: R2+$\frac{2}{3}$/L1
throws: A crossing zaps, straight singles to B; B crossing zaps, straight singles to C; C straight zaps, crossing singles to A



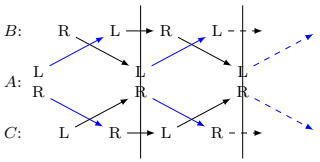
2.6. 10 clubs

2.6.1. Various feeds

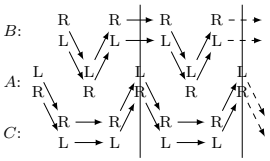
Gorilla
sequence: A: p p / B, C: p s
start: A: L2/R2; B: R2/L1; C: R2/L1



Gorilla synchronous
sequence: A: p+p / B, C: p s
start: A: R2/L2; B: R2/L1; C: L2/R1



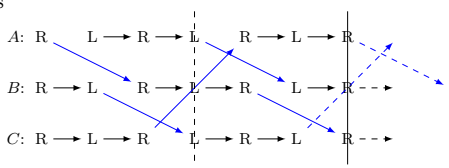
asynchronous heffs
sequence: A: p+p / B, C: p+p s^2+s^2
start: A: R2/L2; B: R2/L2; C: R1/L1
throws: passes are straight floaty singles and selfes are heffs



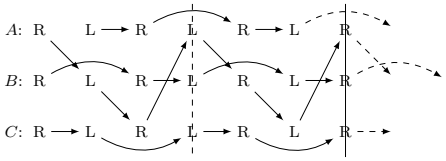
2.6.2. Various circular patterns

Circular 3-count
sequence: p^2 s s
start: A: R2/L2; B: R2/L1; C: R2/L1
throws: crossing singles

remark: This is 2-count (7 clubs) (1.4.1) distributed to three passers

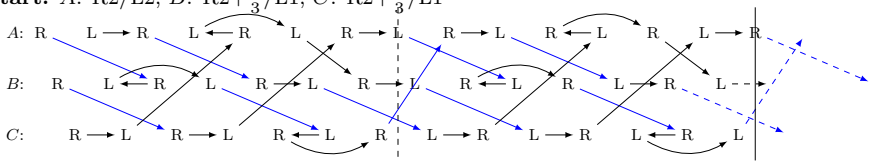


French 3-count triangle
sequence: p s s^2
start: A: R2/L2; B: R2/L1; C: R2/L1
preparation: La Vache Qui Rit (2.4.1)



Jenzig
sequence: A, C: p s p^2 s p^2 s^2 z; B: p^2 s p^2 s p^2 s^2 z
start: A: R2/L2; B: R2+$\frac{1}{3}$/L1; C: R2+$\frac{2}{3}$/L1

remark: Nearly a Why not (7 clubs) (1.4.3) triangle.



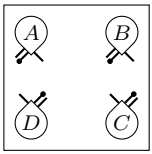
3. 4 jugglers

3.1. 12 clubs

3.1.1. Various

Box of Gloom
sequence: p p s

A: p_D p_C - $\rightarrow A$
B: p_C - p_D $\rightarrow B$
C: p_B p_A - $\rightarrow C$
D: p_A - p_B $\rightarrow D$



Typewriter
sequence: A: p_B p_C p_D / B, C, D: p_A s s
préchac: ${}_A3p$ / ${}_B3p_D3_C3$

A: p_B p_C p_D $\rightarrow A$
B: p_A - - $\rightarrow B$
C: - p_A - $\rightarrow C$
D: - - p_A $\rightarrow D$

4. 5 jugglers

4.1. 10 clubs

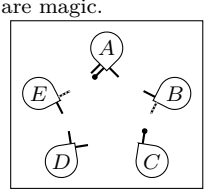
4.1.1. Various

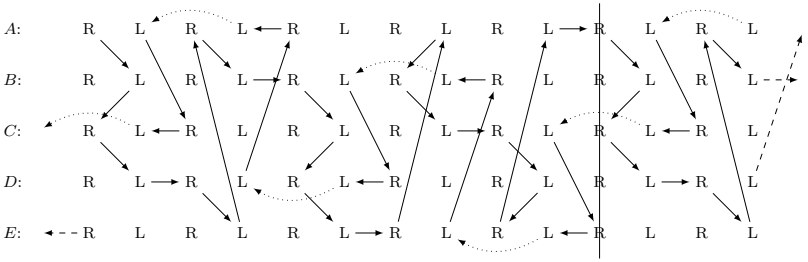
Fünfer-Kleeblatt

A: $p_B\ p_C\ p_B \quad z \quad p_B^+ \quad s \to A$
B: $p_C^+ \quad s\ p_C\ p_D\ p_C \quad z \to B$
C: $p_D \quad z \quad p_D^+ \quad s\ p_D\ p_E \to C$
D: $s\ p_E\ p_A\ p_E \quad z \quad p_E^+ \to D$
E: $z \quad p_A^+ \quad s\ p_A\ p_B\ p_A \to E$

symbols: plus: directly put into the hand, so that the receiver grabs the handle, do not throw
start: The first zip by E is omitted.

sequence: p p p z p s
remark: The clubs initially in the left hand of B and E are magic.





4.2. 12 clubs

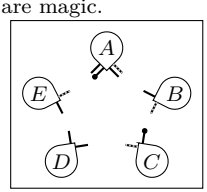
4.2.1. Various

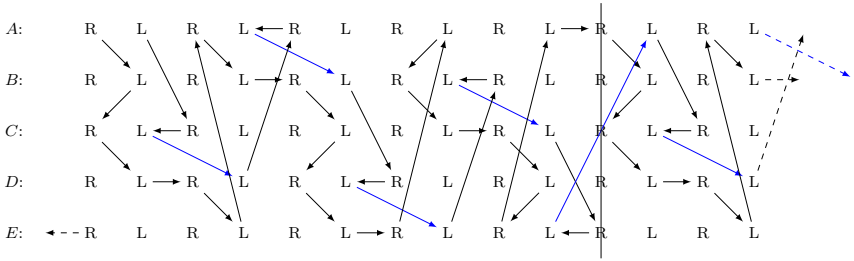
Fünfer-Extrablatt

A: $p_B\ p_C\ p_B\ p_B^2 \quad z \quad p_B^+ \quad s \to A$
B: $p_C^+ \quad s\ p_C\ p_D\ p_C\ p_C^2 \quad z \to B$
C: $p_D\ p_D^2 \quad z \quad p_D^+ \quad s\ p_D\ p_E \to C$
D: $s\ p_E\ p_A\ p_E\ p_E^2 \quad z \quad p_E^+ \to D$
E: $z \quad p_A^+ \quad s\ p_A\ p_B\ p_A\ p_A^2 \to E$

symbols: plus: directly put into the hand, so that the receiver grabs the handle, do not throw
start: The first zip by E is omitted.

sequence: p p p p^2 z p s
remark: The clubs initially in the left hand of B and E are magic.



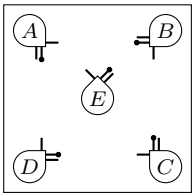


4.3. 15 clubs

4.3.1. Various

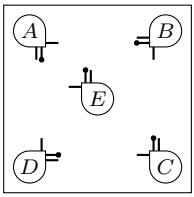
Torture Chamber

A: p_D - p_E - p_B - p_E - $\to A$
B: p_E - p_C - p_E - p_A - $\to B$
C: - - p_B - - - p_B - $\to C$
D: p_A - - - p_A - - - $\to D$
E: p_B - p_A - p_D - p_C - $\to E$



Enhanced Interogation

A: p_E p_B - p_E p_D - $\to A$
B: p_C p_E - p_A p_E - $\to B$
C: p_B - - p_B - - $\to C$
D: - p_A - - p_A - $\to D$
E: p_A p_D - p_C p_B - $\to E$



5. 6 jugglers

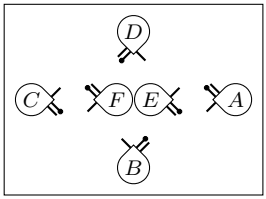
5.1. 18 clubs

5.1.1. Various

It's possible

remark: B and D should move a little to make the lifes of E and F easier.

A: - - p_E - - - p_E - $\to A$
B: p_F - - - p_E - - - $\to B$
C: - - p_F - - - p_F - $\to C$
D: p_E - - - p_F - - - $\to D$
E: p_D - p_A - p_B - p_A - $\to E$
F: p_B - p_C - p_D - p_C - $\to F$



6. n jugglers

6.1. $3n$ clubs

6.1.1. Feasts

For brevity feasts are presented with three jugglers (where sensible).

Feast (2-count)

sequence: p s p s s s
préchac: $_A3p3_B3p3_C33$
start: A: R2/L1; B: R2/L1; C: R2/L1

A: p_B - p_C - - - $\to A$
B: p_A - - - p_C - $\to B$
C: - - p_A - p_B - $\to C$

Feast (3-count)

sequence: p s s p s s s s s
préchac: $_A3p33_B3p33_C333$
start: A: R2/L1; B: R2/L1; C: R2/L1

A: p_B - - p_C - - - - - $\to A$
B: p_A - - - - - p_C - - $\to B$
C: - - - p_A - - p_B - - $\to C$

Part II.

Walking Patterns

7. 2 jugglers

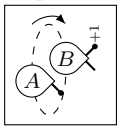
7.1. 3 clubs

7.1.1. Various

Waltz

remark: This pattern is a cascade split over two jugglers. The intention is, that the clubs behave as if only one juggler juggles them.
remark: The first throw of A is performed in front of B; to facilitate this B raises his right arm a little bit.

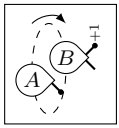
A: - - → B
B: - p_A → A



Fast Waltz

remark: A variation of Waltz (7.1.1).

A: - → B
B: p_A → A



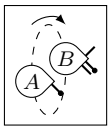
7.2. 4 clubs

7.2.1. Various

Waltz plus one

remark: A variation of Waltz (7.1.1).
remark: The first throw of A is parallel and shift the left to the throw of B. It is rather tricky.

A: - - - → B
B: - - p_A - p_A → A



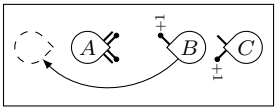
8. 3 jugglers

8.1. 6 clubs

8.1.1. Various

Mutiny

remark: A dynamic version of Drunken sailor (2.3.2).
remark: B omits a pass and walks with two clubs in her hands. A has to continue throwing all the clubs he has.



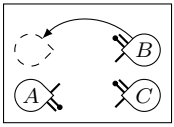
8.2. 9 clubs

8.2.1. Various

Walking feed

sequence: A: p$_B$ s p$_C$ s / B, C: p$_A$ s s s
préchac: $_A3p3$ / $_B3p3_C33$

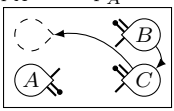
A: p_B - p_C - p_B - → B
B: p_A - - - p_A - → C
C: - - p_A - - - → A



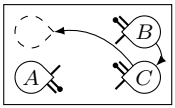
Bruno's Nightmare

remark: A meta-juggler is juggling three passers in a cascade.
remark: After one cycle positions are mirrored.
symbols: asterisk: C walks on this pass

A: p_C - p_B - p_C - → C
B: - - p_A - - - → A
C: p_A - - - p^*_A - → B



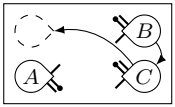
Ambidextrous Bruno



remark: 3-count variation of Bruno's Nightmare (8.2.1).
symbols: asterisk: C walks

A: p_C - - p_B - - p_C - - $\rightarrow C$
B: - - - p_A - - - - - $\rightarrow A$
C: p_A - - - - p_A^* - - $\rightarrow B$

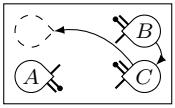
pps-Bruno



remark: pass-pass-self variation of Bruno's Nightmare (8.2.1).
symbols: asterisk: C walks

A: p_C p_B - p_C p_B $\rightarrow C$
B: - p_A - - p_A $\rightarrow A$
C: p_A - s^* p_A - $\rightarrow B$

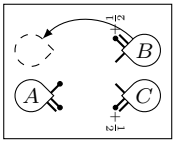
1-count Bruno



remark: 1-count variation of Bruno's Nightmare (8.2.1).

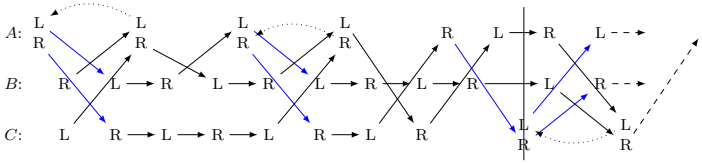
A: p_C p_B p_C $\rightarrow C$
B: - p_A - $\rightarrow A$
C: p_A - p_A $\rightarrow B$

Wanderwaschbär



sequence: A: p_B+p_C p_B p_B+p_C p_C p_C s / B: p_A s p_A s p_A s s s s / C: p_A s s s p_A s p_A p_A
symbols: asterisk: B starts walking, plus: cross pass
throws: All feeder passes go to the inside hands.

A: $p_B + p_C$ p_B $p_B + p_C$ p_C p_C $s \rightarrow B$
B: p_A s p_A s p_A^* s s s s $\rightarrow C$
C: p_A s s s p_A s p_A p_A $\rightarrow A$



8.3. 10 clubs

8.3.1. Various

Walking line feed

sequence: A: p^3_C s p_B s / B: p_A s s s / C: p^3_A s s s

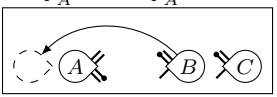
préchac: ${}_A5p33p3$ / ${}_B3p333$ / ${}_C5p333$

remark: After one cycle positions are mirrored.

remark: Everything becomes way less stressful if B starts walking early and the last pass from A to B is short and aimed at B's path.

symbols: asterisk: B starts walking

A: p^3_C - p_B - p^3_C - p_B - p^3_C - - $\rightarrow B$
B: - - p_A - - s^* p_A - - - $\rightarrow C$
C: - - p^3_A - - - p^3_A - - - $\rightarrow A$



10 club runaround

sequence: A: p^2_B s p^2_C s / B, C: p^2_A s s s

préchac: ${}_A4p34p3$ / ${}_B4p333$

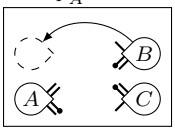
remark: After one cycle positions are rotated by 180°.

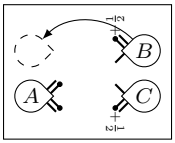
symbols: asterisk: double crossing self from the left hand, there follows a gap (basically a hold) and then pass from the right hand

start: B can start one beat later with a pass from the right hand; C typically starts one beat later with a normal self from the right hand

(instead of the double self)

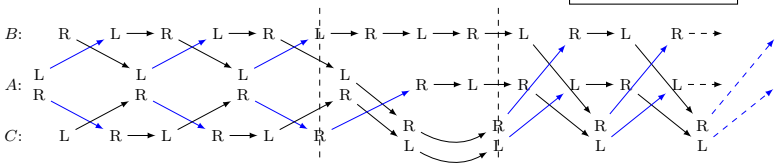
A: p^2_B - p^2_C - p^2_B - p^2_C $\rightarrow B$
B: - p^2_A - - - p^2_A - $\rightarrow C$
C: - s^{2*} p^2_A - - - $\rightarrow A$





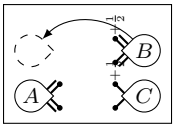
Inselhopping

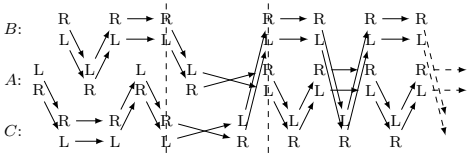
remark: Feeder change in Gorilla synchronous (2.6.1), recommended approach is that C counts down and then throws a double



feeder change in asynchronous heffs

remark: See asynchronous heffs (2.6.1), recommended approach is that C counts down

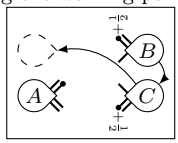




10-club Bruno
remark: Variation of Bruno's Nightmare (8.2.1).
throws: A throws straight to B and crossing to C, B crossing and C straight; all passes are doubles.
symbols: asterisk: C starts walking (due to the double passes C does not need to wait like in basic Bruno); plus: these six selfs take a total of six and a half beats (as indicated by the additional gap during the switch from C to B)

$$\begin{array}{ll} A\colon & p_C^2 \text{ - - } p_B^2 \text{ - - } p_C^2 \text{ - - } p_B^2 \text{ - } \to C \\ B\colon & \text{ - - - - } p_A^2 \text{ - - - - - } \to A \\ C\colon & \text{ - } p_A^{2*} \text{ - - - - - } p_A^2 \text{ - } s^+ \to B \end{array}$$

remark: After one segment, positions are mirrored including hands (right/left).
remark: Passing straight/crossing stays constant for each pair of persons. You always pass straight during the walking part



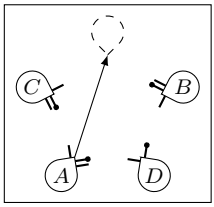
9. 4 jugglers

9.1. 11 clubs

9.1.1. Various

Shooting star
remark: After one cycle positions are rotated by 144°.
symbol: asterisk: walk

$$\begin{array}{ll} A\colon & p_B^* \; h \; h \; h \to D \\ B\colon & p_C \text{ - - - } \to C \\ C\colon & p_D \text{ - - - } \to B \\ D\colon & h \text{ - - - } \to A \end{array}$$

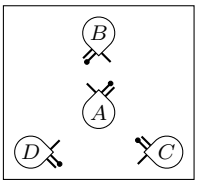


9.2. 12 clubs

9.2.1. Various

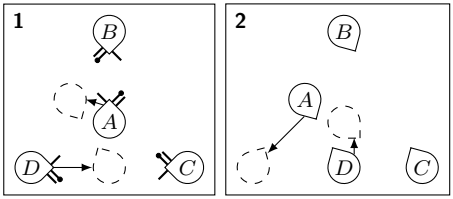
Rotator
remark: After one cycle positions are rotated by 120°.
symbols: asterisk: turn clockwise 120°

$$\begin{array}{ll} A\colon & p_B^* \text{ - - - } \to A \\ B\colon & p_A \text{ - - - } \to D \\ C\colon & p_D \text{ - - - } \to B \\ D\colon & p_C \text{ - - - } \to C \end{array}$$



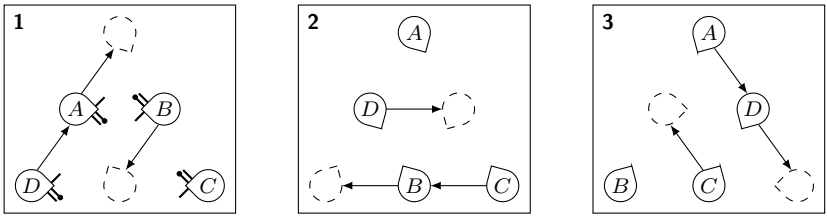
Three leaf clover
remark: After one cycle positions are rotated by 120°.
symbols: asterisk: walk

$$\begin{array}{ll} A\colon & p_B^* \text{ - - - } p_D^* \text{ - - - } \to C \\ B\colon & p_A \text{ - - - } p_C \text{ - - - } \to D \\ C\colon & p_D \text{ - - - } p_B \text{ - - - } \to B \\ D\colon & p_C^* \text{ - - - } p_A^* \text{ - - - } \to A \end{array}$$



Sticky triangle
symbols: asterisk: walk
remark: Corners pass to corners; midpoints pass to midpoints. You move away from a corner after throwing two passes from there.

$$\begin{array}{ll} A\colon & p_B^* \text{ - - - } p_C \text{ - - - } p_B^* \text{ - - - } \to B \\ B\colon & p_A^* \text{ - - - } p_D^* \text{ - - - } p_A \text{ - - - } \to D \\ C\colon & p_D \text{ - - - } p_A^* \text{ - - - } p_D^* \text{ - - - } \to A \\ D\colon & p_C^* \text{ - - - } p_B^* \text{ - - - } p_C^* \text{ - - - } \to C \end{array}$$

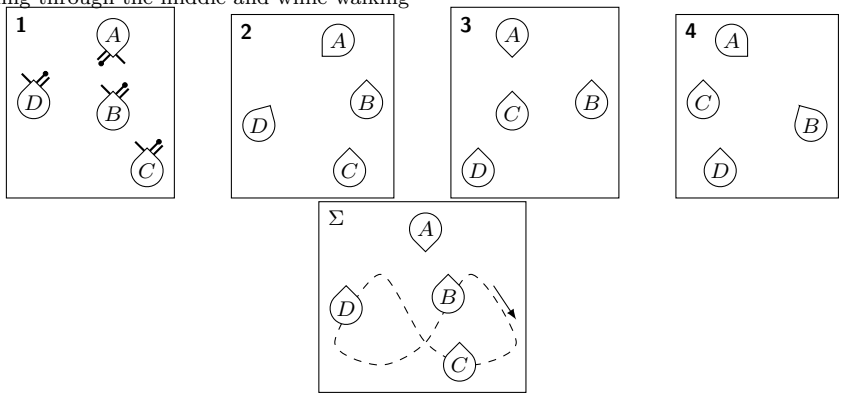


Weave

sequence: A: p$_B$ s p$_D$ s p$_C$ s / B, C, D: p$_A$ s s s s s

remark: The numbered diagrams correspond to the passes of A. The feedies pass while walking through the middle and while walking backwards.

A: p_B - p_D - p_C - p_B - $\rightarrow A$
B: p_A - - - - - p_A - $\rightarrow C$
C: - - - - p_A - - - $\rightarrow D$
D: - - p_A - - - - - $\rightarrow B$

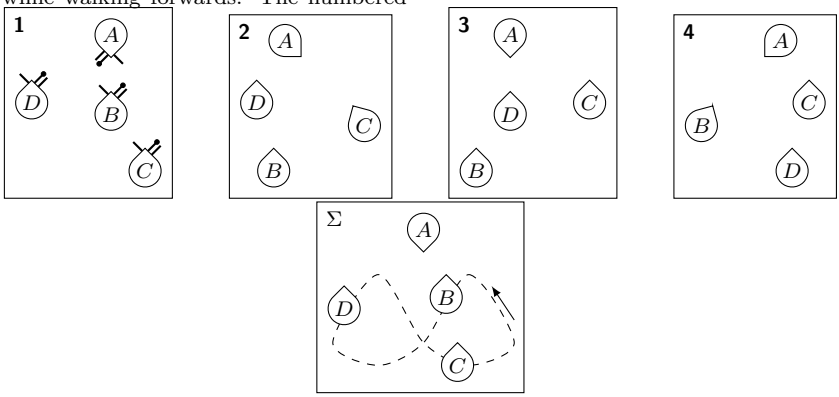


Reverse weave

sequence: A: p$_B$ s p$_C$ s p$_D$ s / B, C, D: p$_A$ s s s s s

remark: A variation of Weave (9.2.1). The feedies pass while walking through the middle and while walking forwards. The numbered diagrams correspond to the passes of A.

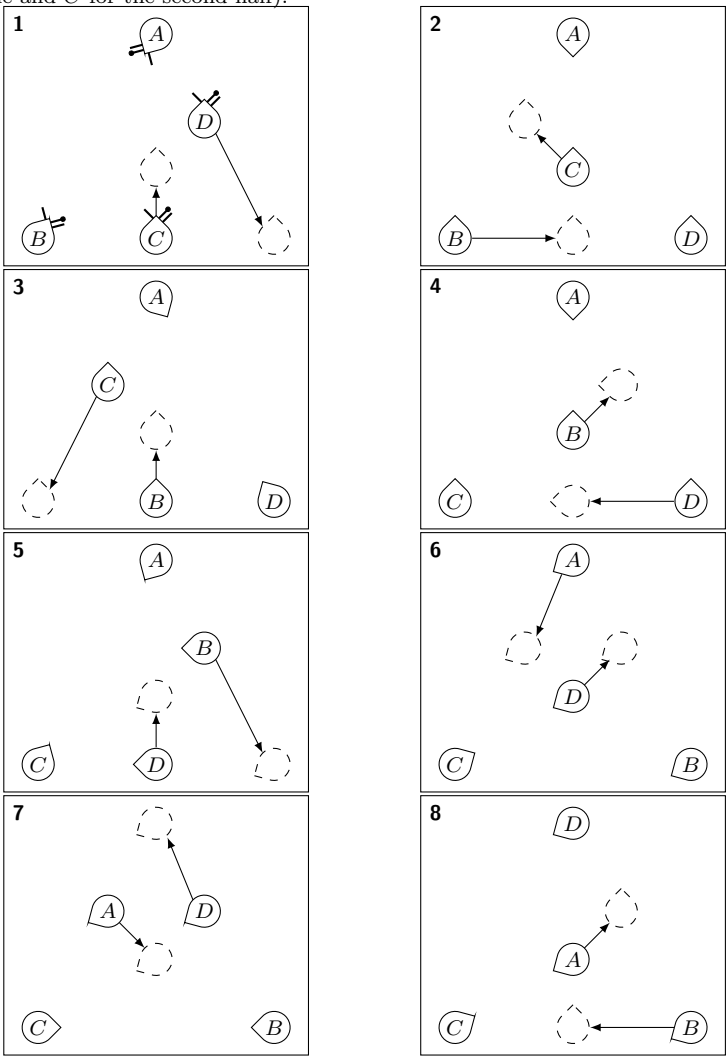
A: p_B - p_C - p_D - p_B - $\rightarrow A$
B: p_A - - - - - p_A - $\rightarrow D$
C: - - p_A - - - - - $\rightarrow B$
D: - - - - p_A - - - $\rightarrow C$



Interlocking weaves

remark: Variation of Weave (9.2.1) and Reverse weave (9.2.1) combined by a feeder change. The numbered diagrams correspond to the passes of the feeder (A for the first half of the cycle and C for the second half).

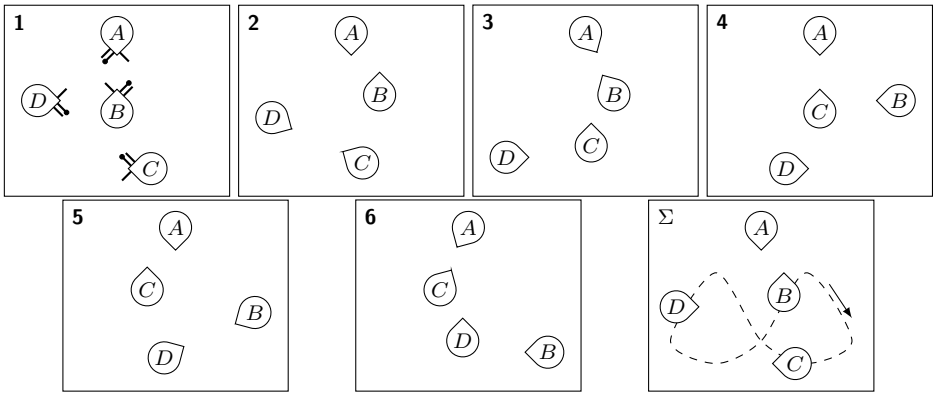
A: p_B - p_C - p_D - p_B - p_C - - - - - p_C - $\rightarrow D$
B: p_A - - - - - p_A - - - - - - - - - $\rightarrow C$
C: - - p_A - - - - - p_A - p_D - p_B - p_A - $\rightarrow B$
D: - - - - p_A - - - - - p_A - - - - - $\rightarrow A$



It's a good one (countdown weave)

remark: Variation of Weave (9.2.1). A does a sweep feed (left, middle, right, middle, …); the feedies do a countdown from 4-count to 2-count. The numbered diagrams correspond to the passes.

A: p_B - p_B - p_C - p_C - $\rightarrow A$
B: p_A - p_A - - p_D - - $\rightarrow C$
C: - p_D - - p_A - p_A - $\rightarrow D$
D: - p_C - - - p_B - - $\rightarrow B$

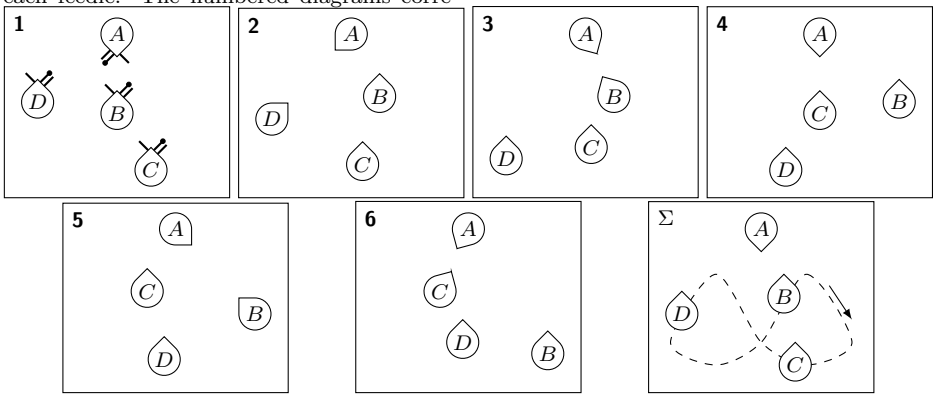


Gorilla weave

sequence: A: p$_B$ p$_C$ p$_B$ p$_D$ p$_B$ p$_D$ / B, C, D: p$_A$ s p$_A$ s p$_A$ s s s s

remark: Variation of Weave (9.2.1). A passes with each hand three times consecutively to each feedie. The numbered diagrams correspond to the passes.

A: $p_B\ p_D\ p_B\ p_C\ p_B\ p_C \rightarrow A$
B: p_A - p_A - p_A - $\rightarrow C$
C: - p_A - - - - $\rightarrow D$
D: - - - p_A - $p_A \rightarrow B$

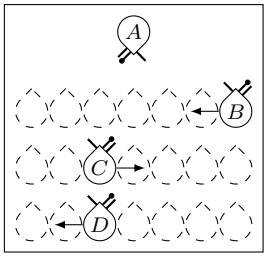


Dresser drawer weave

sequence: A: p$_B$ s p$_C$ s p$_D$ s / B, C, D: p$_A$ s s s s s

remark: The feeder does a sweep feed (left, middle, right, middle, …); the feedies pass in the center and on the outermost positions.

symbols: asterisk: walk one position continuing in the same direction, except on the outermost positions where direction is reversed.



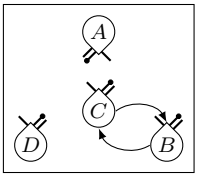
A: p_B - p_C - p_D - $\rightarrow A$
B: p_A^* - s^* - s^* - $\rightarrow B$
C: s^* - p_A^* - s^* - $\rightarrow C$
D: s^* - s^* - p_A^* - $\rightarrow D$

Havana Feed

sequence: A: p$_B$ s p$_C$ s p$_D$ s / B, C, D: p$_A$ s s s s s

remark: After one cycle positions are rotated by 120°.

symbols: asterisk: walk; plus: turn 120° counter-clockwise



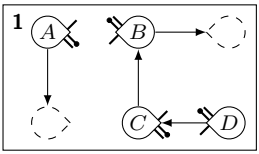
A: p_B - p_C - p_D - p_B - p_C - $\rightarrow B$
B: p_A^* - - - - - p_A - - s^+ $\rightarrow C$
C: - - p_A^* - - - - - p_A - $\rightarrow D$
D: - - - - p_A - - - - - $\rightarrow A$

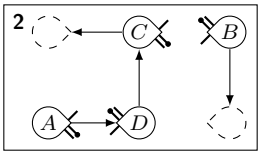
Pistons

remark: The numbered diagrams correspond to the passes.

remark: A, C walk counter-clockwise and B, D walk clockwise around their respective squares

A: p_B - - - p_D - - - $\rightarrow C$
B: p_A - - - p_C - - - $\rightarrow D$
C: p_D - - - p_B - - - $\rightarrow A$
D: p_C - - - p_A - - - $\rightarrow B$

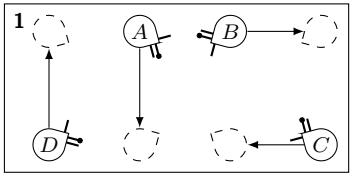


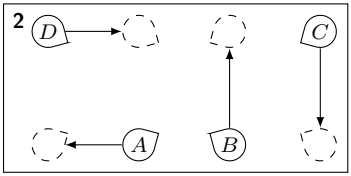


Flying trapeze

remark: The numbered diagrams correspond to the passes.

A: p_C - - - p_B - - - $\rightarrow D$
B: p_D - - - p_A - - - $\rightarrow C$
C: p_A - - - p_D - - - $\rightarrow B$
D: p_B - - - p_C - - - $\rightarrow A$



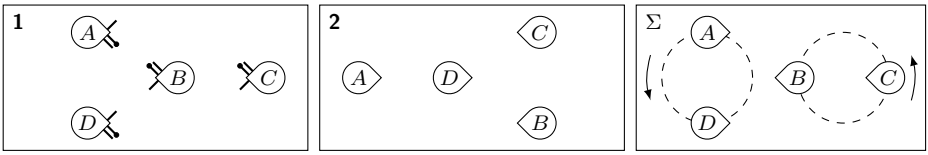


Rotating Y

sequence: p s

symbols: asterisk: each passer moves one position (a quarter circle)

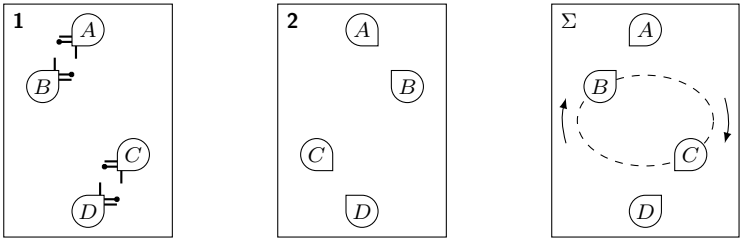
A: p_B - p_B^* - p_B - p_B^* - $\rightarrow D$
B: p_D - p_D^* - p_D - p_D^* - $\rightarrow C$
C: p_A - p_A^* - p_A - p_A^* - $\rightarrow B$
D: p_C - p_C^* - p_C - p_C^* - $\rightarrow A$



Benzene ring

remark: The numbered diagrams correspond to the passes.

A: $p_B \dashrightarrow p_B \dashrightarrow A$
B: $p_A \dashrightarrow p_A \dashrightarrow C$
C: $p_D \dashrightarrow p_D \dashrightarrow B$
D: $p_C \dashrightarrow p_C \dashrightarrow D$

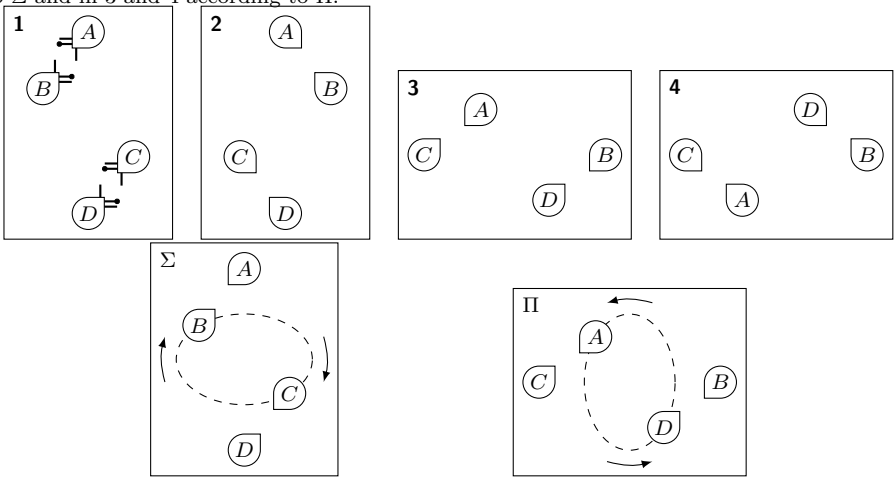


Dosado

remark: A variation of Benzene ring (9.2.1).

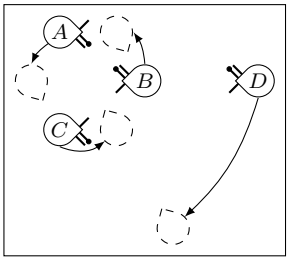
remark: The numbered diagrams correspond to the passes. Movement in 1 and 2 according to Σ and in 3 and 4 according to Π.

A: $p_B \dashrightarrow p_B \dashrightarrow p_C \dashrightarrow p_C \dashrightarrow D$
B: $p_A \dashrightarrow p_A \dashrightarrow p_D \dashrightarrow p_D \dashrightarrow C$
C: $p_D \dashrightarrow p_D \dashrightarrow p_A \dashrightarrow p_A \dashrightarrow B$
D: $p_C \dashrightarrow p_C \dashrightarrow p_B \dashrightarrow p_B \dashrightarrow A$



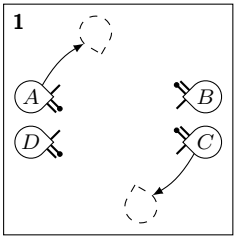
Rotating λ
sequence: p s s s
remark: after each pass the formation rotates by 60°

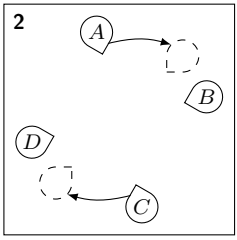
A: $p_B \dashrightarrow C$
B: $p_C \dashrightarrow B$
C: $p_D \dashrightarrow A$
D: $p_A \dashrightarrow D$



Seattle shuffle
sequence: A, C: p s s s / B, D: p s p s s s p s
symbols: asterisk: walk

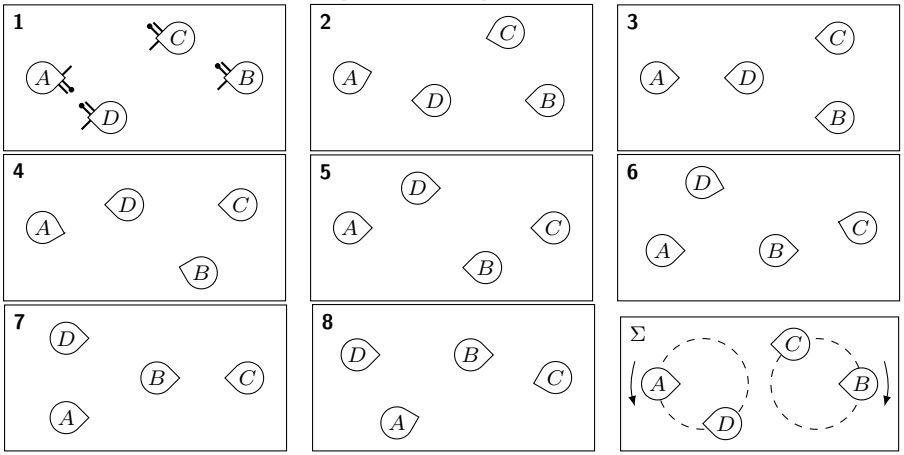
A: $p_B^* \dashrightarrow p_C^* \dashrightarrow B$
B: $p_A \dashrightarrow p_D \dashrightarrow p_D \dashrightarrow C$
C: $p_C^* \dashrightarrow p_A^* \dashrightarrow D$
D: $p_D \dashrightarrow p_B \dashrightarrow p_B \dashrightarrow A$





Double dresser drawer weave
remark: Variation of Dresser drawer weave (9.2.1) where the feeder changes. Feeders do not move, feedies pass at 6, 12 and 3 or 9 o'clock.
remark: The numbered diagrams correspond to the passes.

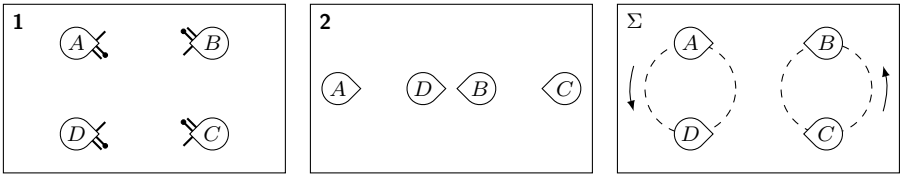
A: $p_B \dashrightarrow p_C \dashrightarrow p_D \dashrightarrow p_B \dashrightarrow p_C \dashrightarrow p_C \dashrightarrow D$
B: $p_A \dashrightarrow p_A \dashrightarrow p_A \dashrightarrow p_C \dashrightarrow C$
C: $p_A \dashrightarrow p_A \dashrightarrow p_A \dashrightarrow p_D \dashrightarrow p_B \dashrightarrow p_A \dashrightarrow B$
D: $p_A \dashrightarrow p_A \dashrightarrow p_C \dashrightarrow A$



Karamazov shuffle

remark: The numbered diagrams correspond to the passes.

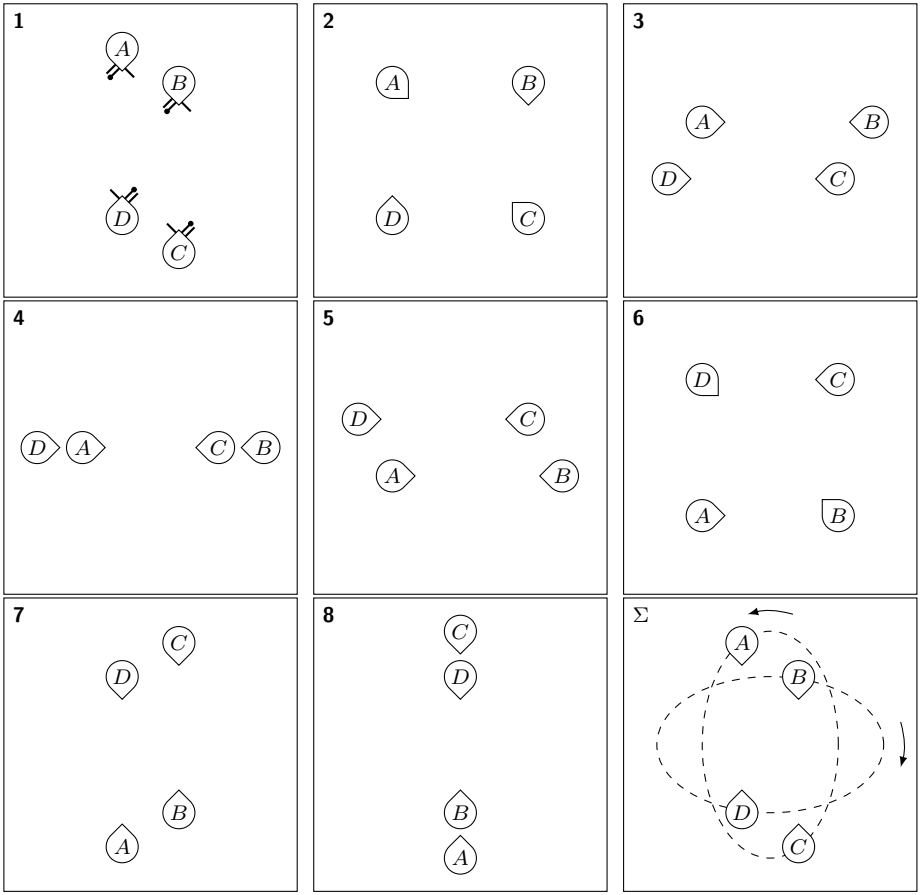
A: p_B - - - $\to D$
B: p_A - p_D - $\to C$
C: p_D - - - $\to B$
D: p_C - p_B - $\to A$



Cyclone

remark: The numbered diagrams correspond to the passes.

A: p_D - p_C - p_B - p_C - p_B - - - p_D - - - $\to C$
B: p_C - - - p_A - - - p_A - p_D - p_C - p_D - $\to D$
C: p_B - p_A - p_D - p_A - p_D - - - p_B - - - $\to A$
D: p_A - - - p_C - - - p_C - p_B - p_A - p_B - $\to B$



Baby Mix

remark: Variation of Cyclone (9.2.1) with double the speed.

$$\begin{array}{ll} A\text{:} & p_D\ p_C\ p_B\ p_C\ p_B\ \text{-}\ p_D\ \text{-} \to C \\ B\text{:} & p_C\ \text{-}\ p_A\ \text{-}\ p_A\ p_D\ p_C\ p_D \to D \\ C\text{:} & p_B\ p_A\ p_D\ p_A\ p_D\ \text{-}\ p_B\ \text{-} \to A \\ D\text{:} & p_A\ \text{-}\ p_C\ \text{-}\ p_C\ p_B\ p_A\ p_B \to B \end{array}$$

Bamboozled Panto

remark: Variation of Panto (13.4.1) with two more clubs. The positions are permutated here for ease of use; the permutation is (bamboozled – original): $A - A$; $B - M$; $C - B$; $D - C$.

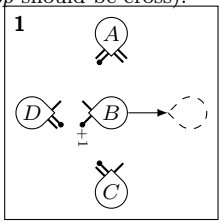
remark: The gaps (first beat of B and second beat of D) make the handedness work and could be replaced by hurried holds.

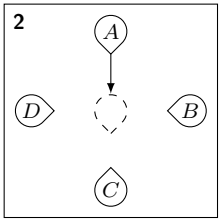
remark: Technically D's first pass is to the wrong hand (actually going from D's right to B's left, where $3p$ should be cross).

remark: After one cycle positions are rotated by 90°.

symbols: asterisk: walk forward, plus: walk backward, L: left hand throw, R: right hand throw

$$\begin{array}{ll} A\text{:} & p_C^2\ \text{-}\ p_D^2\ \text{-}\ p_C^2\ h^*\ h^R \to B \\ B\text{:} & \quad s^L\ p_D^0\ h^+\ h\ \text{-}\ p_D^2 \to C \\ C\text{:} & \text{-}\ p_A^2\ \text{-}\ \text{-}\ \text{-}\ p_B^2\ \text{-} \to D \\ D\text{:} & p_B^R\ \quad s^L\ p_B^2\ \text{-}\ \text{-}\ \text{-} \to A \end{array}$$

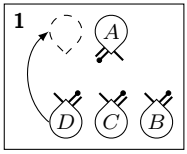


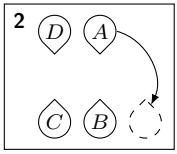


Typewriter of Doom

remark: A combination of Typewriter (3.1.1) and Box of Gloom (3.1.1).

symbols: asterisk: walk





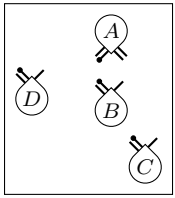
$$\begin{array}{ll} A\text{:} & p_B\ p_C\ p_D\ p_B\ p_C\ p_D\ p_B\ p_C\ \text{-}\ p_B\ p_C\ \text{-}\ p_B\ p_C^*\ \text{-}\ \text{-} \to B \\ B\text{:} & p_A\ \text{-}\ \text{-}\ p_A\ \text{-}\ \text{-}\ p_A\ \text{-}\ p_D\ p_A\ \text{-}\ p_D\ p_A\ \text{-}\ p_D\ \text{-} \to C \\ C\text{:} & \text{-}\ p_A\ \text{-}\ \text{-}\ p_A\ \text{-}\ \text{-}\ p_A\ \text{-}\ p_D\ p_A\ \text{-}\ p_D\ p_A\ \text{-}\ p_D \to D \\ D\text{:} & \text{-}\ \text{-}\ p_A\ \text{-}\ \text{-}\ p_A^*\ \text{-}\ \text{-}\ p_B\ p_C\ \text{-}\ p_B\ p_C\ \text{-}\ p_B\ p_C \to A \end{array}$$

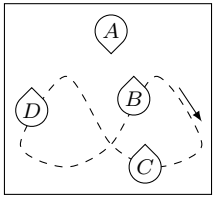
9.3. 13 clubs

9.3.1. Various

Weave (13 clubs)
sequence: A: p^2_B s p^2_D s p^2_C s / B, C, D: p^2_A s s s s s
remark: Variation of Weave (9.2.1) with an additional club. The passes can be straight doubles or singles. The choreography does not change.

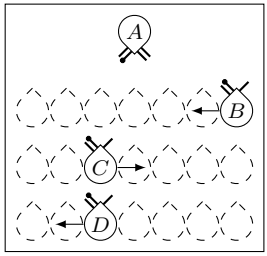
A: p^2_B - p^2_D - p^2_C - p^2_B - $\to A$
B: - p^2_A - - - - p^2_A $\to C$
C: - - - - p^2_A - - $\to D$
D: - - - p^2_A - - - - $\to B$





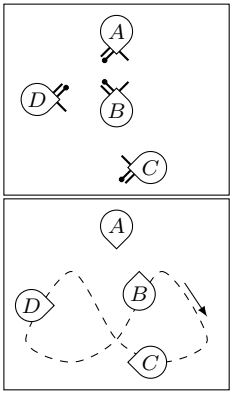
Dresser drawer weave (13 clubs)
sequence: A: p^2_B s p^2_C s p^2_D s / B, C, D: p^2_A s s s s s
remark: Variation of Dresser drawer weave (9.2.1) with an additional club. The passes can be straight doubles or singles. The choreography does not change.

A: p^2_B - p^2_C - p^2_D - $\to A$
B: - p^2_A - - - - $\to B$
C: - - - p^2_A - - $\to C$
D: - - - - - p^2_A $\to D$

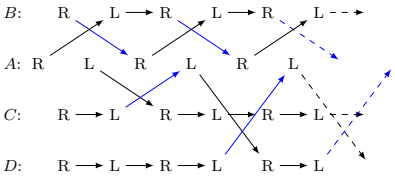


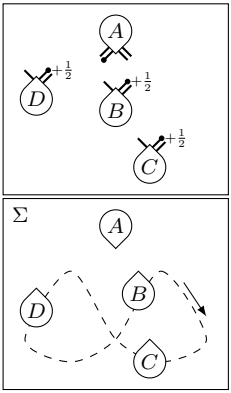
It's a good one (13 clubs)
remark: Variation of It's a good one (countdown weave) (9.2.1) with an additional club. The passes with the feeder can be straight doubles or floaty singles. The choreography does not change.

A: p^2_B - p^2_B - p^2_C - p^2_C - $\to A$
B: - p^2_A - p^2_A - - p_D - $\to C$
C: - - p_D - - p^2_A - p^2_A $\to D$
D: - - p_C - - - p_B - $\to B$



Gorilla weave (13 clubs)
sequence: A: p_B p_C p_B p_D p_B p_D / B, C, D: p_A s p_A s p_A s s s s
remark: Variation of Gorilla weave (9.2.1) with an additional club. The passes are singles, straight for A and crossing for everybody else. The choreography does not change.





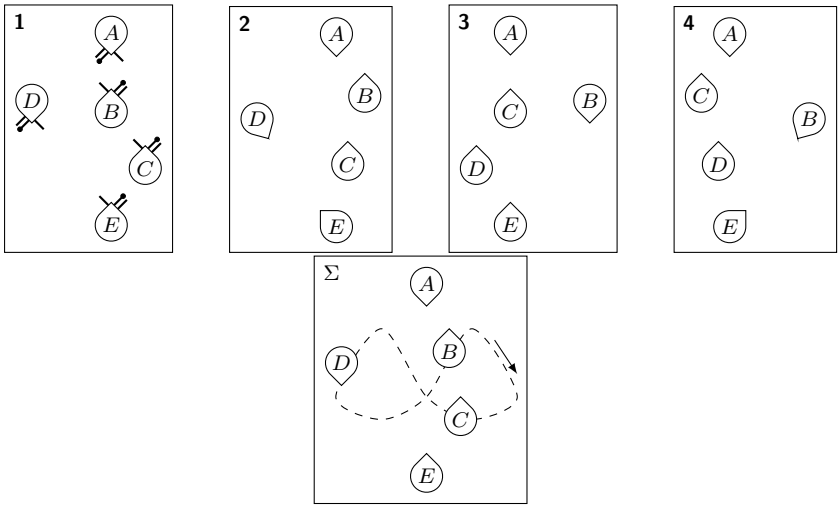
10. 5 jugglers

10.1. 15 clubs

10.1.1. Various

Double Weave
sequence: A, E: p_B s s s p_C s s s p_D s s s / B, C, D: p_A s s s s s p_E s s s s s
remark: Variation of Weave (9.2.1), instead of walking backwards the feedies pass to the new feeder walking forwards. The numbered diagrams correspond to the passes of A and E.

A: p_B - - - p_C - - - $\rightarrow A$
B: p_A - - - - - p_E - - $\rightarrow C$
C: - - - - p_A - - - - $\rightarrow D$
D: - - p_E - - - - - - $\rightarrow B$
E: - - p_D - - - p_B - - $\rightarrow E$



11. 6 jugglers

11.1. 18 clubs

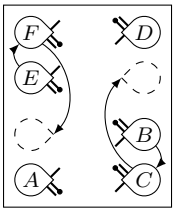
11.1.1. Various

Magermix

remark: Two meta-jugglers are passing six passers in a 2-count.

remark: A, B, C and D, E, F are each doing a Bruno's Nightmare (8.2.1). Every two Brunos on the passes marked with a plus the displayed exchange happens. The passes marked with an asterisk are the normal Bruno walk-acrosses.

remark: After one cycle positions are mirrored.



$$
\begin{array}{ll}
A\colon & p_C\,\text{-}\,p_B\,\text{-}\,p_C\,\text{-}\,p_B\,\text{-}\,\text{-}\,\text{-}\,p_B^*\,\text{-}\to B\\
B\colon & \text{-}\,\text{-}\,p_A\,\text{-}\,\text{-}\,\text{-}\,p_A\,\text{-}\,p_F\,\text{-}\,p_A\,\text{-}\to C\\
C\colon & p_A\,\text{-}\,\text{-}\,\text{-}\,p_A^+\,\text{-}\,\text{-}\,\text{-}\,p_E\,\text{-}\,\text{-}\,\text{-}\to D\\
D\colon & p_F\,\text{-}\,p_E\,\text{-}\,p_F\,\text{-}\,p_E\,\text{-}\,\text{-}\,\text{-}\,p_E^*\,\text{-}\to E\\
E\colon & \text{-}\,\text{-}\,p_D\,\text{-}\,\text{-}\,\text{-}\,p_D\,\text{-}\,p_C\,\text{-}\,p_D\,\text{-}\to F\\
F\colon & p_D\,\text{-}\,\text{-}\,\text{-}\,p_D^+\,\text{-}\,\text{-}\,\text{-}\,p_B\,\text{-}\,\text{-}\,\text{-}\to A
\end{array}
$$

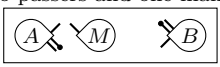
Part III.

Manipulator Patterns

Often the positions are rotated by 180° or mirrored after one cycle. This is should be pretty obvious in most cases and is not annotated specifically.

12. 3 jugglers

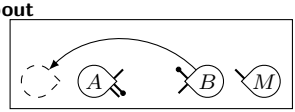
The general starting diagram for two passers and one manipulator is the following.



12.1. 5+1 clubs

12.1.1. Exchange patterns

Hop-About



A: $\dot{p}\ \ s\ \ z\ \ p\ \ s \to B$
B: $z\ \ \ddot{p}\ \ s\ \ z\ \ \to A$
M: $\ \ i_B^A\ \ c_A^B\ \ \to M$

transition: $A \to B \to M \to A$

throws: Left hand side straight; right hand side crossing.
start: The initial zip is omitted (or for better timing replaced by a flip).
remark: Walk analogously to the carried pass.
remark: The carry is done cross-handed.
remark: The base pattern is Hop (1.2.2).

12.2. 6 clubs

12.2.1. Exchange patterns

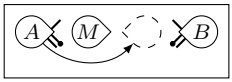
Tiddo's Changeover

préchac: base pattern is 4p 4p 4 0 3 3p 3p 3

A: $p_B^2\ p_B^2\ \ddot{s}^2\ \ddot{0} \to B$
B: $\ \ \dot{p}_A\ p_A\ \ \to A$
M: $c_B^B\ \ \ \ i_A^B\ \ \to M$

transition: $A \to M \to B \to A$
start: The first carry is omitted.

remark: The carry is done cross-handed.
throws: p^2 are straight singles and p are crossing zaps.



12.3. 6+1 clubs

12.3.1. Roundabout family

Roundabout

start: A: R2/L1; B: R2/L1; M: R1/L0
transition: $A \to B \to M \to A$

A: $\dot{p}_B\ \ \ \ \dot{p}_B\ \ \ \ \to B$
B: $p_A\ \ \dot{s}\ \ p_A\ \ \ddot{s}\ \ \ddot{s}\ \ \to A$
M: $m_B^A\ \ m_B^B\ \ \ \ i_B^A\ \ c_B^B \to M$

Roundabout (6-count)

start: A: R2/L1; B: R2/L1; M: R1/L0
transition: $A \to B \to M \to A$

A: $\dot{p}_B\ \ \ \ \ \ \to B$
B: $p_A\ \ \dot{s}\ \ \ddot{s}\ \ \ddot{s}\ \ \to A$
M: $m_B^A\ \ \ \ i_B^B\ \ c_B^B \to M$

Roundabout (3-count)

start: A: R2/L1; B: R2/L1; M: R1/L0
transition: $A \to B \to M \to A$

A: $\dot{p}_B\ \ \ \ p_A\ \ \ \to B$
B: $p_A\ \ \dot{s}\ \ddot{p}_B\ \ \ddot{s}\ \ \to A$
M: $m_B^A\ \ \ \ i_B^B\ c_A^B\ \ \to M$

Dolby 5.1

start: A: R2/L1; B: R2/L1; M: R1/L0
symbols: asterisk: pop (i. e. straight up, negligible spin)

transition: $A \to B \to M \to A$

A: $\dot{p}_B\ \ \ \ \ \ \to B$
B: $p_A\ \ \dot{s}^*\ \ \ddot{s}\ \ \ddot{s}\ \ \to A$
M: $m_B^A\ \ \ \ i_B^B\ \ c_B^B \to M$

Dolby 5.2

start: A: R2/L1; B: R2/L1; M: R1/L0
symbols: asterisk: pop (i. e. straight up, negligible spin)

transition: $A \to B \to M \to A$

A: $\dot{p}_B\ \ \ \ p_B \to B$
B: $p_A\ \ \dot{s}^*\ \ \ddot{s}\ \ \ddot{s}\ p_A \to A$
M: $m_B^A\ \ \ \ i_B^B\ \ c_B^B \to M$

Dolby Söround

start: A: R2/L1; B: R2/L1; M: R1/L0
symbols: asterisk: To avoid standing in the way of the simultaneous pass a special move is required. The new manipulator turns facing away from the new passer thus taking a position outside of the pattern. The carry is then done cross-handed (e. g. right to right).

$$\begin{array}{ll} A\colon & \dot{p}_B \;\text{-}\; \dot{s} \;\; \ddot{s} \;\; p_B \;\text{-}\; \to B \\ B\colon & p_A \;\text{-}\; \dot{s} \;\; \ddot{s} \;\; p_A \;\text{-}\; \to A \\ M\colon & m_B^A \qquad i_B^B \; c_B^{B*} \qquad \to M \end{array}$$

transition: $A \to B \to M \to A$

Chop about

start: A: R2/L1; B: R2/L1; M: R1/L0
symbols: asterisk: pass is a chop
remark: For the best flow as manipulator always turn clockwise.
transition: $A \to M \to B \to A$

$$\begin{array}{ll} A\colon & \dot{p}_B^* \;\text{-}\; \dot{s} \;\text{-}\; p_B \;\text{-}\; \dot{s} \;\text{-}\; p_B \;\; \ddot{s} \;\; \ddot{s} \;\; \text{-} \to B \\ B\colon & p_A \;\text{-}\; \text{-} \;\text{-}\; \dot{p}_A^* \;\text{-}\; \text{-} \;\text{-}\; \dot{p}_A \;\text{-}\; \text{-} \;\text{-}\; \to A \\ M\colon & m_B^A \quad m_A^A \quad m_A^B \quad m_A^A \qquad i_A^B \quad c_A^A \to M \end{array}$$

Chopped Dolby

start: A: R2/L1; B: R2/L1; M: R1/L0
symbols: asterisk: pass is a chop; plus: carry as in Dolby Söround (12.3.1) but turn around the inside shoulder
remark: For the best flow as manipulator always turn in the same direction during one stint.
transition: $A \to M \to B \to A$

$$\begin{array}{ll} A\colon & \dot{p}_B^* \;\text{-}\; \dot{s} \;\text{-}\; p_B \;\text{-}\; \dot{s} \;\; \ddot{s} \;\; p_B \;\text{-}\; \text{-} \to B \\ B\colon & p_A \;\text{-}\; \text{-} \;\text{-}\; \dot{p}_A^* \;\text{-}\; \text{-} \;\text{-}\; p_A \;\text{-}\; \text{-} \to A \\ M\colon & m_B^A \quad m_A^A \quad m_A^B \qquad i_A^A \; c_A^{A+} \qquad \to M \end{array}$$

12.3.2. Various

Champi

start: A: L2/R1; B: L2/R1; M: R1/L0
symbols: asterisk: pass is a chop
transition: $A \to B \to M \to A$

$$\begin{array}{ll} A\colon & p_B \;\; \dot{p}_B^* \;\text{-}\; \dot{p}_B \; p_B \;\; \text{-} \to B \\ B\colon & p_A \;\; p_A \;\text{-}\; p_A \; \ddot{p}_A \;\; \text{-} \to A \\ M\colon & \quad m_B^A \qquad i_A^A \; c_A^B \to M \end{array}$$

MinuEd

start: A: R2/L1; B: R2/L1; M: R1/L0
remark: M has it easier if she catches the takeout on beat 2 at the handle.
symbols: asterisk: Take out very early with the same hand (e. g. right–right) as thrown and hand in from below with the other hand, this means no zip before this takeout; plus: pop (i. e. straight up, negligible spin)
transition: $A \to B \to M \to A$

$$\begin{array}{ll} A\colon & p_B \;\; \dot{p}_B \;\; \text{-} \; p_B \; p_B \;\text{-}\; \dot{p}_B \; p_B \;\; \text{-} \;\; \to B \\ B\colon & p_A \;\; p_A \;\; \dot{s}^+ \; \ddot{p}_A \; p_A \;\text{-}\; p_A \;\; p_A \;\; \dot{s} \;\; \to A \\ M\colon & \quad m_B^A \qquad i_B^B \; c_A^B \quad m_B^A \qquad m_B^{B*} \to M \end{array}$$

Scherzo

start: A: R2/L1; B: R2/L1; M: R1/L0
symbols: asterisk: Take out very early with the same hand (e. g. right–right) as thrown and hand in from below with the other hand, this means no zip before this takeout

$$\begin{array}{ll} A\colon & p_B \;\; \dot{p}_B \;\; \dot{p}_B \;\; \text{-} \;\; \text{-} \; p_B \;\; \text{-} \;\; \to B \\ B\colon & p_A \;\; p_A \;\; p_A \;\; \ddot{s} \;\; \ddot{s} \; p_A \;\; \dot{s} \;\; \to A \\ M\colon & \quad m_B^A \qquad i_B^A \quad c_B^B \; m_B^{B*} \to M \end{array}$$

transition: $A \to B \to M \to A$

Chopsticks

start: A: R2/L1; B: R2/L1; M: R1/L0
symbols: asterisk: pass is a chop
remark: It's customary to do two zips in between the substitutes.

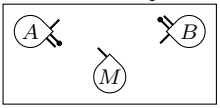
$$\begin{array}{ll} A\colon & \dot{p}_B^* \;\; \text{-} \; \dot{p}_B^* \;\; \text{-} \; p_B \;\; \text{-} \;\; \to B \\ B\colon & p_A \;\; \text{-} \; p_A \;\; \text{-} \; \dot{s} \; \ddot{p}_A \;\; \text{-} \;\; \to A \\ M\colon & \quad m_B^A \qquad m_B^A \quad i_B^B \; c_A^B \quad \to M \end{array}$$

transition: $A \to B \to M \to A$

Phoenician Waltz

start: A: R2/L1; B: R2/L1; M: R0/L1
transition: $A \to B \to M \to A$
remark: The takeouts are very late and caught in the middle between the passers.

$$\begin{array}{ll} A\colon & \dot{p}_B \;\; p_B \;\text{-}\; \dot{p}_B \; p_B \;\text{-}\; \dot{p}_B \; p_B \;\; \text{-} \;\; \to B \\ B\colon & p_A \;\; p_A \;\text{-}\; p_A \; p_A \;\text{-}\; p_A \; \ddot{p}_A \;\; \text{-} \;\; \to A \\ M\colon & \quad m_B^A \qquad m_B^A \qquad i_B^A \; c_A^B \to M \end{array}$$



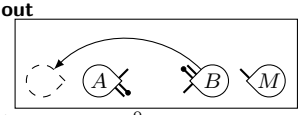
Cold Shoulder

$$\begin{array}{ll} A\colon & \dot{p}_B \;\_\; \_ \;\; \dot{p}_B \;\_\; \_ \to B \\ B\colon & p_A \;\; \dot{s}^* \;\; \_ \;\; p_A \;\; \ddot{s} \;\; \_ \to A \\ M\colon & m_B^A \qquad m_B^B \qquad i_B^A \; c_B^B \to M \end{array}$$

symbols: asterisk: pop (i. e. straight up, negligible spin)
transition: $A \to B \to M \to A$
start: A: R2/L1; B: R2/L1; M: R1/L0

12.3.3. Exchange patterns

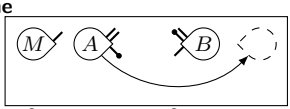
567-About



$$\begin{array}{ll} A\colon & \dot{p} \quad s \quad p^0 \quad p \quad s \to B \\ B\colon & p^0 \quad \ddot{p} \quad s \quad p^0 \to A \\ M\colon & \quad i_B^A \quad c_A^B \to M \end{array}$$

transition: $A \to B \to M \to A$
throws: Left hand side does straight singles and crossing zaps; right hand side does crossing singles and straight zaps.
remark: Walk analogously to the carried pass.
remark: The carry is done cross-handed.
remark: The base pattern is Baby dragon (1.3.3).
hint: The carry is to the same hand as the zap directly before it. The first pass after exiting manipulation is a zap with the club that was just intercepted. It goes to the opposite side of where the new manipulator carries.

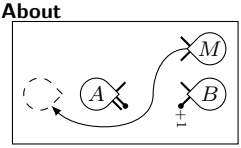
Guillotine



$$\begin{array}{ll} A\colon & p^2 \quad z \quad \ddot{p} \quad p^2 \quad z \to B \\ B\colon & \dot{p} \quad p^2 \quad z \quad p \to A \\ M\colon & \quad i_A^B \quad c_B^A \to M \end{array}$$

transition: $A \to M \to B \to A$
throws: Left hand side does straight singles and crossing doubles; right hand side does crossing singles and straight doubles.
remark: Walk analogously to the carried pass.
remark: The carry is done cross-handed.
hint: The first pass after exiting manipulation is not done from the hand where the next club arrives (because of the following zip). Also it goes to the hand where the new manipulator carries to.
remark: The base pattern is 972 (1.3.5).

Bookends-About

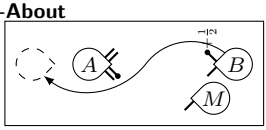


remark: The carry is *not* done cross-handed.
remark: The base pattern is Bookends (1.3.1).
hint: The first throw after exiting manipulation is a pass with the substituted club.
symbols: asterisk: self is a pop

$$\begin{array}{ll} A\colon & p \;\; p \; s \;\; p \;\; \dot{s}^* \to B \\ B\colon & \ddot{p} \;\; p \; s \;\; \dot{p} \;\; s \to A \\ M\colon & c_A^B \qquad s_A^B \; i_A^A \to M \end{array}$$

transition: $A \to M \to B \to A$

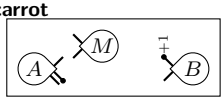
Why-Not-About



throws: Left hand side straight; right hand side crossing.
remark: Walk contrary to a normal pass (crossing the pattern when previously throwing straight).
hint: Walk to the opposite side of where you passed last.
hint: Crossing the pattern is best done close to the previous manipulator on the zip done by that person (the second to last throw in the table below).
remark: The carry is as in Dolby Söround (12.3.1).
remark: The base pattern is Why not (1.3.2).
symbols: asterisk: thrown as a zap to the manipulator; plus: substitute is caught with the inside hand with no zip afterwards
hint: After the the intercept the first action is a pass that flies right behind the pass the intercepted juggler just threw.
transition: $A \to B \to M \to A$

$$\begin{array}{ll} A\colon & p^* \qquad s \quad \dot{p} \quad s^2 \quad z \quad p \quad s \quad p \to B \\ B\colon & \quad s^2 \quad z \quad p \quad \ddot{s} \quad p \quad s^2 \quad z \to A \\ M\colon & \quad m_B^{A+} \qquad i_B^A \quad c_B^B \qquad \to M \end{array}$$

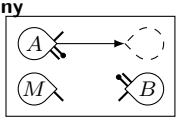
Catch the carrot



A: $\dot{p}_B$ $\dot{s}^*$ $\ddot{s}$ $\to B$
B: $\ddot{p}_A$ - - $\to A$
M: c_A^B i_A^A $\to M$

symbols: asterisk: pop
throws: left side of the pattern has crossing passes, right side has straight passes
remark: The intercepted clubs stay the same, thus they can be color-coded (guiding the walking).
transition: $A \to M \to B \to A$

Suwecide Bunny



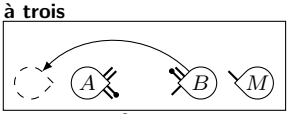
start: A starts with p.
throws: Left hand side straight singles and crossing zaps; right hand side crossing singles and straight zaps.
remark: The intercept is done by placing the held club in the intercepting hand. Note that due to A locally having only two clubs in that moment there is no carry.
remark: The base pattern is 45678 (1.3.3).
remark: The heffs are always on the inside.
transition: $A \to M \to B \to A$

A: $\dot{h}$ s $s^2 \to B$
B: p^0 p $\to A$
M: i_A^A $\to M$

12.4. 7+1 clubs

12.4.1. Exchange patterns

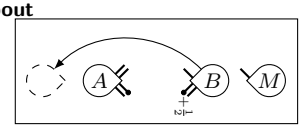
Manège à trois



A: $\dot{p}$ s s^2 p $s \to B$
B: s^2 $\ddot{p}$ s s^2 $\to A$
M: i_B^A c_A^B $\to M$

transition: $A \to B \to M \to A$
throws: Left hand side straight; right hand side crossing.
remark: Walk analogously to the carried pass.
remark: The carry is done cross-handed.
remark: The base pattern is French 3-count (1.4.2).
start: If the first heff by B feels uncomfortable try doing one additional round of the base pattern at the start (that is three additional throws in total).
remark: The first throw after exiting the manipulation is to where the new manipulator is *not* moving. After becoming manipulator you move to where the first throw went.

966-About

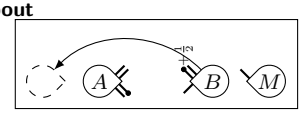


throws: Left hand side straight; right hand side crossing.
remark: Walk analogously to the carried pass.
remark: The carry is done cross-handed.
remark: The base pattern is 3-count (7 clubs) (1.4.1).

A: $\dot{p}^2$ s s p^2 s s p^2 $s \to B$
B: s p^2 $\ddot{s}$ $\ddot{s}$ $\ddot{p}^2$ s s $\to A$
M: i_B^A $c_A^B \to M$

transition: $A \to B \to M \to A$

777-About

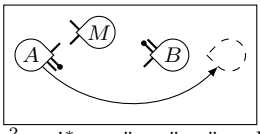


throws: Left hand side straight; right hand side crossing.
remark: Walk analogously to the carried pass.
start: An arguably more comfortable start is doing four additional throws in the beginning.
remark: The carry is done cross-handed.
remark: The base pattern is 1-count (7 clubs) (1.4.1).

A: $\dot{p}$ p p p $p \to B$
B: p $\ddot{p}$ p p $\to A$
M: i_B^A c_A^B $\to M$

transition: $A \to B \to M \to A$

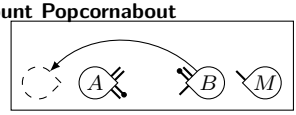
Shorty



A: p^2 $\dot{s}^*$ $\ddot{s}$ $\ddot{s}$ $\ddot{p} \to B$
B: s s^2 s^2 p $\to A$
M: c_A^{B+} i_A^A $\to M$

transition: $A \to M \to B \to A$
throws: Left hand side straight singles and crossing doubles; right hand side crossing singles and straight doubles.
remark: Walk analogously to the carried pass.
symbols: asterisk: pop (i. e. straight up, negligible spin), plus: wrapped around c_B^A
remark: The carry is done cross-handed.
hint: The carry goes to the opposite hand of where the last pass went. The first throw after exiting the manipulation is a self with the intercepted club.
remark: The base pattern is 779668686.

Five Count Popcornabout



throws: Left hand side straight; right hand side crossing.
remark: Walk analogously to the carried pass.
remark: The carry is done cross-handed.

A: $\dot{p}$ s^3 p $\to B$
B: s^3 $\ddot{s}$ $\ddot{p}$ s^3 $\to A$
M: i_B^A c_A^B $\to M$

transition: $A \to B \to M \to A$

12.4.2. Various

Dolby 7.1

start: A: R2/L2; B: R2/L1; M: R1/L0
preparation: Dolby 5.1 (12.3.1) and Mute Dolby (1.4.7)
throws: straight singles and crossing doubles
symbols: asterisk: pop (i. e. straight up, negligible spin)

A: $\dot{p}_B$ s^2 s^2 s^2 $p_B^2 \to B$
B: p_A^2 $\dot{s}^*$ $\ddot{s}$ $\ddot{s}$ $\to A$
M: m_B^A i_B^B $c_B^B \to M$

transition: $A \to B \to M \to A$

Ronjabout

start: A: R2/L2; B: L2/R1; M: R1/L0
transition: $A \to B \to M \to A$

A: $\dot{p}_B^2$ s^3 $\dot{p}_B^2$ s^3 $p_B^2 \to B$
B: p_A^2 $\dot{s}$ p_A^2 $\ddot{s}$ $\ddot{s}$ $\to A$
M: m_B^A m_B^B i_B^A $c_B^B \to M$

Champix

start: A: R2/L2; B: R2/L1; M: R1/L0
symbols: asterisk: pass is a chop
throws: p^2 is a crossed double pass

transition: $A \to B \to M \to A$

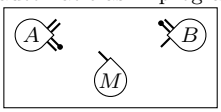
A: p_B $\dot{p}_B^*$ s^2 $\dot{p}_B$ p_B^2 $\to B$
B: p_A^2 p_A^2 s^2 $\ddot{p}_A$ $s^2 \to A$
M: m_B^A i_B^A $c_A^B \to M$

Phoenician Quickstep

start: A: R2/L2; B: R2/L1; M: R0/L1

A: $\dot{p}_B$ p_B^2 $\dot{p}_B$ p_B^2 $\dot{p}_B$ p_B^2 $\to B$
B: s^2 p_A p_A^2 s^2 p_A p_A^2 s^2 $\ddot{p}_A$ $s^2 \to A$
M: m_B^A m_B^A i_B^A $c_A^B \to M$

transition: $A \to B \to M \to A$
remark: Base pattern is Not Pass pass self (7 clubs) (1.4.6).
remark: The takeouts are very late and caught in the middle between the passers.
remark: The last throw by B switches roles. This is not automatic as in programming.



12.5. 8+1 clubs

12.5.1. Various

Extreme Roundabout

start: A: R2/L2; B: R2/L2; M: R1/L0
remark: Based on 2-count (8 clubs) (1.5.1).
throws: straight double passes with quads for the high selfs

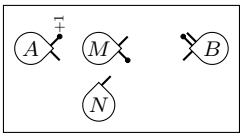
A: $\dot{p}_B^3$ s^5 $\dot{p}_B^3$ s^5 p_B^3 $\to B$
B: p_A^3 p_A^3 $\dot{s}$ p_A^3 $\ddot{s}$ $\ddot{s}$ $\to A$
M: m_B^A m_B^B i_B^A $c_B^B \to M$

13. 4 jugglers

13.1. 6+2 clubs

13.1.1. Various

Kennedy



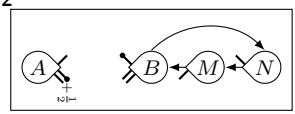
start: to avoid congestion N waits outside and skips the first two actions
symbols: asterisk: pass is a chop; plus: on becoming manipulator M (formerly B) one typically does a 270° turn

$$\begin{array}{lcccccccc} A\colon & \dot{p}_B & - & \dot{s} & - & \dot{p}^*_B & - & - & - & \to B \\ B\colon & \dot{p}_A & - & \dot{s} & - & p_A & \ddot{s} & \ddot{s} & - & \to A \\ M\colon & m^A_B & & m^B_B & & & i^A_B & c^{B+}_N & & \to N \\ N\colon & m^B_A & & m^A_A & & m^A_B & & m^M_B & & \to M \end{array}$$

transition: $A \to B \to N \to M \to A$
hint: Each person only ever is a juggler on either the left or the right side.

13.1.2. Lazy patterns

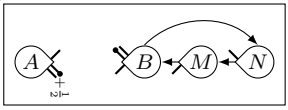
Lazy 972



start: B starts with the p^2 at the end of the line below.
throws: A throws crossing singles and straight doubles; B throws crossing doubles (her straight singles are not thrown but carried).
remark: The carry is done cross-handed.
remark: Carry to the hand your last pass went not to.

$$\begin{array}{lccccc} A\colon & \dot{p} & & p^2 & z & \to A \\ B\colon & & z & \ddot{p} & p^2 & \to B \\ M\colon & & & i^A_B & & \to N \\ N\colon & c^B_A & & & & \to M \end{array}$$

Lazy 567



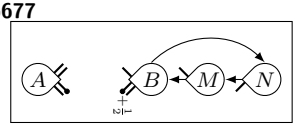
start: B starts with the s at the end of the line below.
throws: A throws straight zaps and crossing singles; B throws crossing zaps (her straight singles are not thrown but carried).
remark: The carry is done cross-handed.
remark: Carry to the hand your last pass went to.

$$\begin{array}{lccccc} A\colon & \dot{p} & & s & p^0 & \to A \\ B\colon & & p^0 & \ddot{p} & s & \to B \\ M\colon & & & i^A_B & & \to N \\ N\colon & c^B_A & & & & \to M \end{array}$$

13.2. 7+2 clubs

13.2.1. Lazy patterns

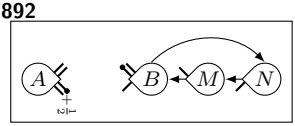
Lazy 96677



throws: A throws crossing singles and straight doubles; B throws straight singles (her crossing doubles are not thrown but carried).
remark: The carry is done cross-handed.
remark: Carry to the hand your last pass went to.

$$\begin{array}{lccccccc} A\colon & \dot{p}^2 & & s & p & s & p & \to A \\ B\colon & & s & p & \ddot{p}^2 & s & p & \to B \\ M\colon & & & & i^A_B & & & \to N \\ N\colon & c^B_A & & & & & & \to M \end{array}$$

Lazy 97892



start: B starts with the last p^2 on the line below.
throws: A throws crossing singles and straight doubles; B throws straight singles and crossing doubles.
remark: The carry is done cross-handed.
remark: Carry to the hand your last pass went to.

$$\begin{array}{lccccccc} A\colon & \dot{p}^2 & & p^2 & s^2 & z & p & \to A \\ B\colon & & z & p & \ddot{p}^2 & p^2 & s^2 & \to B \\ M\colon & & & & i^A_B & & & \to N \\ N\colon & c^B_A & & & & & & \to M \end{array}$$

13.3. 9+0 clubs

13.3.1. Exchange patterns

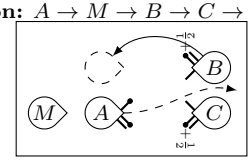
Eiliger Wanderwaschbär

sequence: A: p_B+p_C p_B p_B+p_C p_C p_C s / B: p_A s p_A s p_A s s s s / C: p_A s s s p_A s p_A p_A

symbols: asterisk: B starts walking, plus: cross pass

remark: exchange version of Wanderwaschbär (8.2.1)

transition: $A \to M \to B \to C \to A$



$$
\begin{array}{lccccccccccl}
A\colon & p_B + p_C & & p_B & & ..p_B + ..p_C & & & p_C & & p_C^+ & s \to B \\
B\colon & & p_A\ s & & \dot{p}_A\ s & & p_A^* & s & & s\ \ s & s & \to C \\
C\colon & & p_A\ s & & s\ \ s & & p_A & s & & p_A\ p_A & & \to A \\
M\colon & & & & & i_A^B & & c_B^A + c_C^A & & & & \to M
\end{array}
$$

13.4. 9+1 clubs

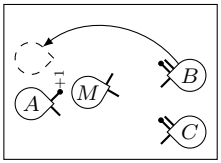
13.4.1. Scrambled-V family

Based on Walking feed (8.2.1).

Scrambled V

$$
\begin{array}{lccccccccl}
A\colon & \ddot{p}_B & - & p_C & - & p_B & - & & & \to B \\
B\colon & p_A & - & \dot{s} & - & p_A & - & & & \to C \\
C\colon & - & - & p_A & - & \dot{s} & \ddot{s} & & & \to A \\
M\colon & & c_B^A & & m_B^B & & & i_C^C & & \to M
\end{array}
$$

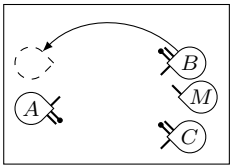
transition: $A \to B \to C \to M \to A$



Unscrambled B

$$
\begin{array}{lccccccccl}
A\colon & \dot{p}_B & - & p_C & - & p_B & - & & & \to B \\
B\colon & p_A & \ddot{s} & \dot{s} & - & p_A & - & & & \to C \\
C\colon & - & - & p_A & - & - & - & & & \to A \\
M\colon & & i_B^A & & c_B^B & & m_A^B & & & \to M
\end{array}
$$

transition: $A \to B \to M \to C \to A$

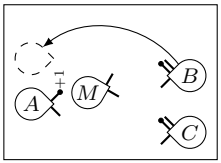


Toast

start: The first substitute of M is replaced by a carry.

$$
\begin{array}{lccccccccl}
A\colon & \dot{p}_B & - & \dot{p}_C & - & p_B & - & & & \to B \\
B\colon & p_A & - & - & - & p_A & - & & & \to C \\
C\colon & - & - & p_A & \ddot{s} & \ddot{s} & - & & & \to A \\
M\colon & m_B^A & & & i_C^A & & & c_C^C & & \to M
\end{array}
$$

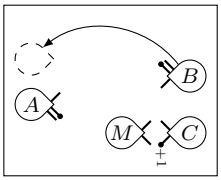
transition: $A \to B \to C \to M \to A$



Three

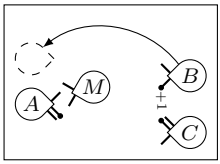
$$
\begin{array}{lccccccccl}
A\colon & p_B & - & p_C & - & \dot{p}_B & - & & & \to B \\
B\colon & p_A & - & - & - & p_A & \ddot{s} & & & \to C \\
C\colon & \ddot{s} & - & \dot{p}_A & - & - & - & & & \to A \\
M\colon & & c_C^C & & m_A^C & & & i_B^A & & \to M
\end{array}
$$

transition: $A \to B \to M \to C \to A$



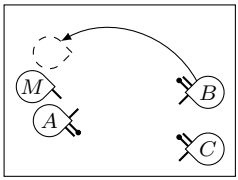
Casbia

A: p_B - p_C - p_B $\ddot{s}$ $\to B$
B: $\ddot{p}_A$ - $\dot{s}$ - $\dot{p}_A$ - $\to C$
C: - - p_A - - - $\to A$
M: c_A^B m_B^B $i_A^B \to M$
transition: $A \to M \to B \to C \to A$



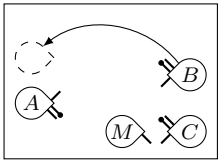
Ivy

A: p_B $\ddot{s}$ $\ddot{p}_C$ - p_B - $\to B$
B: $\dot{p}_A$ - - - p_A - $\to C$
C: - - p_A - $\dot{s}$ - $\to A$
M: i_A^B c_C^A m_C^C $\to M$
transition: $A \to M \to B \to C \to A$



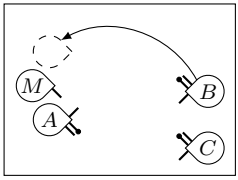
Wust

A: p_B - p_C - p_B - $\to B$
B: p_A - $\dot{s}$ $\ddot{s}$ $\ddot{p}_A$ - $\to C$
C: $\dot{s}$ - p_A - - - $\to A$
M: m_C^C i_B^B $c_A^B \to M$
transition: $A \to B \to M \to C \to A$



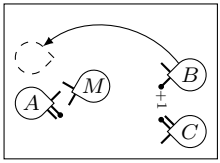
Around the World

A: p_B $\ddot{s}$ $\ddot{p}_C$ - p_B - $\to B$
B: $\dot{p}_A$ - - - $\dot{p}_A$ - $\to C$
C: - - p_A - - - $\to A$
M: i_A^B c_C^A m_A^B $\to M$
transition: $A \to M \to B \to C \to A$



Pirouettes go crazy

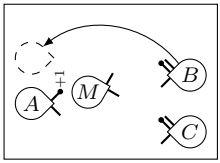
A: p_B - p_C - p_B $\ddot{s}$ $\to B$
B: $\ddot{p}_A$ - - - $\dot{p}_A$ - $\to C$
C: - - $\dot{p}_A$ - - - $\to A$
M: c_A^B m_A^C $i_A^B \to M$
transition: $A \to M \to B \to C \to A$



Chopped Up V

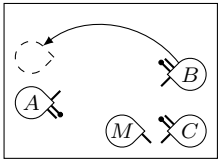
symbols: astrisk: pass is a chop

A: $\ddot{p}_B$ - p_C - p_B - $\to B$
B: p_A - - - p_A - $\to C$
C: - - $\dot{p}_A^*$ - $\dot{s}$ $\ddot{s}$ $\to A$
M: c_B^A m_A^C $i_C^C \to M$
transition: $A \to B \to C \to M \to A$



Panto

A: p_B - p_C $\ddot{s}$ $\ddot{p}_B$ - $\to B$
B: p_A - - - p_A - $\to C$
C: $\dot{s}$ - $\dot{p}_A$ - - - $\to A$
M: m_C^C i_A^C $c_B^A \to M$
transition: $A \to M \to B \to C \to A$



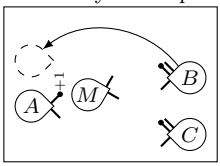
Postmen

symbols: asterisk: chop

$$\begin{array}{ll} A\colon & \ddot{p}_B \;\_\; \dot{p}^*_C \;\_\; p_B \;\_ \to B \\ B\colon & p_A \;\_\; \_ \;\_\; p_A \;\_ \to C \\ C\colon & \_ \;\_\; p_A \;\_\; \dot{s} \;\; \ddot{s} \to A \\ M\colon & \quad c^A_B \quad m^A_C \quad i^C_C \to M \end{array}$$

transition: $A \to B \to C \to M \to A$

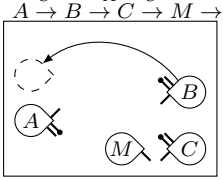
hint: It's helpful to throw the chop rather to the outside since otherwise the manipulater tends to be in the way of C's pass.



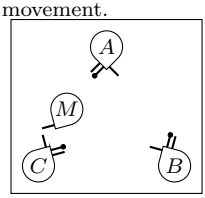
Wankle Engine

$$\begin{array}{ll} A\colon & p_B \;\_\; p_C \;\_\; p_B \;\_ \to B \\ B\colon & \dot{p}_A \;\_\; \_ \;\_\; p_A \;\_ \to C \\ C\colon & \dot{s} \;\; \ddot{s} \;\; \ddot{p}_A \;\_\; \dot{s} \;\_ \to A \\ M\colon & \quad i^C_C \quad c^C_A \, m^C_C \quad \to M \end{array}$$

transition: $A \to B \to C \to M \to A$



remark: Above displayed is the straight-forward way to juggle this pattern. However the customary variant is as below where all juggling positions are fixed and the manipulator does all the movement.

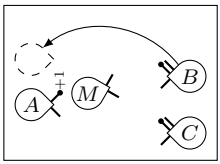


Anna-Maria

start: The first substitute of M is replaced by a carry.

$$\begin{array}{ll} A\colon & \dot{p}_B \;\_ p_C \;\; \ddot{s} \;\; \ddot{p}_B \;\_ \to B \\ B\colon & p_A \;\_\; \_ \;\_\; p_A \;\_ \to C \\ C\colon & \_ \;\_ \dot{p}_A \;\_\; \_ \;\_ \to A \\ M\colon & m^A_B \quad i^C_A \quad c^A_B \to M \end{array}$$

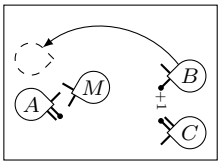
transition: $A \to M \to B \to C \to A$



Cascia

$$\begin{array}{ll} A\colon & p_B \;\_\; \dot{p}_C \;\_ p_B \;\; \ddot{s} \to B \\ B\colon & \ddot{p}_A \;\_\; \_ \;\_ \dot{p}_A \;\_ \to C \\ C\colon & \_ \;\_\; p_A \;\_ \;\_ \;\_ \to A \\ M\colon & \quad c^B_A \, m^A_C \quad i^B_A \to M \end{array}$$

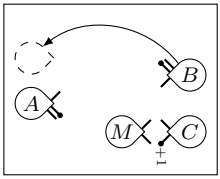
transition: $A \to M \to B \to C \to A$



Wrong one

$$\begin{array}{ll} A\colon & p_B \;\_\; p_C \;\_ \dot{p}_B \;\_ \to B \\ B\colon & p_A \;\_\; \dot{s} \;\_ p_A \;\; \ddot{s} \to C \\ C\colon & \ddot{s} \;\_\; p_A \;\_ \;\_ \;\_ \to A \\ M\colon & \quad c^C_C \, m^B_B \quad i^A_B \to M \end{array}$$

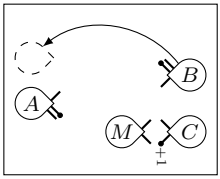
transition: $A \to B \to M \to C \to A$



Zig zag

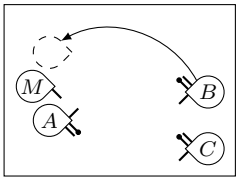
$$\begin{array}{ll} A\colon & p_B \;\_\; \dot{p}_C \;\_ \dot{p}_B \;\_ \to B \\ B\colon & p_A \;\_\; \_ \;\_ p_A \;\; \ddot{s} \to C \\ C\colon & \dot{s} \;\_\; p_A \;\_ \;\_ \;\_ \to A \\ M\colon & \quad c^C_C \, m^A_C \quad i^A_B \to M \end{array}$$

transition: $A \to B \to M \to C \to A$



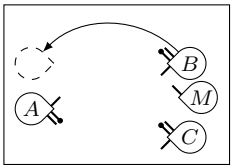
Unscrambled LB

A: p_B $\ddot{s}$ $\ddot{p}_C$ - $\dot{p}_B$ $\to B$
B: $\dot{p}_A$ - - - p_A $\to C$
C: - - p_A - - - $\to A$
M: i_A^B c_C^A m_B^A $\to M$
transition: $A \to M \to B \to C \to A$



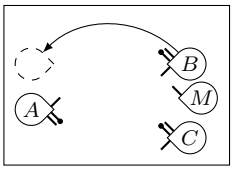
Chopped up B

A: $\dot{p}_B$ - p_C - $\dot{p}_B$ $\to B$
B: p_A $\ddot{s}$ $\ddot{s}$ - p_A $\to C$
C: - - p_A - - - $\to A$
M: i_B^A c_B^B m_B^A $\to M$
transition: $A \to B \to M \to C \to A$



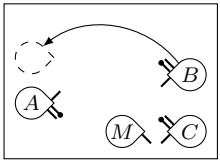
Gentle Romble

A: $\dot{p}_B$ - p_C - p_B $\to B$
B: p_A $\ddot{s}$ $\ddot{s}$ - p_A $\to C$
C: - - p_A - $\dot{s}$ - $\to A$
M: i_B^A c_B^B m_C^C $\to M$
transition: $A \to B \to M \to C \to A$



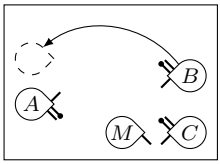
Moonwalk

A: p_B - p_C - p_B $\to B$
B: $\dot{p}_A$ - - - $\dot{p}_A$ $\to C$
C: $\dot{s}$ $\ddot{s}$ $\ddot{p}_A$ - - - $\to A$
M: i_C^C c_A^C m_A^B $\to M$
transition: $A \to B \to C \to M \to A$



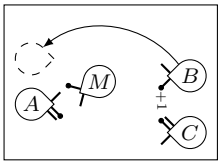
Variation on Three

A: p_B - p_C - $\dot{p}_B$ $\to B$
B: $\dot{p}_A$ - - - p_A $\to C$
C: $\dot{s}$ $\ddot{s}$ $\ddot{p}_A$ - - - $\to A$
M: i_C^C c_A^C m_B^A $\to M$
transition: $A \to B \to C \to M \to A$



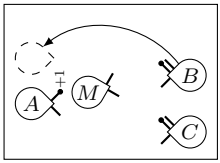
Buddy check
start: The first substitute of M is replaced by a carry.

A: p_B - p_C $\ddot{s}$ $\ddot{p}_B$ - $\to B$
B: $\dot{p}_A$ - - - p_A - $\to C$
C: - - $\dot{p}_A$ - - - $\to A$
M: m_A^B i_A^C c_B^A $\to M$
transition: $A \to M \to B \to C \to A$

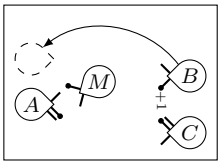


Last one
start: The first substitute of M is replaced by a carry.

A: $\dot{p}_B$ - p_C - p_B - $\to B$
B: p_A - $\dot{s}$ $\ddot{s}$ $\ddot{p}_A$ - $\to C$
C: - - p_A - - - $\to A$
M: m_B^A i_B^B c_A^B $\to M$
transition: $A \to B \to M \to C \to A$



Saibca

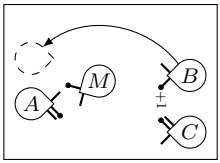


start: The first substitute of M is replaced by a carry.

$$\begin{array}{ll} A\colon & p_B \; \_ \; p_C \; \_ \; p_B \; \_ \to B \\ B\colon & \dot{p}_A \; \_ \; \dot{s} \; \dot{s} \; \ddot{p}_A \; \_ \to C \\ C\colon & \_ \; \_ \; p_A \; \_ \; \_ \; \_ \to A \\ M\colon & m_A^B \qquad i_B^B \qquad c_A^B \to M \end{array}$$

transition: $A \to B \to M \to C \to A$

Vegemite Toast

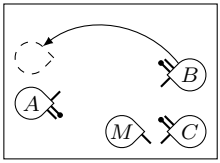


start: The first substitute of M is replaced by a carry.

$$\begin{array}{ll} A\colon & p_B \; \_ \; \dot{p}_C \; \_ \; p_B \; \_ \to B \\ B\colon & \dot{p}_A \; \_ \; \_ \; \_ \; p_A \; \_ \to C \\ C\colon & \_ \; \_ \; p_A \; \ddot{s} \; \ddot{s} \; \_ \to A \\ M\colon & m_A^B \qquad i_C^A \qquad c_C^C \to M \end{array}$$

transition: $A \to B \to C \to M \to A$

Right one

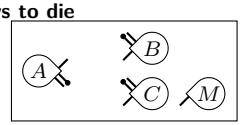


$$\begin{array}{ll} A\colon & p_B \; \_ \; \dot{p}_C \; \_ \; p_B \; \_ \to B \\ B\colon & p_A \; \_ \; \_ \; \_ \; p_A \; \_ \to C \\ C\colon & \dot{s} \; \_ \; p_A \; \ddot{s} \; \ddot{s} \; \_ \to A \\ M\colon & m_C^C \qquad i_C^A \qquad c_C^C \to M \end{array}$$

transition: $A \to B \to C \to M \to A$

13.4.2. Exchange patterns

Dumb ways to die



symbols: asterisk: pop (i. e. straight up, negligible spin) outside the selfs

remark: The base pattern is Civil war feed (2.5.2).

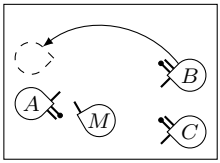
remark: After exiting the manipulation on the feedee side you start with a right handed 2-count.

transition: $A \to M \to C \to B \to A$

$$\begin{array}{ll} A\colon & p_B \; \dot{p}_C \; \_ \; p_B \; p_C \; \_ \; p_C \; p_B \; \_ \; p_C \; \ddot{p}_B \; \_ \to A \\ B\colon & p_A \; \_ \; \_ \; p_A \; \_ \; \dot{s}^* \; \_ \; \ddot{p}_A \; \_ \; \_ \; p_A \; \_ \to B \\ C\colon & \_ \; p_A \; \dot{s} \; \_ \; p_A \; \_ \; p_A \; \_ \; \dot{p}_A \; \_ \; \_ \to C \\ M\colon & \qquad i_C^A \; c_C^C \qquad i_B^B \qquad c_A^B \qquad i_A^C \; c_B^A \to M \end{array}$$

13.4.3. Various

Chippy

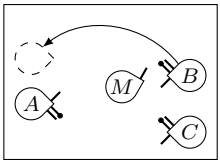


$$\begin{array}{ll} A\colon & \dot{p}_C^\dagger \; p_B \; \_ \; p_C \; p_B \; \_ \; \dot{p}_C \; \_ \to B \\ B\colon & \_ \; p_A \; \_ \; \_ \; p_A \; s^* \; \_ \; \_ \to C \\ C\colon & p_A \; \_ \; \dot{s} \; \ddot{p}_A \; \_ \; \_ \; p_A \; \_ \to A \\ M\colon & m_C^A \qquad i_C^C \; c_A^C \qquad m_C^A \to M \end{array}$$

symbols: dagger: chop; asterisk: B starts walking

transition: $A \to B \to C \to M \to A$

Zippy



$$\begin{array}{ll} A\colon & p_C \; p_B \; \_ \; p_C \; \ddot{p}_B \; \_ \; p_C \; \_ \to B \\ B\colon & \_ \; \dot{p}_A \; \_ \; \_ \; p_A \; s^* \; \dot{s} \; \_ \to C \\ C\colon & p_A \; \_ \; \_ \; \dot{p}_A \; \_ \; \_ \; p_A \; \_ \to A \\ M\colon & \qquad m_A^B \qquad i_A^C \; c_B^A \; m_B^B \to M \end{array}$$

symbols: asterisk: B starts walking

transition: $A \to M \to B \to C \to A$

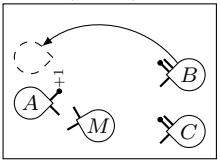
Wiebke's Waltz

$$\begin{array}{lllllllll}
A: & \dot{p}_C & p_B & - & \dot{p}_C & p_B & - & \dot{p}_C & - & \to B \\
B: & - & p_A & - & - & p_A & s^+ & - & - & \to C \\
C: & p_A & - & - & p_A & - & - & p_A & \ddot{s} & \to A \\
M: & c_A^A + m_B^A * & & & m_C^A & & & & i_C^A & \to M
\end{array}$$

transition: $A \to B \to C \to M \to A$

symbols: asterisk: instead of doing the manipulation, clink by hitting your clubs together; plus: start walking

hint: The movements are inspired by the Phoenician Waltz (12.3.2).



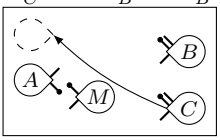
Halt mal kurz

symbols: asterisk: C starts walking; dagger: carry as in Dolby Söround (12.3.1); plus: late takeout without zip beforehand (i. e. catch the handle in mid-flight cross-handed)

remark: Throughout one cycle the manipulator spins always in the same direction.

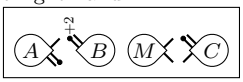
transition: $A \to C \to B \to M \to A$

$$\begin{array}{lllllllll}
A: & p_B & - & \dot{p}_C & - & \dot{p}_B & - & p_C & - & - & \to C \\
B: & p_A & - & - & - & p_A & - & - & \dot{s} & \ddot{s} & \to A \\
C: & - & - & p_A & - & - & - & p_A^* & - & - & \to B \\
M: & c_A^{A\dagger} & & m_C^A & & m_B^{A+} & & i_B^B & & & \to M
\end{array}$$



Dropabout

symbols: asterisk: pass is a dropback; plus: self replaced by a zip and then a hold with two clubs in the right hand



hint: There are exactly three consecutive long throws.

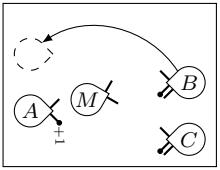
$$\begin{array}{lllllllllll}
A: & p_B & - & - & - & \dot{p}_C & - & - & - & p_C & - & - & - & \to C \\
B: & \ddot{p}_C & s^+ & - & - & p_A^* & - & - & - & p_A^* & - & \dot{s} & \ddot{s} & \to B \\
C: & p_A & - & \dot{s} & - & p_B & \ddot{s} & \ddot{s} & - & \dot{p}_B & - & - & - & \to A \\
M: & & c_C^B & m_C^C & & i_C^A & & c_C^C & m_B^C & & & i_B^B & & \to M
\end{array}$$

transition: $A \to C \to B \to M \to A$

Shakshuka

$$\begin{array}{lllllllllll}
A: & \dot{p}_B & p_C & - & p_B & \dot{s} & \ddot{p}_C & p_B & - & p_C & - & \to B \\
B: & p_A & - & - & \dot{p}_A & - & - & p_A & - & - & - & \to C \\
C: & - & p_A & - & - & - & p_A & - & - & \dot{p}_A & - & \to A \\
M: & m_B^A & & & m_A^B & i_A^A & & c_C^A & & m_C^A & & \to M
\end{array}$$

transition: $A \to M \to B \to C \to A$

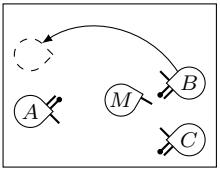


Shakshuka – dancing

$$\begin{array}{lllllllllll}
A: & p_B & p_C & - & p_B & - & p_C & \ddot{p}_B & - & p_C & - & \to B \\
B: & p_A & - & - & \dot{p}_A & - & - & p_A & - & - & \dot{s} & \to C \\
C: & - & p_A & - & - & - & \dot{p}_A & - & - & \dot{p}_A & - & \to A \\
M: & & & & m_A^B & & i_A^C & c_B^A & & m_B^B & & \to M
\end{array}$$

remark: Switching hands, i. e. starting right-handed gives a nice (nicer?) variant.

transition: $A \to M \to B \to C \to A$



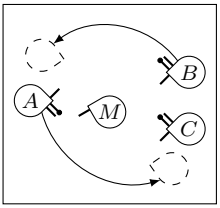
Fallen angels

$$\begin{array}{lllllllll}
A: & p_B & \dot{p}_C^* & - & - & p_C & s^+ & \to C \\
B: & p_A & s^+ & - & \dot{p}_C & - & - & \to A \\
C: & - & p_A & - & p_B & \ddot{p}_A & - & \to B \\
M: & & & m_C^A & & i_C^B & c_A^C & \to M
\end{array}$$

transition: $A \to C \to M \to B \to A$

symbols: asterisk: pass is a chop, plus: walk

remark: Walk after a right handed pass to the feeder.

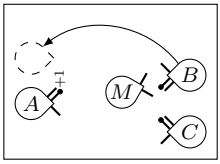


13.5. 10+1 clubs

13.5.1. Ambled-V family

Based on 10 club runaround (8.3.1). For additional hints see there.

Ambled V

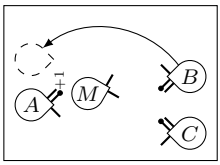


start: The first substitute of M is replaced by a carry.

A: $\ddot{p}^2_B$ - p^2_C - p^2_B - $p^2_C \to B$
B: - p^2_A - $\dot{s}$ - p^2_A - $\to C$
C: - s^2 p^2_A - $\dot{s}$ $\ddot{s}$ $\to A$
M: $c^A_B\ m^B_B$ $i^C_C \to M$

transition: $A \to B \to C \to M \to A$

Ambled Toast

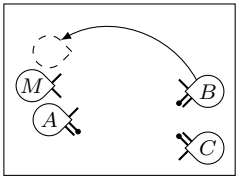


start: The first substitute of M is replaced by a carry.

A: $\dot{p}^2_B$ - $\dot{p}^2_C$ - p^2_B - $p^2_C \to B$
B: - p^2_A - - - p^2_A - $\to C$
C: - s^2 p^2_A $\ddot{s}$ $\ddot{s}$ - $\to A$
M: m^A_B i^A_C $c^C_C \to M$

transition: $A \to B \to C \to M \to A$

Ambled Ivy



symbols: asterisk: this is a wrapped i^A_C

A: p^2_B $\ddot{s}$ $\ddot{p}^2_C$ - p^2_B - $\dot{p}^2_C \to B$
B: - p^2_A - - - p^2_A - $\to C$
C: - s^2 p^2_A - $\dot{s}$ - $\to A$
M: i^{B*}_A $c^A_C\ m^C_C$ $\to M$

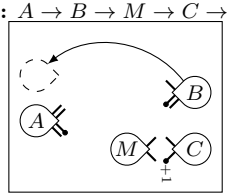
transition: $A \to M \to B \to C \to A$

Ambled Three

remark: Note the different time zone transition for C for smoother manipulation.

symbols: asterisk: For an easier variation A does $\dot{p}^1_B$ and the intercept happens one beat earlier (before the substitution is completed).

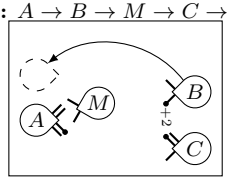
transition: $A \to B \to M \to C \to A$



A: p^2_B - p^2_C - $\dot{p}^2_B$ - $p^2_C \to B$
B: - p^2_A - - - p^2_A $\ddot{s}$ $\to C$
C: $\ddot{s}$ - $\dot{p}^3_A$ - - - $\to A$
M: $c^C_C\ m^C_A$ $i^{A*}_B \to M$

Ambled Aidan

transition: $A \to B \to M \to C \to A$



symbols: asterisk: this is an i^B_A that has wrapped around; plus: C actually throws the pass and the takeout happens by M standing next to A and catching it

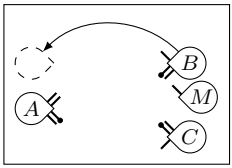
start: The first intercept is omitted.

A: p^2_B - p^2_C - p^2_B - $p^2_C \to B$
B: $\ddot{s}$ $\ddot{p}^2_A$ - - - $\dot{p}^2_A$ - $\to C$
C: - s^2 $\dot{p}^{2+}_A$ - - - $\to A$
M: i^{C*}_B c^B_A m^{C+}_A $\to M$

Ambled B

A: $\ddot{p}^2_B$ - p^2_C - p^2_B - $p^2_C \to B$
B: - p^2_A $\ddot{s}$ $\ddot{s}$ - $\dot{p}^2_A$ - $\to C$
C: - s^2 p^2_A - - - $\to A$
M: i^A_B c^B_B m^B_A $\to M$

transition: $A \to B \to M \to C \to A$

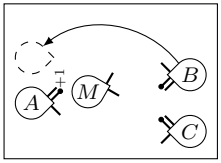


Ambled Chopped Up V

symbols: asterisk: C throws a low chop and A does the substitute by throwing a zap at A

A: $\ddot{p}^2_B$ - p^2_C - p^2_B - $p^2_C \to B$
B: - p^2_A - - - p^2_A - $\to C$
C: - s^2 $\dot{p}^{2*}_A$ - $\dot{s}$ $\ddot{s}$ $\to A$
M: c^A_B m^{C*}_A $i^C_C \to M$

transition: $A \to B \to C \to M \to A$



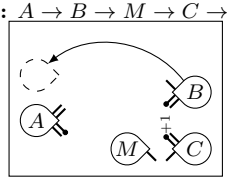
Ambled Wust

symbols: asterisk: this is a wrapped c^B_A; plus: the high crossing self has to happen early so the m^C_C is possible

start: The first carry is omitted.

A: p^2_B - p^2_C - p^2_B - $p^2_C \to B$
B: - p^2_A - $\dot{s}$ $\ddot{s}$ $\ddot{p}^2_A$ $s^{2+} \to C$
C: $\dot{s}$ - p^2_A - - - $\to A$
M: c^{C*}_B m^C_C $i^B_B \to M$

transition: $A \to B \to M \to C \to A$

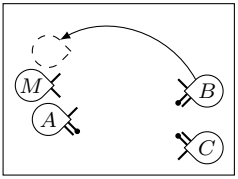


Around the Ambled World

symbols: asterisk: this is a wrapped i^A_C; plus: B and M do zaps

A: p^2_B $\ddot{s}$ $\ddot{p}^2_C$ - p^2_B - $\dot{p}^2_C \to B$
B: - p^2_A - - - $\dot{p}^{2+}_A$ - $\to C$
C: - s^2 p^2_A - - - $\to A$
M: i^{B*}_A c^A_C m^{B+}_A $\to M$

transition: $A \to M \to B \to C \to A$



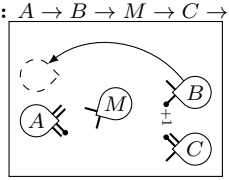
Ambled Casbia

symbols: asterisk: this is a wrapped i^B_A; plus: B throws a zap at M and M first does c^B_A by throwing a zap at A then m^B_B

start: The first intercept is omitted.

A: p^2_B - p^2_C - p^2_B - $p^2_C \to B$
B: $\ddot{s}$ $\ddot{p}^2_A$ - $\dot{s}^+$ - $\dot{p}^2_A$ - $\to C$
C: - s^2 p^2_A - - - $\to A$
M: i^{C*}_B $^+$ $\to M$

transition: $A \to B \to M \to C \to A$



Cambled V

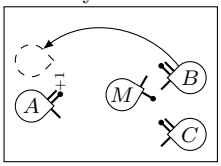
remark: Variant of Ambled V (13.5.1) with crossing passes.

A: $\ddot{p}_B$ p^2_C - p^2_B - $p^2_C \to B$
B: p^2_A - $\dot{s}$ - p^2_A - $\to C$
C: - - p^2_A - $\dot{s}$ $\ddot{s}$ $\to A$
M: c^A_B m^B_B $i^C_C \to M$

transition: $A \to B \to C \to M \to A$

throws: All double passes are cross, the single pass (which is not thrown) is straight.

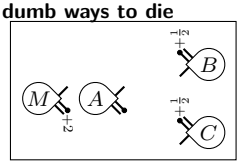
remark: Note that there is no time travel as all right hands are synchronous.



13.6. 11+1 clubs

13.6.1. Exchange patterns

Extremely dumb ways to die



start: The club of the first intercept of the manipulator is already in the hands of the manipulator.

throws: A crossing; B, C straight

$$
\begin{array}{lccccccccccccccccc}
A\colon & p_B^2 & \dot{p}_C^{2+} & - & p_B^2 & & p_C^2 & - & p_C^2 & p_B^2 & - & p_C^2 & p_B^2 & - & \to A \\
B\colon & - & p_A^2 & - & - & & p_A^2 & - & - & \dot{s}^* & \ddot{p}_A^2 & - & - & p_A^2 & \to B \\
C\colon & - & - & p_A^2 & \ddot{s} & & - & p_A^2 & - & p_A^2 & - & - & \dot{p}_A^2 & - & \to C \\
M\colon & & i_A^C & & (c+i)_C^{A\dagger} & & c_C^C & & & & i_B^B & & & c_A^B & \to M
\end{array}
$$

symbols: asterisk: pop (i. e. straight up, negligible spin) outside the selfs; plus: this pass is not thrown, but carried (meaning that this should have both a single and a double dot annotation); dagger: the carried pass is intercepted, meaning that it is simply held on to

remark: A variation of Dumb ways to die (13.4.2)

transition: ???

14. 5 jugglers

14.1. 6+1 clubs

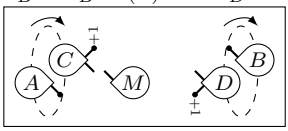
14.1.1. Various

Leipziger Allerlei

remark: A combination of Roundabout (12.3.1) with two Waltz (7.1.1). A and C as well as B and D perform a Waltz. Only A, B and M switch places; C and D always remain in their roles.

remark: The intercept is unorthodox and happens without any clubs changing hands. The new manipulator (formerly B) flips both clubs in her hands.

$$
\begin{array}{lccccccc}
A\colon & \dot{p}_B & & - & - & p_C & & \to B \\
B\colon & p_A & & - & \ddot{s} & \ddot{p}_D & & \to A \\
C\colon & - & p_A & p_D & & - & & \to D \\
D\colon & - & \dot{p}_B & p_C & & - & & \to C \\
M\colon & m_B^A & m_B^D & i_{(B)} & & c_D^B & & \to M
\end{array}
$$

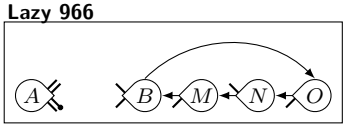


transition: ???

14.2. 6+3 clubs

14.2.1. Lazy patterns

Extra Lazy 966



throws: A throws crossing doubles

remark: The carry is done cross-handed.

14.2.2. Various

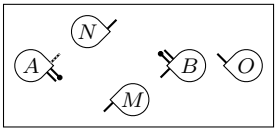
Göttinger Opernball

remark: A combination of three times Phoenician Waltz (12.3.2).

$$
\begin{array}{lccccc}
A\colon & \dot{p}_B & p_B & - & \to B \\
B\colon & \dot{p}_A & \ddot{p}_A & - & \to A \\
M\colon & & \dot{m}_B^A & & \to N \\
N\colon & & m_A^B & & \to O \\
O\colon & & i_B^A & c_A^B & \to M
\end{array}
$$

remark: Carry to the hand the intercepted pass came from.

$$
\begin{array}{lccccc}
A\colon & \dot{p}^2 & - & - & & \to A \\
B\colon & - & \ddot{p}^2 & - & & \to B \\
M\colon & & & i_B^A & & \to N \\
N\colon & & c_A^B & & & \to O \\
O\colon & & & & & \to M
\end{array}
$$

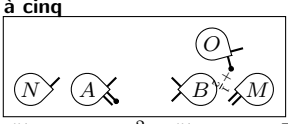


transition: $A \to B \to M \to N \to O \to A$

14.3. 7+3 clubs

14.3.1. Various

Manège à cinq



$$\begin{array}{lccccccc} A\colon & \ddot{p}^* & & s & & s^2 & \dot{p}^* & s \to B \\ B\colon & & s^2 & & \ddot{p}^* & & s \quad s^2 & \to A \\ M\colon & & & i_B^A & & & c_A^B & \to M \\ N\colon & c_A^{B+} & & & & & i_A^B & \to N \\ O\colon & & i_A^B & & c_B^A & & & \to O \end{array}$$

transition: $A \to O \to N \to B \to M \to A$
symbols: asterisk: all passes are intercepted as well as carried; plus: wrapped around carry to B
start: A starts on the first self. B is immediately intercepted and flips her clubs.
throws: Left hand side straight; right hand side crossing.
remark: Walk analogously to the carried pass.
remark: The carry is done cross-handed.
remark: Extended version of Manège à trois (12.4.1).
hint: Go to the opposite side as the person in front of you did. Each sequence is: self, heff, flip.

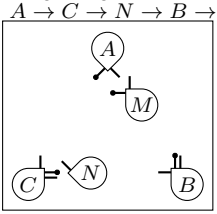
14.4. 9+2 clubs

14.4.1. Various

Muckabout
remark: This is a 3-count feast 6.1.1 combined with two 6-count roundabouts **??**
hint: It helps to think of the two different manipulations in terms of inside and outside instead of left and right as the latter are rather confusing.
hint: To improve the timing it's advisable to always do a pirouette on the intercept.
remark: It would be more natural to start the pattern on a pass, but the density of actions does not allow for this.

$$\begin{array}{lccccccc} A\colon & - & \dot{p}_B & - & - & p_C & - & \to C \\ B\colon & - & p_A & - & \dot{s} & \ddot{s} & \ddot{s} & \to A \\ C\colon & \dot{s} & \ddot{s} & \ddot{s} & - & \dot{p}_A & - & \to B \\ M\colon & c_A^A & m_B^A & & & i_B^B & & \to M \\ N\colon & & i_C^C & & c_C^C & m_A^C & & \to N \end{array}$$

transition: $A \to C \to N \to B \to M \to A$

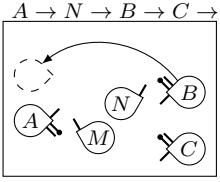


Chippy Zippy

$$\begin{array}{lccccccc} A\colon & p_C^\dagger & p_B & - & p_C & \ddot{p}_B & - & \dot{p}_C & - \to B \\ B\colon & - & \dot{p}_A & - & - & p_A & s^* & \dot{s} & - \to C \\ C\colon & p_A & - & \dot{s} & \ddot{p}_A & - & - & p_A & - \to A \\ M\colon & m_C^A & & & i_C^C & c_{A+}^C & & m_C^A & \to M \\ N\colon & & m_A^B & & & i_A^C & c_B^A & m_B^B & \to N \end{array}$$

symbols: dagger: chop; asterisk: B starts walking; plus: carry to the person who was N and just intercepted A

transition: $A \to N \to B \to C \to M \to A$



14.5. 10+2 clubs

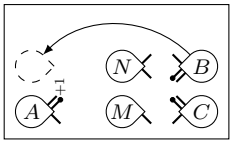
14.5.1. Various

We Will Rock You

$$\begin{array}{ll} A\colon & \ddot{p}^2_B \;\_\; p^2_C \to B \\ B\colon & \_\; p^2_A \;\_\; \to C \\ C\colon & \dot{s}^{2+} \quad \ddot{s} \to A \\ M\colon & i^{C*}_C \quad \to N \\ N\colon & c^A_B \to M \end{array}$$

symbols: asterisk: C and M do two clinks afterwards by hitting their clubs; plus: double crossing self from the right hand, there follows a gap (basically a hold) and a self from the left hand

transition: $A \to B \to C \to N \to M \to A$



remark: Actual positions are more like a pentagon without too much running around.

remark: Based on 10 club runaround (8.3.1).

start: It may be more comfortable to add an additional artifical self for everybody in front.

14.6. 12+1 clubs

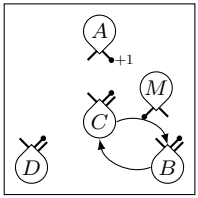
14.6.1. Various

Kittens

remark: Based on Havana Feed (9.2.1).

symbols: asterisk: walk; plus: turn 120° counter-clockwise

transition: $A \to B \to C \to D \to M \to A$



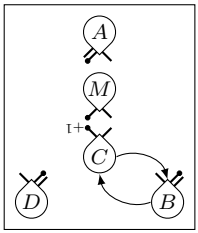
$$\begin{array}{ll} A\colon & \ddot{p}_B \;\_\; p_C \;\_ p_D \;\_ p_B \;\_ p_C \;\_ \to B \\ B\colon & p^*_A \;\_\; \dot{s} \;\_\;\_\;\_ p_A \;\_\;\_ s^+ \to C \\ C\colon & \_\;\_\; p^*_A \;\_\;\_\;\_\;\_ \;\_ p_A \;\_ \to D \\ D\colon & \_\;\_\;\_\;\_ p_A \;\_ \dot{s} \;\_ \dot{s} \;\; \ddot{s} \to A \\ M\colon & \quad c^A_B \; m^B_B \qquad m^D_D \qquad i^D_D \to M \end{array}$$

Cubs

remark: Based on Havana Feed (9.2.1).

symbols: asterisk: walk; plus: turn 120° counter-clockwise

transition: $A \to B \to M \to C \to D \to A$



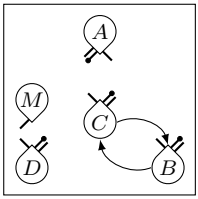
$$\begin{array}{ll} A\colon & p_B \;\_\; p_C \;\_ \dot{p}_D \;\_ p_B \;\_ p_C \;\_ \to B \\ B\colon & p^*_A \;\_\;\_\;\_\;\_ p_A \;\_ \dot{s} \;\; \ddot{s}^+ \to C \\ C\colon & \dot{s} \;\_ \dot{p}^*_A \;\_\;\_\;\_\;\_ p_A \;\_ \to D \\ D\colon & \_\;\_\;\_\;\_ p_A \;\_\;\_\;\_\;\_ \;\_ \to A \\ M\colon & \quad c^C_C \; m^C_A \quad m^A_D \qquad\qquad i^B_B \to M \end{array}$$

Puppies

remark: Based on Havana Feed (9.2.1).

symbols: asterisk: walk; plus: turn 120° counter-clockwise

transition: $A \to M \to B \to C \to D \to A$



$$
\begin{array}{ll}
A\colon & p_B \;\text{-}\; p_C \;\text{-}\; p_D \;\text{-}\; p_B \;\ddot{s}\; \ddot{p}_C \;\text{-} \to B \\
B\colon & p_A^* \;\text{-}\; \text{-} \;\text{-}\; \text{-} \;\text{-}\; \dot{p}_A \;\text{-}\; \text{-} \;s^+ \to C \\
C\colon & \text{-} \;\text{-}\; p_A^* \;\text{-}\; \text{-} \;\text{-}\; \text{-} \;\text{-}\; p_A \;\text{-} \to D \\
D\colon & \dot{s} \;\text{-}\; \dot{s} \;\text{-}\; \dot{p}_A \;\text{-}\; \text{-} \;\text{-}\; \text{-} \;\text{-} \to A \\
M\colon & m_D^D \quad m_D^D \quad m_A^D \qquad i_A^B \quad c_C^A \to M
\end{array}
$$

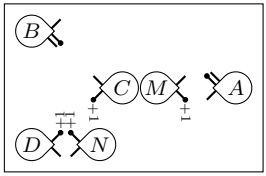
15. 6 jugglers

15.1. 12+2 clubs

15.1.1. Various

Y you follow me

remark: On beat 2 as well as on beat 4/5 the manipulators are exchanging virtual clubs by satisfying the gap left by the other manipulator.
symbols: asterisk: place on shoulder
transition: $A \to D \to N \to B \to C \to M \to A$



$$
\begin{array}{ll}
A\colon & p_B \;\text{-}\; \dot{s} \;\ddot{s}\; \ddot{p}_B \;\text{-}\; \text{-} \;\text{-}\; p_B \;\text{-}\; \text{-} \;\text{-} \to A \\
B\colon & p_C \;\text{-}\; \text{-} \;\text{-}\; \dot{p}_C \;\text{-}\; \dot{s} \;\ddot{s}\; \ddot{p}_C \;\text{-}\; \text{-} \;\text{-} \to B \\
C\colon & \ddot{p}_D \;\text{-}\; \text{-} \;\text{-}\; p_D \;\text{-}\; \text{-} \;\text{-}\; \dot{p}_D \;\text{-}\; \dot{s} \;\ddot{s} \to C \\
D\colon & \ddot{p}_A \;\text{-}\; \text{-} \;\text{-}\; p_A \;\text{-}\; \text{-} \;\text{-}\; p_A \;\text{-}\; \dot{s} \;\ddot{s} \to D \\
M\colon & \quad c_A^C \quad i_A^A \qquad c_C^{A*} \qquad m_D^C \qquad i_D^D \to N \\
N\colon & \quad c_D^D \qquad m_B^B \qquad i_B^B \quad c_C^B \quad i_C^C \to M
\end{array}
$$

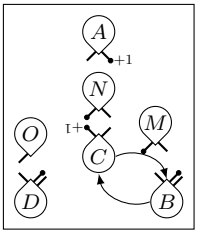
16. 7 jugglers

16.1. 12+3 clubs

16.1.1. Various

Animal crossing

remark: The combination of Kittens (14.6.1), Cubs (14.6.1) and Puppies (14.6.1).
symbols: asterisk: walk; plus: turn 120° counter-clockwise
transition: $A \to O \to B \to N \to C \to D \to M \to A$



$$
\begin{array}{ll}
A\colon & \ddot{p}_B \;\text{-}\; p_C \;\text{-}\; \dot{p}_D \;\text{-}\; p_B \;\ddot{s}\; \ddot{p}_C \;\text{-} \to B \\
B\colon & p_A^* \;\text{-}\; \dot{s} \;\text{-}\; \text{-} \;\text{-}\; \dot{p}_A \;\text{-}\; \dot{s} \;\ddot{s}^+ \to C \\
C\colon & \ddot{s} \;\text{-}\; \dot{p}_A^* \;\text{-}\; \text{-} \;\text{-}\; \text{-} \;\text{-}\; p_A \;\text{-} \to D \\
D\colon & \dot{s} \;\text{-}\; \dot{s} \;\text{-}\; \dot{p}_A \;\text{-}\; \dot{s} \;\text{-}\; \dot{s} \;\ddot{s} \to A \\
M\colon & \quad c_B^A \; m_B^B \qquad m_D^D \qquad i_D^D \to M \\
N\colon & \quad c_C^C \; m_A^C \quad m_D^A \qquad i_B^B \to N \\
O\colon & m_D^D \quad m_D^D \quad m_A^D \qquad i_A^B \quad c_C^A \to O
\end{array}
$$

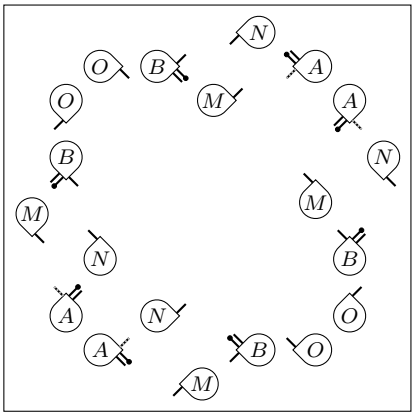
17. 20 jugglers

17.1. 24+12 clubs

17.1.1. Various

Götterball

remark: A combination of four times Göttinger Opernball (14.2.2). Each passer switches pattern right before doing the intercept. Half the passers are rotating clockwise and the other half counter-clockwise through the big pattern.


N
O
B
A
O
M
A
B
N
M
M
N
B
A
N
O
A
B
O
M

Part IV.

Additional Topics

18. Interfaces

Here we list patterns which are compatible with each other.

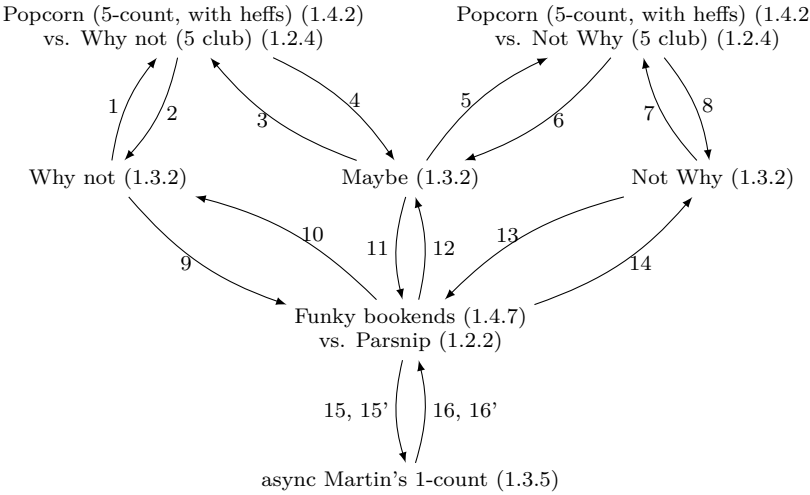
- Heffalot (1.2.3), Popcorn (7-count) (1.4.2)
- First zap (1.2.3), 56662 (1.2.3), Why not (5 club) (1.2.4), Not Why (5 club) (1.2.4), Popcorn (5-count, with triple) (1.4.2), Popcorn (5-count, with heffs) (1.4.2), That's y (9 clubs) (1.6.3)
- Hop (1.2.2), Killer bunny (1.2.2), Glass elevator (1.2.2), 663 (1.2.2), Argonaut (1.2.3), Inverse Argonaut (1.2.3), 3-count (7 clubs) (1.4.1), French 3-count (1.4.2), Golden Fleece (1.4.5), Odd scots (1.4.7), 89a (1.6.3)
- Maybe (1.3.2), Maybe not (1.3.5), Call me (1.5.4)
- No More Why (1.4.3), 9788827 (1.4.7)
- 1-count (5 clubs) (1.2.1), 1-count (7 clubs) (1.4.1), Holy grail (1.4.5), 1-count (9 clubs) (1.6.1)
- Skip (1.2.5), 558444 (1.2.5), 556668 (1.3.6), 972486 (1.3.6), 778824 (1.3.6), 772686 (1.3.6), 996426 (1.3.6), 978888 (1.5.2)
- Inverted parsnip (1.1.2), Why not (1.3.2), Not Why (1.3.2), 75666 (1.3.3), 45678 (1.3.3), Why not zaps (1.3.3), Not likely (1.3.5), async Jim's 2-count (1.3.5), 99688 (1.4.7), That's y (1.5.4), 6789a (1.5.4)
- Flipalot (1.2.2), Why not (7 clubs) (1.4.3), Not Why (7 clubs) (1.4.3), Aspirin (1.4.7), 9968827 (1.4.7), async Jim's 2-count, 7 clubs (1.4.7), Gute Nacht (1.4.7), Long Island (1.4.7)
- Maybe (7clubs) (1.4.3), Tequila Sunrise (1.4.7)
- 552 (1.1.1), Baby dragon (1.3.3), Dragon (1.3.3), Jason (1.3.3), 972 (1.3.5), async Jim's 1-count (1.3.5), Coral A (1.4.7), Coral B (1.4.7), Pass pass self (8 clubs) (1.5.4), 789 (1.5.4)
- 9799224 (1.3.5), 9968897 (1.5.4)
- Vitoria (1.4.7), Gasteiz (1.4.7), Espresso Martini (1.4.7)
- Parsnip (1.2.2), 97522 (1.2.3), 56789 (1.4.5), Funky bookends (1.4.7), Funky bookfriends (1.4.7)
- Jonix (1.3.6), 966777 (1.4.6), 974778 (1.4.6)
- Odnom (1.3.5), 9797226 (1.3.5), async Mild Madness (1.3.5), 9647772 (1.3.5), Das Gedicht (1.5.4), Vitoria (8 clubs) (1.5.4)
- 75756 (1.3.3), async Martin's 1-count (1.3.5)
- 7772255 (1.2.3), Mojito (1.4.7), Caipirinha (1.4.7), Cuba Libre (1.4.7)
- 1-count (6 clubs) (1.3.1), 1-count (8 clubs) (1.5.1), High-low (8 clubs) (1.5.4), 8 clubs crossing (1.5.4), Ultimates high-low (9 clubs) (1.6.3)
- 2-count (6 clubs) (1.3.1), 2-count (8 clubs) (1.5.1)
- Pass pass self (7 clubs) (1.4.6), Not Pass pass self (7 clubs) (1.4.6), Frost's frenzy (1.4.6)

- 2-count (7 clubs) (1.4.1), 2-count (9 clubs) (1.6.1)

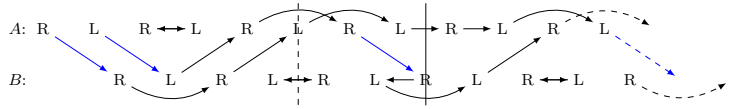
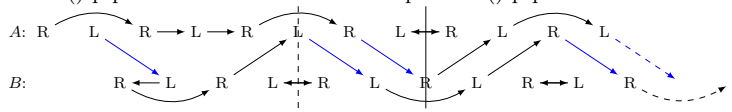
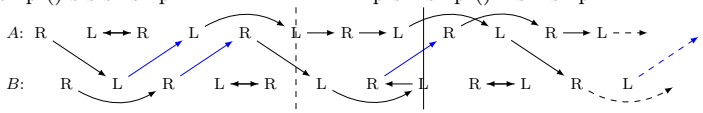
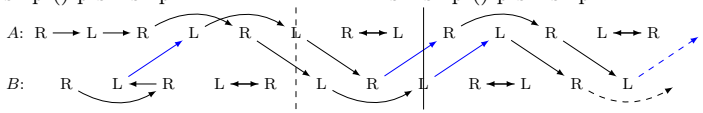
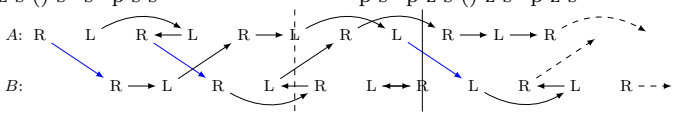
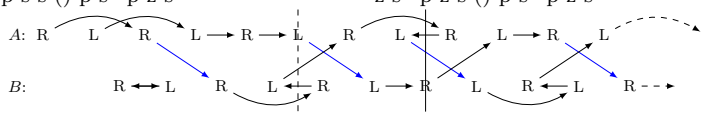
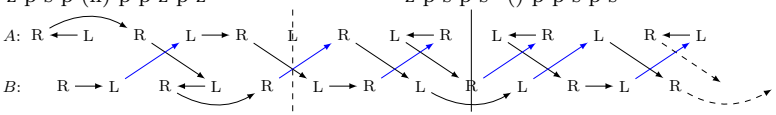
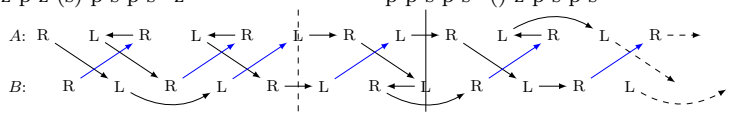
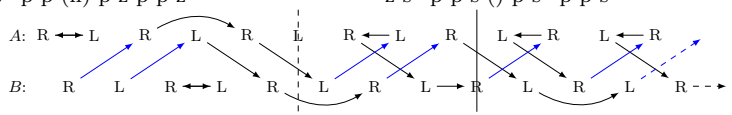
19. Programming

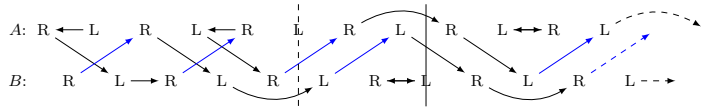
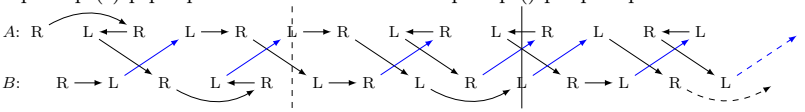
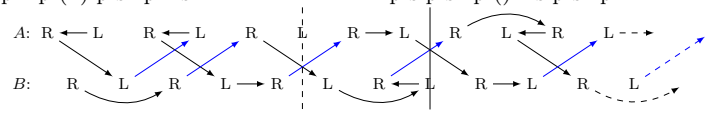
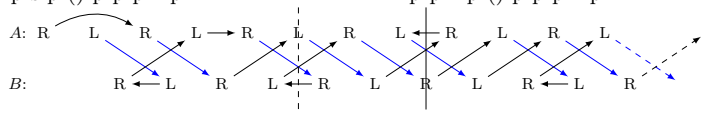
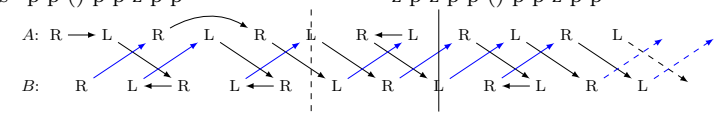
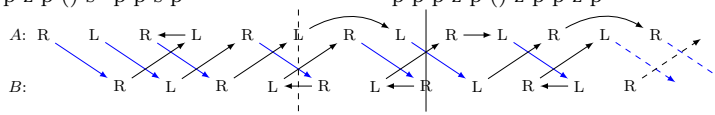
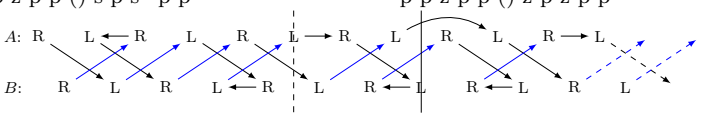
This chapter contains ways to change some passing pattern while juggling them in an uncoordinated fashion. That is one juggler can initiate an unannounced transition into another pattern. This is often referred to as hijacking. The basic mechanism is to throw at a hand which would otherwise receive a zip or omit a throw forcing a zip. The programmed partner should in general not need to think about the programming, but do the right things intuitively. We will present either a single programming opportunity or a diagram with multiple opportunities. The actual programming instructions will be given as a sequence of throws. The transitioning sequence is presented in brackets, before it is one cycle of the original pattern and afterwards comes one cycle of the new pattern. Additionally the reaction by the partner will be listed but should normally not be needed.
In the causal diagrams the start of the transition is marked with a dashed line and the end with a solid line.

19.1. Period five patterns (6 clubs)

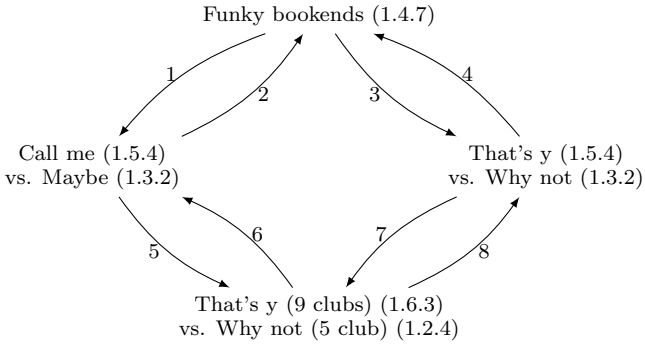


no.	program	reaction
1	p s^2 z p s () s s^2 s^2 p s	p s^2 z p s () z s^2 z p s
2	s s^2 s^2 p s () p s^2 z p s	z s^2 z p s () p s^2 z p s
3	p p s z s^2 () s^2 p s s s^2	p p s z s^2 () z p s z s^2

no.	program	reaction
		
4	s^2 p s s s^2 () p p s z s^2	z p s z s^2 () p p s z s^2
		
5	p s z s^2 p () s s s^2 s^2 p	p s z s^2 p () z s z s^2 p
		
6	s s s^2 s^2 p () p s z s^2 p	z s z s^2 p () p s z s^2 p
		
7	p s^2 p z s () s^2 s^2 p s s	p s^2 p z s () z s^2 p z s
		
8	s^2 s^2 p s s () p s^2 p z s	z s^2 p z s () p s^2 p z s
		
9	s^2 z p s p (h) p p z p z	z p s p s^2 () p p s p s^2
		
10	p p z p z (s) p s p s^2 z	p p s p s^2 () z p s p s^2
		
11	s z s^2 p p (h) p z p p z	z s^2 p p s () p s^2 p p s
		
12	p p z p z (h) s^2 p p s z	p s^2 p p s () z s^2 p p s

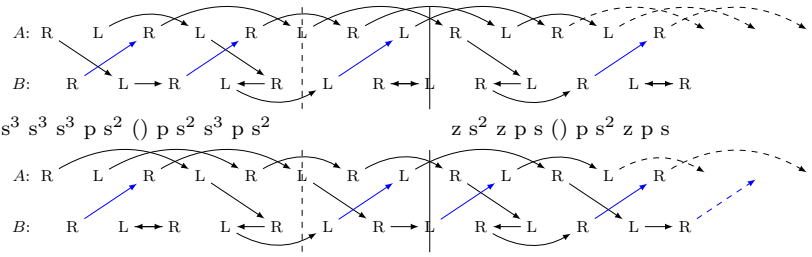
no.	program	reaction
		
13	s^2 p z s p (s) p p z p z	z s p s^2 p () p s p s^2 p
		
14	p z p z p (h) p s^2 p z s	p s p s^2 p () z s p s^2 p
		
15	s^2 p p s p () p p p z p	z p p z p () p p p z p
		
15'	s p s^2 p p () p p z p p	z p z p p () p p z p p
		
16	p p p z p () s^2 p p s p	p p p z p () z p p z p
		
16'	p p z p p () s p s^2 p p	p p z p p () z p z p p
		

19.2. Period five patterns (7 clubs)

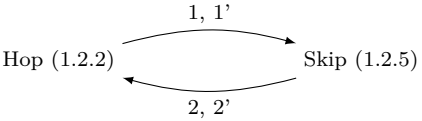


no.	program	reaction
1	p s^2 p p s () s^3 s^3 p p s	p s^2 p p s () z s^2 p p s
2	s^3 s^3 p p s () p s^2 p p s	z s^2 p p s () p s^2 p p s
3	p p s p s^2 () s^3 p s^2 p s^2	p p s p s^2 () z p s p s^2
4	s^3 p s^2 p s^2 () p p s p s^2	z p s p s^2 () p p s p s^2
5	p p s s^3 s^3 () s^3 p s^2 s^3 s^3	p p s z s^2 () z p s z s^2
6	s^3 p s^2 s^3 s^3 () p p s s^3 s^3	z p s z s^2 () p p s z s^2
7	p s^2 s^3 p s^2 () s^3 s^3 s^3 p s^2	p s^2 z p s () z s^2 z p s

no.	program	reaction
8	$s^3\ s^3\ s^3\ p\ s^2\ ()\ p\ s^2\ s^3\ p\ s^2$	$z\ s^2\ z\ p\ s\ ()\ p\ s^2\ z\ p\ s$

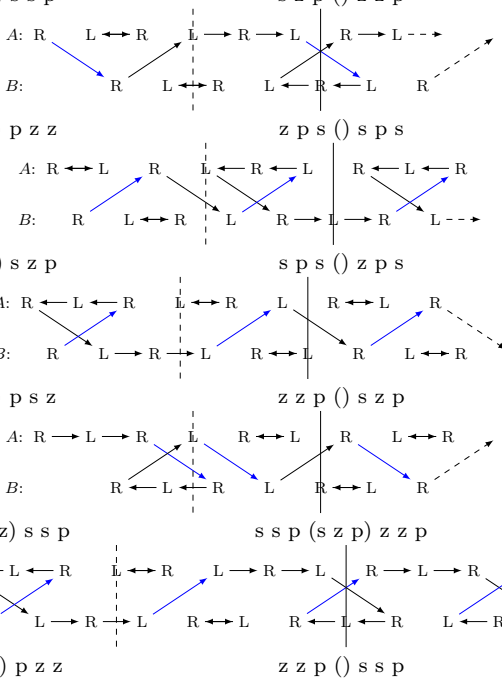


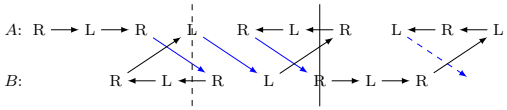
19.3. Period three patterns (5 clubs)



Note that Skip (1.2.5) is asymmetric and the transitions can be combined to switch sides as noted below.

no.	program	reaction
1	p s z () s s p	s z p () z z p
1'	s z p () p z z	z p s () s p s
2	p z z () s z p	s p s () z p s
2'	s s p () p s z	z z p () s z p
2 + 1	p z z (s z) s s p	s s p (s z p) z z p
2' + 1'	s s p (p) p z z	z z p () s s p



no.	program	reaction
		

19.4. Period three patterns (6 clubs)

Golden Fleece (1.4.5) vs. Argonaut (1.2.3)

1 2

Jason (1.3.3)

3 4

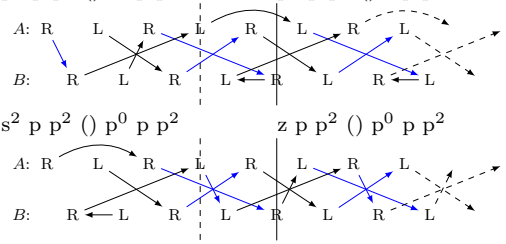
Golden Fleece (1.4.5) vs. Inverse Argonaut (1.2.3)

no.	program	reaction
1	$p^0\ p^0\ s^2\ ()\ s^2\ p^0\ s^2$	$p^0\ p^0\ s^2\ ()\ z\ p^0\ s^2$
2	$s^2\ p^0\ s^2\ ()\ p^0\ p^0\ s^2$	$z\ p^0\ s^2\ ()\ p^0\ p^0\ s^2$
3	$p^0\ s^2\ p^0\ ()\ s^2\ s^2\ p^0$	$p^0\ s^2\ p^0\ ()\ z\ s^2\ p^0$
4	$s^2\ s^2\ p^0\ ()\ p^0\ s^2\ p^0$	$z\ s^2\ p^0\ ()\ p^0\ s^2\ p^0$

19.5. Period three patterns (7 clubs)

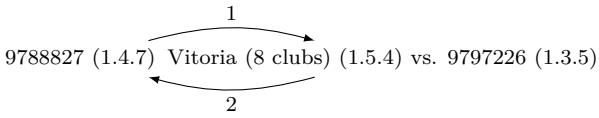
Holy grail (1.4.5) 1 789 (1.5.4) vs. 972 (1.3.5) 2

no.	program	reaction
1	$p^0\ p\ p^2\ ()\ s^2\ p\ p^2$	$p^0\ p\ p^2\ ()\ z\ p\ p^2$
2	$s^2\ p\ p^2\ ()\ p^0\ p\ p^2$	$z\ p\ p^2\ ()\ p^0\ p\ p^2$

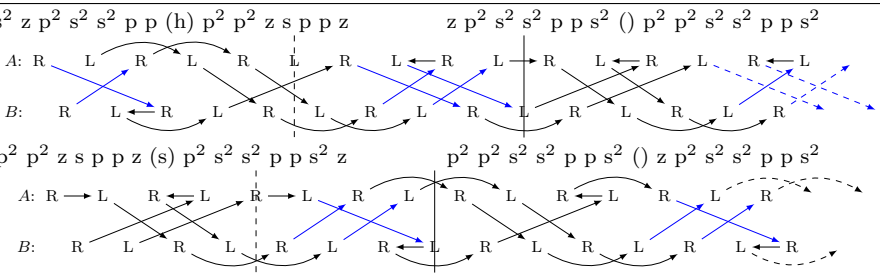


19.6. Period seven patterns (7 clubs)

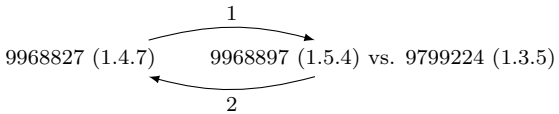
19.6.1. Variant A



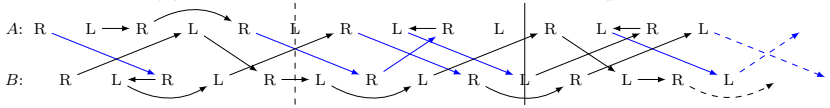
no.	program	reaction
1	$s^2\ z\ p^2\ s^2\ s^2\ p\ p\ (h)\ p^2\ p^2\ z\ s\ p\ p\ z$	$z\ p^2\ s^2\ s^2\ p\ p\ s^2\ ()\ p^2\ p^2\ s^2\ s^2\ p\ p\ s^2$
2	$p^2\ p^2\ z\ s\ p\ p\ z\ (s)\ p^2\ s^2\ s^2\ p\ p\ s^2\ z$	$p^2\ p^2\ s^2\ s^2\ p\ p\ s^2\ ()\ z\ p^2\ s^2\ s^2\ p\ p\ s^2$



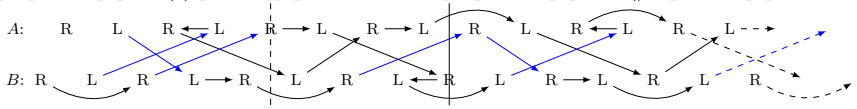
19.6.2. Variant B



no.	program	reaction
1	$s^2\ z\ p^2\ s\ s^2\ p\ p^2\ (h)\ p^2\ p^2\ z\ h\ p\ p^2\ z$	$z\ p^2\ s\ s^2\ p\ p^2\ s^2\ ()\ p^2\ p^2\ s\ s^2\ p\ p^2\ s^2$



no.	program	reaction
2	$p^2\ p^2\ z\ h\ p\ p^2\ z\ (s)\ p^2\ s\ s^2\ p\ p^2\ s^2\ z$	$p^2\ p^2\ s\ s^2\ p\ p^2\ s^2\ ()\ z\ p^2\ s\ s^2\ p\ p^2\ s^2$

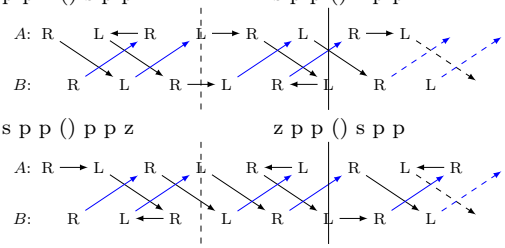


19.7. Various

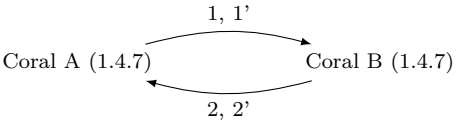
19.7.1. Jonix

Switching sides in Jonix (1.3.6) can be done as follows.

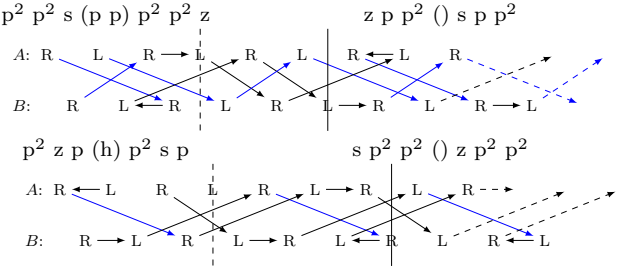
no.	program	reaction
1	p p z () s p p	s p p () z p p
2	s p p () p p z	z p p () s p p

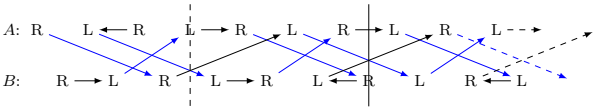
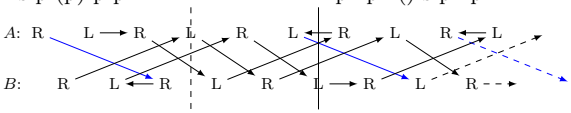


19.7.2. Coral A and B



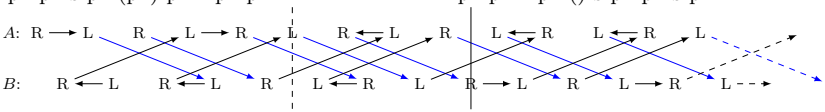
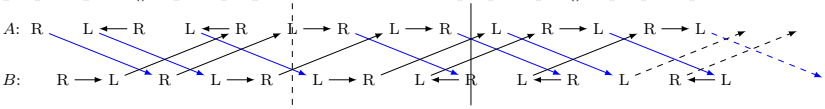
no.	program	reaction
1	$p^2\ p^2\ s\ (p\ p)\ p^2\ p^2\ z$	$z\ p\ p^2\ ()\ s\ p\ p^2$
1'	$p^2\ z\ p\ (h)\ p^2\ s\ p$	$s\ p^2\ p^2\ ()\ z\ p^2\ p^2$
2	$p^2\ p^2\ z\ ()\ s\ p^2\ p^2$	$s\ p\ p^2\ ()\ z\ p\ p^2$



no.	program	reaction
		
2'	p^2 s p (p) p p^2 z	z p^2 p^2 () s p^2 p^2
		

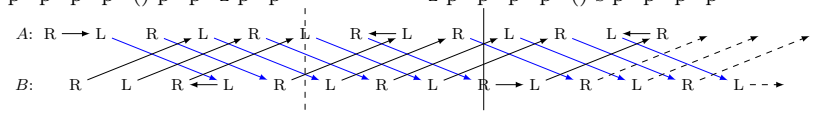
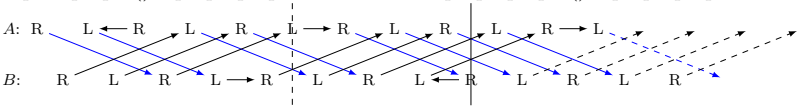
19.7.3. Dash 3

Switching sides in Dash 3 (1.4.6) can be done as follows.

no.	program	reaction
1	s p^2 p^2 s p^2 (p^2) p^2 z p^2 p^2 z	z p^2 p^2 z p^2 () s p^2 p^2 s p^2
		
2	p^2 p^2 z p^2 z () s p^2 s p^2 p^2	s p^2 p^2 s p^2 () z p^2 p^2 z p^2
		

19.7.4. Ariel Ultra

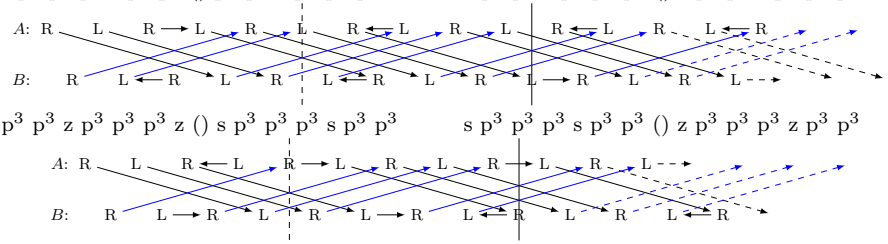
Switching sides in Ariel Ultra (1.5.2) can be done as follows.

no.	program	reaction
1	s p^2 p^2 p^2 p^2 () p^2 p^2 z p^2 p^2	z p^2 p^2 p^2 p^2 () s p^2 p^2 p^2 p^2
		
2	p^2 p^2 z p^2 p^2 () s p^2 p^2 p^2 p^2	s p^2 p^2 p^2 p^2 () z p^2 p^2 p^2 p^2
		

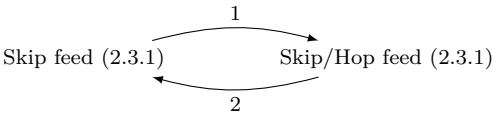
19.7.5. Persil Mega Pearls

Switching sides in Persil Mega Pearls (1.6.2) can be done as follows.

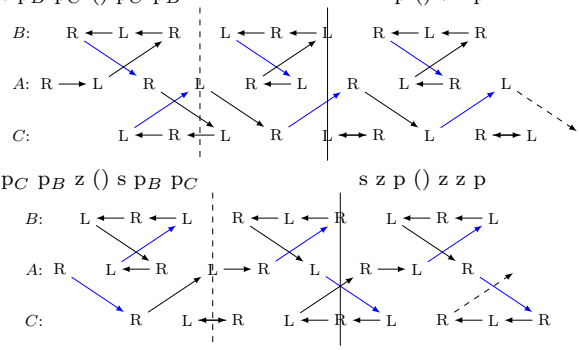
no.	program	reaction
1	s p^3 p^3 p^3 s p^3 p^3 () p^3 p^3 z p^3 p^3 p^3 z	z p^3 p^3 z p^3 p^3 p^3 () s p^3 p^3 s p^3 p^3 p^3
2	p^3 p^3 z p^3 p^3 p^3 z () s p^3 p^3 p^3 s p^3 p^3	s p^3 p^3 p^3 s p^3 p^3 () z p^3 p^3 p^3 z p^3 p^3



19.7.6. Skip and Hop feed



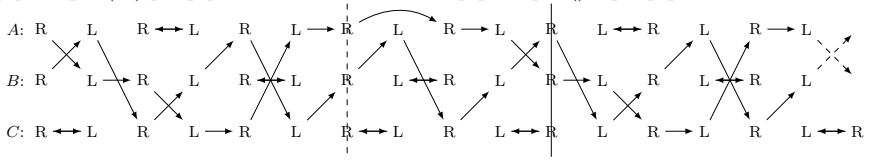
no.	program	reaction
1	s p_B p_C () p_C p_B z	z z p () s z p
2	p_C p_B z () s p_B p_C	s z p () z z p



19.7.7. La Vache Qui Rit

Switching chirality in La Vache Qui Rit (2.4.1) can be done as follows.

no.	program	reaction
1	p p s z p s (s^2) p s p p s z	p p s z p s () z p s p p s



Index

1-count (5 clubs), 3
1-count (6 clubs), 7
1-count (7 clubs), 15
1-count (8 clubs), 23
1-count (9 clubs), 26
1-count Bruno, 38
1-count reverse spotlight, 11
1-count spotlight, 11
10 club runaround, 39
10-club Bruno, 40
2-count (6 clubs), 7
2-count (7 clubs), 15
2-count (8 clubs), 23
2-count (9 clubs), 26
2-count/4-count feed, 29
3-count (6 clubs), 7
3-count (7 clubs), 15
4-count (6 clubs), 7
4-count (7 clubs), 15
45678-about, *see* Suwecide Bunny
5 person Shamrock, *see* Fünfer-Kleeblatt
5 person Shamrock plus, *see* Fünfer-Extrablatt
567-About, 57
6789a, 25
777-About, 58
8 clubs crossing, 26
89a, 27
966-About, 58

552, 3
663, 4
774, *see* async Jim's 1-count
789, 24
825, *see* Inverse Argonaut
852, *see* Argonaut
855, *see* Jason
885, *see* Golden Fleece
972, 12
45678, 9
56662, 4
56789, 17
75666, 9
75756, 9
77466, *see* async Jim's 2-count
77772, *see* async Martin's 1-count
97522, 6
99688, 21
556668, 14
558444, 6
772686, 14
778824, 14
966777, 18
972486, 14
974778, 19
978888, 23
996426, 14
7772255, 5
7777266, *see* async Mild Madness
9647772, 13
9788827, 21
9797226, 12
9799224, 12
9964966, *see* async Jim's 2-count, 7 clubs
9968827, 21
9968897, 25
7747746677466, *see* async Brainstorm

AA799, 30
Aidan, *see* Pirouettes go crazy
Ambidextrous Bruno, 38
Ambled Aidan, 67
Ambled B, 68
Ambled Casbia, 68
Ambled Chopped Up V, 68
Ambled Ivy, 67
Ambled Three, 67
Ambled Toast, 67
Ambled V, 67
Ambled Wust, 68
Animal crossing, 72
Anna-Maria, 63
Argonaut, 5
Ariel Ultra, 24
Around the Ambled World, 68
Around the World, 62
Aspirin, 19
async Brainstorm, 13
async Jim's 1-count, 13
async Jim's 2-count, 13
async Jim's 2-count, 7 clubs, 21
async Martin's 1-count, 12
async Mild Madness, 13
asynchronous heffs, 31

Baby dragon, 9
Baby Mix, 48
Bamboozled Panto, 48
Benzene ring, 45
Blinky, 11
Blinky (8 clubs), 24
Bookends, 7
Bookends-About, 57
Box of Gloom, 31
Brainstorm, 10
Bruno's Nightmare, 37

Buddy check, 64

Caipirinha, 22
Call me, 25
Cambled V, 68
Casbia, 62
Cascia, 63
Catch the carrot, 58
Champi, 56
Champix, 59
Chippy, 65
Chippy Zippy, 70
Chocolate bar, 7
Chop about, 56
Chopped Dolby, 56
Chopped up B, 64
Chopped Up V, 62
Chopsticks, 56
Circular 3-count, 31
Civil war feed, 29
Cold Shoulder, 57
Coral A, 20
Coral B, 20
Countdown, 8
Cuba Libre, 22
Cubs, 71
Cyclone, 47

Dark side of 2-count, 17
Das Gedicht, 24
Dash 3, 19
Dolby 5.1, 55
Dolby 5.2, 55
Dolby 7.1, 59
Dolby Söround, 56
Dosado, 45
Double banana, 20
Double dresser drawer weave, 46
Double Weave, 50
Dragon, 9
Dresser drawer weave, 44
Dresser drawer weave (13 clubs), 49
Dropabout, 66
Drunken sailor, 28
Dumb ways to die, 65

Eiliger Wanderwaschbär, 61
Enhanced Interogation, 33
Espresso Martini, 22
Extra Lazy 966, 69
Extrablatt, 27
Extreme Roundabout, 59
Extremely dumb ways to die, 69

Fallen angels, 66
Fast Waltz, 37
Feast (2-count), 33
Feast (3-count), 33
feeder change in asynchronous heffs, 39
First zap, 4
Five Count Popcornabout, 59
Flipalot, 4
Flying trapeze, 44
French 3-count, 15
French 3-count triangle, 31
Frost's frenzy, 18
Funky bookends, 19
Funky bookfriends, 19
Fünfer-Extrablatt, 32
Fünfer-Kleeblatt, 32

Gasteiz, 20
Gentle Romble, 64
Glass elevator, 4
Golden Fleece, 18
Gorilla, 30
Gorilla synchronous, 30
Gorilla weave, 43
Gorilla weave (13 clubs), 50
Großes Chaos, 22
Guillotine, 57
Gute Nacht, 21
Götterball, 72
Göttinger Opernball, 69

Halt mal kurz, 66
Hammy, 11
Hasty hiking racoon, *see* Eiliger Wanderwaschbär
Havana Feed, 44
Heffalot, 5
High-low (8 clubs), 24
Hiking racoon, *see* Wanderwaschbär
Holy grail, 18
Hop, 4
Hop-About, 55
How to train your dragons, 13

Inselhopping, 39
Interlocking weaves, 42
Inverse Argonaut, 5
Inverted bookends, 7
Inverted parsnip, 3
It's a good one (13 clubs), 49
It's a good one (countdown weave), 42
It's possible, 33
Ivy, 62

Jason, 9
Jenzig, 31
Jim's 1-count, 10
Jim's 2-count, 10

Jim's 3-count, 10
Jim's 7-club 2-count, *see* Oddz Godz
Jim's bookends, *see* Brainstorm
Jim's-3-count-about, *see* Catch the carrot
Jonix, 14

Karamazov shuffle, 47
Kennedy, 60
Killer bunny, 4
Kittens, 71
Kleeblatt, 27
Kraken, 3

La Vache Qui Rit, 28
Last one, 64
Lazy 567, 60
Lazy 96677, 60
Lazy 972, 60
Lazy 97892, 60
Leipziger Allerlei, 69
Long Island, 23

Magermix, 51
Maja, 17
Manège à cinq, 70
Manège à trois, 58
Martin's 1-count, 10
Martin's pass pass self, *see* Mild Madness
Martins Madness, 29
Martins Mildness, 29
Maybe, 8
Maybe (7clubs), 16
Maybe not, 11
Mayday zap, 28
Mild Madness, 10
MinuEd, 56
Mojito, 22
Moonwalk, 64
Moscow Mule, 22
Muckabout, 70
Mute Dolby, 21
Mutiny, 37

Nestor, 5
No More Why, 16
Not likely, 11
Not Pass pass self (7 clubs), 18
Not Why, 8
Not Why (5 club), 6
Not Why (7 clubs), 16

Odd scots, 20
Oddz Godz, 17
Odnom, 12

Panto, 62
Parsnip, 3
pass pass self (6 clubs), 7
Pass pass self (7 clubs), 18
Pass pass self (8 clubs), 24
Persil Mega Pearls, 26
Phoenician Quickstep, 59
Phoenician Waltz, 56
Pirouettes go crazy, 62
Pistons, 44
Placebo, *see* Gute Nacht
Popcorn (5-count, with heffs), 15
Popcorn (5-count, with triple), 15
Popcorn (7-count), 16
Postmen, 63
pps-Bruno, 38
Pulsar (2-count), 29
Pulsar (pass pass self), 30
Puppies, 71

Quasar, 30

Reverse spotlight, 11
Reverse weave, 41
Right one, 65
Ronjabout, 59
Rotating λ, 46
Rotating Y, 44
Rotator, 40
Roundabout, 55
Roundabout (3-count), 55
Roundabout (6-count), 55

Saibca, 65
Scherzo, 56
Scrambled V, 61
Scratch 8, 24
Scratch your head, 17
Scratch your nose, 17
Seattle shuffle, 46
Self centered, 12
Shakshuka, 66
Shakshuka – dancing, 66
Shamrock, *see* Kleeblatt
Shamrock plus, *see* Extrablatt
Shooting star, 40
Shorty, 59
Skip, 6
Skip feed, 28
Skip/Hop feed, 28
Spotlight, 10
Sticky triangle, 40
Suwecide Bunny, 58
Swing, 25
synchronous 1-count (6 clubs), 7

Techno, 17

Tequila Sunrise, 23
That's y, 25
That's y (9 clubs), 26
Theseus, 5
Three, 61
Three leaf clover, 40
Tiddo's Changeover, 55
Toast, 61
Torture Chamber, 33
Typewriter, 31
Typewriter of Doom, 48

Ultimates high-low (9 clubs), 26
Unscrambled B, 61
Unscrambled LB, 64
Urban terror feed, *see* Typewriter

Variation on Three, 64
Vegemite Toast, 65
Vitoria, 20
Vitoria (8 clubs), 25

Walking feed, 37
Walking line feed, 39
Waltz, 37
Waltz plus one, 37
Wanderwaschbär, 38
Wankle Engine, 63
We Will Rock You, 71
Weave, 41
Weave (13 clubs), 49
Why not, 8
Why not (5 club), 6
Why not (7 clubs), 16
Why not feed, 29
Why Not Triangle, 30
Why not zaps, 9
Why Rei, 19
Why-Not-About, 57
Wiebke's Waltz, 66
Wrong one, 63
Wust, 62

Y you follow me, 72

Zap Opus I, *see* Baby dragon
Zap Opus II, *see* Holy grail
Zig zag, 63
Zippy, 65