

# Passing Patterns Compendium

Edition May 07

## Acknowledgements

These patterns come from many sources, though the largest is the [passingdb.com](http://passingdb.com) website as of 2005/6, by JiBe Hurteaux. In compiling these patterns I've made the editorial decision to not include attributions and credits, partially because in many cases a pattern/rhythm is "folklore", invented by many people independently, or of unknown origin; and partially to save space. The vast number of patterns out there for 2 or more people bear witness to the efforts of many people, too many to list here, but some contributors I've noticed are: JiBe Hurteaux, Martin Frost, NeilFred Picciotto, Rick Rubenstein, Ed Carstens, Dave Davis, Madison Area Jugglers, Tarim, Aidan Burns, Ed Pultar and Dave Alaya, Christoph Schumacher, and I myself have even contributed a few patterns. Apologies to anyone I've not mentioned who reads this and finds a pattern they invented; take comfort in the fact that I don't intend to publish this and if I do in fact publish it I'll do my best to credit things.

This collection is not intended to supplant or negate the forthcoming tome by Martin Frost which I've heard is entitled Passing Madness. For all that he has done for the passing community, when he finally publishes the thing the least you can do is get rid of this and buy his book.

## Please contribute!!

If you know of a pattern/rhythm that you are *sure* is not in here, please contact me and tell me about it! If you have any other suggestions, comments, about the content or layout, I'd love to hear them. Email me at mweston at uvic dot ca.

- compiled by Mark Weston

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# Terminology and Notation

A *rhythm* is the sequence of throws between the jugglers, a *pattern* is the physical layout of jugglers on the floor and sequence of who passes to whom. Obviously a given pattern can have many rhythms. Throughout, patterns and rhythms are given in multiple notations as well as a textual description and causal diagram to aid quick comprehension. Cross-references are [underlined in blue](#).

## Rhythm Notation


We refer to the two jugglers in a rhythm as J1 and J2; J1 is always the top line in a causal diagram, and their hands as RH (right hand) and LH (left hand). A pass is *crossing* if it goes LH to LH (or RH to RH), *straight* (or *tramline*) if it goes RH to LH (or vice versa).


A sequence of throws for a single juggler can be written as a series of numbers in *siteswap* notation: **1** = **zip** (or *hand-across*), **2** = **hold**, **3** = **single spin**, **3.5** = **floaty single**, **4** = **double**, **5** = **triple**, etc. A **p** means the number is a pass; generally a pass is a *straight* or *tramline* (R->L or L->R) unless it ends in **.5**, in which case it *crosses* (R->R or L->L); exceptions can be noted with an 'x'. A non-passing throw returns to the same hand if it is even, otherwise it crosses; thus a **3** is the (crossing) self single you throw in a 3-club cascade. Sometimes a \* is used to denote a **hurry** (two throws in a row from the same hand). Two throws at the same time for one juggler are written (**x,x**). **<xxx | xxx>** denotes a *synchronous sequence* of throws for the two jugglers; the first sequence of **xs** is J1's, the second is J2's.


Sequences are often written in shorthand using **P=pass**, **S=self**, **H=hold**, **Z=zip**, **D=double** (usually a self double), **T=triple**.

*Multihand notation* is a compact way to represent asynchronous patterns (J1 and J2 do not throw at the same time). An MHN sequence **xxx** represents a siteswap sequence for all four hands involved, going in order J1RH J2RH J1LH J1LH. To quickly find the sequence of throws for each juggler, take every second number (cyclically) in the sequence and divide each digit by 2. **2=zip**, **4=hold**, **6=single**, **7=3.5p**, **a=10**, **b=11**, etc.

*Causal diagrams* are very powerful and easy-to-use tools for describing a rhythm. Each diagram has a horizontal row of hands for each juggler, with R and L for throws from each hand. Arrows are throws: passes go between lines and selfs stay on the same line, and time progresses from left to right.

**Holds (2s)** are represented by a small loop coming back to the same hand: 

**Zips (1s)** are selfs that are so fast they go vertically or backwards: they cause the previous throw to be made, in order to empty the hand to receive the zip: 

An **empty hand** is represented by an arrow moving 2 beats backwards into that hand: 

A single (**3**) goes one place forward, a **3.5p** moves 1½ places (so the rhythm of the jugglers must be staggered by ½ a beat), a **4** two places, etc. A pattern has one club for each path moving down the diagram, plus one club held in each hand to start. To start a pattern, each hand holds a club to start, plus one extra for each arrow coming into that hand from the left-hand side of the diagram.

## Feed Notation

**FF** is the "feeder", who passes to **F1** and **F2**, who are the "feedees". F1 is always the top line of the causal diagrams shown and FF is the middle line.

An extension of a 2-person notation can be used:

**<xxx | xxx | xxx>** denotes a synchronous sequence of throws; the first series of **xs** is FF's sequence, the second is F1's and the third F2's. Throw heights are given by siteswap as in rhythms; a **p** means the number is a pass; for FF the **p** can be subscripted (**p<sub>1</sub>** or **p<sub>2</sub>**) to indicate the receiver if it is not easy to deduce. Sometimes we use the terms *outsides/insides*: from FF's perspective, these are throws to the outside or inside of the pattern (*i.e.* FF's LH to the right-hand feedee is an *inside*).

## Pattern Notation

Jugglers in a pattern are shown by letters (A, B, C...). In causal diagrams, A is the top line, B the second, etc.

► In diagrams, passes are shown by black arrows, self throws are usually not shown. *Optional* passes are shown as blue arrows; *movement of jugglers* is shown by red arrows

► Tables are used to show the sequence of passes for all jugglers for patterns for 4+; selfs may or may not be included; and the pattern can be easily changed by adding extra selfs, changing which hand makes which pass, etc. Entries in the table show the recipient of the pass at each beat; selfs are shown by "s".

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# Rhythms

These are passing rhythms for two jugglers.

## 3 clubs: 3 Around

This pattern is the [6 club 2-count](#) with 3 clubs missing. J1 starts with 3 clubs in a cascade and sends three consecutive RH passes to J2. J2 receives them with 3 LH selfs and throws three RH passes back to J1.

This pattern is good for learning trick throws as you have plenty of time to think about the throw while the other person has the clubs.

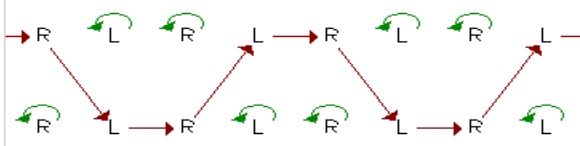
## 5 clubs: Passing and Running the Gap

Any 6+ club pattern missing a club can still be juggled by just pretending the club is still in the pattern; the space where the club should be is called the “gap”.

### Passing the Gap

(also confusingly called Holding the Gap). This refers to the technique of not passing unless you have enough clubs; in patterns with 3 clubs per person (i.e. 6-club 2-count) the rule is “**Don't pass unless you have three clubs**”. Thus you hold two clubs until someone passes you a third.

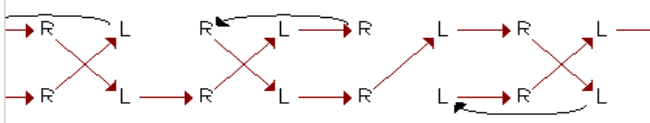
J1 passes and doesn't receive from J2 since J2 had the gap. They do nothing (hold two clubs) until J2 passes back to them:



### Running the Gap

This refers to the technique of continuing to juggle, treating the missing club as a “hole” that you juggle. This looks better in performance but it takes longer for the hole to move between jugglers. Practise this in a [6-club 2-count](#) by just continuing to pass whenever there is a club in your RH, and your LH throws selfs whenever possible.

Here is an example in [2-count](#): J1 has the hole but they don't pass it to J2 until it is in their RH when they are supposed to pass; then J2 gets it for a while.

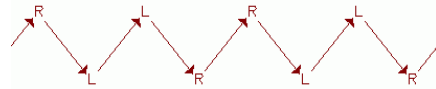


**Variations:** any (!) of the following rhythms can be done missing some clubs; some of the resulting patterns may even be interesting.

## 5 clubs: 1-count

### Normal 1-count <3p2\*|2\*3p>

Passes are normal singles, with one of the jugglers throwing all crossing passes.



**Variations:** throw the 2! **Synchronous popcorn:** (6,4)(6x,4)(4,4). That is, when the pass comes in throw a self double (and the 2 with the other hand!), before passing again.

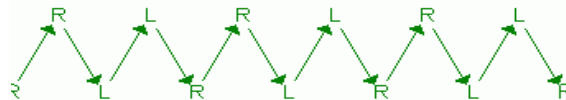
### Slow 1-count, or Flurry ( 3.5p22 744 )

This version is very similar to normal 1-count; just make lofty passes instead of normal passes (also try **doubles**).

**Variation:** replace the 22 with 31 (self zip) (726).

### Fast 1-count (2.5p , 5)

Get close together and pass in flats, pushing the clubs forward. A very quick rhythm that's visual, fun, and not that difficult.



**Variations:** you can make lots of nice slow patterns by adding in self throws when you receive a pass (and the other person does **self zip**, or **flourishes**). The passes can be flats or ½ **spin singles**.

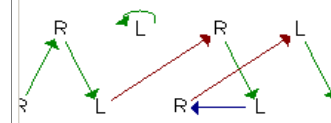
### Syncopations (Siteswaps)

An easy way to add siteswap syncopations is to think of your side of the pattern as just a 3-club cascade (**333...**); the other person is acting as gravity to send the clubs back to you. Now you can throw any siteswap you like.

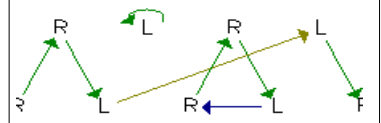
- all 4s are doubles, 5s triples, etc. If your 3s are crossing then odd numbers cross and evens are straight, vice versa if you are throwing straight 3s by default.

- J1 simply sends back normal passes whenever they can.

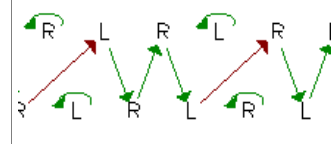
#### 441: Double, double, zip.



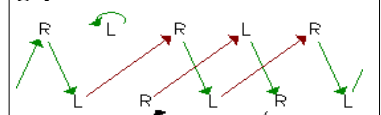
#### 531: Triple, single, zip.



#### 423: Double, hold.



#### 4440: Double, double, double, gap.

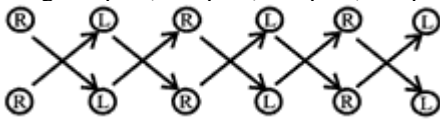


Also try **34512: double, triple, zip**, or **63141: quad, zip, double, zip**.



## 6 clubs: 1-count (Ultimates, Thundershower) 3p

Here there is no selfs, only passes. It's as if you were juggling 3 clubs on each side of the pattern. You both start at the same time doing RH pass, LH pass, RH pass, LH pass...



**Variations:** Try starting with J1 with 4 clubs passing both at once: a nice **synchronous** pattern.

Also see [Jim's 1-Count](#), [Martin's 1-Count](#), [Brendan's Folly](#), [Simul Squirrel](#), [Ultimate-zip](#), etc.

### Syncopations (Siteswaps)

An easy way to add siteswap syncopations is to think of your side of the pattern as just a 4-club fountain; the other person is acting as gravity to send the clubs back to you. Now you can throw any valid siteswap you like.

- all 3s are selfs, 5s are crossing doubles, 6s straight triples, etc.
- J1 simply sends back normal passes whenever they can.

|  |   |
|--|---|
| 53: double, self                           | 534: double, self, pass, double, self, pass,... (it's almost a PPS) |
| 552: double, double, hold                  | 5551: double, double, double, zip                                   |
| 55550: double, double, double, double, gap | 633: triple, self, self   |

**Variation:** on **synchronous 1-count**, use any valid *synchronous* siteswap:

|   |   |
|---|---|
| (6x,4)(4,2x): (crossing triple, pass) (pass, zip) | (6x,4x)(4,2): (crossing triple, crossing pass) (pass, hold) |
|---|---|

**Variations:** use any valid 4-club siteswap you like: **7441**, **55613**, **566151**, etc.

### Transition from Sync to Async

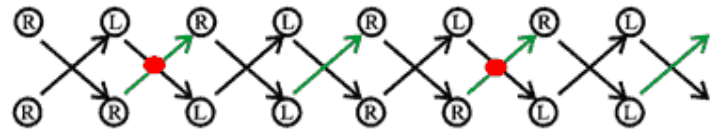
There are several different methods:

- one hand throws a double pass
- one hand does a single or floaty double self
- do a hurry by throwing twice quickly with one hand
- collect on one side and throw a multiplex (from async to sync)

## 6 clubs: Brendan's Folly <3px 3px 3p 3p | 3p 3px\* 3px 3p\*>

Brendan's Folly is a 1-count rhythm for 6 clubs. The two jugglers have different roles:

- J1 (top line) does "R-L-R-L" as "crossing-crossing-straight-straight"
- J2 does "R-R-L-L" as "straight-crossing-crossing-straight" and gets the hurried throws (in green)



There is also a heavy risk of collision no later than beat 2 (red circle). To avoid that, you can agree that J2 (RH crossing pass) will throw from the outside and J2 (LH crossing pass) from the inside.

## 6 clubs: Jim's 1-count <3p 3p\* | 3p\* 3p>

J1 (upper line) does straight passes, J2 does crossing passes. The rhythm is **R R L L...** similar to [Brendan's Folly](#).

Hurried passes are shown in green.



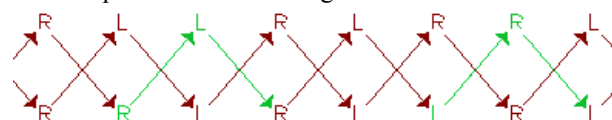
**Variation:** both doing **RRL L** in sync (each starting with the first R), each juggler does **cross-straight-cross-straight**.

**All Collisions:** J1 does RRL L, J2 does LLRR, both do **cross-straight-cross-straight**.

## 6 clubs: Jim's 1-count + Brendan's Folly

J1 does **cross cross straight straight**, J2 does all straights. Symmetric; and both jugglers get hurries.

Hurried passes are shown in green.



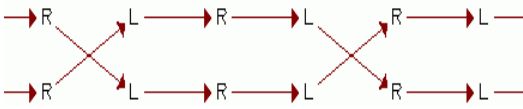




## 6 clubs: 3-count (PSS, Waltz, Tic-Tac) 3p33

This pattern is gaining in popularity as the “default” passing pattern for 6 clubs, since it is not hard and is ambidextrous.

In 3 count, passes are made alternately by both hands: if a pass is made from the right hand, the following pass will be done from the left hand. It's always the same 2 clubs that are being passed back and forth.



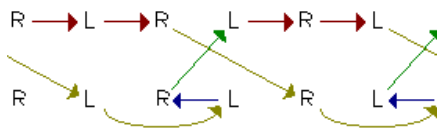
### What is good in 3-count ?

- You still have a few selfs to play with (as in a [4-count](#))
- It's more convenient for solo tricks that have period 3 (such as Mills Mess).
- all of the “traditional” syncopations from [2-count](#) and most from [4-count](#) work, and they can be done on both sides !!

**Nice variations:** **4 2 3p** – throw your self double under the incoming pass, **4 4p 1** – throw your self double and then early crossing doubles, **4p 4 1** – start with late crossing double pass, **5p 3 1** – throw early triple pass, **5 3p 1** is fun also.

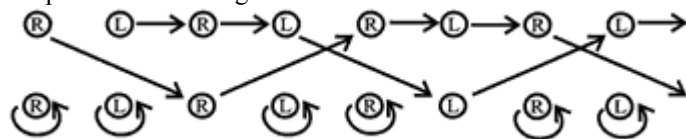
**Shared 441:** <4p 3 3 | 3p 4 1> J1 throws a late crossing double, J2 responds with 41 (instead of 23).

**Agreed 441:** J1 throws late doubles (4p33), J2 throws 3p14, starting with 2 clubs in the LH.



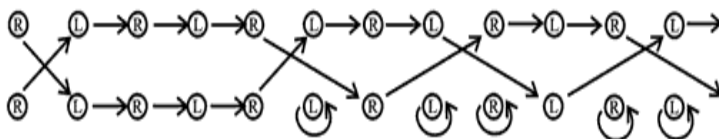
## 6 clubs: 3-count/1-count <4p 3 3 | 2 2 4p>

This pattern allows one juggler to work on the [7 clubs 3-count](#) while the other one juggles a very slow 1-count on doubles (and can use some holds). It's not a [slow-fast](#) though because the jugglers keep juggling at the same speed (if we count a hold as being a throw). All passes are crossing doubles.



An easy way to start this pattern is to start from a 4-count, and then to throw a late double. The one who throws the double starts juggling on a 3-count, the other one starts his 1-count side of the pattern by throwing back a crossing double under the incoming double (see diagram below).

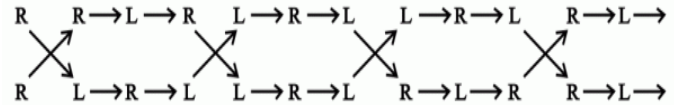
3-count/1-count with a 4-count start:



## 6 clubs: Jim's 3-count <3p3\*33p33 | 3p333p3\*3>

The original “random” pattern: this rhythm is very similar to regular [3-count](#), and is not really harder.

The difference to regular 3-count is that a juggler crosses his passes (for every throw). Hence it creates a [hurry](#), but as long as you remember that you have to **throw the club you just received**, it should present no particular problem. Each juggler regularly throws twice in a row with the same hand.



**Variations:** most of the standard 3-count syncopations work.

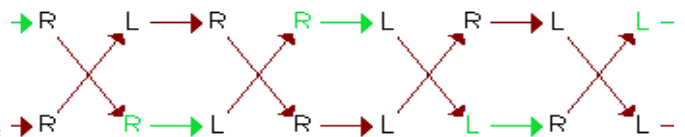
## 6 clubs: Jim's 4-count <3p3\*333p333 | 3p333p3\*33>

The difference with a normal 4-count is that one of the jugglers (the bottom one in the diagrams) will cross all their passes. This is very similar to [Jim's 3-count](#) but with 3 self's between each pass.



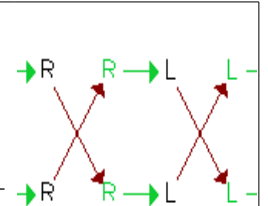
## 6 clubs: Jim's 2-count <3p33p3\* | 3p3\*3p3>

Both jugglers juggle a 2-count; J1 (top) crosses all passes and J2 throws tramlines.. Hurried selfs are shown in green:



### Compressed Mildness:

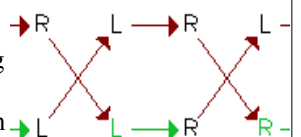
If both jugglers cross their throws each juggler throws **R R L L**; throw the passes from inside to outside to avoid collisions. All selfs are hurried (in green):



**Variation:** throw one cycle (straight pass + self) of normal 1-count before crossing (**Juergen's 2-count**).

### The Koshi-Hellner Inequality

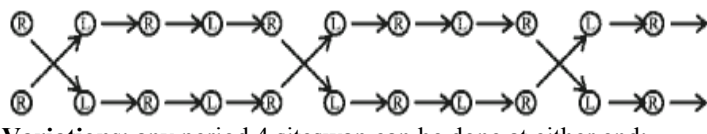
For an **asymmetric** version, J1 does a 2-count, alternating which hand they pass to, and J2 does **R R L L** alternating which hand they throw to. This is a 1-count/2-count slow-fast with J2 using an extra club to “fill the gap”. J2 gets hurried selfs: shown in green:





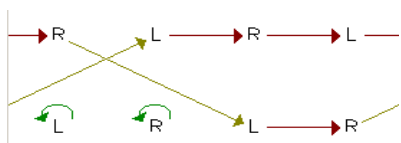
## 6 clubs: 4-count (Every Others) 3p 3 3 3

THE classical pattern of passing.



**Variations:** any period 4 siteswap can be done at either end: **3p5313p**, **3p4413p**, etc. **Syncopations:** late double (**4p333**), early double (**3p334p2**), late triple (**5p333**), early triple (**3p35p22**).

## 6 clubs: Double Returns <4xp 3 3 3 | 2 2 3 4xp>



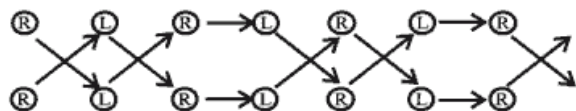
A variation on 4-count: all passes are **straight doubles**, and J2 does a 2-count with large gaps. **Variation:** cross both passes.

## 6 clubs: 6-count 3p 3 3 3 3 3



Keep this pattern in mind if you are doing difficult multi-person patterns which are initially challenging on 4-count: switching to 6-count can make things slower.

## 6 clubs: PPS (Double 3-count, Ogilvies) 3p 3p 3

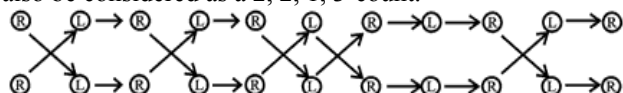


The 4 passed clubs are always the same, just like the two clubs that are used for selfs.

**Variations:** **4p4p1** (crossing 4ps), **5p3p1** (noncrossing 5p3p; very nice when both jugglers run it); throw the first 4p or 5p instead of the self in PPS.

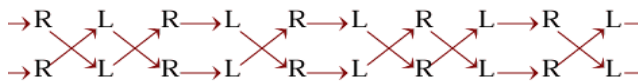
## 6 clubs: Tango 3p33p33p333

This rhythm is a combination of a [2-count](#) and a [chocolate bar](#). The easiest way to describe it consists in saying : **PS PS PPSS**. It can also be considered as a 2, 2, 1, 3-count.



## 6 clubs: Bookends (PPSPS) 3p3p33p3

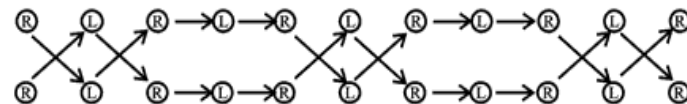
A 5-count with 3 passes and 2 selfs.



There are two ways of thinking about this rhythm: one is just **PPSPS**, the other is **PSPSP**, and both ways feel different to juggle!

## 6 clubs: Chocolate Bar

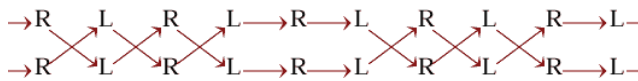
(PPSS, Two-two, Desmond Tu-Tu) 3p3p33



This pattern is a useful variant of 2-count that can make many feeds and 2-count patterns more interesting without adding more passes in 4 beats.

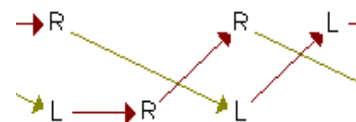
## 6 clubs: PPPSS 3p3p3p33

This pattern has period 5 and is thus symmetric.



## 6 clubs: Benni's Nightmare

J1 does **RH double, hold, RH double, LH self** on tramline doubles; J2 does **LH self, RH single, LH single, hold** on crossing singles.



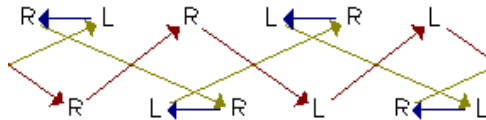
To stagger the rhythms, both jugglers can throw floaty singles.

**Variation:** an easy **symmetric version** can be done by adding in a self for both jugglers before J1's first or second pass.

## 6 clubs: 972

A beautiful pattern that's lots of fun to juggle.

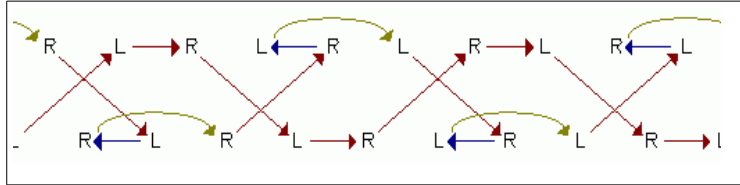
All passes are floaty; J1 starts with 2 in their LH and juggles **cross double, zip, straight single**; J2 starts ½ a beat later with 2 in their RH and juggles **cross single, straight double, zip**.



## 6 clubs: WhyNot? 3.5p 3 3.5p 4 1 86277

One juggler does crossing passes, while the other one does straight passes. All passes are floaty singles (3.5). See [5-club WhyNot?](#) for a warm-up.

**The double-zip:** when a pass is coming to your RH, instead of freeing it with a usual self (3), you have to do a LH double (4), followed by a right to left zip (1). The full cycle is: **DZPSP** (double zip pass self pass).

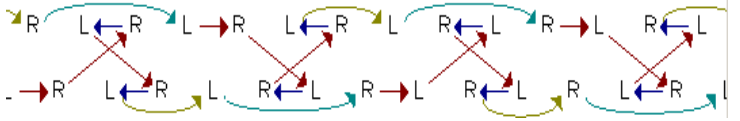


To start, the best is to have J1 starting with 4 clubs, and doing **PSPDZ**. J2 starts half a beat later with the **self double**.

**Lazy Version (Can't Be Bothered):** replace the **double, zip** with **hold, self**; then the sequence goes **HSPSP** <3.5p 3 3.5p 2 3>. You can switch from one to the other at any time.

### a778226 (extended WhyNot?)

A period-7 symmetric rhythm with all sorts of fun throws. Each juggler starts with 3 clubs, 2 in their RH. The sequence is **triple, pass, zip, self, pass, double, zip**; J1 starts at the beginning, J2 starts ½ a beat later at **pass, double, ...** J1 throws tramline passes, J2 crosses, all triples are crossing selves, doubles are noncrossing selves, and passes are floaty singles (3.5p).

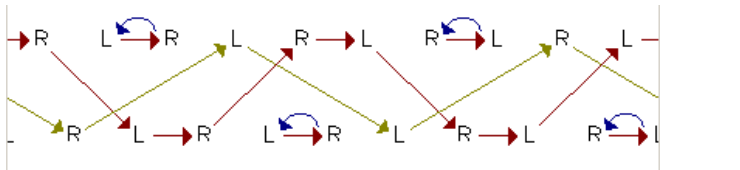


**Variation:** throw more selves: each new self *after* your triple must correspond to a new self for your partner *before* their triple.

Another symmetric extended version is **7786266: pass, double, zip, self, pass, self, self**. J1 starts with their first RH straight pass, J2 starts with **pass self self** ½ beat later.

## 6 clubs: 79662 3.5p 31 4.5p 3

Each person does **pass, self, zip, double, self**. One person throws straight singles and crossing doubles, the other the reverse. J1 starts with a single pass, J2 starts ½ a beat later with a floaty double. All passes are floaty.

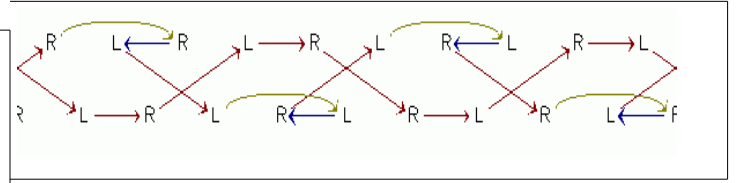


For a one-sided version try **6679662**: each person does a self at the beginning of the sequence.

## 6 clubs: NotWhy? 4 3.5p 1 3 3.5p 86772

J1 crosses and J2 throws straights. The passes are lofty singles. See [5-club NotWhy?](#) for a warm-up.

Here, in order to catch a pass, you throw just one double (from the same hand), followed by a pass from the other hand and a zip. It's a little easier to get used to than the double zip in [WhyNot?](#). The full cycle is **double, pass, zip, self, pass**.

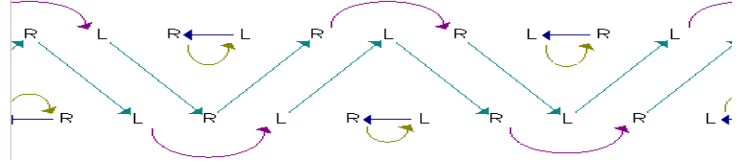


Start: 3 clubs each (2 in the RH), J1 starts with a RH double and does crossing passes. J2 starts ½ a beat after J1's first pass with a RH pass, followed by a double to start the cycle. J2 does straights.

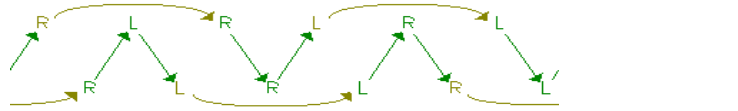
**Lazy Version (Bothered Be Can't):** replace the **double, pass, zip** with **self, pass, hold** to get **SPHSP** (see [Jim's 2-count](#)).

## 6 clubs: Maybe (Can't Be Bothered) 86727 3.5p3.5p314

J1 starts with four clubs, starts with RH pass and J2 starts with their double 1.5 beats later. The sequence is **double pass pass self zip**.

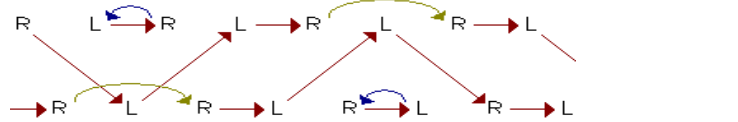


**Maybe a Little Faster:** make the passes faster (**2.5p** in fact) and remove the **31**: the sequence is **double pass pass**, J1 crosses and starts with a double, J2 throws straights and starts ½ a beat later.



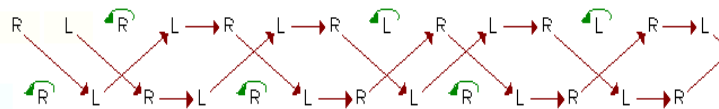
## 6 clubs: 7867266

This is like an extended [Maybe](#) pattern. The sequence is **pass self zip self double pass self** and it repeats on the other side. J1 starts with a R->L pass and J2 starts ½ a beat later with RH double, LH pass.



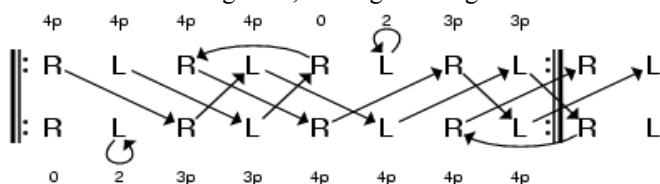
## 6 clubs: Brainstorm 7477466774667

A long sequence that will test your powers of memory. The sequence goes **pass, pass, hold, self, pass, self, pass, \* hold, pass, self, pass, hold, self** and repeats again on the other side. J1, with 4 clubs, starts at the beginning and throws straight passes, J2 starts  $\frac{1}{2}$  a beat later with the second-hold (marked \*) throwing cross passes. Passes are floaty singles; for a hurried version with normal passes J2 starts synchronously. (causal diagram below shows only one side of the pattern, repeat starting with LH).



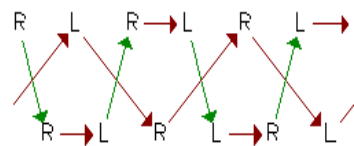
## 6 clubs: Expanded Moose 4p4p4p4p023p3p

A six-club pattern with a 0 in it! J1 starts with 4 clubs, J2 starts with 2. All doubles are diagonals, all singles straights.



## 6 clubs: Zap Opus #1 (567)

The sequence is **zap (2.5p), floaty single, self**. Stand close together and make the singles floaty. For J1, the zaps cross and singles don't, vice versa for J2; so for each person they pass twice (zap, single) to the same hand.

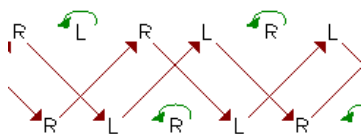


J2 starts with 2 clubs in their LH and starts a beat later with a zap.

## 6 clubs: 774

Both passers do **3.5p 3.5p 2 (floaty single, floaty single, pause)**, so the rhythm is LR, RL, LR... J1 crosses and J2 throws straights.

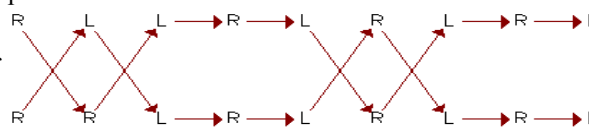
**Variation:** throw the 2!



## 6 clubs: Jim's Variations

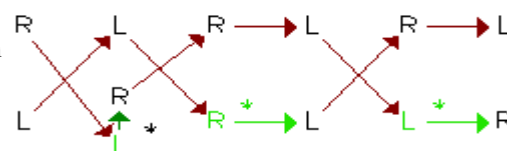
### Jim's Chocolate Bar (PPSS)

A variation on PPSS: J1 throws **Cross Cross self self Straight Straight self self**; J2 throws **Straight Straight self self Straight Straight self self**. You get hurries and it's symmetric and each end feels different. To speed up the hurries just have J1 cross all their passes.



### Archibald 5-Count

A Martin's/Jim's [Bookends](#) (PPSPS) pattern: J1 (the easy side) does **straight straight self cross self**, J2 (the hard side) does **cross cross zip self straight self**. J2 gets 3 hurries per round (!).



### Stover Conservatory

This pattern mixes straight and crossing passes: you both do **straight diagonal self self**, the first self is hurried by the diagonal.

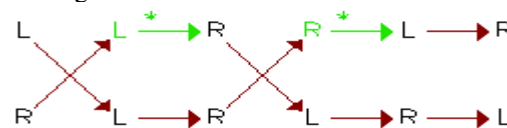
### Other Patterns:

Other 6-club rhythms can be "Jim's"ed just by having one juggler cross all their passes, **PPSPS, PPSS, PPSSS, PPPSS**, etc. A few nice patterns from this idea: both jugglers do **straight, straight, diagonal, (hurry) self, diagonal** and the sequence repeats from the other side.

**Reading Romp:** both jugglers do **diagonal, (hurry) straight, straight, straight**.

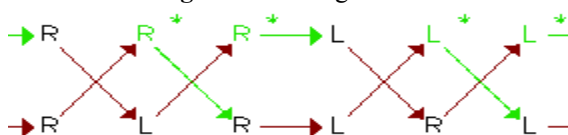
### Hammy 5-count

This is an unbalanced [Sdnekoob](#) (reverse [bookends](#)) pattern: J1 has two hurries and J2 has none. J1 does **cross self straight self self**, starting with the LH, and J2 does **straight self diagonal self self**, starting with RH.



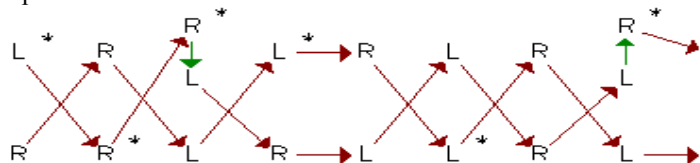
### Compact Hammy

This is the Hammy 5-count with the two ending selfs removed: J1 does **RH straight, RH cross, RH self** and repeats with the LH, J2 does **cross straight self self** starting with RH.



### The Lutkinsky

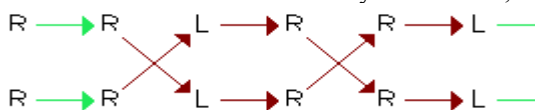
This bizarre rhythm has J1 throwing straights and J2 crossing. J1 starts with 2 in their LH and J2 with 2 in their RH. J1 does **PPZPS PPPZS**, J2 does **PPPS PPPS**; J2 gets hurries but no zips and J1 gets zips but no hurries.



**Variation:** after every 4 beats (J1's PPZPS), switch roles.

### 6 clubs: Jim's Jam

A pattern featuring "hops": selfs to the same hand (3x). Both jugglers start with 2 in the same hand and throw, at the same time, **hop straight self cross (hurry) self**, and start again from the other hand. One half of the full cycle is shown; hops are in green:



**Variations:** Remove the pulp to get **Jim's Jelly: hop, cross, (hurry) self** and repeat on the other side.

**RRLL:** each person does **RH cross, RH straight, LH cross, LH straight** simultaneously.

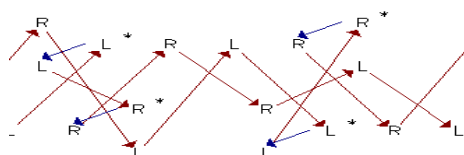
See [Hurries Galore](#) for more on hops.

### 6 clubs: Simul Patterns

These are 6-club patterns involving simul (two tramline passes thrown at once), which usually appear only in feeds. They tend to be quite fast as there are plenty of hurries.

#### Moose

The sequence is **Simul, R, L, R, L**, where all passes are crossing floaty singles (**3.5p**). No selfs! The same two clubs get thrown back and forth as the simul.

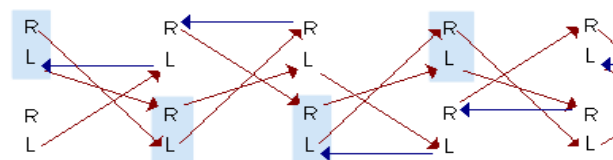


J1 starts with 4 clubs with the four singles; J2 waits as long as possible and then throws their simul.

There are collision issues between the first and third crossing singles; both jugglers must throw accurately and lofty.

### Simul Squirrel

This is basically 8-club 1-count with two holes, so make floaty passes or try the **Slow** version below first. J1 does **simul, R->R, L->L, simul**, and J2 does the same but starting at the **L->L**. Simuls are shown in boxes below, the reverse arrows indicate empty hands:



### Slow Simul Squirrel

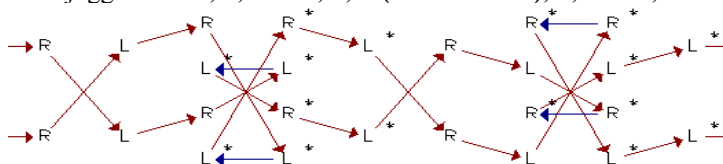
Adding selfs into the above gives the sequence **simul, RH cross, self, self, LH cross, simul, self, self**; J1 starts with the first **simul** and J2 with the **L->L** pass.

In these next patterns both people are throwing simul at the same time: to avoid collisions, you must agree that one person should throw to the side, or inside, like this:



### Simul (Parallel) Universe

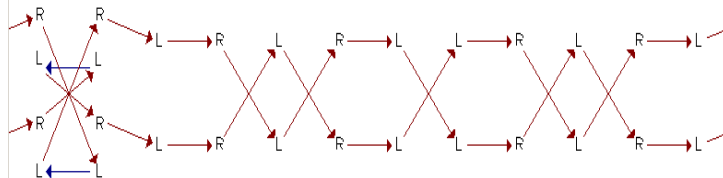
Both jugglers do **P, S, Simul, S, P (LH this time), S, Simul, self**.



**Fast Version:** eliminate all the selfs! Just do **Simul, RH pass, Simul, LH pass**. You can come up with other variations.

### 6 clubs: Compressed LCM4,3 (see [LCM 4.3 Feed](#))

Basically, do the LCM-4,3 feed but with the two feedees compressed into one person (it just feels like a random 12 count sequence). Because the count is even and the simul causes a hurry, at some point you have to do a another hurry to equalize things. For the sake of symmetry (and to make it easy to recall) this diagram has the hurry as the middle pass (an alternative is to make it an 11-count cycle instead of 12 counts: do a straight pass as the middle one and don't do the final self). So the cycle goes **simul, self, self, pass, pass, self, cross pass, (hurry) self, pass, pass, self, self**.



Note also that one person should throw their simul inside to avoid collisions.

## 6 clubs: Countdowns

The countdowns are a family of patterns in which you constantly change the main pattern. For instance, you start with a 4-count cycle, a 3-count cycle, a 2-count cycle, an ultimate cycle (only one pass) and back, and so on.

### Countdown from 3 (3-2-1-2)

We do a 3-count cycle, then a 2-count cycle, a 1-count, a 2-count, and then we start again. This rhythm is a cycle of 8 throws, which means there are two versions of it (one starts with a RH pass, the other with a LH pass).

The entire sequence is **PSSPSPPS**, easier to remember when you think of it as **PSSP-SPPS**.



### Countdown from 4 (4-3-2-1-2-3)

Run a 4-count cycle, a 3-count cycle, a 2-count, a 1-count, a 2-count and a 3-count, then start from the other hand. As opposed to the countdown from 3 there is only one version since you alternate a start with the RH and a start in the LH in the same pattern.

The sequence is **PSSSPSSPSPSPSS**, but you'd rather count in your head than learn it by heart.



**Variations:** 4-3-2, 4-3-2-1, any sequence involving an odd number of odd numbers (?) will involve changing sides, which is nice.

**Mixed-up Countdowns:** 3-4-2, 3-4-1-2, etc, you get the idea.

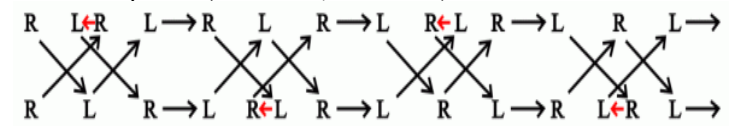
**Counting down the Passes:** switch passes for selfs in all of the above: so 4-3-2-1 becomes PPPS PPS PS P, etc.

Surprisingly nice is the **Parker 4-3**, in which you switch between 4-count and 3-count.

For the 7 club versions see [Copenhagen](#) and [Oslo countdown](#).

## 6 clubs: Mild Madness

Mild Madness is an evolved version of the [normal PPS](#). The cycle is **PPS PPZS**, where the zips alternate directions. One juggler crosses all passes (RH to RH, LH to LH).

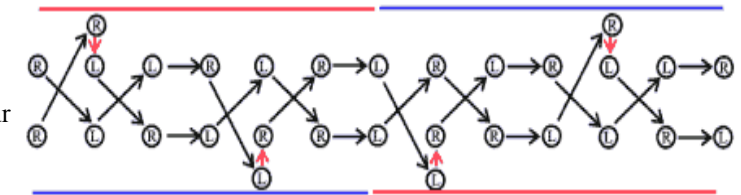


A classic mistake is to forget the self. So be careful, the zip does not replace the self.

**Variations:** have the 2 jugglers swap between crossing and straight passes:

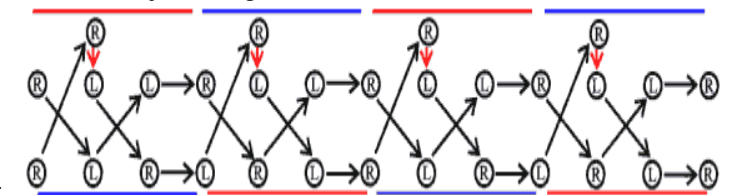
**Synchronous change (6 beats)**

The two jugglers change at the same time every 6 beats (the time for PPS PPZS). The consequence is that each juggler has the zip twice in a row, the new cycle being **PPS PPZS PPZS PPS**.



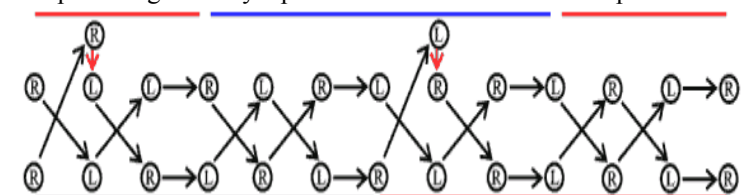
### Synchronous change (3 beats)

The two jugglers change at the same time every 3 beats (the time for PPS or for PPZS). one juggler now has all the zips, while the other one is just doing PPS.



### Asynchronous change (6 beats)

The two jugglers change every 6 beats but not at the same time. As a consequence, one of them has no more zips, while the other one keeps having as many zips as usual. There are collision problems.





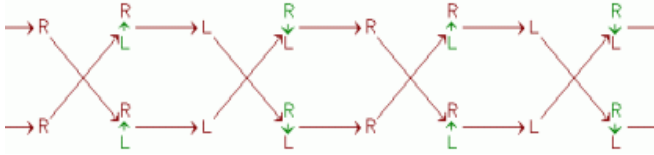




### 3- shower, straight passes

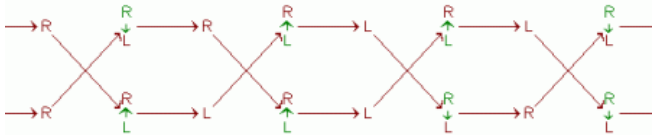
Upon receiving a pass to the LH, throw a R->L self and a zip L->R at the same time. When the self comes down again, throw the club you've just caught. Both jugglers do straight passes.

Ambidextrous pattern.



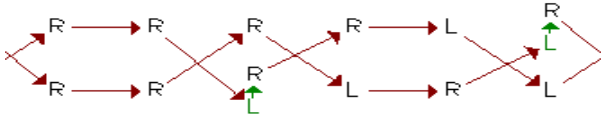
### 4- shower, straight and cross passes

Same as above, but one of the jugglers cross his passes. Passes are made twice in a row on each side. Rather a difficult one.



On the same principle, you can try out what the [3-count](#) has to offer, especially if you juggle a box instead of normal selfs. In fact, you can try on any rhythm to replace the selfs by some synchronous self-zips.

A strange rhythm in which the jugglers do different patterns but both have a "hop" (single to same hand) at the same time:



## 6 clubs: Crossing Patterns

Any pattern can be done with both partners throwing crossing passes instead of straights; one partner must do the pattern "left-handed". To avoid collisions, especially with synchronous passes, one person should pass slightly later than the other.

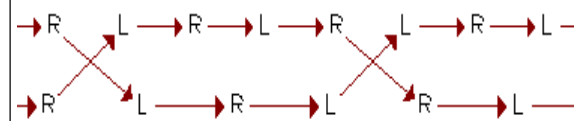
Try:

- crossing [2-count](#), [3-count](#), [PPS](#), [4-count](#)
- crossing [1-count](#) (ultimates) !!

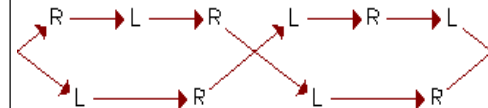
## 6+ clubs: Slow/Fast Patterns

These patterns share the characteristic that one juggler is juggling at a slower tempo than the other. In the first three patterns each juggler crosses every other pass.

### 3-count/4-count



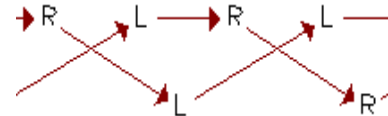
### 2-count/3-count



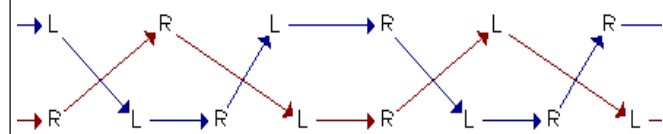
If J1 and J2 switch roles after each pass you get **Rushed Hammy**.

### 1-count/2-count

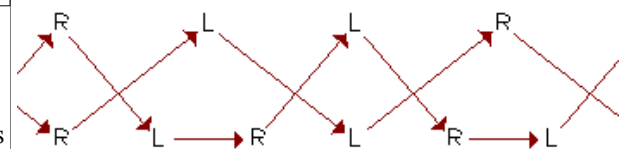
The classical "slow-fast" pattern.



**PPS/2-count:** A strange rhythm. J1 does PPS to J2's LH, J2 passes to J1's hands in the order RH LH LH RH ...

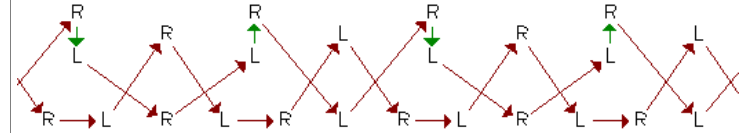


### PPS/1-count:



The person doing **PPS** (J2 here) passes straights; J1's passes go **cross straight**. in the rhythm **R R L L**.

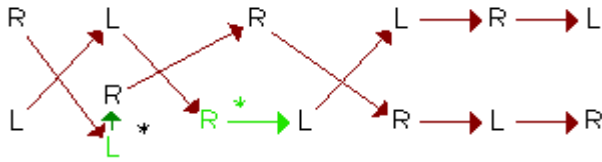
For a version with all straight passes, J1 can do **PZP**:



More disparate rhythms are doable, for example **4-Count/2-Count**, **2-count/5-count**, **3-count/5-count**, **4-count/5-count**, etc. If the difference between the counts is odd at least one person will need to cross some of their passes.

## Jezebel Fast/Slow

This is a 5-count/6-count with some extra complications. J1 (slow) does **straight straight diagonal self self** starting with RH; J2 (fast) does **cross cross zip self cross self self** starting with LH.



**Variation:** for the **Compact Jezebel Fast/Slow**, remove the two trailing selfs to make a difficult 3-count/4-count pattern.

**Hurries** in slow-fast are easy for the slow side since they aren't hurried at all! Hence play with changing crossing and straight passes.

This is a **Hurried 2-count/3-count**:

J1 does a normal 3-count, J2 does **cross, (hurry) self** from both sides.

**Variation:** add one "self" beat after each cycle to make things easier, and ambidextrous. For example, for the **Turlock 2-count/1-count** J1 does **PSPSS** while J2 does **PPS**; both jugglers cross their second pass in the cycle.

**Variation:** "Jim's" a pattern by changing straight throws to crossing, and vice versa.

**Variation:** Vary all of the above by **switching roles**.

This is **3-count/4-count switching every pass**:

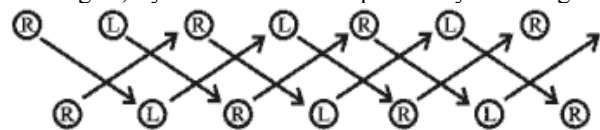
Also see [7-club slow/fast](#) patterns.

## 7 clubs: 1-count (Ultimates) <3.5p|3.5p>

There's no "big secret" to this amazing pattern; you just need a lot of practice and some precision. You can either juggle it on doubles (harder because of the precision needed) or on floaty singles (faster but easier to get down and nicer).

J1 starts with 4 clubs (2 in each hand) and makes tramline passes (the RH makes the first pass), J2 starts half a beat later and throws diagonal passes (the RH make the first pass).

On singles, try to slow down the pattern by throwing lofty passes.



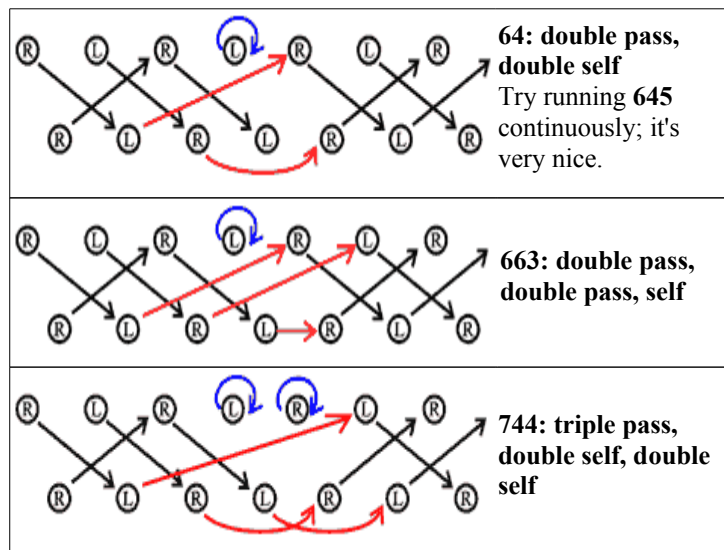
**Variations:** Make the pattern synchronous by having one juggler throwing **doubles** and the other **singles**.

### Syncopations (Siteswaps)

An easy way to add siteswap syncopations is to think of your side of the pattern as "just" a 5-club cascade; the other person is acting as gravity to send the clubs back to you. Now you can throw any siteswap you want.

- all **3s** are selfs, **4s** are self doubles, **6s** straight double passes, **7s** are crossing triples, etc.

- J1 simply sends back normal passes whenever they can.

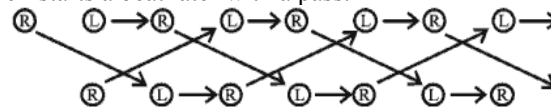


There are many more (really hard) patterns using 5 ball siteswaps: try 7733, 753, 8444, 66751, 8552, 66661.

## 7 clubs : 2-count (Shower) <4p 3 | 3 4p>

The basic 7 clubs pattern. Both jugglers are passing a 2-count on doubles (i.e. **RH tramline double pass, LH self**).

J1 (on top) starts with 2 clubs in each hand and begins with a pass, J2 starts a beat later with a pass.



### Singles

A common variation is to use floaty singles instead of doubles. If it goes too fast, keep cool and throw higher passes and selfs.

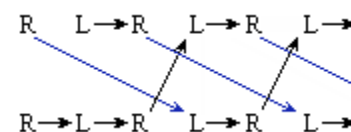
In both the doubles and singles version, any trick from [6 clubs 2-count](#) will work (doubles, triples, trick throws, multiplex...) provided that you make the necessary adjustments (the doubles become triples, etc).

### Variations

#### Triple-Singles:

J1 throws triple passes, all other throws are singles.

<5p|3><3p|3>



Also, one person can throw double passes and selfs, the other singles. Transition between singles, one person doing doubles, both doubles, etc.

## 7 clubs: 4 vs 3 2-counts

These patterns involve one person (J2) doing 3 clubs as if in a standard [6-club 2-count](#) pattern; thus they are good for passers of different abilities.

### 53p vs 2-count <53p | 33p>

J1 throws self triples, all other throws are singles (selfs and passes).

### 4 Fountain vs 2-count <4p4 | 33p>

J1 does an aysnc fountain with 4 and throws continuous early doubles to J2. J1's RH just does 2 in one hand independently of the rest of the pattern.

### 4 Sync Fountain vs 2-count <(4p,4x) | 3p3>

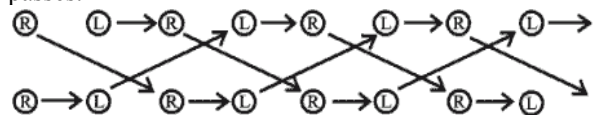
J1 throws crossing LH double selfs and RH tramline double passes.

### 4 Singles Sync Fountain vs 2-count

J1 does 4 in sync singles, every second throw is a RH pass and crossing self from the LH.

## 7 clubs: Crossing 2-count

This pattern is nearly identical to the [classic 7 club 2-count](#) except that J2 makes left hand passes. Both J1 and J2 make diagonal passes.

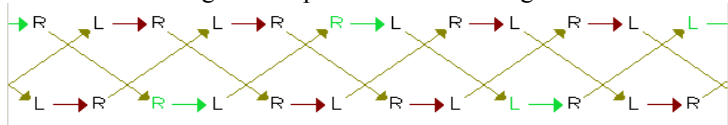


Collisions are avoided because the clubs cross in the centre at different times.

**Variations:** try singles, and in fact all the versions of [2-count](#).

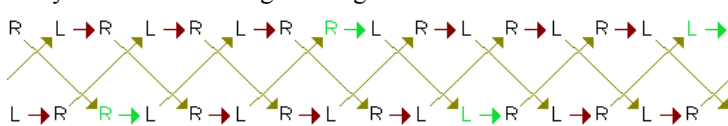
## 7 clubs: Jim's 2-count

Both jugglers throw 3 passes from the right and then 3 from the left. J1 throws crosses and J2 straights. J1 starts with 4 clubs and throws their first 3 passes from their RH; J2 starts at the same time with a LH self and one right-hand pass before switching to the LH.



## 7 clubs: Crossing 4

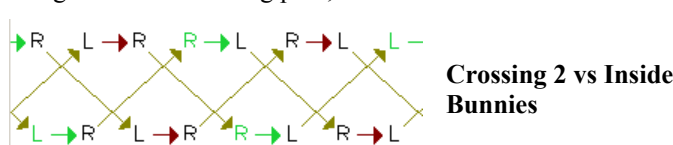
This pattern is like [Jim's 2-count](#) but with the cycle extended to 4 throws on each side by mixing up the passes. J1 throws all crossing passes and J2 throws *one crossing and then 3 straight*. J1 starts with 4 RH crossing passes; J2 starts with the last straight from their RH before switching and doing one crossing from their LH and then straights. J2 can remember it by just doing one crossing after the hurry and then switching to straights.



**Variation:** J1 throws all straights and J2 throws one straight and 3 crossing.

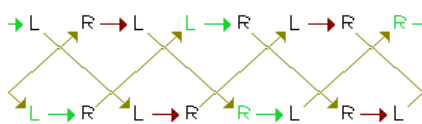
## 7 clubs: Crossing 2 vs Inside Bunnies

This is like [Jim's 2-count](#) with hurries every 2 throws. J1 throws one straight and one crossing pass; J2 throws crosses.



**Variation: Straight 2 vs Outside Bunnies:**

Reverse the hands of J1 to throw one cross and one straight; J2 throws all straights.



## 7 clubs: 3-count (PSS) 4.5p 3 3 966

A very nice rhythm for 7 clubs.

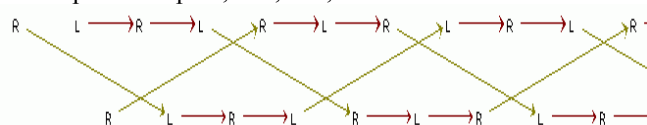
- It's a 3-count, so the feeling is the same as the 6 clubs 3-count. The incoming clubs are those that are thrown back (it's always the same 3 clubs in the air).

- The passes are made on doubles. The theoretical siteswap of the passes is **4.5p** so make them high and slow. It's also possible to make the passes on singles.

- J1 starts with 2 clubs in each hand and juggles : RH pass, self, self,

...

- J2 waits for as long as possible (one and a half beats) and starts with a pass: RH pass, self, self, ...

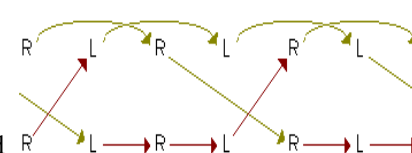


**Variation:** If J2 starts synchronously with two selfs, J1 can throw triples and J2 crossing doubles (<5p33|334p>). Some syncopations: **5 1 4.5p**, a nice 3-count pattern, **5 4.5p 1: self triple, pass double, zip** instead of self pass self. **4 2 4.5p**: throw **self double, hold** instead of self self; feels very different in the pattern. 3-count in singles is [Techno](#). Pretty much anything you can do in [6-club 3-count](#) you can do with 7, just increase doubles to triples, etc.

**Variation:** both jugglers **cross** their passes; then both sides get hurries, but each person will have one hand throw more often than the other (depending on how you start). See [Oddz Godz](#) for more on this.

## 7 clubs: 4 vs 3 3-count

J2 does a standard 3-count (**333p**) and J1 does a 4-club **444p**, i.e. **self double, self double, double pass**. J1 throws crossing doubles and J2 straight singles.



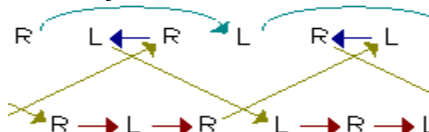
This is a good pattern for passers of different abilities.

**Variation:** J2 passes crossing singles and J1 straight doubles.

**Variation:** several of the 3-count popcorn variations are more difficult variations of **4vs3** pattern: [443p vs 3-count Popcorn](#), and [534p vs 3-count](#).

**888972:** J2 does **4 4p 1** instead of 333p and J1 throws floaty single passes.

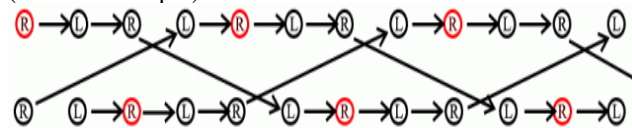
**a69629:** J1 does **self triple, floaty double pass, zip** and J2 does **self self floaty double**.



## 7 clubs: 4-count <3 3 5p 3 | 5p 3 3 3>

Both passers are juggling a 4-count and the passes are made on triples (you got to make them nice & clean). The passes are not thrown at the same time: there's two beats between the pass of the J1 and the pass of J2. To get started, J1 starts with a pass and J2 starts at the same time with the sequence : RH self, LH self, pass...

Since it's a 4-count, you can do many of the 6 clubs 4-count tricks (**441** for example).



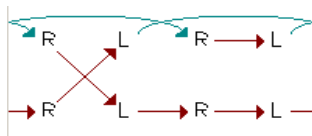
For a speedy but easier variation (because the passes are usually better), throw doubles instead of triples: a good pattern that helps to master the [11 clubs 2-count feed](#).

## 7 clubs: 4 vs 3 4-counts

These patterns involve one person (J2) doing 3 clubs in a standard 4-count pattern; thus they are good for passers of different abilities. J2 can even throw tricks (syncopations, trick throws) to J1 !

### 53p53 vs 4-count <53p53|33p33>

J1 throws LH self triples, all other throws are singles (selfs and passes).

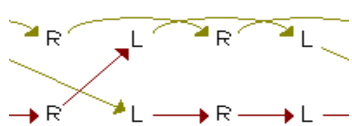


**Variations:** J1 can do **53p44** instead.

### 4 Fountain vs 4-count <4p444 | 33p33>

J1 does an aysnc fountain with 4 and throws continuous early doubles to J2. J1's RH just does 2-in-1-hand independently of the rest of the pattern.

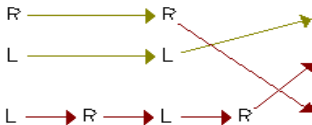
This pattern is slightly harder for J2 as they need to catch doubles. To start, J2 starts with 4 and makes their first pass to J1.



### 4 Sync Fountain vs 4-count

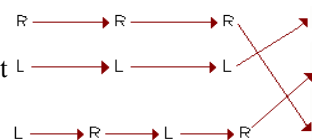
<(4,4) (4p,4x) | 333p3>

J1 does a sync fountain on doubles; every other beat they throw a straight double pass from the RH and crossing double single from the LH. J2 starts with 3 selfs.



### 4 Singles Sync Fountain vs 4-count

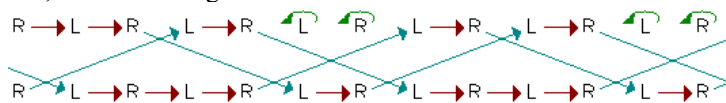
J1 does a sync fountain on singles; every third throw they throw a straight pass from the RH and crossing single from the LH. J2 starts with 3 selfs.



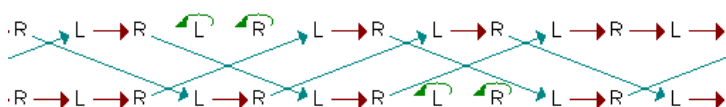
## 7 clubs: Pieces of Eight

These patterns are formed by taking a club from the standard [8-club 2-count](#): the simplest is the [7 club 4-count](#).

At any point in the 7 club 4-count, either person can throw two RH triple passes in a row: the other must respond with two triples (or go into a 4 club pattern !). If this continues, J1 is doing **PPH** with their RH, and J2 is doing **PPS**:



J2 can "steal" the holds by throwing three RH triples back instead of two:

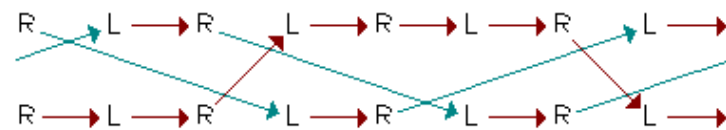


In this way J1 and J2 can constantly try to steal the extra clubs back and forth. At any point either person with the holds can switch back to 4-count by only returning one triple.

This is a great exercise in peripheral vision since you need to keep an eye on what your partner is throwing you while watching their incoming triples.

### Pieces of Ded (TSTSSSPS)

This pattern is formed from the above by "filling" the holds of the other person by throwing a single pass. Counting only right hands, J1 throws **triple pass, triple pass, self, single pass** and J2 does the same, starting with the self. J1 starts with 4 clubs.



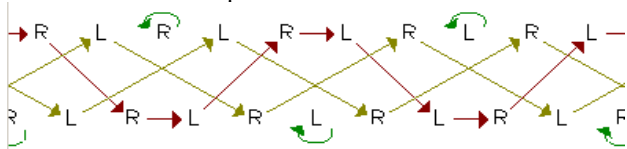
While you are throwing your RH self, look at the other person to "spot" the single you are about to throw: it must be thrown blind as you must watch the first incoming triple pass.

## 7 clubs: 5-count (PSSSS)

Similar to 4-count on triples, except the triples have to be floaty (or the selfs faster). J2 crosses their passes and J1 throws straights. J1 starts with a RH pass; J2 waits 2 1/2 beats (or waits 1/2 a beat and then throws 2 selfs) before their first RH pass.

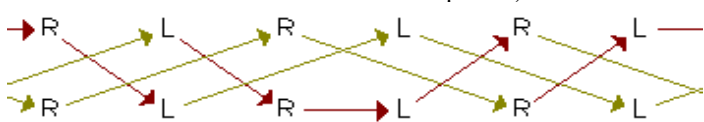
## 7 clubs: PPHPS 3.5p4.5p24.5p3

Each juggler throws **single, double, hold, double, self**, before repeating from the other side. J1 throws crossing singles, straight doubles, J2 throws straight singles, crossing doubles. J1 starts with four clubs and throws their single from their RH, J2 starts with their last double in the sequence from the LH 1/2 a beat later.



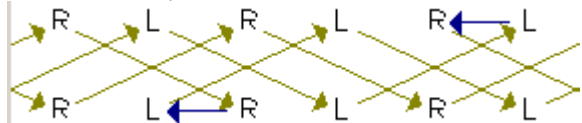
## 7 clubs: PPPPS <3p3p4p4p3p | 4p4p3p3p4p>

The sequence for both jugglers is **straight straight cross cross cross self**, where the straights are singles and the crossing passes are doubles. J1 starts from RH at the beginning of the sequence, J2 starts simultaneously from LH with the second cross pass (i.e. J2 does cross cross self and then into the sequence).



## 7 clubs: PPPPPZ

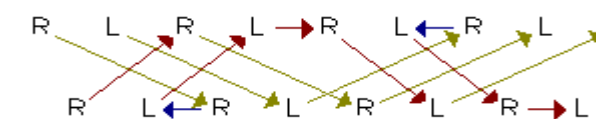
Both jugglers throw all crossing passes on floaty singles (fast) or doubles. J1 starts with 4 clubs at the beginning of the sequence and J2 starts with 3, with PPZ.



**Variation:** PPPZPPZ, all passes are crossing doubles, I think!

## 7 clubs: 7-count PPPSPPZ (9797926)

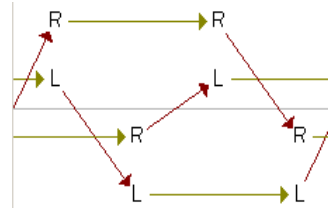
The sequence is **double, double, double, self, single, single, zip**. J1 starts with 4 clubs at the beginning of the sequence, J2 starts with 2 in RH 1/2 beat later with their first single pass. J1 crosses their doubles but not their singles, J2 does the opposite. Make sense? The sequence is symmetric; only one side is shown below:



## 7 clubs: Tower Pass

A synchronous simultaneous pattern: J1 throws **crossing single** passes, J2 **tramline singles**. When a pass comes in to a hand, throw a self double from that hand and then throw the pass back (which occurs simultaneously to a pass coming in to the other side).

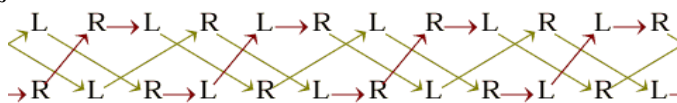
It's like throwing **423p** in a 6-club 3-count (PSS), except a little faster...



## 7 clubs: PPS <4p 4p 3 | 3 3p 4p>

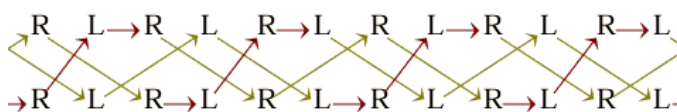
There is no such thing as a *symmetrical* PPS with 7 clubs. In the versions below one of the jugglers must alternate between passes on singles and passes on doubles.

With tramline doubles:



J1 is doing **PPS** with **tramline double** passes (this is the *easy* end). J2 is also doing **PPS** but the first pass is a **diagonal single**, and the second pass is a **tramline double**. You pass twice in a row to the same side of the pattern. You need to make your singles really low compared to the height of the doubles. J1 starts with **PP** from RH and J2 starts with a **self** from their LH.

**Variations:** a variation with a different feel is to throw the doubles as diagonal passes and the singles as tramline. With diagonal doubles:

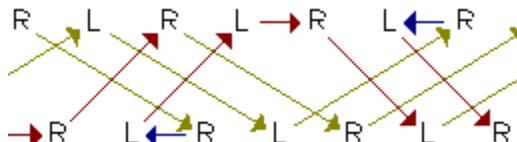


An asynch variation (966777) allows the juggler doing tramline doubles to get away with singles.

One juggler can do 6-club PPS and the other do 6-club PPS with double selfs: **777786 <3.5p3.5p3 | 3.5p3.5p4>**.

## 7 clubs: PPPSPPZ 9797926

The sequence is **double double double self single single zip**, where all passes are floaty; J1's doubles cross and singles are straight, and J2's are the other way around. J1 starts with 4 clubs with the doubles, J2 starts with 3 with their first crossing single 1/2 a beat later from the RH.

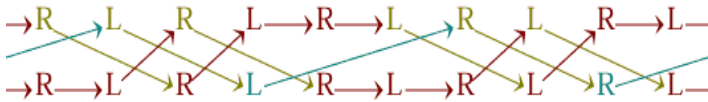




**7 clubs: PPPSS**

Warm up with the [6-clubs PPPSS](#) to familiarise yourself with the tempo. J1 starts with 4 clubs and throws three **diagonal passes** on **doubles** followed by two normal selfs. J2 starts at the same time but throws a self first, before going into their PPPSS sequence: **tramline single, tramline single, tramline triple, self, self..**

The diagram shows the same thing, only with all the crossing throws inverted. Try both versions; it just depends on which hand J1 and J2 start with.



## 99692

This is a similar but asynchronous pattern: each juggler does **double double double hold hold (or self zip)**; J1 crossing and J2 straights. J1 starts with **double hold hold** and J2, with 4 clubs, starts ½ a beat later with the full sequence. All passes are floaty doubles.

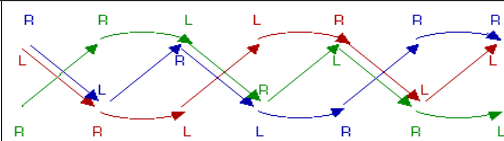
## 7 clubs: PPS Doubles vs Singles <3p3p3|4p44p>

Here's an easy PPS pattern: J1 is juggling everything on **singles**, J2 on **doubles** - even the uncrossing selfs. The passes from J1 are tramline singles and those from J2 are diagonal doubles.

J1 starts with **PPS**, J2 does **PDP** at the same time. J2's double is a non-crossing self double.

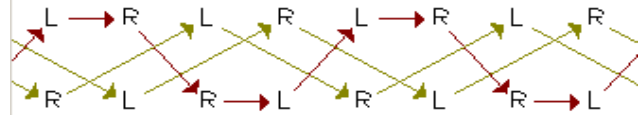


**Variation:**  
all passes are  
singles (!):



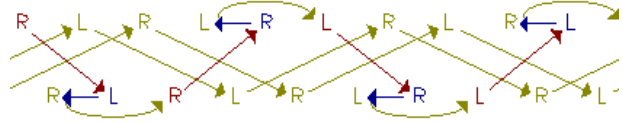
**7 clubs: PPS** <3xp 4p 4p 3 | 4p 3 3xp 4p>

An asymmetric pattern since the period is even (but one person does it left-handed). Make sure you try both sides! The sequence is **crossing single, double, double, self**. J1 starts with 4 clubs with the single, J2 starts with their second double, from the opposite hand). All doubles are tramline.



**Variations:** you can add pairs of **3|4p**, alternating who does what, after the crossing single: effectively you do a 2-count for a while before switching.

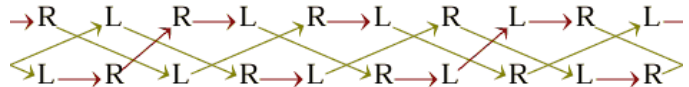
**97892:** for a symmetric version, throw **double, double, self double (same hand), zip, single**. J1 crosses their doubles and throws straight singles; J2 throws straight doubles and crossing singles. All passes are floaty.



### 7 clubs: Bookends (PPSPS)

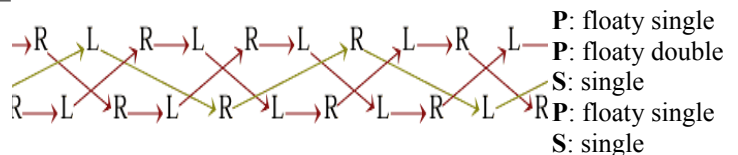
## Basic bookends

Not actually that hard, you just add another pass and another self to the [basic PPS](#). J1 starts with 4 clubs. Don't forget to try both ends and to reverse the passes like in the PPS patterns

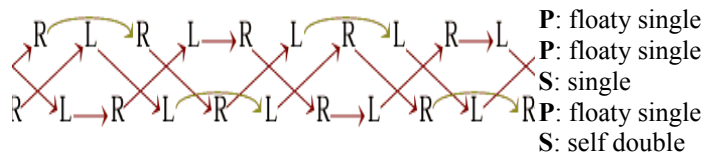


## Asynchronous Bookends 96677

Here is a version where both jugglers do (almost) the same thing. J1 does **floaty crossing singles** and **straight floaty doubles** and J2 does the opposite. J2 has 4 clubs and starts from the RH with **PPSPS**, and J1 starts immediately (half a beat) after with **PS** (then **PPSPS**) from the LH.

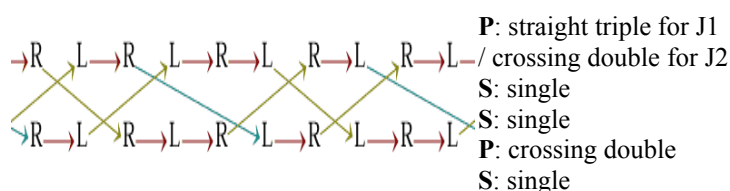
**Funky Bookends 86777**

An even weirder bookends. J1 has 4 clubs, and J2 starts half a beat later with **PS** (then **PPSPS**) on the LH.

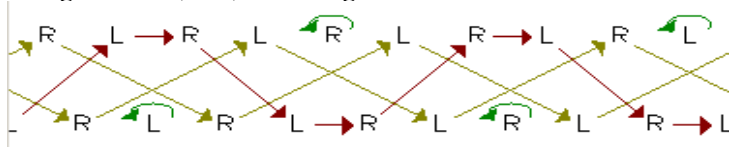


**Sdnekoob**

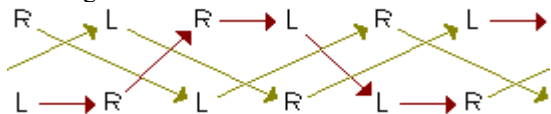
For a 'reverse' bookends (SSPSP or PSPSS) try this one - it even has a triple in it. J1 starts with 4 clubs with **PSS** (at the same time as J2 who starts with **SSP**). The passes don't need to be floaty, and you can try making the crossing passes straight and vice versa.

**Bookends with a hold 97647**

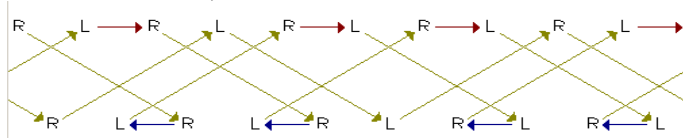
J1 starts with 4 clubs with **cross double, self, straight single, double, hold**; J2 waits ½ a beat and does **straight double, hold, straight double, self, cross single**.

**7 clubs: PPS vs PPPSPS <4p4p33xp4p3 | 33xp4p4p34p>**

J1 feels like they are doing 7-club **PPS** and constantly changing sides. J1, with 4 clubs, does **double double, self, single, double, self**; J2 starts at the same time from the LH with **self, single, double, double, self, double**; all doubles are tramline, all singles are crossing.

**7 clubs: PSPPS/PPZPZ (Dash 3) 9969929962**

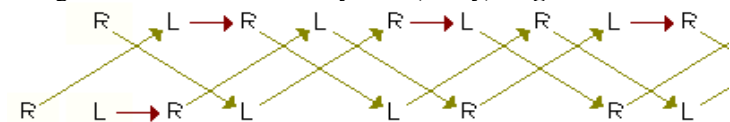
J1 crosses, J2 does straights; all passes are floaty doubles (4.5p). J1 starts with their PS, J2 starts ½ a beat later with PPZ.



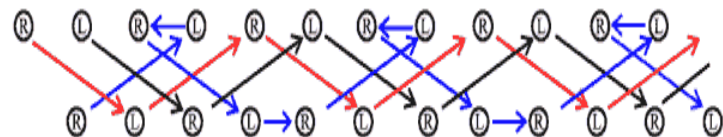
**Variation:** J1 can "steal" the zips by doing PPS instead of a zip; then J2 gets the selfs; J2 (with the zips) can steal the selfs by doing a self after the PZ and continue with PSPPS.

**7 clubs: Frost Frenzy <3 4p 4p | 4p 4p 2>**

J1 does **PPS**, J2 does **PHP**. To start, J2 does **pass self pass pass hold** and J1 waits a beat before doing **PSPP**. All passes are **doubles**, though for extra frenzied fun try it on (floaty) **singles**!

**7 clubs: Compressed Mesopotamia <4p4p4p1| 4p4p4p3>**

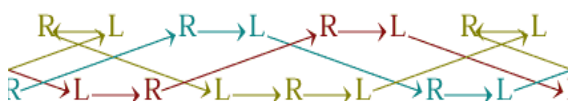
A hardcore rhythm, highly collision prone. Both jugglers are passing straight doubles (perhaps even singles!). J1 does **PPPZ** and J2 does **PPPS**. To avoid collisions, try to keep the passes in corridors.



**Variation:** J1 makes triple passes while J2 makes single passes. Even better would be floaty doubles and floaty singles. Also, see the 6-club (easier) and 8-club (harder) versions.

**7 clubs: Copenhagen Countdown (PSPP SPPS)**

To warm up: [do the 6 club version](#). Think of it as one round of a 3-count (**PSPP**) followed immediately by the reverse (that is **SPPS**):



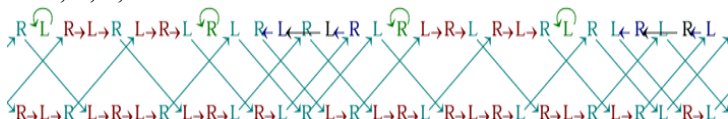
In this pattern J1 (let this be the better juggler if possible) starts with two clubs in each hand throwing the countdown sequence like in the 6-club version but making his passes **crossing floaty doubles**. If J1 starts from the left hand it will be easier for J2, (so J1 actually does the left-handed version of the pattern, while J2 does it right-handed). You could practice the left-handed version with 6 clubs first if you are sure this won't mess up your partner's head even more as he will then have to learn it left-handed. The pattern is one-sided since it repeats every eight beats, and it actually feels a bit different doing the 'left-handed' version.

J2 has two clubs in his right and one in his left and does exactly what he was doing in 6-club version (starting right-handed), only his passes are **straight floaty doubles** (this will be fairly easy if you have the 6-club version solid). J2 starts one and a half beats after J1, so the timing of the start is exactly like in a [7-club three-count](#).

To get this to work, J1 gets two zips instead of two selfs; so her entire throwing sequence is **PZSPSPZ** (Note: The first zip in the first round should be thrown as a normal self, meaning that the first actual zip is throw number 8). The two zips are both from right to left so J1's right hand will be doing no normal selfs (except for its very first throw) so her right hand will be starting with a self and then doing **PPZZPPZ**, etc.

## 7 clubs: Oslo Countdown

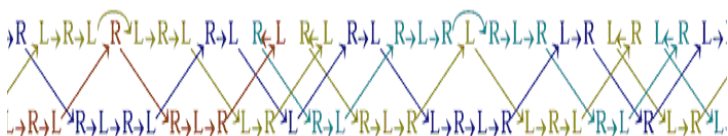
This one is a real bastard as the sequence is 15 beats long (from each side, that is), and furthermore because of collision danger. If you are planning on just a little bit of success with this pattern, learn the [6-club version \(countdown from 4\)](#). Just do one round of 4-count, one of 3-count, one of 2-count, a 1-count, a 2 count, a 3-count, and then all over starting with the other hand. The throwing sequence is **PSSSPSSPSPSPSSP**. The original version of the Oslo Countdown is a synchronous pattern where both jugglers do straight (!) passes - either on triples or doubles. Especially around the one-count the pattern gets a bit weird for J1 as the sequence goes (starting from throw number 8) ... P, hold, P, P, Z, P, empty hand, Z, P, hold ... Good luck. J1 starts with 4 clubs.



When we tried it in doubles we found that making the four-count very fast (try to do a [7-club four-count](#) in doubles instead of triples to warm up) helps. The one-count, on the other hand, should be nice and sloooooow.

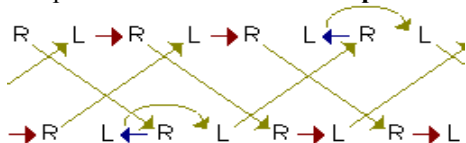
### Asynchronous Oslo countdown

This version is (possibly) a bit easier. There is an asynchronous version that might be a bit easier, as all the passes are floaty doubles (definitely doubles!), and it contains no holds or empty hands. However there is a self double. J1 starts with 4 clubs, and J2 starts one and a half beats later:



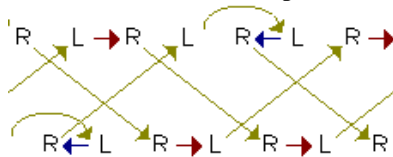
## 7 clubs: WhyNot? 9968926

These patterns are variations of [7 club Jim's 2-count](#). At the pause after three passes, do a **double zip**. The full cycle is **pass self pass self pass double zip**; all passes are floaty doubles, J1 crossing and J2 throwing straight. J1 starts throwing crossing passes, J2 throws one pass and then does **double zip**.



### NotWhy? 9962968

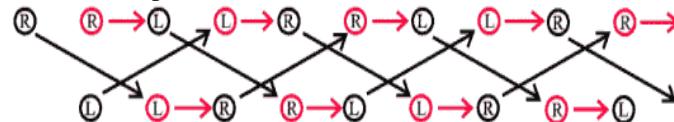
When the third pass comes in, do the **double** to receive it, and then **zip** to the other side. The full cycle is **pass self pass double pass zip**; J1 starts with the passes throwing crosses, J2 starts at the same time with a fast **double zip**.



## 7 clubs: Oddz Godz <4p 3\* | 3\* 4p>

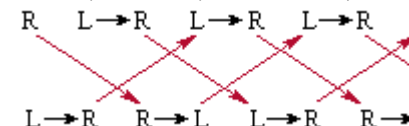
One of the juggler makes tramline passes on doubles. The other one makes diagonal passes on doubles. The rhythm for each juggler is: **RH pass, RH self, LH pass, LH self**. Each hand throws twice in a row: all of the hurries make it very difficult. Throw very floaty doubles to start (even triples). See [Jim's 2-count](#) and variations with hurries for practise throwing hurried 2-counts.

At the beginning, J1 (on top) starts with 3 clubs in the RH and one in LH. He goes like this : **RH pass, RH self, ...** J2 starts with 2 clubs in the RH and one in LH. He starts at the same time as J1 and juggles: **RH self, LH pass, LH self, ...**



### Staggered Godz:

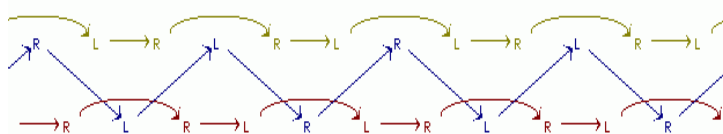
J1 has no hurries, they just alternate **cross/straight** for their passes. The full sequence for J2 is **L-R Self, R-L Double, R-L Self, L-L Double, L-R Self, R-L Double, ...**



## 7 clubs: 3-count Popcorn (French 3-count) 786

Both jugglers do: **pass** (floaty singles, diagonal for one of you and tramline for the other); **self** (crossing single); **double** (non-crossing self).

Since you will be juggling with a delay of a half beat, the second passer needs to wait a bit before throwing his first pass. He can wait half a beat and start with the double or wait 1 1/2 beats and start with the pass.



You throw a pass when you receive one, and only then.

## 7 clubs: Fast 3-count Popcorn

There's a 3-count popcorn that follows the logic of the [7-count](#) and [5-count](#) popcorns. The sequence would be: a self triple followed by a normal self and a very fast pass (a low flat). This pattern is nearly impossible to juggle properly; to juggle it with clubs, you can throw all the passes a beat earlier as floaty singles or throw all the passes on the beat as floaty singles too (swapping the tramline-diagonal in each case). Both patterns will have a hold (or a very low throw, siteswap 2) so the 4 handed siteswaps are **a74** and **a47**. A [8 clubs PPS variation](#) can also be extrapolated if you throw passes instead of holds.

With early singles



With late singles



## 7 clubs : 4-count Popcorn 5 3 3p 3 44p33 443p3

The 4-count (non-ambidextrous) popcorn, is useful as a mean to boost the difficulty of some feeds (see [popcorn feeds](#)).

The sequence is : **RH triple, LH self, RH single pass, LH self**. J1 starts with 4 clubs and begins with the pass, J2 starts at the same time with the triple. Since the sequence is short because of the single passes, it can be difficult to find the correct tempo. Try to concentrate on making your triples high enough and your passes low and fast.



Also try the "twin towers" version : **RH double, LH double** (each double comes back in the hand that threw it) instead of the RH triple, LH self (44 instead of 53).

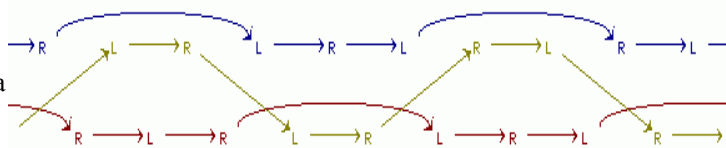
## 7 clubs : 5-count Popcorn a6667 or 86867 443.5p33

Here is what you have to do : **thing, thing, (floaty) single pass, self, self** where :

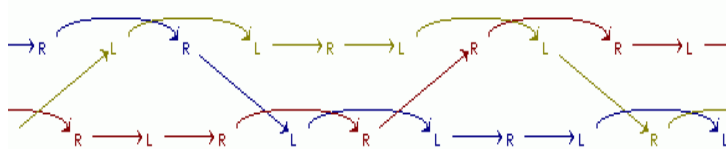
- **thing, thing** = triple, self (original but tricky because of the triple)
- or : **thing, thing** = double, double ("twin towers" version, easier)

When a pass comes your way, you throw 2 doubles (or a triple-self) to get the 4 clubs, make a pass, then throw two selfs before starting again on the other side.

With triple-self : **5 3 3.5p 3 3**



With double double (twin towers) : **4 4 3.5p 3 3**



**Note** : Since the triple (siteswap 5) is thrown every 5 beats, it's always the same club that is thrown as the triple.

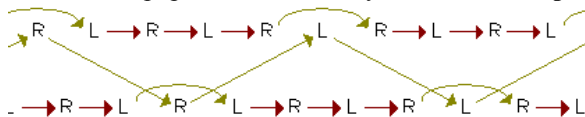
**Syncopations** : There's not too many siteswap variations here because we only have 2 selfs. **42** is a possibility, especially if you throw the 2 as a very fast single. You can also try to throw a self triple on the beat before the normal triple, forcing you to make a transfer instead of a self after the second triple (why ? because you're juggling **551** before the pass instead of **353**).

J1 juggling 551 and J2 juggling 42:

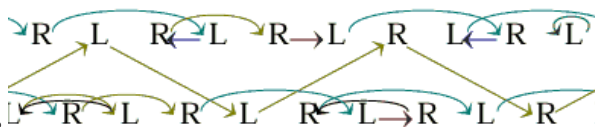


You can also throw an early double followed by a hold - something that opens new possibilities since there's now the hold and the 2 selfs (ie : **233**) to have fun with. (if you're doing **443.5p** the early double gives you a **333** to play with). Try **530** for example, **440** or **413**, **512** (throwing the 2 or not, you decide).

The 5-count popcorn with all early doubles is **4 4.5p333**:



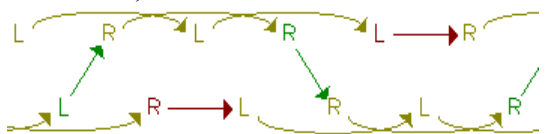
With some siteswaps: 413 and 512 for J1, 440 and 530 for J2:



**Variations**: add extra pairs of 4s and 3s to either end to make the sequence longer: one pair for 7-count, two pairs for an easy 9-count popcorn, etc.

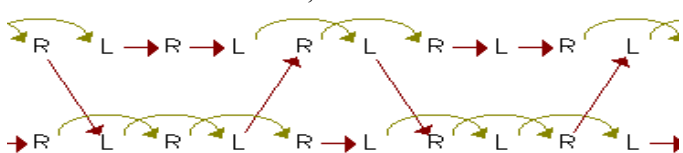


**88685:** a 5-count popcorn with a fast (**2.5p**) pass: each juggler does **double, double, double, pass, self**. J1 starts with 3 clubs with their first **double**, J2 starts with 4 clubs  $\frac{1}{2}$  a beat later with **pass self**.



### Asymmetric 5-count Popcorn <3p 3 3 4 4 | 4 4 4 3p 3>

Here J1 spends 2 beats lifted into 4 clubs, J2 three. J1 starts with four clubs and does **PSSDD**, J2 does **DDDPs**.



**Variation:** J2 can pass their third double and then do a siteswap afterwards: **DD double pass SS**.

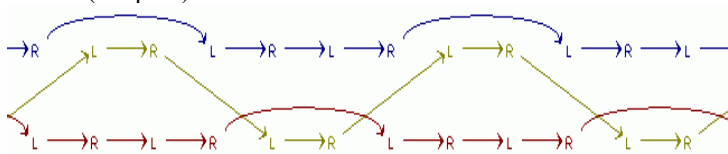
## 7 clubs : 6-count Popcorn (3-2-1)

<333534p | 534p333>

The right hand sequence (the left hand throws only singles) for each juggler is :

- **triple-self** (thrown to the left hand) ("3")
- **tramline double pass** ("2")
- **self** ("1")

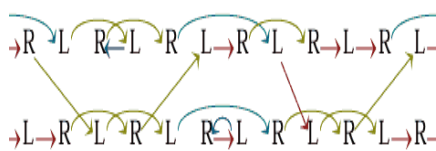
It's just a round of solo triple-single (the triple is a self) when the double (the pass) comes in.



**Variation:** replace the triple-selves by double-selves and the passes on doubles by passes on singles (**JiffyPop**). It's faster, but lower and thus easier to master.

Try replacing the **triple-singles** (siteswap **53**) by **self doubles** (**44**, called "**Twin Towers**"). As a matter of fact, you can switch between the two at any moment. Also, since each juggler gets 3 normal selfs after the pass, you can get into **441** or **531** (leading to their own variations). A final variation can be juggled by throwing a right hand double self instead of the pass followed by a diagonal single pass (**5343p33**).

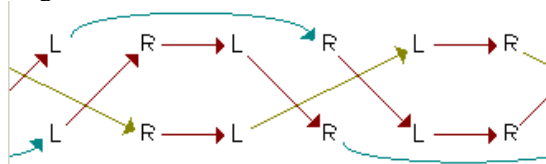
### Variations:



- J1 juggles triple-singles with a bit of 441 then throws the diagonal pass with single spin.
- J2 does the "twin towers" beginning with 531.

## 7 clubs : 6-count 3-pass Popcorn <4p533p3p3>

Here is a difficult popcorn, created from taking the [6-count popcorn](#) and adding extra passes. The sequence is **triple, self, single pass, single pass, self, double pass**. J1 starts with their triple and J2 starts with 4 clubs with their **pass, self**. Double passes are crossing, singles are not.



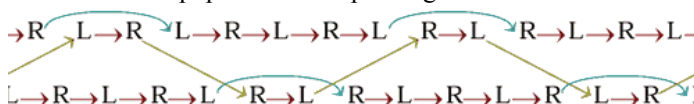
Note that there are two places where both jugglers are doing selfs, and thus **two more single passes** could be added in, to get **PPPPPT** !

## 7 clubs : 7-count Popcorn 966a666

Take the [6-count popcorn](#), and apply these modifications :

- add a self (we now have an ambidextrous pattern)
- make the passes floaty (**4.5p**)
- one juggler makes diagonal passes.

7 clubs 7-count popcorn with triple-single

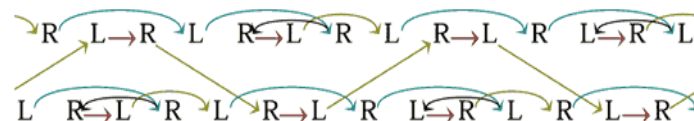


If we break it down, we have:

- **triple-self** (or double-double; "twin towers")
- **pass** as a floaty double (tramline for you, diagonal for your partner)
- **4 normal selfs**
- ... (same thing on the other side of the pattern)

**Variations:** Try the same variations as in the [6-count](#). You can choose to throw a 441 or the 531 at different times because of the 4 selfs that you have to play with. Or you can do any 3 club siteswap of length 4, like the superfuncky 5340. If you juggle it continuously, add another club and make the pass a floaty single, you have the [8 clubs 7-count popcorn of Jon and Dani](#).

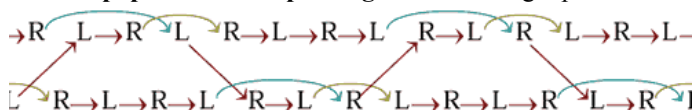
With continuous 5340:



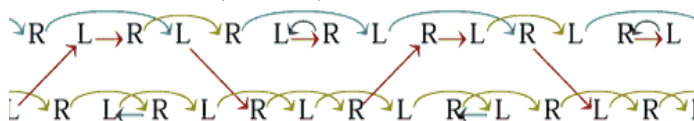
By replacing the pass on the double by a right self double (a normal 4), followed by a floaty single pass (diagonal if you were throwing tramline doubles and vice-versa), we obtain a fantastic rhythm (**a666867**). It's easier if you can both juggle 534 solo, because what you're doing here is a 534 followed by a floaty single pass then 3 normal selfs before starting again on the other side.

Also try **triple triple zip pass (9a6a626)** instead of self triple self pass..

**7-count popcorn with triple-single and late single pass.**



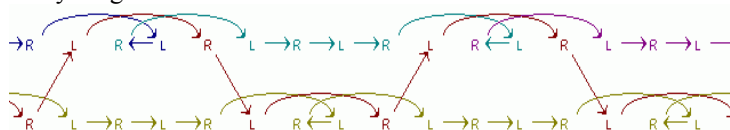
For a spicier variation even, you can try any of the 6-count variations since you still have 3 selfs left to play with. Here's the diagram of J1 juggling a popcorn and 531 (**a687a62**) while J2 does the Twin Towers with a 441 (**8887882**). Good luck...



## 7 clubs: 8-count 5551 Popcorn

<5 5 5 1 3p 3 3 3 | 3p 3 3 3 5 5 1>

In this pattern, it's always the same club that is passed back and forth, as a single. When the pass comes in, flash your 3 clubs (as triples in theory, however it's easier with floaty doubles), catch the pass, feed it to the other hand, pass it back to your partner then catch everything that comes down.

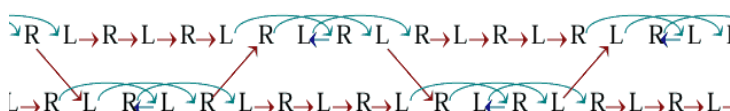


Make your flash on doubles and concentrate on throwing the second double (left hand) high enough to calm things down. Also, be careful with your single passes; there's a natural tendency to throw them a bit too high.

## 7 clubs: 9-count 5551 Popcorn

This is the ambidextrous variation of the [8-count 5551 popcorn](#). All you have to do is add an extra self. In order to do that, one of you must throw tramline passes while the other responds with diagonal passes. All passes are singles and must be as floaty as possible.

The beginning is the same as in the 8-count. The sequence becomes: **triple, triple, triple, zip, pass, self, self, self, self** and repeats on the other side. Throwing doubles instead of triples will probably be easier here too.



## Popcorn Oddities

### 2-count Popcorn 43p

Each of you juggles two in one hand in one hand and passes the other 3 (in singles, as in ultimates) with the other hand; J1 (4 clubs) starts with pass while J2 starts with double self. For a faster (and symmetric) version see [Tower Pass](#).

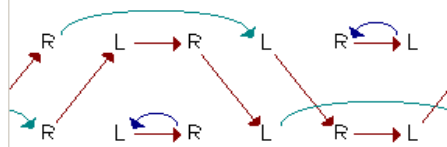
**Hard version:** the two opposing hands doing 4's do triple-singles between them (**5p3p**).

### Asymmetric Popcorns

The patterns based on **444** or **534** vs **3-count** can be seen as asymmetric popcorns: one juggler never lifts into 4, the other never drops into 3.

### Progressive Popcorns

These are patterns in which each juggler lifts twice, then drops twice, i.e. 2 -> 3 -> 4 -> 3 -> ... clubs. Eg: **533p3p31(6)**:



An 8-club progressive sequence is **554p44p334**.

### Longer sequences

Popcorns can be lengthened in several ways: add extra self throws on either end (i.e. an extra 4 for you, 3 for your partner, then vice versa), make higher passes, enabling your partner to get in more selfs before lifting their pattern. You can also lengthen by **adding rounds of normal 2-count** when you pass: instead of passing one away, pass two away; when you receive a pass, throw one away before lifting into 4.

**4p3 vs 43p:** any **4p3** can also be a **43p**, and vice versa.

**Siteswaps:** Wherever possible, throw in siteswaps: **441**, **423**, or **531** instead of **333**, etc. Siteswaps involving early triples or late singles (that don't mess up your partner) work well.

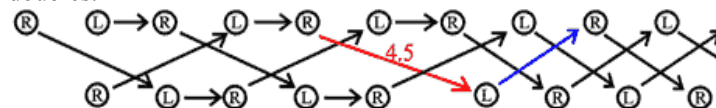
### DDSDT (2-2-1-2-3)

This nice rhythm is formed by extending the standard [6-count popcorn](#) (**triple-double-self**). The full cycle, counting RHs only, is **double pass, double pass, self, double pass, triple** (the triple is a self). J1, with 4 clubs, starts at the beginning of the cycle. J2 starts 1 beat later with **double pass, triple**.

## 7 clubs: 2-count/1-count transitions

### From 2-count to 1-count

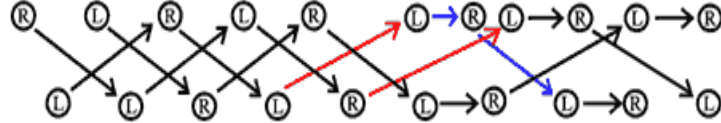
From a 2-count on singles (floaty ones), A throws a double (instead of the single; in red in the diagram) to B. A then makes a last self before going into ultimate with diagonal throws. B waits for the double to come down before getting into ultimates with tramline passes by throwing a left hand pass (in blue) under the incoming doubles.



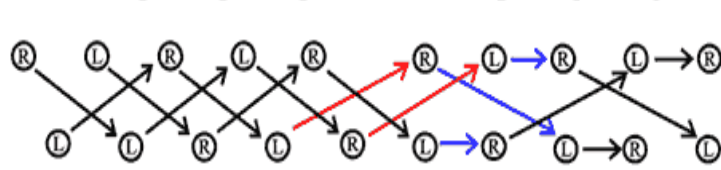
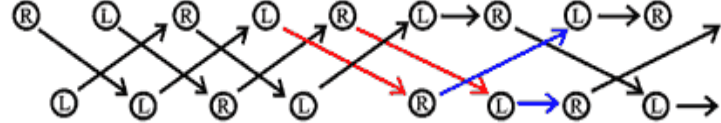


### From 1-count to 2-count

From 1-count on singles, the juggler who is throwing diagonal passes makes a diagonal double (LH to LH) instead of a single, followed by a tramline double (RH to LH) before clicking into the 2-count. When the first double arrives, the other juggler goes directly into a 2-count (a self instead of a pass, you'd better react quickly!). The 2-count you both fall into can be juggled on singles or doubles.



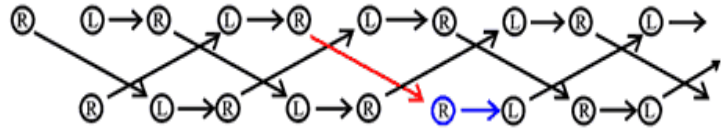
### Variations (from ultimate to 2-count)



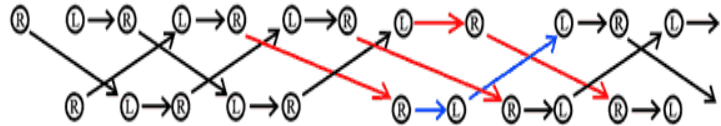
### 7 clubs : Transition 2-count/crossing 2-count

#### From 2-count to crossing 2-count

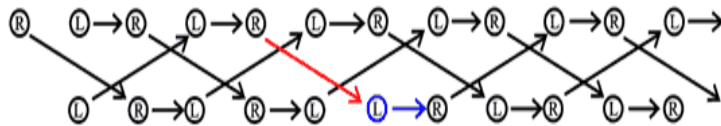
2-count to crossing 2-count / with hurry



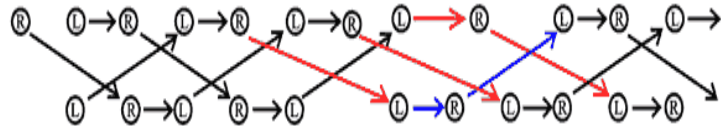
2-count to crossing 2-count / slow version



#### From crossing 2-count to 2-count (with hurry)

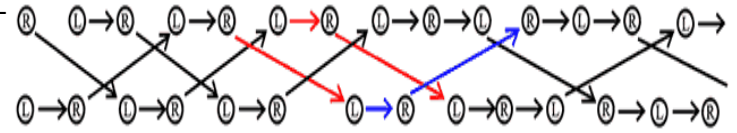


Crossing 2-count to 2-count / slow version

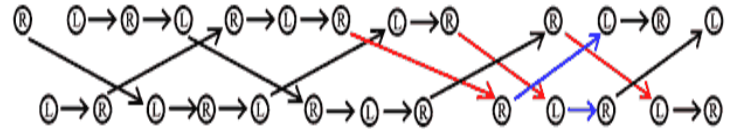


### 7 clubs : Transition 2-count/3-count

#### From 2-count to 3-count

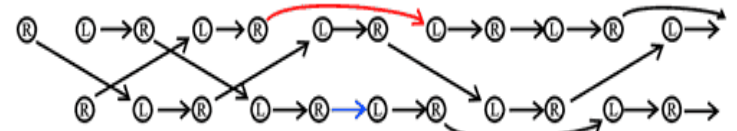


#### From 3-count to 2-count

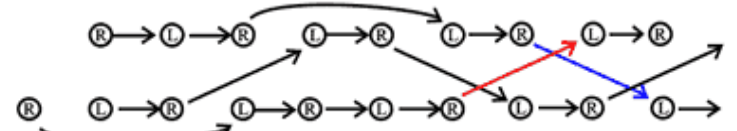


### 7 clubs : Transition 2-count/6-count popcorn

#### From 2-count to regular popcorn



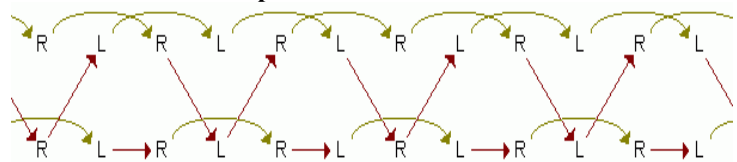
#### From popcorn to 2-count



### 7 clubs: 443p vs 3-count Popcorn

J1 does 443p, i.e. double-double-pass. J2 does pass-self-double, which is 3-count popcorn. The result is an asymmetric popcorn that includes no selfs for J1, his share of juggling 3 objects reduced to the pass. The passes are normal straight singles for both jugglers.

The easiest way to get it going is for J1 to start with 4 clubs and jump right into the sequence. J2 starts with 2 clubs in the right hand and 1 in the left. He waits for J1's first pass to arrive and then starts with his left hand with pass-self-double.

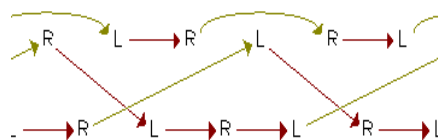


## 7 clubs: 44p3 vs 3-count Popcorn

J1 does **4 3.5p 3**, the 3-count popcorn (**pass self double**) passing tramline floaty singles, and J2 does **3 3 4.5p**, i.e. classical **3-count**, passing tramline floaty doubles.

The start is easy, J1 starts with 4 clubs; he throws a RH floaty single pass. J2 waits as in a 7 clubs 2 count and then throws a RH double pass.

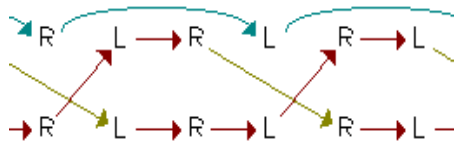
This pattern is very cool because you can teach the classical 7 clubs 3 count (**4.5p 3 3**) to your partner and you can learn the 3 count popcorn.



**Variation:** switch who is passing doubles vs singles: J1 does **4 4.5p 3**, J2 **3 3 3p** (i.e 6-club 3-count). Lengthen the pattern by adding 4s and 3s together (J1 stays in a 4 club pattern for longer).

## 7 clubs: 534p vs 3-count Popcorn <534p | 3p33>

J1 does **534p**, passing crossing doubles; J2 does **PSS** (3-count) throwing tramline singles.



**Variations:** switch who is passing doubles and who singles; switch who is crossing and who throws tramline. Also, both jugglers throw floaty singles and J1 throws his/her 5 as a double. J1 can do **444.5p**. Since J2 is doing 6-club 3-count they can throw syncopations like **44p1**, **53p1**. Make the pattern longer by adding 4s and 3s, one for each person.

## 7 clubs: 534p3 vs 4-count Popcorn <534p3 | 4p334>

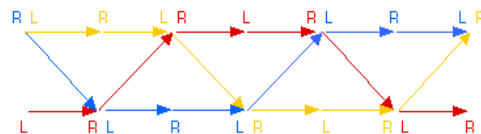
This pattern is doubly asymmetric: one-handed and one-sided. J1's LH does **selfs**, RH does **self triple, double pass** (tramline). J2 does a 4-count on doubles. J2 starts with 2 clubs in LH and starts with **SPSSSP**... passing tramline doubles.

**Variation:** passes are floaty singles and J1's 5 is a double.

## 7 clubs: Techno (3-count singles)

This is actually the [7 clubs 3-count](#), but done in singles. It's a lot harder but it can be done. As the diagram below shows clearly, you need to make synchronous throws sometimes. The sequence becomes:

- RH pass / LH self
- RH self
- LH pass / RH self
- LH self



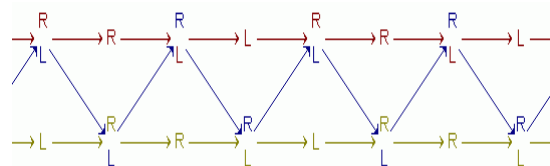
- J1 starts with 2 clubs in each hand and juggles: RH pass/LH self, self, ...
- J2 waits for a beat and starts with a pass: RH pass/LHself, self, ...

## 7 clubs: French Techno

Remember that when you do singles instead of doubles in the [7 clubs 3-count](#), you get a rhythm called **Techno**. One can switch at any time between 3-count and [French 3-count](#). So there is also a compressed version of French 3-count, similar to Techno.

The sequence is very similar to the one of techno, but the self that is done at the same time as the pass is now a straight self (RH to RH or LH to LH). This is in fact the self double from the French 3-count that has become a single.

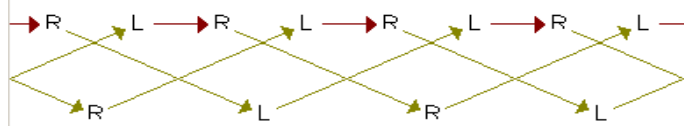
- RH pass/LH straight self
- LH self
- LH pass/RH straight self
- RH self



- J1 (crossing passes) starts with 2 clubs in each hand and juggles: RH pass/LH straight self, self, ...
- J2 (straight passes) starts a beat later with: RH pass/LH straight self, self, ...

## 7 clubs: Slow/Fasts

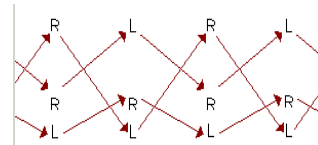
**1-count / 2-count:** Similar to the [6-club slow/fast](#), J1 alternates straight and crossing passes in 2-count, J2 returns each pass to J1's LH. All passes are doubles; the rhythm is staggered (J2 starts ½ a beat late).



**Variation:** J2 could pass triples and start at the same time.

### 7 club 1-count / 4,2x:

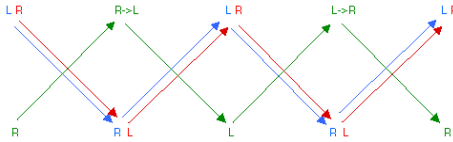
All passes are tramline; the fast person throws a pass and crossing self, then the same in the other direction. All throws are hurried...



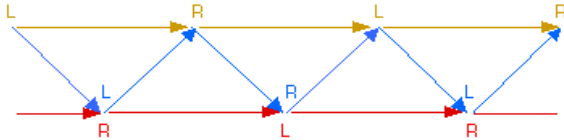
**Variations:** try the other 6-club slow/fast patterns with 7 by replacing single passes with doubles.

## 7 clubs: 6+1 Ultimates

This pattern is based on [6 sync 1-count](#). The rest beats of the base pattern offer room to add a seventh club which is passed diagonally to avoid collisions. The version below is way easier for the second passer; it is possible to change roles on the fly.



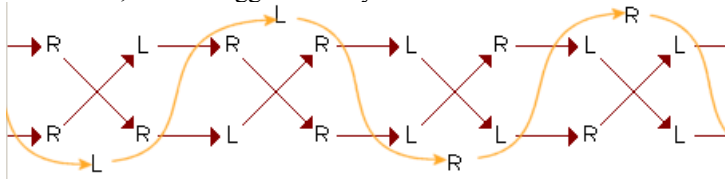
## 5+2 Ultimates



## 7 clubs: Augmented Jim's 2-count

A related idea is to use holds in Jim's patterns to add extra clubs. This pattern is perhaps the most do-able: in a [6-club Jim's 2-count](#), add a seventh club which is passed on doubles between the hands where there is a hold.

The extra throw occurs halfway between two “hurried” throws of the other hand, which staggers the rhythm:



It may be easier, for those used to patterns involving (4x,2) throws, to throw the double simultaneously with the hurried single from the other hand. J1, who is crossing their singles, throws straight doubles, and J2 throws straight singles and crossing doubles.

**Variation:** theoretically any Jim's rhythm (or rhythm with a long hold in one hand) can be augmented in this way, but this seems easiest: Jim's 3-count would be augmented with a triple, which is very hard, and Jim's 1-count is already quite hard.

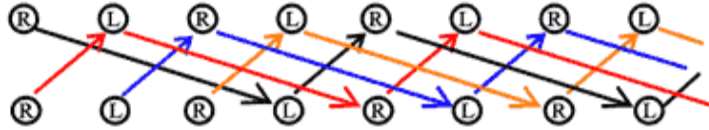
## 8 clubs: 1-count (Ultimates)

If both jugglers just throw doubles, i.e.  $\langle 4p \mid 4p \rangle$  there is a huge problem with collisions.

### 8 ultimates, possible versions

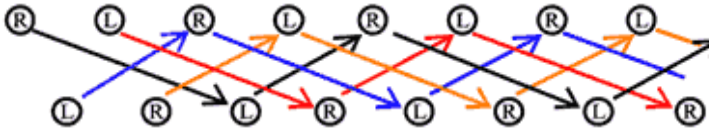
A doable solution (but hard anyway) consists in having one juggler throwing very high (triples), and the other very low (singles). The juggler who starts with singles has 5 clubs (at least on the following scheme).

8 clubs ultimate, doable but hard version :  $\langle 5p \mid 3p \rangle$



A much easier solution is to have a juggler throwing floating doubles and the other one throwing floating singles, just under the doubles. Both jugglers start with 4 clubs each.

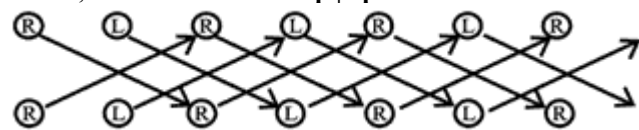
8 clubs ultimate, "easier" version:  $\langle 4.5p \mid 3.5p \rangle$



**Note :** In the following, I show desynchronized rhythms (LH, then RH, LH...). Since in 8 ultimate you juggle 4 clubs separately on each side of the pattern (red lines & orange lines on one side, blue lines & black lines on the other), you can have the matching synchronized version, with RH and LH throws at the same time, in which it's easier to see what's going on in the pattern (even if it's harder to achieve).

There is also a last version, completely different from the previous. It consists in crossing every pass (RH→RH and LH→LH); you'll have to be desynchronized. The height of the passes is doubles' height, but you can also throw higher singles. Obviously it's much harder with singles.

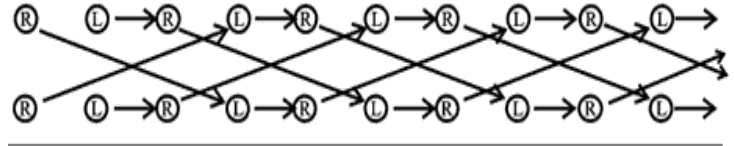
8 clubs, crossed ultimate :  $\langle 4p \mid 4p \rangle$



## 8 clubs: 2-count $\langle 5p \ 3 \mid 5p \ 3 \rangle$

Theory would request triples for 8 club 2-count, the matching siteswap being '5p 3'. Most passers use doubles because it is easier to throw doubles than triples, even if the rhythm is faster. On the other hand, triples will be more spectacular and a good training for [9 club 2-count](#).

Assuming you are throwing doubles, it will be the same as [7 clubs 2-count](#), the only difference being beginning at the same time with four clubs each, and also it's a little faster.



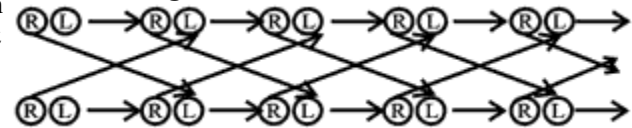
### 8 clubs synchronous

The trick is to have your own self and your single pass thrown at the same time; both hands throw at the same time.

On doubles, it is like doing 4 clubs synchronous; here 1 hand throws crossing self doubles and the other passes, all at the same time.

**Variation:** for a symmetric pattern, throw **LH self / RH pass** (both doubles), then **RH self / LH pass** ( $4xp, 4x$ )( $4x, 4xp$ ). It also works, though is harder, to make the selfs non-crossing and the passes crossing (though watch for collisions) ( $4p, 4$ )( $4, 4p$ ).

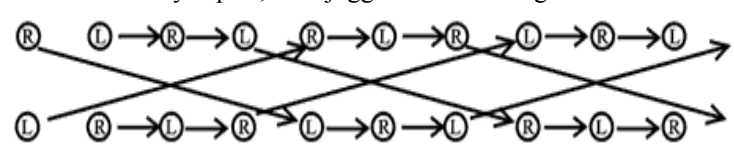
### 2-count on singles:



With a lot more practice, one can go from 8 clubs 2-count triples to doubles, and then to singles, and back.

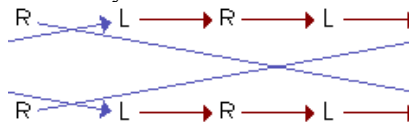
## 8 clubs 3-count $\langle 6p \ 3 \ 3 \mid 6p \ 3 \ 3 \rangle$

Passes are floaty triples, both jugglers throw straights.



## 8 clubs 4-count $\langle 7p \ 3 \ 3 \ 3 \mid 7p \ 3 \ 3 \ 3 \rangle$

Passes are floaty triples, both jugglers throw straights and do their selfs really fast.

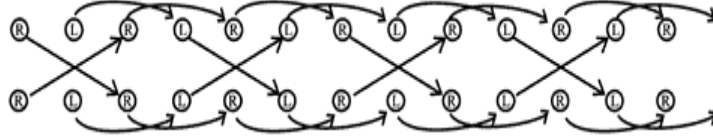




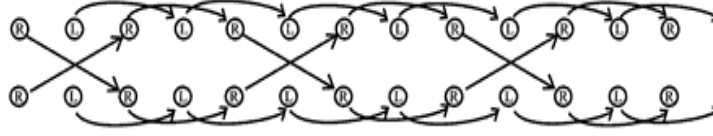
## 8 clubs: Symmetric Synchronous Patterns

Both passers **MUST** be extremely steady with four clubs. Each juggler starts with 4 clubs doubles (in the same time), then you throw a (double) pass in synch.

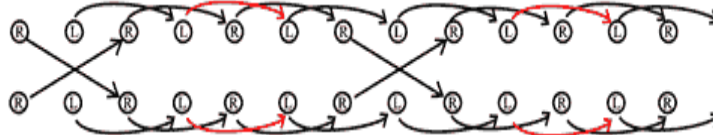
### 3-Count (PSS) <4p44 | 4p44>



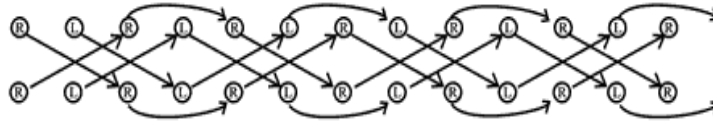
### 4-Count (PPPS) <4p444 | 4p444>



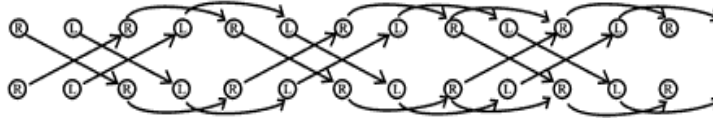
### 6-count <4p44444 | 4p44444>



### PPS <4p4p4 | 4p4p4>

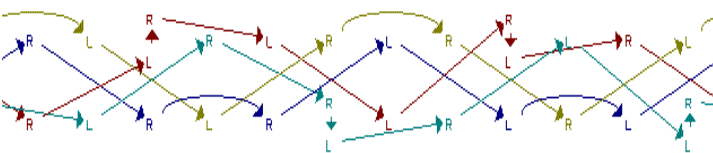


### Chocolate Bar (PPSS) <4p4p44 | 4p4p44>



## 8 clubs: Mild Madness

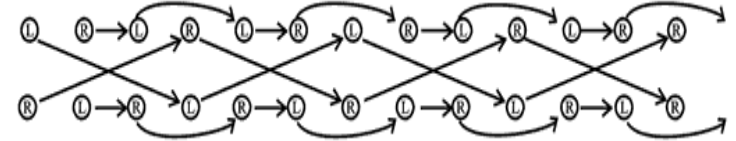
Top juggler crosses, bottom juggler throws tramlines. The full cycle is **PPS PPScZ** (where Sc is a crossing self double).



For two passers who can comfortably throw multiplexes in patterns, try <[43]23p>. It's like a 6-club 3-count, except when a pass comes in it triggers a multiplex **self+double**, and the self is collected for the next multiplex in the other hand; meanwhile the pass is thrown back out from under the double.

## 8 clubs: 3-count Popcorns <5p 3 4 | 5p 3 4>

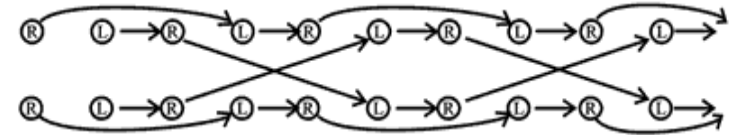
A little bit like [7 clubs popcorn](#), and also like **534** alone. The rhythm is **pass, self, double, pass** :



**Variations:** pass the 3s, or the 4s. These are technically symmetric synchronous patterns like the above, but with different siteswaps. Try **552**, **633**, etc.

## 8 clubs: 4-count Popcorn <5 3 5p 3 | 5 3 5p 3>

This rhythm comes directly from [regular 7 clubs popcorn](#), but it is not so usual with eight clubs, though quite easy to manage. In theory, each juggler throws: RH triple self, LH single self, RH triple pass, LH single self.

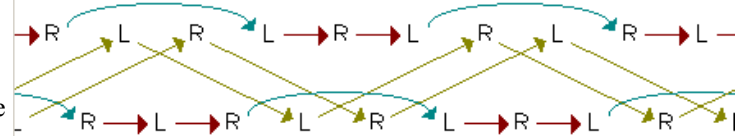


When you practice, you realize it's easier to replace triples (passes and selfs) with doubles (as you would do with 7 clubs popcorn). It's a little faster and lower, but not so ugly.

A second 4-count popcorn, this one involving two passes, is <**5 4p4p 3 | 4p 3 5 4p**>: triple, pass, pass, self, all passes are straight doubles. This popcorn is [progressive](#).

## 8 clubs: 5-count Popcorn 5 4.5p 4.5p 3 3

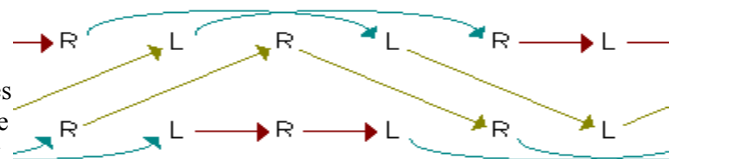
Triple, pass, pass, self, self... something like that. J1 crosses and J2 throws tramline, all passes are floaty doubles.



This popcorn is [progressive](#).

## 8 clubs: 6-count (Svendborg) Popcorn 554p4p33

**Triple, triple, pass, pass, self, self.** Passes are crossing doubles.



A faster but lower version might involve self doubles and floaty single passes... let me know if you try this.

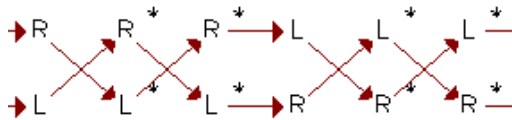




## Fun Ideas with Rhythms

### Creating New Patterns

- For a one-sided pattern, both jugglers add in a **self** somewhere to make the pattern **switch sides** (though sometimes this is not possible, especially with 7+ clubs).
- try everything **left-handed**.
- Reflect** one side of the pattern: cross all passes that are normally straight (and vice versa) and make only one side of the pattern left-handed. e.g. [7 club 2-count](#) turns to [Crossing 2-count](#) by reflecting one side.
- Vary the **position**: try **side-by-side**, **back-to-back**, one person stands **in front** of the other person; stand **far apart** and increase the height of passes (or not), stand very **close together** and throw short non-spinning passes; one person stands on a chair, one person stands on a balcony above the other...
- Rotate** the pattern: J1s RH becomes their LH, LH becomes J2s RH, J2s RH becomes LH, J2s LH becomes J1s RH. For example, rotating [6 clubs 1-count](#) gives two separate 3-club patterns.
- Adding **hurries**: have one juggler switch hands so the pattern starts reversed for them. Sometimes the resulting pattern is impossible but sometimes you just get lots of **hurries...** for example, **PPS hurried** (hurries are \*s):



There can be collision problems; one juggler must throw inside and catch outside.

## Games

- Mixed objects**: who said you can only pass clubs? Clubs mixed with large balls is fun. For patterns in which some objects never get passed (3-count, PPS) use a chainsaw, egg, rubber chicken, etc.
- Juggle 3 clubs each in time. Make a pass whenever the count:
  - is divisible by 7, contains a 7, or the digits add to 7 (**7-up**)
  - is a *digit of pi*
  - is *prime*
  - is *composite* (not prime)
- Patterns From Hell**: pick a number  $n$  coprime with the period of the base rhythm (i.e. 5 for a 3-count); both jugglers throw every  $n$ th throw as a double.
- Random 5-club 1-count**: throw to either hand, or throw two at once, mix in zips, throw the 2s with the other hand, etc ...
- Random Jim's**: with two passers solid with any Jim's pattern (3-count and 4-count work best) start with the base pattern and then start randomly passing to either hand. One juggler is responsible for avoiding collisions.
- Random Feed**: in a 4-person line feed with 13 clubs (or  $n$ -person line with  $3n+1$  clubs), FF passes doubles on 2-count and randomly swings passes up and down the line. Feedees pass back when FF's pass is halfway to them.
- Random 6-clubs**: two *solid* passers juggle 6 clubs and then just start passing randomly. That's it!! Tip: juggle *very slow*; high throws give you (and the other person) more time, and multiplexes are useful to get out of jams (though trouble for the other person).
- Vincent Bruel's **Random Passing Rhythms** game: you start with all one colour of club (say, white) except for one different (the "indicator", which J1, the "leader", starts with). The indicator, when passed, indicates the recipient will then juggle one round of a prearranged count (say, 3-count); a white club indicates the "base" pattern (say, 4-count). Spice it up by adding two or more different coloured indicators.
- Battle Passing**: two jugglers do a [6-club 2-count](#). The "server" throws as poorly as possible, within limits (passes must be within the "zone of catchability", no more than 3 spins, etc); the "receiver" must send back as perfect passes as possible. If the receiver survives 20 passes (or 10, to make it easier) without dropping they get a point. Serve alternates.
- Random 3-count**: the two passers must be solid with Jim's 3-count. You do 3-count and pass randomly.
- Random 3-count Feed**: requires one *very solid* feeder and two solid feedees. The feedees do a [Random 3-count](#) and the feeder tries to keep it all going !

# Feeds

Feeds are the most commonly seen 3-person pattern. One juggler, the “feeder” (FF) alternately passes to two other jugglers, the “feedees” (F1 and F2), who do not exchange passes between each other. Generally FF should be the better passer of the three of you, though there are many feeds where the feedees have as hard a job as FF!

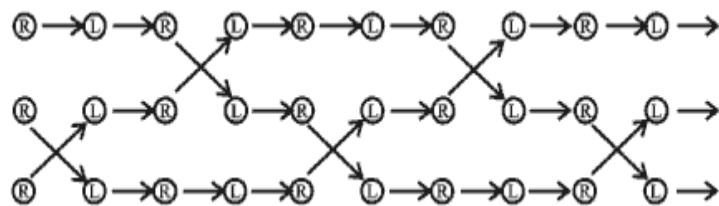
## 2-count Feeds

Feeds where the feeder is juggling a 2-count while the feedees are passing a 4-count.

### 9 clubs

All the passes are made on singles. Both feedees are juggling a 4-count. While F1 is passing, F2 is making a RH self.

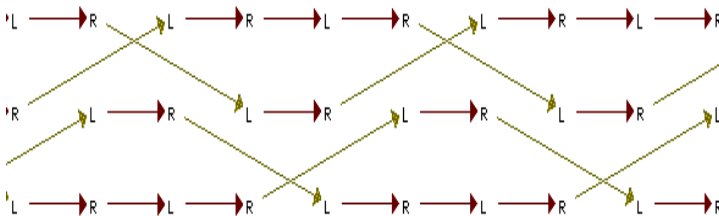
- FF is juggling a 2-count and alternately feeds F1 and F2.
- F1 and F2 can throw any 4-count syncopations (doubles, triples, ...) except they must be careful if they throw “late” throws, as they may collide with the other feedee's passes.
- FF can throw any 2-count syncopations (provided he makes sure they arrive to the right feedee)
- A good feeder can compensate for the errors made by 2 novice feedees.



### 10 clubs

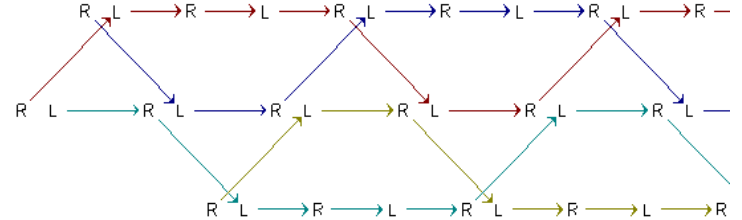
The 10 club feed isn't much harder if the feeder is solid on [7 clubs 2-count](#). All passes are made on doubles. FF starts with 4 clubs; both feedees with 3 each.

- The feedees “reply” to the passes of the feeder : they wait to see that a pass is coming their way before answering. It means that the pass from F1 to FF is thrown a beat after the pass from FF to F1.
- There's a risk of collision between the passes from F2 to FF and those from FF to F1 (see diagram at the top). To avoid this, F2 must aim a bit outside, on the left of FF.



### 10 Clubs: On singles

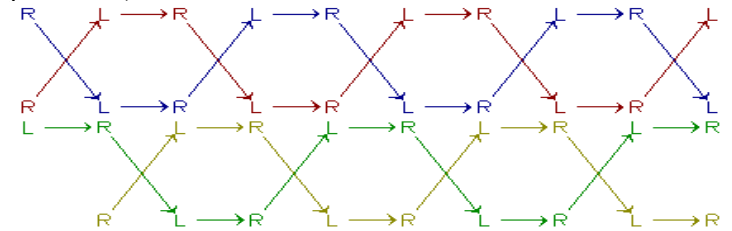
This is similar to juggling [7 clubs 2-count](#) on floaty singles. The collision risk is less important than with doubles.



### 10 Club Sync Shower Feed

This pattern is really advanced for FF. Essentially, he does one side of 8-clubs 2-count in singles, passing a lofty single with the right hand while simultaneously throwing a same height single self from the left hand.

Both feedees juggle a right-handed 2-count pattern with throws as high as the feeder's (they should try to juggle as slooooow as possible ...).

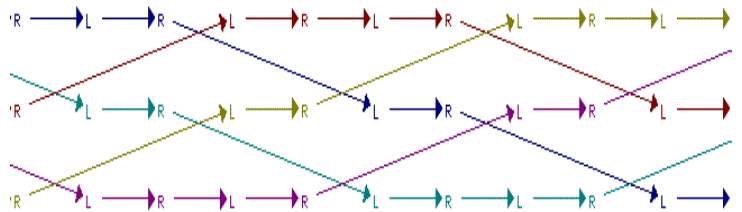


### 11 clubs

The 11 club feed isn't too hard if both F1 and F2 are familiar with the [7 clubs 4-count](#) pattern. Theory says that all passes should be made on triples but I suggest you use floaty doubles instead (much easier).

- FF starts with 4 clubs, F2 with 4, F1 with 3

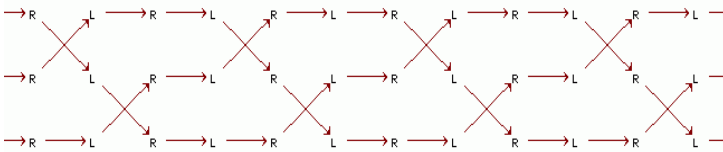
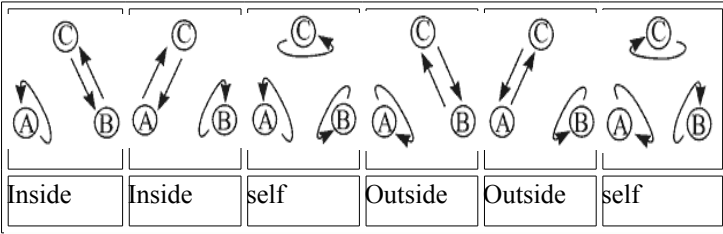
- FF starts with a pass to F1, F1 starts with 2 selfs, F2 starts with a pass (the start is synchronous).



## PPS Feeds (3-count Feed)

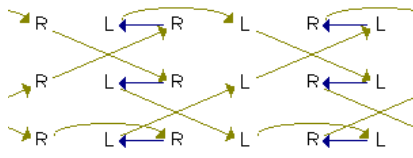
### Normal PPS feed

The feeder is juggling a PPS while both feedees are juggling 3-count. The second feedee starts with a left hand pass.



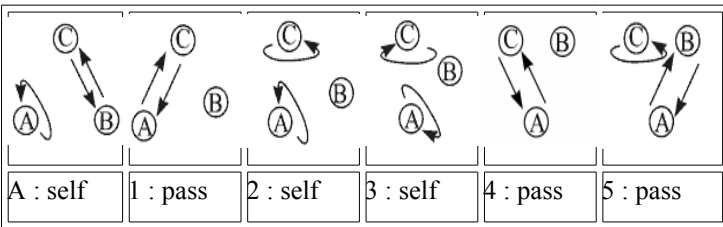
**Variations: 441 Feed** instead of 333; feeder juggles **4p4p1**, feedees juggle **4p41** and **44p1** (all passes crossing doubles). Transition into it from normal PPS feed by throwing early doubles. Also **531 Feed** which looks very nice as all the triples peak at the same time; FF throws their triples to F1 and their singles to F2; F2 passes their singles and F1 passes their triples. All passes are tramline..

**9 clubs 441 PPS feed; FF**  
and F1 start with crossing  
double passes; J2 with self  
double.



### Position change 1 - left feedee

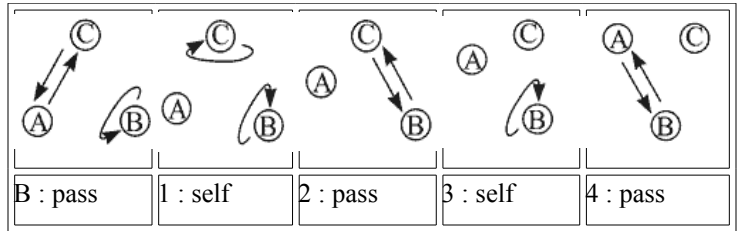
If you are the left feedee (B in this case) and if you leave your position just after a right hand pass, you'll be back on the other side with a left hand pass 5 beats later. A becomes the feeder (see actions).



A actions : 4 : pass 5 : pass 6 : self 7 : pass .....

### Position change 2- right feedee

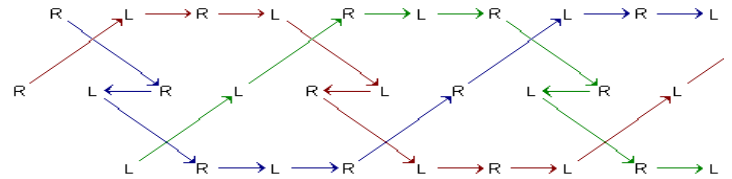
If you are the right feedee (A in this case) and if you leave your position just after a right hand pass, you'll be back on the other side with a right hand pass 4 beats later. B becomes the feeder (see actions).



B actions : 4 : pass 5 : pass 6 : self 7 : pass ....

## 9 Clubs PPH Feed

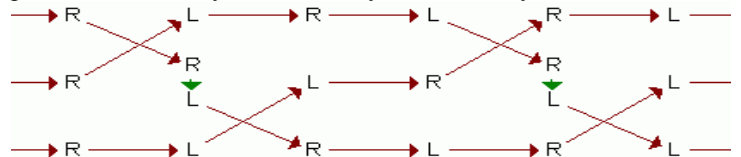
Feedees do 3-count as above, feeder does PPH; passes are floaty singles (3.5p). The feeder throws straights and the feedees cross. Starting position: The feeder and feedee J1 have 2 clubs in the right hand and 1 in the left, feedee J3 has 2 clubs in the left hand and 1 in the right. Each feedee waits for the feeder's pass to be thrown to him before replying by a pass.



## Keith's PPS Feed

This is an intense feed in which FF does **PPZS** – yes, a zip every three beats (twice as often as in [Martin's Madness](#)). Each feedee does [3-count](#). F1 always passes to the FF's RH, which means that the passes alternate between straight and diagonal. F2 always passes to FF's LH.

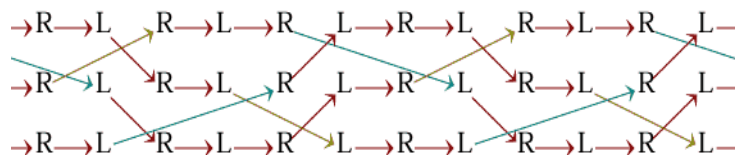
In the original version, F1 is the right feedee seen from the feeder's point of view. But you can also try the other way round.



A good training pattern for the feeder is [Mild Madness with synchronous change every 3 beats](#). This feed is similar to [Compressed Madness](#).

## 10 Clubs Funky PPS Feed

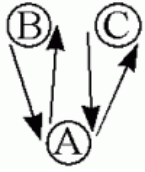
Everybody starts at the same time from the RH. F1 stands to the right of F2. FF has 4 clubs and does: **crossing double** to F1, **straight single** to F2, self, **cross double** (F2), **straight single** (F1), **self**. All the feedees' passes are straight and both start with a self before doing their 3-count sequences. F1 does: **left single pass**, **self**, **self**, **right triple pass**, **self**, **self**. F2 does: **left triple pass**, **self**, **self**, **right single pass**, **self**, **self**.



## 1-count Feeds Two-fisted Feeds

Feeds where the feeder is passing on [1-count](#) (ultimates) while both feedees juggle a [2-count](#). Using ultimates for the feeder is a good way to go for large numbers of clubs.

### 8-club Gorilla



In this pattern, the feeder (A) is juggling 4 clubs with B on the left and 4 clubs with C on the right. A starts with a club in each hand and the feedees start with 3 clubs and initiate things by passing to A (at different times, or at the same time to make it more challenging).

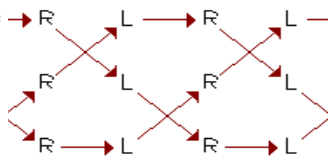
Patterns of this type are called **gorillas**.

**Variation:** FF can feed either inside passes or outside passes (or one hand inside, one hand outside). The **3,3,3-count** is when FF does 3 rounds (6 passes) of insides, then 3 of outsides, then 3 of insides, before finishing. The transitions between insides and outsides (and vice versa) for the feedees is quick – they just miss a self.

### 9 club 1-count Feed

FF passes to F1 with his right and to F2 with his left. F1 and F2 are juggling a [2-count](#). The main difficulty of this pattern comes from the fact that F2 passes with his left hand and receives with his right (left-handed 2-count). All passes are tramline.

9 clubs feed with the feeder on 1-count:



**Variation:** throw more than once to each feedee before switching. For two throws to each feedee, feedees do **PPSS (Chocolate Bar Feed)**.

### Dissociated 9 clubs (The Schizoid Man)

See the diagram for the [8-club gorilla](#) above: in the 9-club version, the feeder (A) is juggling 4 clubs with B on the left and 5 clubs with C on the right. A starts with 2 clubs in each hand, B with 2 in the RH and one in the LH, C with 1 in each hand. B and C must start a bit after their first incoming pass from A. A must disassociate their LH from their RH as their RH will maintain a faster rhythm.

An **11-club dissociated feed** can be done as well; 5 clubs on one side of the pattern, 6 on the other. Passing doubles is pretty much required.

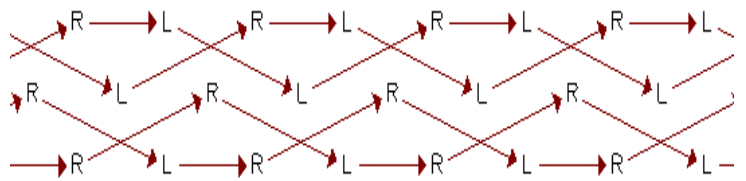
## Mangoes

Though really a [triangle](#) pattern, this pattern belongs to the feeds section in spirit. FF feeds a regular 1-count feed with outside passes; with their inside hands, F1 and F2 juggle a cascade. It is essentially a [1-count triangle](#) pattern in the position of a feed.

**Variation (Inside Mangoes):** have FF feed the feedee's inside hands, and F1 and F2 juggle a cascade with their outside hands. Surprisingly collisions aren't a problem.

### 10 clubs Gorilla

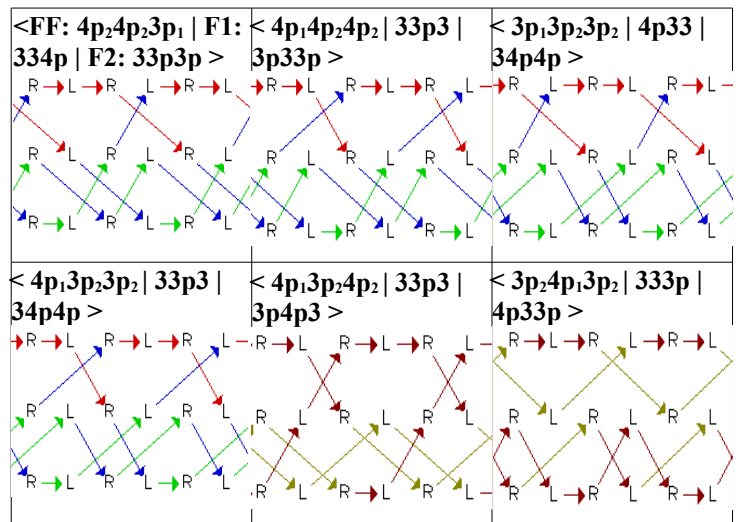
5 clubs on each side of the pattern: 5 for F1 and FF's LH; 5 for F2 and FF's RH. The siteswap for each pass is **3.5p** so they will be easier to make on floaty singles. F1 might prefer passing with his right hand (theoretically he should use his left), in this case FF just needs to pass to his left hand.



The diagram shows a non-synchronous version; for a **synch version**, FF needs to make their passes from both hands at the same time.

**Variation:** for the async version, FF can cross their passes: i.e. (referring to the diagram) A's LH passes with C and RH passes with B.

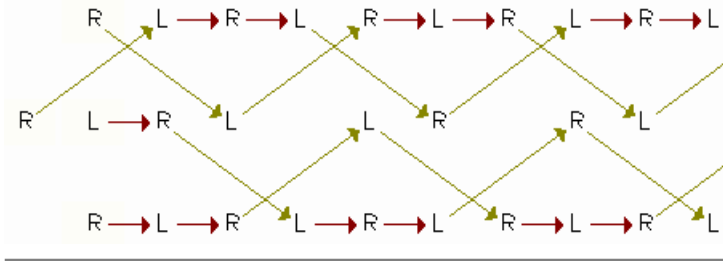
**Asynchronous 10-club 1-count feeds:** in this series of feeds FF does **1-count** while F1 does **PSS** and F2 does **PPS**.



**Variations:** shift doubles/singles exchanges by  $\frac{1}{2}$  a beat so that FF and feedees exchange floaty singles. One or both feedees can be shifted  $\frac{1}{2}$  a beat.

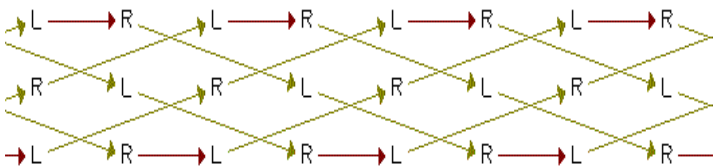
### 10 clubs: Feeding Frenzy

This is the [Frost Frenzy](#) with the PPS person split into two feedees. F1 and F2 are doing **PSS**, FF is doing **PPH** (PP hold). FF starts with four clubs with PS then PPH..., F1 and F2 pass back before the first incoming pass arrives; all passes are tramline **doubles**. For extra frenzy, try it on (floaty) singles.



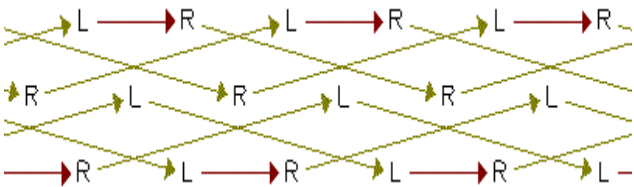
### 11 clubs Two-Fisted Feed

Just like with 9 clubs, the passes are all tramline. Only the height and the spin is modified; the passes here should be made on doubles but it's perfectly possible to juggle the pattern on singles too. Faster of course, but somehow easier. Again F2 passes with their LH. FF and F2 start with four clubs and a pass; FF is always throwing insides (though try outsides too).



### 12 clubs

Same idea as 10 clubs but you need 6 clubs on each side of the pattern (left and right hand sides of the feeder). Using doubles sounds like the best solution. F1 starts at the same time as FF's first pass to him, F2 does the same, one beat later. The diagram shows a little staggering but the feedees will easily get back into the right tempo; the feeder has enough problems to deal with.



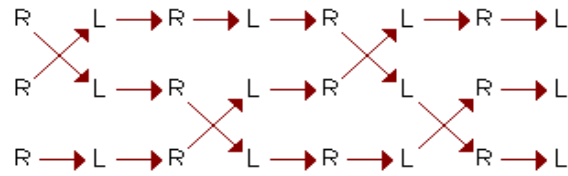
As with 10 clubs, a synchronized version of this feed is possible.

## Mixed Count Feeds

Here are a few feeds involving switching (rapidly) between different counts. Probably the simplest is:

### Parker 4-3 Feed

FF switches between 4-count and 3-count feed (**PSPSPPS**) and the feedees switch between 4-count and 3-count. Thus, F1 does **PSSS PSS**, and F2 does **SSPS SPS**; the feed switches sides which is nice.



### Rotating Parker Feed (Tango Feed)

Change roles after each **4-3**, and the first pass by the new feeder is to the old feeder.

### 4-3-2 Feed

F2 just does 3-count, starting with 1 self. F1 does 1 round each of 2-count, 4-count, 3-count, and repeats. FF does **PPPS PS PPS PPPS PS PPS**, alternating passes between receivers.

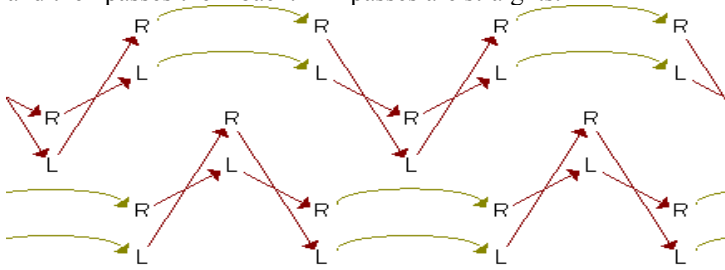
### 4-2-3 Feed

F1 does 2-count, 3-count, 4-count. F2 does a self and then repeats doing 2-count, 4-count, and 3-count. FF does **PPPS PS PS PPPPS PS PS**, alternating passes between receivers.



## Synch 10-club Feed

Here is a strange SJRI feed. FF, starting with 4, does 2 synch passes to F1; F2 starts with 4 and passes 2 synch passes to FF after a beat. Each feedee, upon receiving 2 passes, throws 2 synch selfs and then passes them back. All passes are straights.



**Variation:** turn it into an **async** pattern by staggering the initial passes. This pattern can be thought of as a 2-stage **popcorn** for the feedees (lifting from 2 into 4 and then dropping to 2).

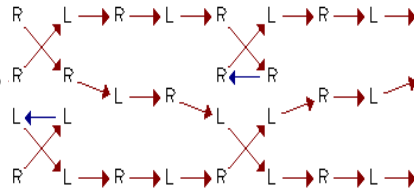
There is also a very fast 12-club version in which FF sends two pairs of passes to each feedee; the feedee throws a pair of self doubles and then two pairs of passes back.

## Simul Feeds

A *simul* is when the feeder passes to both feedees simultaneously; generally one of the passes is hurried. Remember: backwards arrows in the diagrams are when the feeder has an empty hand after throwing the simul.

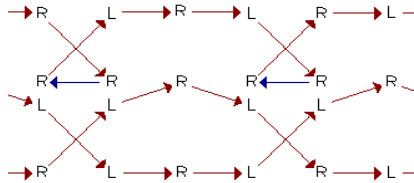
### 4-Count Simul Feed

F1 passes to FF's RH, F2 to the LH. On the pass beat FF hurries two passes out to make room for the two coming in. In practise it is easier for FF to make only two (floaty) selves (3.5s)...



### 3-Count Simul Feed

J1 passes to FF's RH, J2 to the LH. On the pass beat FF hurries two passes out to make room for the two coming in.

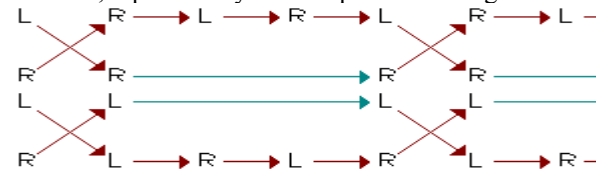


**Variations:** most feed rhythms can be done as simul feeds; try [3-count](#) for the feedees.

**Others:** See the [LCM 4.3](#) and [Mock Moose](#) under asymmetrical rhythms for another simul feed; also [10-club 1-count / 3-count slow fast](#).

## 10-club Simul Feed

Good if the feeder is comfortable with 4 clubs synchronous. F1 and F2 do a **4-count**, one of them lefthanded (or not, if you wish). FF starts with 4 and sends two passes to the feedees, who start simultaneously with passes. FF then throws a set of **synch self doubles**; repeat the cycle. All passes are singles.

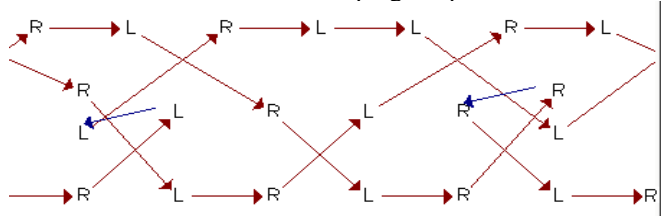


Note that this is [gorilla](#) feed (though it doesn't feel like it).

Theory dictates that FF's self throws are triples, or some of the passes are doubles (or floaty singles), but it seems to work as the version above, which is a [slow-fast](#).

## 9 club Split Moose

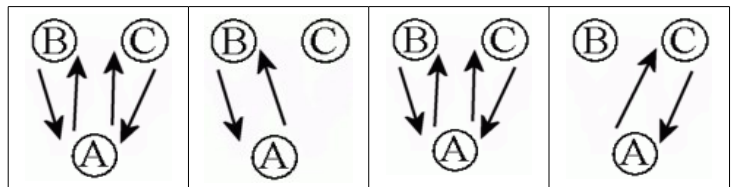
Here, before FF throws the simul they have to *receive* a simul (lumis?), by catching two throws at once. The feedees are doing **PSPSPS hop** (or replace the self hop by self crossing double, or slow single). FF starts with the simul (straight passes) followed by 4 outside passes. F1 (to FF's left) starts with **LH pass self hop cross self pass self**, F2 does **pass self pass self cross self hop**. F1 tends to bear the brunt of keeping the pattern in time.



## 9 club Raccoon Feed

FF's sequence is **inside simul, RH tramline, inside simul, LH tramline**. All of FF's passes go to the feedees' inside hands, i.e. the lefthand person's LH and the righthand person's RH. The lefthand feedee (from FF's perspective) does **PSPSSS** righthanded, and the other person does **PSPSSS** lefthanded, starting with their second pass.

The sequence of passes looks like this:

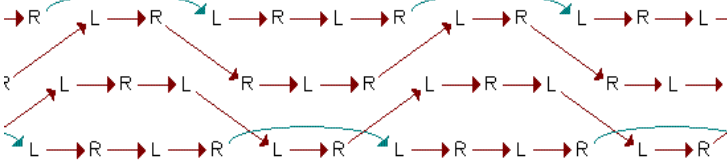


## Popcorn Feeds

### Feedees in popcorn

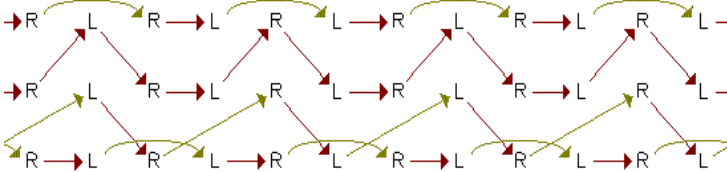
#### Feeder in 3-count, feedees in 6-count popcorn

10 clubs

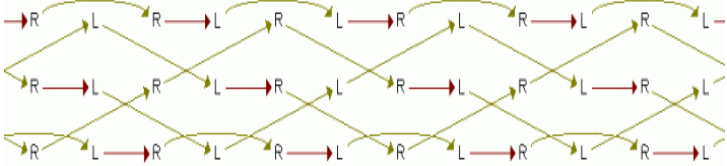


#### Feeder in PPS, feedees in 3-count popcorn

10 clubs

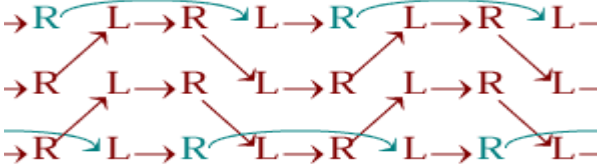


11 clubs: All passes are doubles.

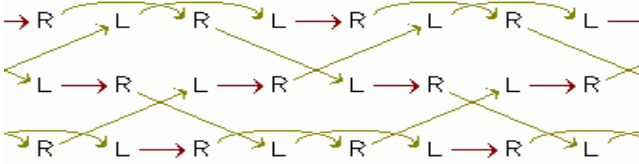


#### Feeder in 2-count, feedees in 4-count popcorn

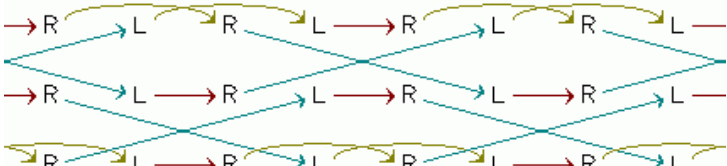
10 clubs



11 clubs: All passes are doubles.

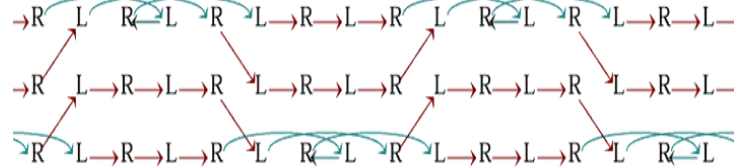


12 clubs: All passes are triples, or try floaty doubles.



#### Feeder in 4-count, feedees in 8-count popcorn 5551

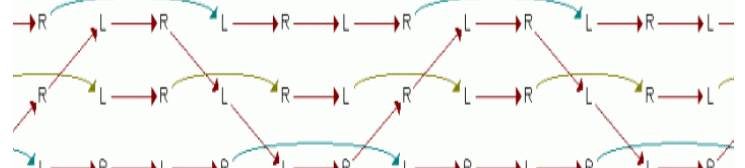
10 clubs



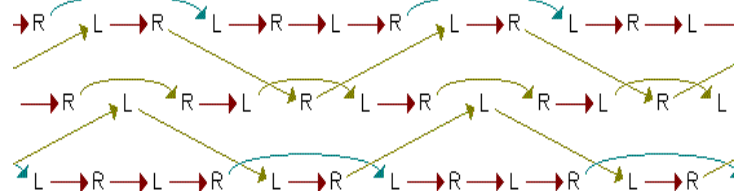
### Feeder and feedees in popcorn

#### Feeder in 3-count popcorn, feedees in 6-count popcorn

10 clubs

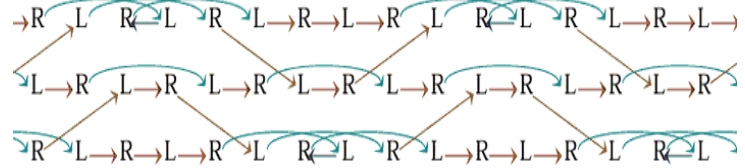


11 clubs: All passes are floaty doubles.



#### Feeder in 4-count popcorn, feedees in 8-count popcorn 5551

11 clubs: All passes are doubles.

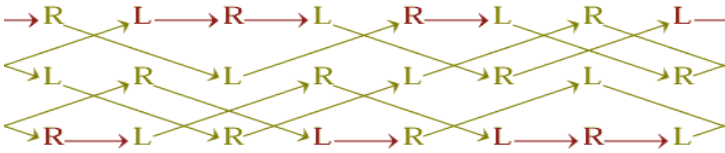


## JaSoN's Countdown

Warm up by juggling it with 9 clubs. F1 does **PSSP SPPS** while F2 starts four beats later thus doing **SPPS PSSP**. FF does 1-count starting with two inside passes then going into the sequence which is **four outside** passes, **four inside** passes etc. This is a nice pattern and can be extended to the N-feed, etc. In these cases only the two jugglers on the end do the countdown - all the others are feeding.

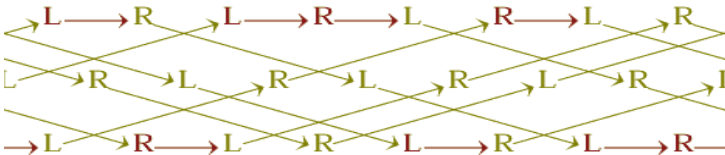
### JaSoN's countdown: 11 clubs

Have the two feedees do the easy end of the Copenhagen Countdown (that is, straight double passes and no zips). F1 starts with 4 clubs and does PSSP SPPS. F2 has 3 clubs and starts at the same time as F1 doing SPPS PSSP. Both start with the right hand. FF starts at the same time as the feedees but from the left hand and he does 1-count. He does one inside pass before going into the real sequence which is four outside passes (starting from the right) followed by four inside passes (also starting right, of course). All the passes are normal (not floaty) straight doubles as this pattern is synchronous.



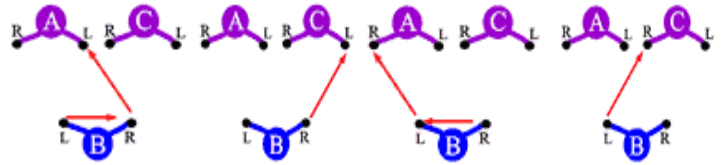
### JaSoN's countdown: 12 clubs

In the 12-club version all the passes are floaty doubles and F2 (this time equipped with 4 clubs) starts with a LH pass half a beat before the feeder and a whole beat before F1. FF and F1 both start with the right hand. F2 starts one throw earlier in the throwing sequence thus doing **PSPPS** before going into the Copenhagen Countdown sequence. To get this to work FF will be crossing and the feedees doing straight passes (as in the diagram), but it can also be done with FF going straight, and the feedees doing crossing passes.



## Technofeeds

These rhythms are some very interesting slow-fasts with FF in a special 1-count.

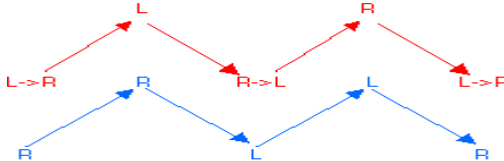


RH pass - LH zip    RH pass    LH pass - RH zip    LH pass

In both patterns (8 and 10 club), F2 (B) starts with 2 clubs in each hand, and won't do the first 2 zips.

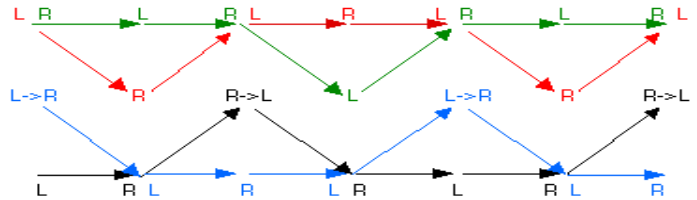
### 8 club Technofeed

The feedees do a very (very very) slow 1-count. They should try to throw at the very last moment to make it easier for the feeder. F1 (A) does straight passes, F2 (C) does crossing passes. F1 & FF start with a club in each hand.



### 10 clubs Technofeed

FF does the same thing as in the 8 clubs version. As in the 8 clubs version, F1 does straight passes, F2 does crossing passes. They each start with 2 clubs in the right hand and 1 in the left.

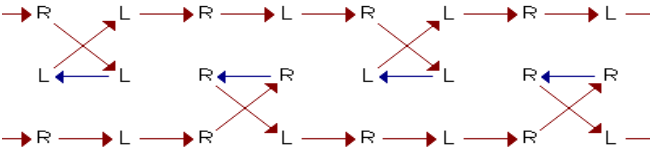


## Slow-Fast Feeds

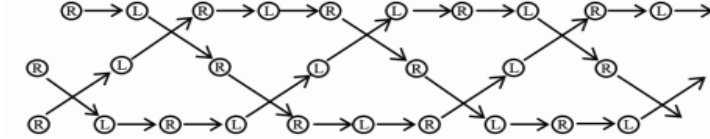
In these feeds the feeder and feedees are juggling different rhythms. Typically the feedees should adjust their speed as the feeder's job is harder.

### 8 clubs: FF 1-count / Feedees in 4-count

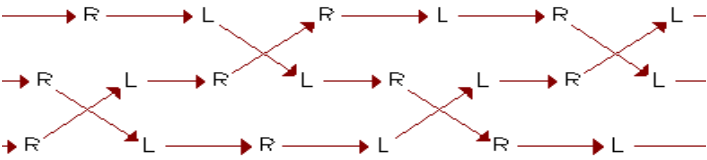
The backwards arrows just mean the feeder's hand remains empty for a beat after the pass. This feed can be stretched into a straight line with the feeder in the middle, throwing under the arm, behind the back, etc.



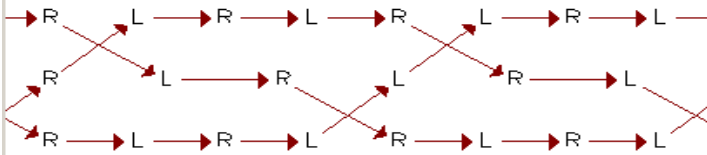
**9 clubs: FF 1-count / Feedees 3-count** Each feedee passes to the same hand always.



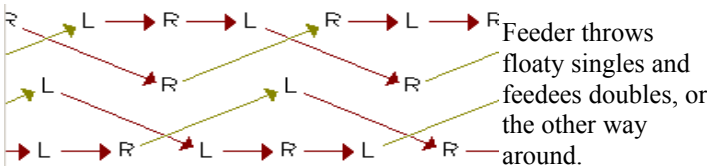
### 9 clubs: FF 2-count / Feedees 3-count



### 9 clubs: FF PPS / Feedees 4-count



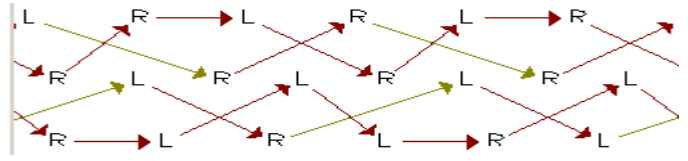
**10 clubs: Feeder 1-count / Feedees in 3-count (a gorilla pattern)**  
Feeder alternates throwing to L and R hands of the feedees.



**Variation:** a nice **simul** feed results if the feeder starts with 4 clubs and throws both initial passes at the same time.

### 10 clubs: Feeder 1-count / Feedees in PPS

Feedee throws floaty singles to **RH RH LH LH** of each feedee (out of phase, i.e. **RRLL** and **RLLR**), feedees throw **self single double**. This feed is a gorilla (the two halves are separate, each feedee feeds FF's hand on their side).



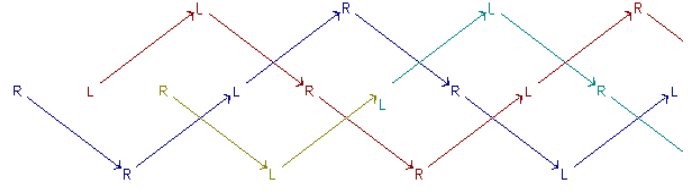
## Alan's Anguish

Theses rhythms are **slow-fasts** with *both* feeder and feedees on **1-count**. Therefore, the feedees have to juggle slowly.

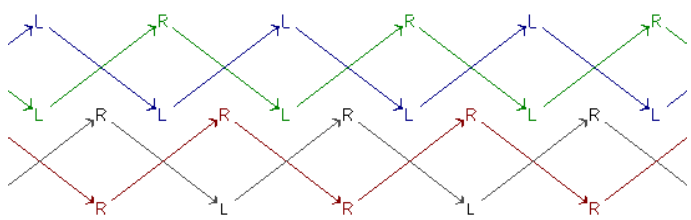
### Alan's Anguish, 8 clubs

The feeder's sequence is : diagonal, diagonal, tramline, tramline or - to say it differently - outside, outside, inside, inside. For both feedees it's relatively easy ; each is always aiming toward the same hand (in order to have 4 clubs on each side).

### Alan's Anguish, 9 clubs



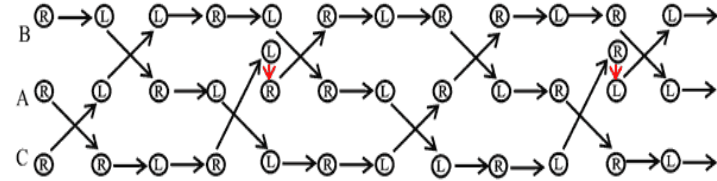
### Alan's Anguish, 10 clubs



## Martin's Madness

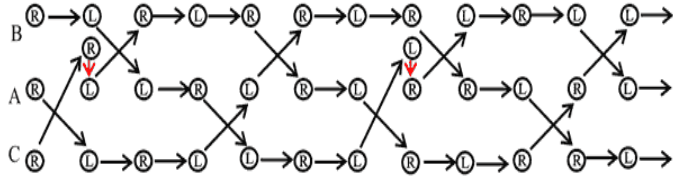
The original "crazy" feed.

This is what happens when you feed 2 people doing [Jim's 3-count](#). FF is doing [Mild Madness](#) with diagonal passes, the first two are *extremes* (in that they go extremely diagonal, e.g. from your RH to the left-hand feedee's RH) and then *tramline* (which aren't, but they feel like it because they go straight down the middle). The full sequence is **extreme extreme self tramline tramline zip self tramline tramline self extreme extreme zip self**, where the zips are hurried. The feedees are juggling [Jim's 3-count](#) on straight passes.



## Martin's Mildness

For a (slightly) easier version, the Mildness is the same except FF does tramline passes and the feedees do diagonal passes.

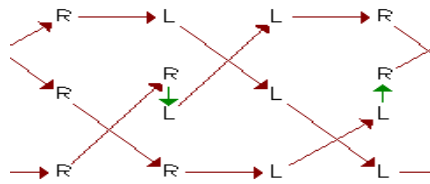


**Variation: Communicable Madness** is when you switch feedees every 6 beats.

## Compact Madness

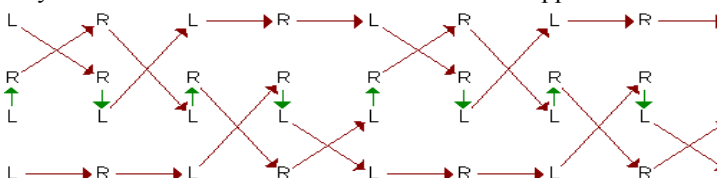
Feedees are juggling a 2-count **Compressed Mildness (RRL)**; FF juggles **PPZ**; all passes are diagonal. The feedees get hurried selves and the feeder is ... well, very hurried.

FF does the sequence **cross cross zip cross cross zip**; the zips change direction each time. Everyone starts from the same hand.



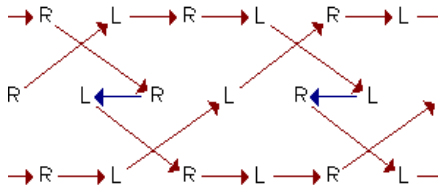
## Fire

Here the feedees are doing [Chocolate Bar](#) (**PPSS**), throwing tramline passes and starting left-handed, and FF is doing [Ultimate-zip](#) (**PZ**) starting right-handed, with crossing passes - i.e. every pass is accompanied by a zip, with one club just zipping back and forth between FF's hands. Everyone starts with 2 in their LH. FF may find it easier with 2 clubs and leave out the zipped club.



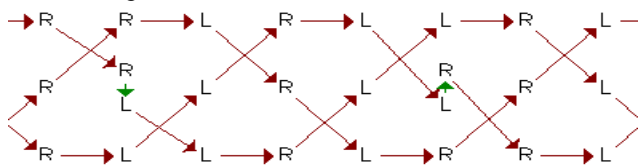
## PPZ vs 3-count

A slower version of the [Fredness](#) (below). On floaty singles, FF throws straights in the sequence **pass pass zip**; the feedees throw crossing floaty singles in a **PSS** sequence. Both feedees start ½ a beat after FF, F1 starts with a pass and F2 starts with **self pass**.



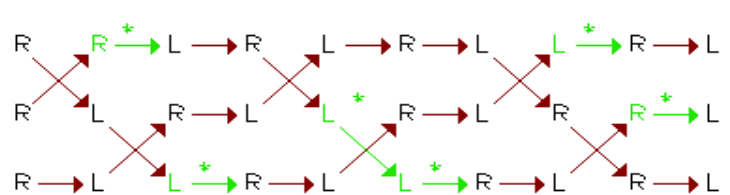
## The Fredness

An expanded version of [Compact Madness](#) by adding some straights for the feeder. FF does **cross cross zip straight straight** (tramline outsides) **cross cross zip straight straight** (tramline insides). Feedees do a hurried 2-count alternating crossing and straight passes: F1 (recipient of FF's first pass) does **cross (hurry) self straight self** while F2 does **self cross (hurry) self straight**; and both repeat from the other hand.



## Martin's Psychosis

If the feeder throws hurried passes instead of zips, the Psychosis results. The feedees can just pretend they are doing a [Random 3-count](#); wherever a pass arrives they just throw it back as a tramline - though if FF is doing their job correctly each feeder should pass three times in a row from the same hand before switching. FF always throws crosses; the sequence of hands they throw from (ignoring self) is **RL, RL, LL, LR, LR, RR**, thus FF is doing **PPS P(hurry)PS PP(hurry)S**.



At beats 5 and 14 the "psychosis" occurs, which is 2 passes in a row from the same hand.

**Martin's Neurosis** is like the Psychosis except the feeder passes straights and the feedees diagonals. The **Mob Psychosis** and **Neurosis** is the respective extensions to feeding 3 people, the feeder is on 1-count.

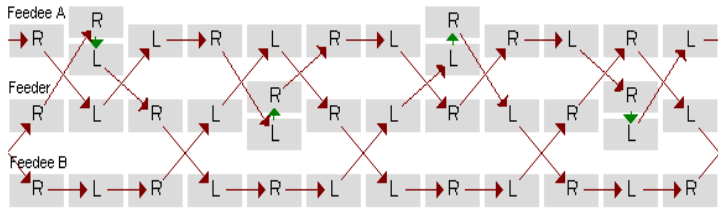


## Sunshine Series inspired by [Martin's Madness](#)

In most of these patterns two or more jugglers do zips, and in many cases, FF juggles 1-count with a zip. In all the following feeds, F1 is on the right from FF's point of view.

### Scattered Sunshine

Scattered Sunshine Feeder: Ultimates + hand-off; Feedee A: Martin's Mildness; Feedee B: Jim's 3-count.



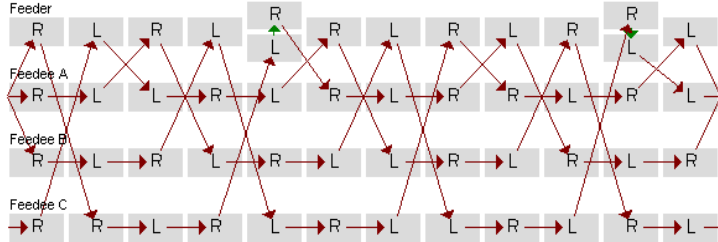
FF does 1-count with a zip. F1 (top) does [Mild Madness](#), (PPZSPPS). F2 does a modified [Jim's 3-count](#) in which passes alternate between straight and diagonal. One way to visualize this pattern is to start with Mild Madness between FF and F1, and then add F2 in place of FF's self throw.

To train the feedees for this pattern: F1 can be trained via [Mild Madness](#), F2 can be trained via a modified [Jim's 3-count](#) in which passes alternate between straight and diagonal.

**Variation:** this feed can be extended easily by adding jugglers to each end. For example, if a [Jim's 3-count](#) feedee is added to F1's end, then F1 turns into a Scattered Sunshine feeder (that is, 1-count with a zip). Adding a 3-count feedee to F2's end causes F2 to turn into a [Martin's Madness](#) feeder. Likewise, it is possible to add a PPS feedee to F2's end, which will cause F2 to perform 1-count.

### Very Scattered Sunshine

Very Scattered Sunshine Feeder: Ultimates + hand-off; Outside feedees: Jim's 3-count, straight passes; Inside feedee: Jim's 3-count, alternate straight & diagonal passes.



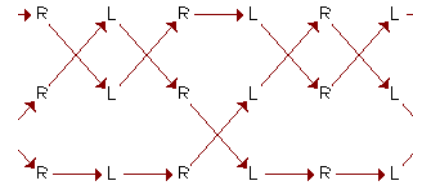
FF (top) does 1-count with a zip every six beats. The feedees on the left and right ends, F1 and F3, do standard [Jim's 3-count](#) with straight passes. F2, the middle feedee, does a modified [Jim's 3-count](#) alternating **straight** and **diagonal** passes. One way to visualize this pattern is to take the [Martin's Madness](#) feed and insert a third feedee in place of FF's self.

## Shattered Sunshine

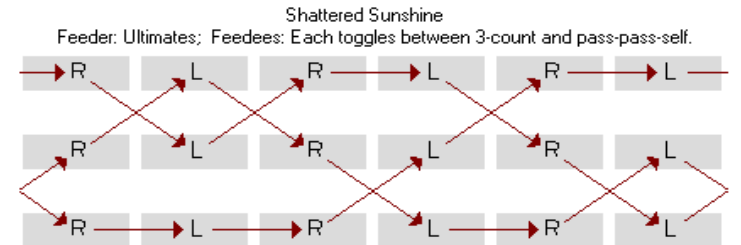
A Sunshine relative without (phew) zips or hurries.

### 3-Count/Double 3-Count Feed

One feedee does PPS, the other does PSS. The feeder passes two out of three passes to the PPS feedee.

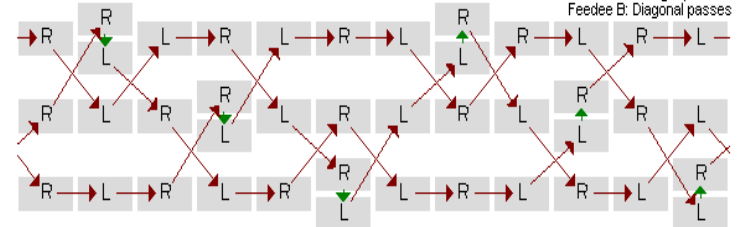


For Shattered Sunshine, F1 and F2 simply change roles in the 3-count/double 3-count feed after every 3 throws. Thus, F1 does PPSPPS, F2 does SSPSPS.



## Shattered Scattered Sunshine

Shattered Scattered Sunshine Feeder: Ultimates + hand-off; diagonal passes to A, straight to B. Feedees: Toggle between pass-pass-self and 3-count.

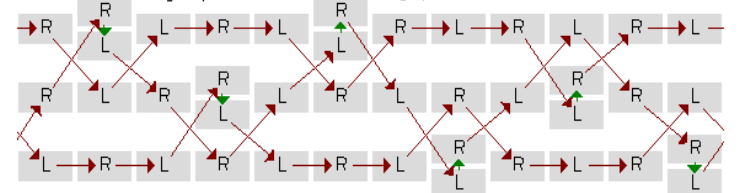


All jugglers do zips every six beats. This pattern is an elegant marriage of the [Shattered](#) and [Scattered Sunshine](#) feeds. FF does 1-count with a zip. F1's pattern is PPSPPS, throwing **straight** passes. F2's pattern is SSPSPS, and throws **diagonal** passes.

**Variation:** feedees throw **straights**, and FF throws **diagonals**.

## Splattered Sunshine

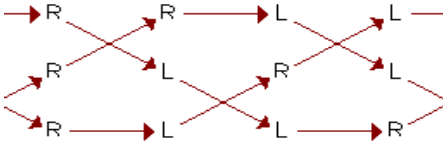
Splattered Sunshine Feeder: Ultimates + hand-off. Diagonal passes. Feedees: Pass-pass-self + hand-off. Straight passes.



All jugglers do zips. FF does 1-count with a zip every six beats, and throws diagonal passes. F1 and F2 each do PPS with a zip, and throw straight passes to the feeder. An interesting feature of this pattern is the irregular zip period of the feedees, which toggles between four and eight beats.

## Folly Feed

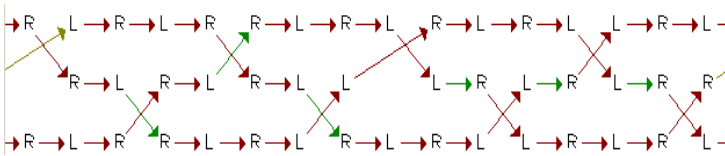
A feeding version of [Brendan's Folly](#). FF does a 1-count with no zips, feedees do a hurried 2-count. FF does **cross cross straight straight**; feedees do **straight self cross self** (F2 starts with the second self).



**Variation:** in the **Full Folly Feed**, repeat the sequence again except the feedees change roles. Thus FF continues with the same sequence, but starting from the other feeder (i.e. the 4th and 5th passes go to the same feedee); F1 does the full sequence **straight self cross self self straight self cross**, F2 does the sequence **self straight self cross straight self cross self**. Got it? In the diagram above, alternate reading the top and the bottom line for the feedee's roles.

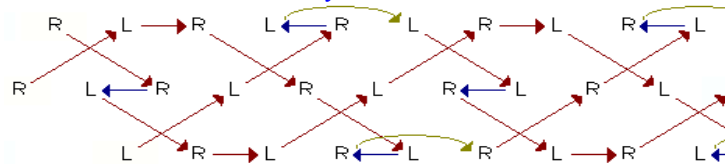
## Jim's 4-Count Feed

- The feeder does: RH pass, (hurry) RH self, LH pass, RH self, LH pass, RH self, LH pass, \* (hurry) LH pass, (hurry) LH self, RH pass, LH self, RH pass, LH self, RH pass, \* (hurry) RH pass, (hurry) RH self. At the \* the feeder's pass is sent off a bit early to the feedee (perhaps as a double). All of the feeders' passes are straights.
- The feedees (B & C) are juggling [Jim's 4-count](#) on diagonal passes; everyone starts from the RH.



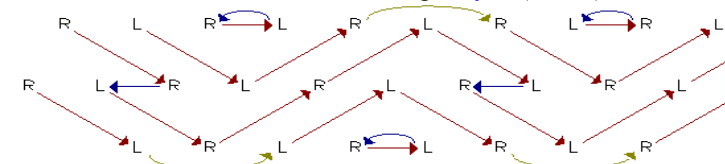
## Whynot Feeds

Feedees are doing [WhyNot](#) (77862), the feeder is doing **PPPPZ**. Feedees could also do [NotWhy](#).



FF passes straights in the sequence **L, R, zip, L, R**, feedees cross.

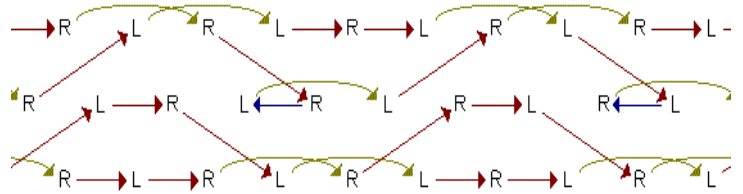
Here is a version with the feedees doing [Maybe](#) (72786):



FF passes straights in the order **R, R, zip, L, L**; the feedees cross.

## Whynot vs. 5-count popcorn

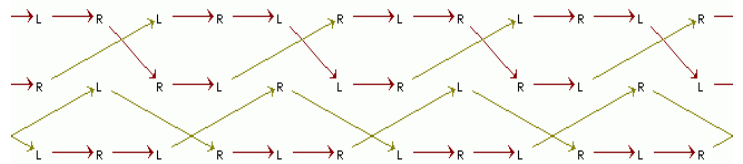
10 clubs; FF does [Whynot](#) (77862), feedees do 5-count popcorn:



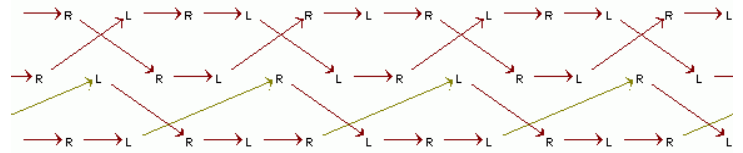
## 10 Club PPS Feeds

These are asymmetric feeds derived from splitting one side of the [7-club PPS](#) pattern into two feedees. Feeder is always on **PPS** and feedees on **PSS**.

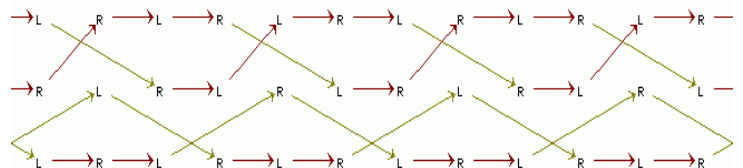
**Feeder passing on doubles:** probably the easiest of the lot.



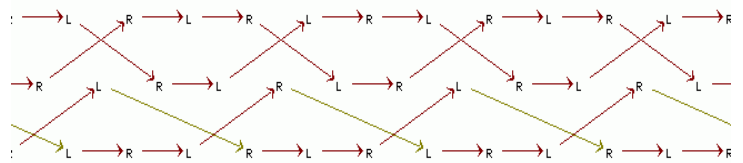
**Feeder passing on (floaty) singles:** feedees start 1/2 a beat after FF.



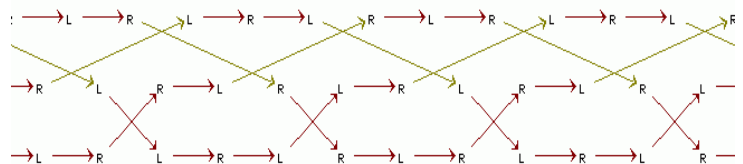
**Feedees passing on doubles**



**Feedees passing on singles:** an asynchronous pattern.



**Disconnected PPS feed:** FF and F2 start together, F1 1/2 beat later:

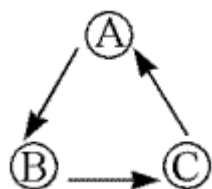




# 3-person Patterns

These include patterns other than feeds.

## Triangle (3)



This is the classical triangle pattern, showing a rhythm with passes made from the right hand. Using such a rhythm, you can do outside passes (as in the diagram) or inside passes (a pass from A's right hand to C's left), or you can alternate.

**3-count** may be the best rhythm for this pattern and the most comfortable (for A: right hand passes to B, left hand passes to C). But you can choose any rhythm (**1-count**, **PPS**, **PPSPS**...). Playing with **PPS** and alternating inside and outside passes is great fun.

### PPS Patterns:

#### Bermuda Triangle

All three jugglers pass: **outside outside self inside inside self**.

**Variation:** **outside inside self inside outside self**.

#### Hovey's Nightmare

The idea is that everyone passes to every other hand in the pattern in the cycle of 6 throws..

A: **inside, inside, outside, outside, self, self**.

B: **self, outside, inside, self, outside, inside**.

C: **outside, self, self, inside, inside, outside**.

#### PPS Out of Phase:

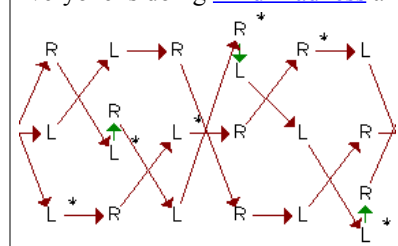
A: **outside outside self inside inside self**

B: **inside self outside outside self inside**

C: **self inside inside self outside outside**

### Mild Madness Triangle:

Everyone is doing [Mild Madness](#) and alternating who they pass to.

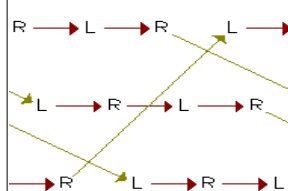


A does **straight self cross cross zip self cross**; starting with RH.  
B does **cross straight zip self cross cross zip self**; starting with LH.  
C does **self straight straight self straight cross zip**, starting with LH.

You can change the sequence of cross/straight throws by starting in different hands (e.g. everyone start with RH,...).

### 10 clubs 4-count <4.3p 333>

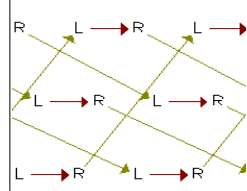
Pass the extra club around as a floaty double. Each person starts when the incoming club is halfway to them.



Try both inside and outside passes.

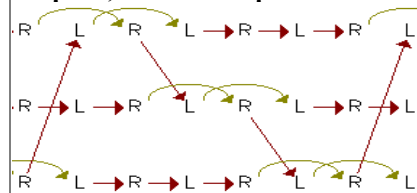
### 11 clubs 2-count <4.3p 3>

Pass the two extra clubs around as floaty doubles; A and C start at the same time and B starts 1/2 a beat later.

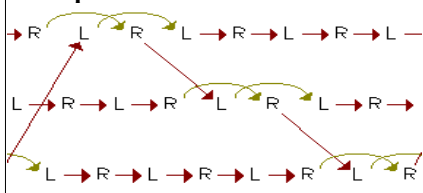


**10 club Popcorns:** each juggler gets two extra selfs in the base pattern if passes are a bit lower than usual. For odd period patterns, generally one person crosses and the other two throws straights. The 7 club 6-count popcorn 534p333 becomes an 8-count: **53 3.6p 33333** or **44 3.6p 33333**. Low throws only allow one extra self: **53 3.3p 3333** or **44 3.3p 3333**. There are three extra selfs if passes are higher: 534p333 becomes **53 4p 333333**, and then **53 4.3p 333333**. Also **443p333**, or **44p3333**.

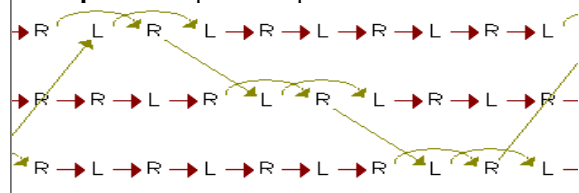
### 443p333, similar to 44p3333.



### 44 3.6p 33333



### 44 4.5p 333333: pattern repeats from L side.



**11 club Popcorns:** each juggler gets extra time in the *lifted* pattern; how much time depends on the height of passes. For an odd count, try **44 4.3p 33**, **444 4.6p 333**, **4444 5p 3333** is like a 2-person popcorn except the throws are triples. For an even count try **444 4p 33** or **44443p3**, **4444 4.3p 333** or **44444 3.3p 33**.

If two passes (into each juggler and out) are allowed, try: **53.6p3.6p33**, **53p3p**, **553p3p33**.

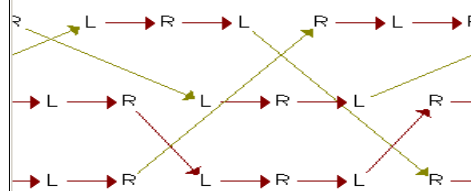
For **11 club 3-counts**, try **443p**, **44p3** (French 3-count), **5p33** (TSS).

**12 clubs:** 2-count passing triples (**5p3**) works. Good luck on more complex patterns...

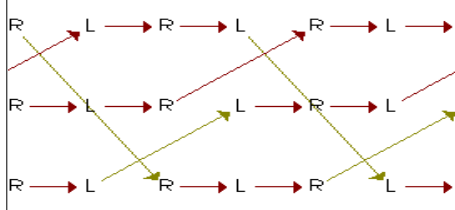
## Triangle 10 club 3-counts

## 3-count singles/doubles (Isocetes

**Triangle):** B and C do singles to each other, passes to and from A are doubles (crossing from B and C, straights from A):



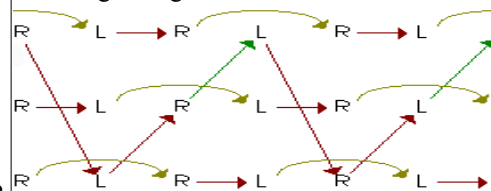
## 3-count on doubles: all throws cross.



**Variation:** one person can do singles, the other two floaty doubles.

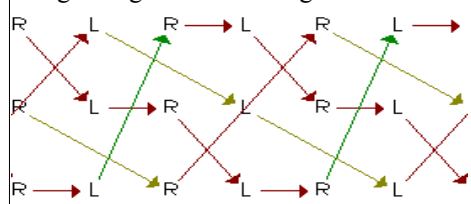
**Variation:** one person crosses, the other 2 throw straights; 2 people start LHed.

**French 3-count (PSD, 43p3).** This difficult rhythm is even harder in a triangle! All passes are straight singles.

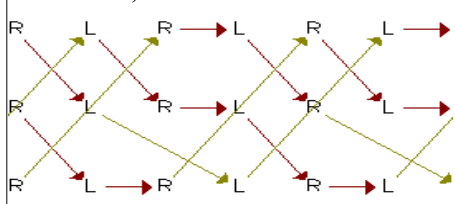


## 10 clubs PPS: each juggler passes to the same person:

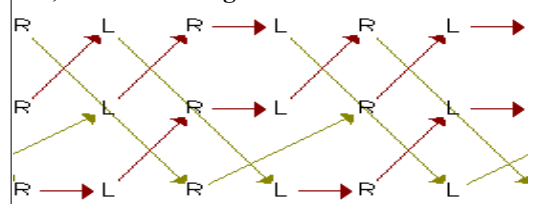
Each juggler does **single double self**; straight singles and crossing doubles.



A does **single single self**, B does **single double self**, C does **double self double**.

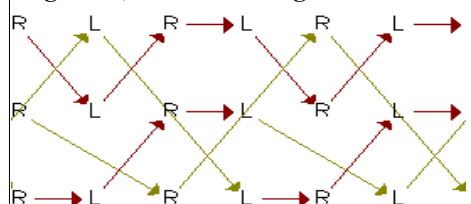


A does **double double self**, B does **single single self**, C does **self single double**.

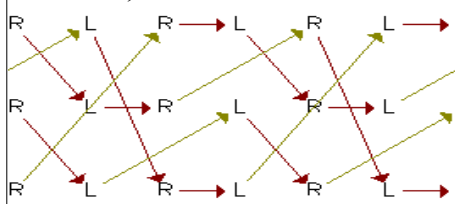


## 10 clubs PPS: passing to different people:

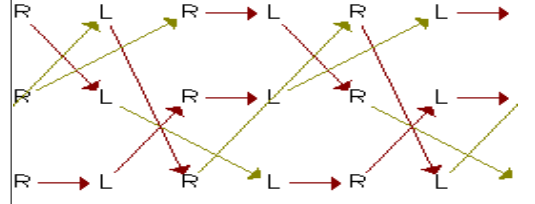
A does **single double self**, B does **double single self**, C does **self single double**.



A does **single single self**, B does **single self double**, C does **double double self**.

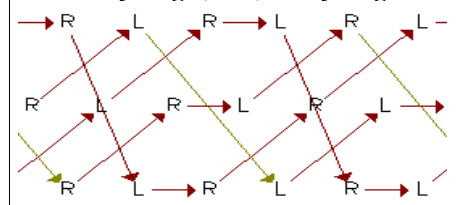


A does **single single self**, B does **double double self**, C does **self single double**.



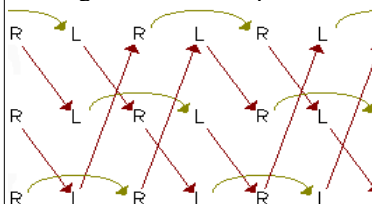
## 10 club asynchronous PPS:

Each juggler passes to the same person: A and C start  $\frac{1}{2}$  a beat after B. B does **floaty single, floaty single, self** to A; A does **single double self** to C; C does **floaty single, self, floaty single** to B.



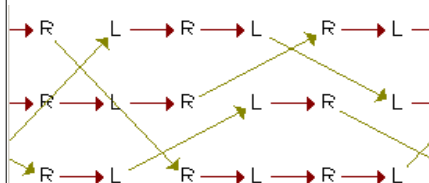
## PPS popcorn:

Each person does **43p3p**, all passes are singles to the same person.



## 10 club 3-count vs 2-count/4-count:

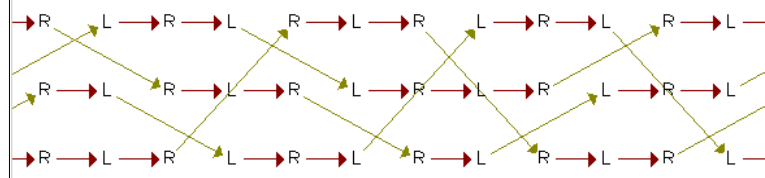
A does 3-count on crossing passes, alternating to C and B, B and C do **PSPSSS** alternating to each other and to A.



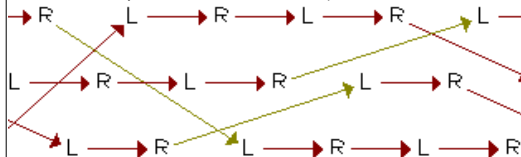
Note that this is actually a weird [feast](#).

## 10 club 3-count vs 2-3-4-3 count:

A passes B,B,C,C in 3-count. B does **PSSPSSSPSSPS** to C,C,A,A, and C does **PSSPSSSPSSSS** to A,A,B,B. Both B and C wait for their first incoming pass to start.

10 Club 2-count [Feast](#):

the sequence is **4p 333 4p 3**; the two people who start will do their feast CCW (right, left, themselves) and the third CW, or vice versa.





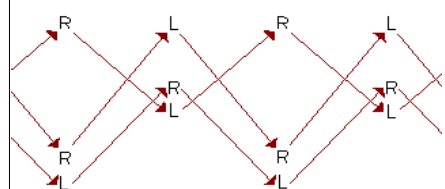
# Triangle 1-counts

**9-club 1-counts:** Experiment with throwing in different directions. Good patterns: **outside/outside/inside/inside**, all **outsides**, all **insides**. **Outside/inside** is nice; all the clubs move in the same direction around the circle.

## 10 clubs synchronous 1-counts:

|   |  |   |   |
|---|--|---|---|
| Each juggler throws a double every 3 passes. The sequence for A is <b>double (B) single (C) single (B)</b> , B and C pass to the other 2 similarly; all passes go to the same person. | The two singles go to the same person and the double to the other one: | A passes <b>singles</b> , B passes <b>double double single</b> , C passes <b>single single double</b> . | A and C pass <b>straight singles</b> and B passes <b>crossing doubles</b> , all passes go to the same person. |
|   |  |   |   |

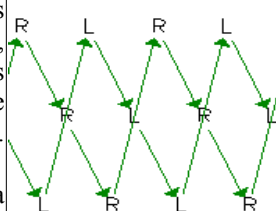
**Quantum 1-count:** with a normal 9-club 1-count on outside throws, one person delays their first pass, forcing them and one other to do *simuls*:



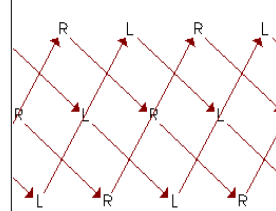
**Ultimates in a circle:**  
An asynchronous pattern: A passes singles to C; C passes floaty singles to B, B passes floaty singles to A; all passes are crossing. Try to make all passes the same height.

**Variation:** throw simultaneously for a synchronous pattern.

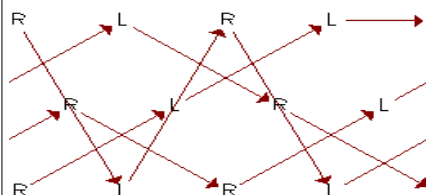
**8 clubs:**



**10 clubs:**

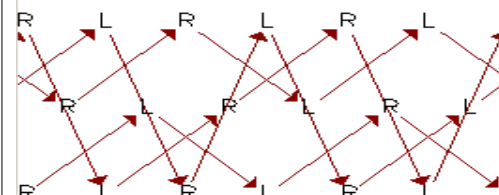


A 10-club asynchronous pattern where each juggler alternates who they pass to:



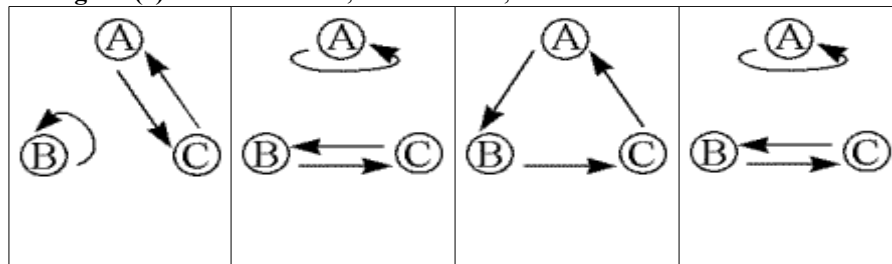
A and C pass straights, B passes crossing passes and starts  $\frac{1}{2}$  a beat late, so all passes to and from B must be floaty (**3.5p**). A passes to CBCB, C passes to BABA, and B passes to CACA.

A 10-club asynchronous pattern where jugglers pass to the others in a 2/1 ratio: 2 passes to one person, 1 to the other, etc.



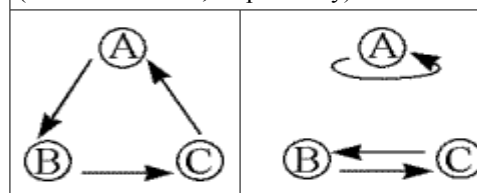
Again B crosses and the other two throw straights; so all passes to and from B must be floaty (**3.5p**). A passes to CCBCCB, C passes to BBABBA, and B passes to ACAACA.

**Triangle 2 (3):** A does **4-count**, B does **SPPP**, C does **2-count**.

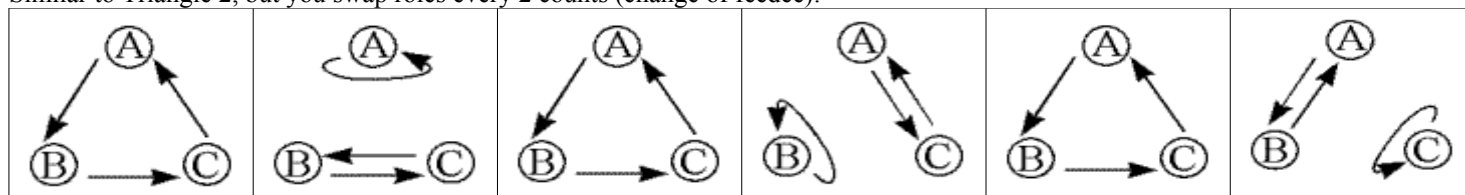


**Triangle 3 (3):** Half of Triangle 2.

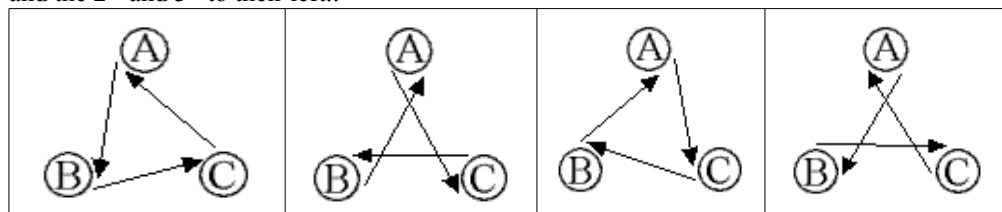
A does 4-count, B & C do 2-count  
(or 2 and 1-count, respectively):



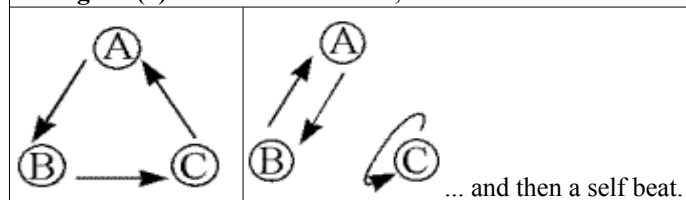
Similar to Triangle 2, but you swap roles every 2 counts (change of feedee):



**RRLL Triangle (3):** Each person does **RH cross**, **RH straight**, **LH cross**, **LH straight**, with the 1<sup>st</sup> and 4<sup>th</sup> passes to their RH neighbour, and the 2<sup>nd</sup> and 3<sup>rd</sup> to their left.:



**Triangle 4 (3):** A does **PPS** with B, B does **PPS feed** to A and C, C does **3-count** with A.

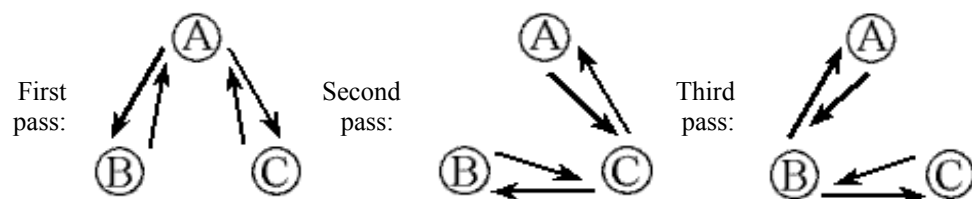


On the next round passes go the same places but with the other hand.

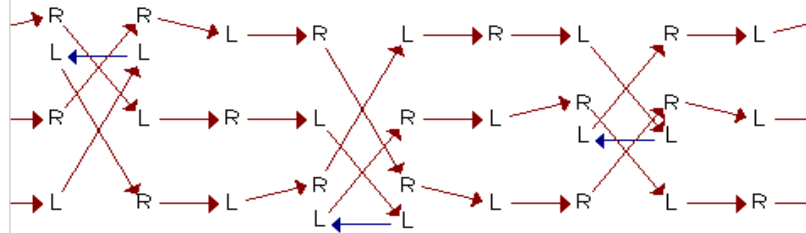
**Variation:** after every 6 throws (or 3!!) switch roles, A becomes C, B becomes A, C becomes B.

## Simultaneous Triangle (3)

A triangle in which the jugglers take it in turn to throw *simuls* - two simultaneous throws at once, as outsides. There are lots of hurries.

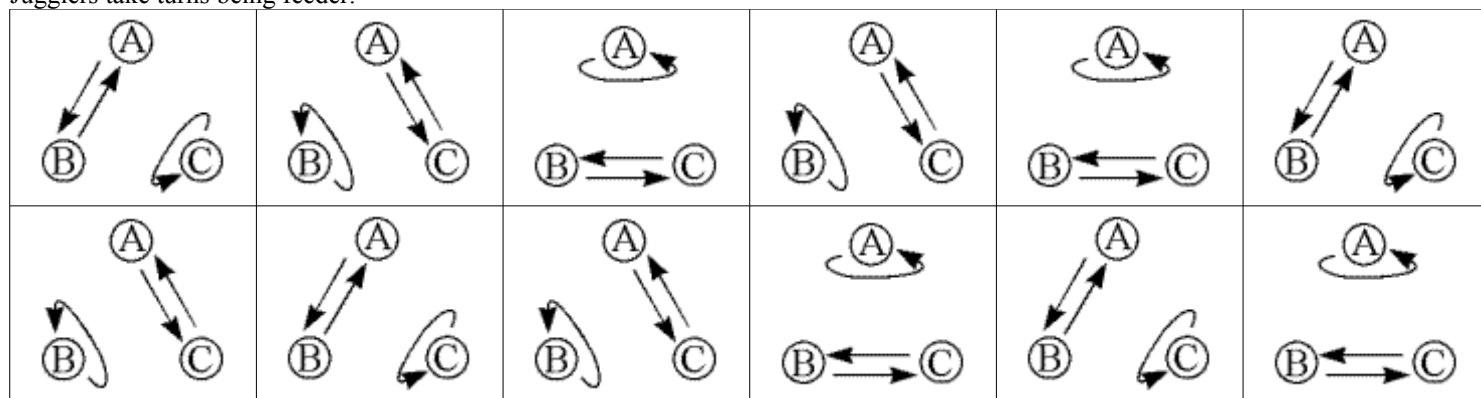


The three rows in the causal diagram correspond to the three jugglers in CCW order. This pattern is in 3-count but other rhythms would work, you just have to figure out where to throw to. Odd-period rhythms tend to work better as you get fewer hurries.



## Pulsar (3)

Jugglers take turns being feeder.



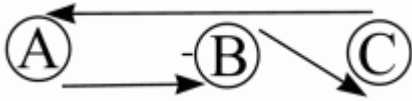
1. A passes Right-Left (figures 1 & 2)
2. C passes Left-Right (figures 3 & 4)
3. B passes Right-Left (figures 5 & 6)
4. A passes Left-Right (figures 7 & 8)
5. C passes Right-Left (figures 9 & 10)
6. B passes Left-Right (figures 11 & 12)

After a feeder does Right-left, the next does Left-Right and vice-versa. When feeding, each juggler might call out which they're doing (Right, Left) to make the pattern easier.

See also the [4-person Pulsar](#).

## Lines (3) (Dropback Line)

B faces A and sends passes back over his shoulder to C. All passes are singles (C has a long pass). B's passes should come in as close to the center as possible (like a tomahawk) after making two turns (in theory, it's a single, but in practice, do what you will). There are also variants in which the club is thrown under the left arm, behind the back, or between the legs (alberts) instead of over the shoulder.



See also [4-person lines](#).

**Rhythms:** Usually done in 4-count or 2-count, but 3-count or other rhythms such as [popcorn](#) are also interesting.

Lines are probably the best way to go for *high numbers* with 3 people, since there are no collision issues and the sitelines are all good.

### 10 clubs in 2-count:

- As B is doing doubles, we can consider there is enough room for a tenth club without varying the height of one pass (it's too fast then have C doing doubles)
- B begins with 4 clubs and throws the first double to C; C starts a beat later, as if passing 7 clubs
- A starts just slightly after C since the pass from C is a long single.

### 11 clubs in 2-count:

- C now throws doubles
- B and C start together with 4 clubs each, but C can try to anticipate slightly on the start.
- A starts a beat later with 3 clubs.

### 12 clubs in 2-count:

- A, B and C throw doubles (being able to pass 8 in 2-count will help)
- All 3 jugglers start at the same time but A can start just slightly after.
- A should pay attention that his doubles to B are short enough, since B will struggle more with too long passes.

**Variation:** do the line as a [feed](#): that is, A passes alternately to B and C, who do not exchange with each other. It may be easier to do doubles to C.

## Combining a Line and Feed:

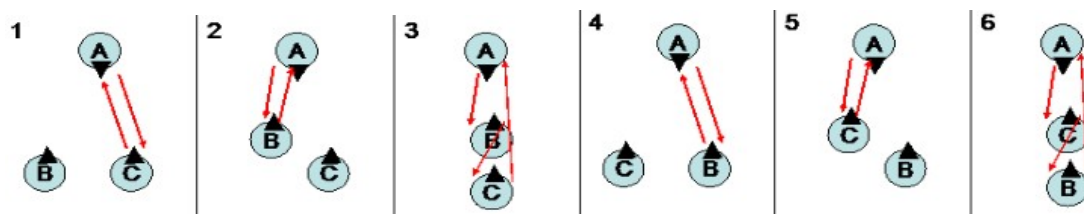
A feed can be turned into a line, and back to a feed, by having one feedee move behind the other.

A: C B B B C C

B: x A C A x A

C: A x A x A B

**Variation:** try this with 10 clubs. Also see [Dropback Line Feeds \(4+\)](#).



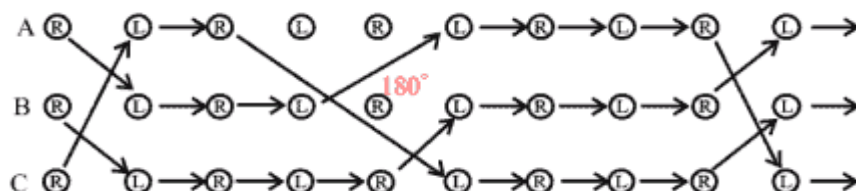
**Variations with double-returns:** Double returns can help handling the gap created by B's double pass (dropback).

| Double-returns in the middle   | Double-returns at the back   |
|--|--|
| <ul style="list-style-type: none"> <li>A throws doubles in 4-count</li> <li>B still throws doubles dropbacks but in a 2-count with 2 holds (3 4p 2 2).</li> <li>C throws singles in 4-count</li> <li>B starts first, then A and C a beat later.</li> </ul> | <ul style="list-style-type: none"> <li>A throws singles in 4-count</li> <li>B throws doubles dropbacks in 4-count</li> <li>C throws doubles but in a 2-count with 2 holds (3 4p 2 2).</li> <li>C starts first, then A and B a beat later.</li> </ul> |

## Pirouette

B can make a half-pirouette, thus changing the direction of the line. B can do this by turning under a self double if they have at least 2 selfs in the middle of the pattern.

**Variation:** A more tricky way of doing it, in a 4-count: looking at the diagram at the top, A, at any moment, can throw a triple to C (in a 2-count). B immediately sends a crossing left-handed double to A and turns around just in time to receive C's pass.



As you can see, B has little time to react, so preferably, A should give a warning when he decides to throw the triple.  
In a 4-count line, B can also turn while juggling (during the 3 selfs) without warning.

**Variation:** a 3-person variation on the [Irvine Pinwheel](#) has B doing 4-count and turning after every pass; A and C pass with B and pass triples with each other on 2-count.

## Shamrock (3) 5 clubs between 3 people.

This pattern is strange because all passes are either zaps (short pass with ½ a spin, or 2.5p) or handacrosses (1p). You need to stand close enough to hand a club between your outside hands. A starts with 3 clubs, 2 in their RH, and B and C each start with a club in their RH. The club starting in C's RH is the "satellite" (labelled s in the diagrams); it is handed around the outside of the pattern (preferably over each person's head). It can be a different colour for extra effect.

|  |   |                             |  |  |
|--|---|-----------------------------|--|--|
| A passes a "zap" to B's LH while C passes the satellite over their head to their LH. | C now has the satellite <i>gripped by the bulb</i> in their LH, and A zaps their second pass to C's RH. | A's third zap is to B's LH. | B must do a self to receive the zap in the previous step. C hands the satellite to A's RH. | At this point everyone has moved one step forward in the cycle; B is the new A, C is the new B, and A is the new C. Repeat until tired!! |
|  |   |                             |  | <b>Variations:</b> pass the satellite under your leg, behind the back, etc.  |

You'll notice that when you are B you have a long time with just one club in your RH; use the opportunity to flourish it !

**Variation:** there is a 4-person version with 7 clubs (2 satellites): the throwing sequence for the zaps is across/right/left.



## Runarounds (3)

Runarounds are passing patterns where a juggler gets rid of all their clubs and takes up another position where they will start juggling again by receiving clubs from their partners.

**(B)** **The basic maneuver:** Consider the diagram to the left: A and B have 3 clubs each and C has none. A & B are passing together in 2-count until B decides to throw all his passes to C. Now, after 3 passes A no longer has clubs, so B & C are left passing. A can now move next to B and wait until C decides to pass with him (As in the beginning between C and B).

**(C) (A)** It is possible to perform the maneuver described here without anyone stopping. To achieve this, we must not pass to the person from whom we received our clubs. B starts passing directly with C. After 3 passes C will be ready to throw to A, who no longer has any clubs, and who will have quickly moved next to B.

**Variations:** there are many different positions that can be taken by the jugglers when they move; adding more clubs ; or adding different rhythms (descriptions here are given for a 2-count).

See [Shooting Star](#) (4) to add more jugglers.

**Jugglers' Movement:** there are three main possibilities for where the jugglers place go when they move:

|                             |  |   |
|-----------------------------|--|---|
| <b>left<br/>(pentagon)</b>  |  | The juggler moves to place themselves to the left of the juggler facing them without crossing through the other two jugglers' pattern.  |
| <b>right<br/>(line)</b>     |  | The jugglers must go to the right of the juggler facing them. Therefore they must be ready to cross the pattern just after they throw their last pass. They must cross the pattern perpendicularly to the pattern. There is a risk of collision which can be avoided if the person who has just moved throws his last pass a little higher than necessary (C here). |
| <b>right<br/>(pentagon)</b> |  | The same thing as previously, but if jugglers don't move as far as previously, they can stay in a circle. All that needs to change is that the person next to the one who has moved, takes that person's place. As above, the same thing for applies for collisions.  |

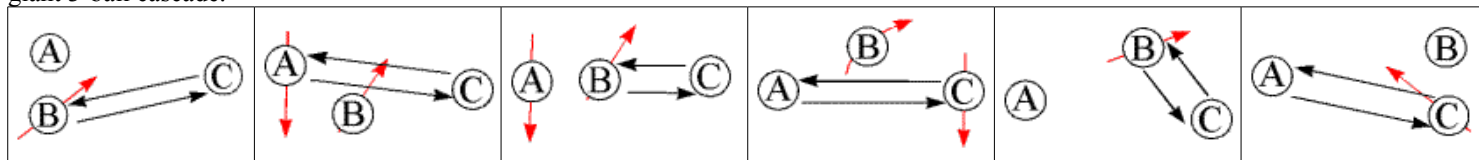
### Rhythms and numbers of clubs :

**6 clubs:** The moving juggler has 2 beats (his hands are empty after his last pass) to take up his new position. Therefore there is a lot of time, and it is not necessary to run or anticipate the move.

|                       |  |
|-----------------------|--|
| <b>7 singles:</b><br> | <p>The third juggler (C) starts with one club (instead of none). He are thus ready to throw his first club at the same time as the person who is about to move throws his last (A). There are two possibilities:</p> <ul style="list-style-type: none"> <li>A (and the others will do the same when their turn comes) only throws 2 passes to B. He then arrives at his new position with the last club. He still has 2 beats to move, which gives him the opportunity for a flourish, thumb-twirl etc... while he moves.</li> <li>A throws his 3 clubs to B. Keeping in mind that he throws B his first club at the same time that he gets rid of his last, it is essential to anticipate the move. After his second throw, A should approach B and throw him his last pass while moving to catch the one thrown by C.</li> </ul> |
| <b>7 doubles</b>      | The feeling is exactly the same as with 6 clubs except that the base rhythm is a 7-club 2-count. We can therefore add an eighth club as we did when going from "6" to "7 singles".   |

## Bruno's Nightmare (3)

This is a rotating feed in which one juggler moves through the middle of the pattern. Imagine that each juggler represents one ball in a giant 3-ball cascade.



The diagrams show B's movement, passing through the pattern to the other side. The feeder's position then changes from C to A. It's the feeder (C in this case) who counts (if there is a need to count) the 6 passes it takes to change positions. As soon as C makes the sixth pass, it's his turn to begin moving to the other side, passing in 4-count (every other). A is left as feeder, (switching to 2-count) and counts his first pass at the same time as C's sixth. B does three passes while moving: the first from the starting point (facing the current feeder), the second while crossing through the middle of the other two jugglers, and the third beside the feeder (which is also his last pass as feeder).

During B's movement, A should also move slightly (see figures 2, 3, and 4), otherwise B might get knocked in the head.

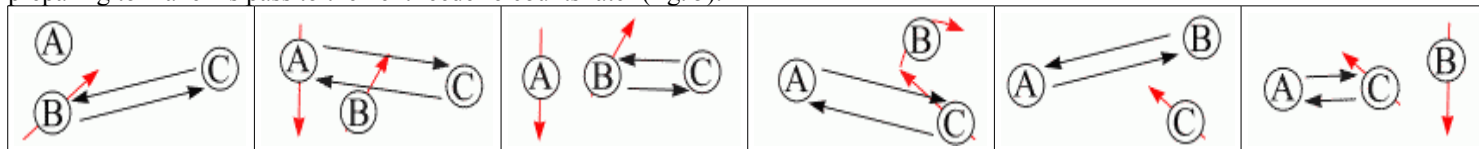
### Rhythms:

4-count (every other) and 2-count (solids) as in a normal feed.

## 3-count Bruno's Nightmare (3)

Now the feeder is in 3-count. It's slower, and there is one less pass to make when changing places.

In the regular version, the change in positions takes three passes; in the 3-count version, the last pass is omitted. More specifically, after the pass is made from the middle (B in fig. 3), the moving juggler should continue moving to the other side while turning around (fig. 4), preparing to make his pass to the next feeder 6 counts later (fig. 5).



**Rhythms:** Three-count (waltz) and 6-count (one person passing with the right hand, the other with the left).

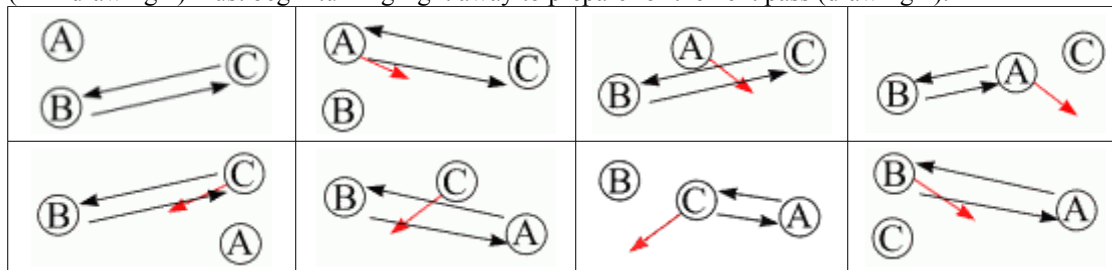
The table below illustrates a full cycle: (corresponding with the diagrams above).

|   | 1st rotation | 2nd rotation | 3rd rotation | 4th rotation |
|---|--------------|--------------|--------------|--------------|
| A | 6-count L    | 3-count      | 6-count R    | 6-count R    |
| B | 6-count R    | 6-count R    | 3-count      | 6-count L    |
| C | 3-count      | 6-count L    | 6-count L    | 3-count      |

**Variation:** There is also a PPS version of Bruno's Nightmare.

## Turbo (3)

Turbo is somewhat like [Bruno's nightmare](#) but it uses fewer steps to change posts, making it significantly harder. The juggler who moves (A in drawing 2) must begin turning right away to prepare for the next pass (drawing 4).

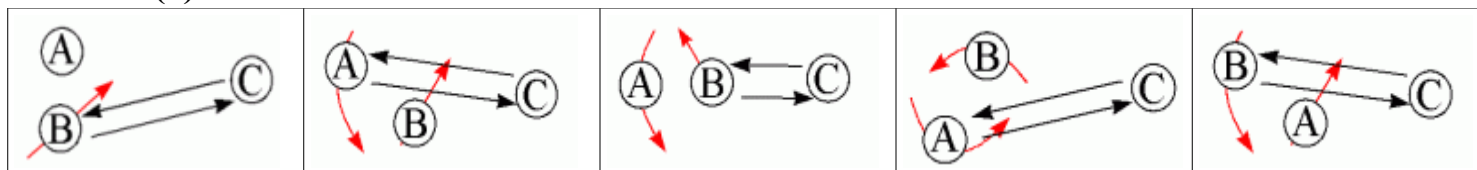


### Rhythms :

2-count for the feeder and 4-count for the feedees (the problem is knowing when to start feeding and when to stop).

**Variation:** a 10-club turbo can be done. C starts with 10 clubs and throws a triple to B. B throws triples to C until they are not the feeder anymore. The idea is that the current feeder throws triples, and the person not about to be the feeder also throws triples.

## Tornado (3)



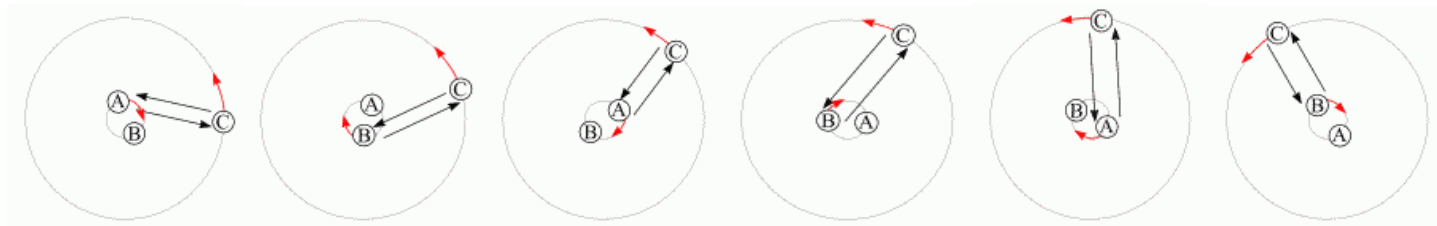
What we want here is to have A and B turning around each other. The feeling for starting the pattern (diagram 1 for B and 5 for A) is similar to the one in [Bruno's nightmare](#). The feeder should try his best to anticipate the movements of the feedees.

**Rhythms:** 4-count for A&B, 2-count for C

**Variations:** Try also [Hans Tornado](#), so that everybody gets to move. Should be doable with C on a 3-count.

## Hans Tornado (3)

This is a [tornado](#) in which the feeder also spins, but in the reverse direction compared to the feedees. In the diagrams, the direction is different from the tornado.

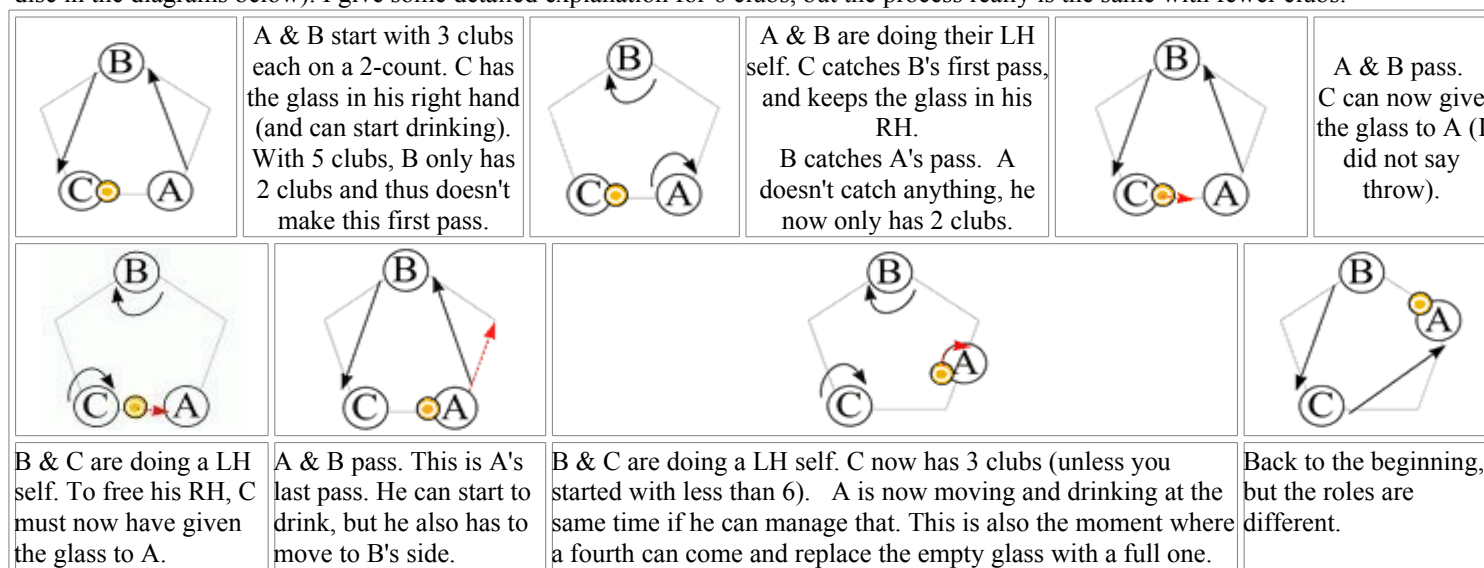


**Rhythms:** any, I think...

**Hans Tornado (Inversed):** Reverse the direction A & B rotate, as well as C (it's different because of the RH passes).

## Beer Passing (3)

Beer passing is nothing more than a special [runaround](#). What happens here is, we put down one club (or more) and replace it with a glass of beer (or anything else if you're not into beer or alcohol). The purpose is then to drink one (or more) gulp when you have the glass. You need 4, 5 or 6 clubs (depending on how difficult you want it to be, and how drunk you already are) and a glass of beer (the yellow disc in the diagrams below). I give some detailed explanation for 6 clubs, but the process really is the same with fewer clubs.



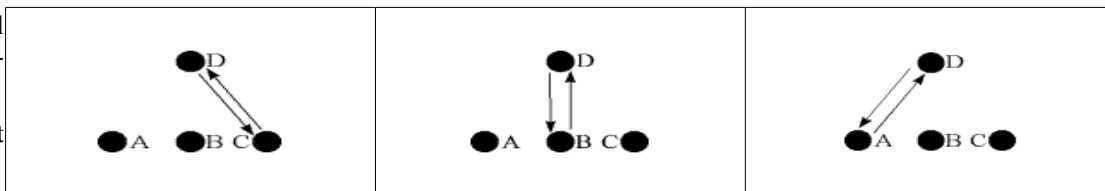
# 4-person Patterns

These patterns are for 4 (or more, in some cases) participants, with indications as to how to generalize them to larger numbers.

## Large Feeds (4+) These are feeds with 3 or more jugglers as feedees.

The first 3 passes in a normal feed with the feeder juggling a 2-count:

For more feedees, everyone just lines up across from D.



## Feeder on 2-count

### Normal Feed (Sweep Feed)

D feeds the clubs from left to right then from right to left, i.e. C, B, A, B, C, B, A... A & C are juggling an 8-count and B a 4-count. Note that it's also possible for D to make his passes in front of him while A, B, C are moving laterally on the line (all at the same time) to receive their clubs. All jugglers not on the ends will get twice as many passes as the two ends, unless FF passes twice in a row to the ends.

### Feed with Carriage Return (Typewriter feed)

With a normal feed, A and C can get the impression of not passing often enough. In this version, A, B and C all pass a 6-count. D now feeds the clubs from left to right only (C, B, A, C, B, A...). When the feeder reaches the end of the line (A) he turns back to face the first feedee (carriage return). If you want a more dynamic version, try the [speed-weave](#).

### Adding some more passes

With any of the two versions above, D and A (for example) can agree to make an additional pass. When he's about to pass with A, D will make his right hand pass (normal) followed immediately (instead of the self) by a left hand pass. The rhythm - for the typewriter variation - is now PPPSPS for D and PPSSSS for A.

It's a nice way to add difficulty for the jugglers who feel at ease with the pattern while keeping it simple for the others. If all (A, B and C) want to pass this way, D will find himself juggling ultimate (see [1-count feeds](#)) as in the "feed 2" variation.

## Simul Feed

The feeder is actually on a 4-count for this one, but passes [simuls](#). D passes two clubs at once every 4 counts, and the previous self to the simul is then hurried. D passes A+B, s, s, s, B+C, s, s, s, etc. A, B and C alternate passing 4-count with 8-count: P SSS P SSS SSSS. A passes to D's RH, C passes to D's LH, and B must alternate which hand of D they pass to. D always passes to left hands.

To make it less boring for the feedees, try the [Simul Speed Weave](#).

## Circle Feeds

With enough feedees (around 8 for a competent feeder on 2-count) the feedees can arrange themselves into a circle around FF. With fewer feedees, or more feeders in the centre, the feeders can rotate faster and the feedees can themselves rotate around the feeders. See the patterns [Catherine Wheel](#) and [Ball Bearing](#).

With 4 on the inside and 4 on the outside, both rotating, feeders can make every pass to a new feedee.

## Complete Feed

In a complete feed everyone feeds everyone else in the same direction, and to make it work there are "phantom" feeders on each end. If there are two rows of X and Y feeders each, the row with X has Y-1 "phantoms" on each end, and vice versa for the row with Y. In this example there is one row of two feeders and one of three; thus the row of two has 3-1=2 phantoms on EITHER end.

|  |  |   |  |
|--|--|---|--|
| Everyone starts on the RH end; A, D and E pass to a phantoms. Everyone sweeps to the left. | A passes to C and B moves to D. E moves left and passes to their second phantom. | Sweeping left, C passes to their first phantom. | Finally C passes to their second phantom. Then everyone sweeps right in a similar fashion... |
|  |  |   |  |

It helps to visualize the phantoms you are passing to, so you don't lose count.

## **13+ Clubs**

### **7-club Passing Feed**

This feed is based on the [10 clubs 2-count feed](#). You just need to add an extra club (and only one, even if there's more jugglers on the line).

The feeder passes on the same rhythm as in the [7 clubs 2-count](#) for 2 people and can choose to feed whoever he wants. He doesn't even need to decide beforehand the order of the passes because the jugglers in front of him always have the time (one beat) to react and pass a club back when they see a double coming their way.

### **Popcorn Line Feed**

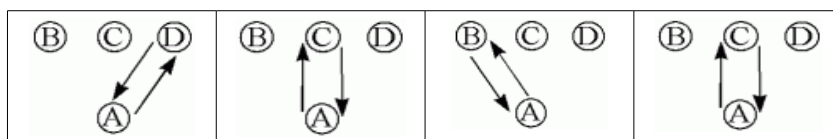
The feeder does a 2-count typewriter feed along the line, and feedees do [7-club popcorns](#) out of phase with each other. The feedees must wait until a pass is incoming and then lift into 4 clubs and pass back.



## Feeder on 1-count

### 4-person Feed 1

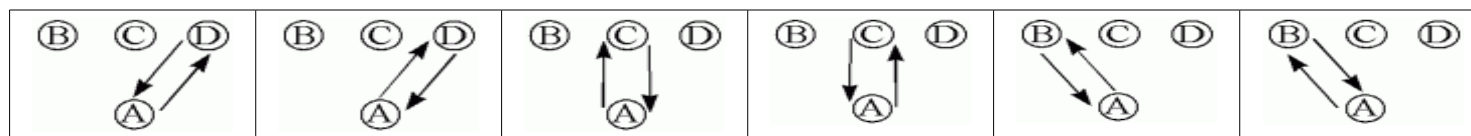
The right and left hands are feeding in the same direction and two consecutive passes can't be sent to the same person.



|                  |                          |   |
|------------------|--------------------------|---|
|                  | Without carriage return: | With carriage return:   |
| <b>B &amp; D</b> | 4-count (PSSS)           | Waltz (PSS)   |
| <b>C</b>         | left-handed 2-count (PS) | This classical feed is also known as the <b>Urban Terror Feed</b> . |

### 4-person Feed 2

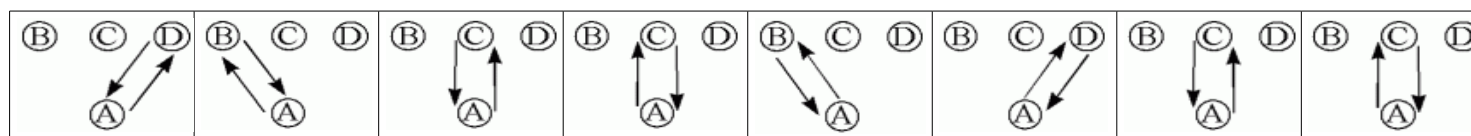
The right and left hands are feeding together the same juggler in front of the feeder. Each LH pass is sent to the person who received the previous RH pass.



|                  |  |   |
|------------------|--|---|
|                  | Without carriage return:                                 | With carriage return:   |
| <b>B &amp; D</b> | PPSSSSSS (8-count with an extra pass on the second beat) | PPSSSS (Chocolate bar if there's only 2 of them in front of the feeder) |
| <b>C</b>         | Chocolate bar (PPSS)                                     |   |

### Crossing feed

The right and left hand are feeding in different directions.



**Rhythm:** B & D do PSS PSSSS, C does PPSS (Chocolate Bar).

**Variations:** in general, any sequence of RH LH exchanges can be agreed upon and juggled; any time the feeder and a feedee are both doing a self can be replaced with two passes. These feeds can be easily expanded to more feedees; it is probably easiest for the feedees to memorize their sequences of passes rather than try to anticipate them while juggling.

**Mesopotamia:** Three feedees, all doing 4-count; the outside pair R-handed, the middle one L-handed. The feedee does a 1-count typewriter followed by a zip: **RLRZ**.

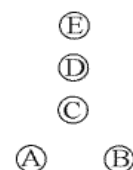
**Half-compressed Mesopotamia:** the three feedees can be *compressed* into two (or one: see the 7-club pattern [Compressed Mesopotamia](#)) by stepping up the number of passes one of them makes.

**WhyNot Feed:** the different [WhyNot feeds](#) can be extended by having all of the feeders doing 77772 (**PPPPZ**).

[Martin's Madness](#) can be extended to typewriters feeds of three feedees; FF has no selves. For the **Mob Madness**, FF's sequence is **RLRLRZ**. For the **Mob Psychosis** (see [Psychosis](#)): FF's passes are **RLR LLR LRR LRL LRL RRL RLL RLR**. Good luck.

## N- or W-Feeds

(A) (B) These are feeds in which there are multiple feeders, but each feeder only feeds two other people.  
 (C) (D) (E) You can use the traditional W-feed positions for these patterns, but all of them can also be done with the jugglers arranged as in the diagram on the right.  
 All of these feeds can be arbitrarily extended by adding more people at either end.



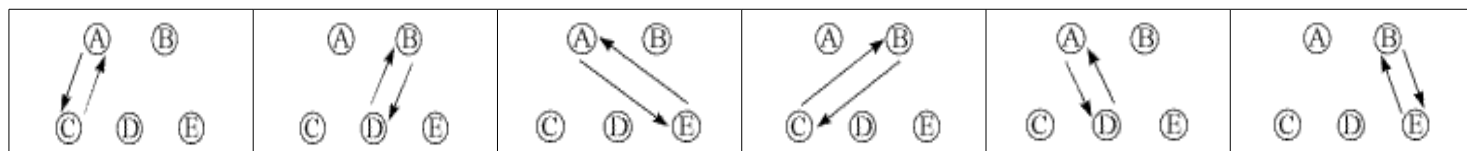
### Traditional W-feed

The feeders alternating which person opposite them they pass to: the two end people are feedees and everyone else is a normal feeder.

**Rhythms:** almost any of the [3-person feeds](#) can be done in such a pattern.

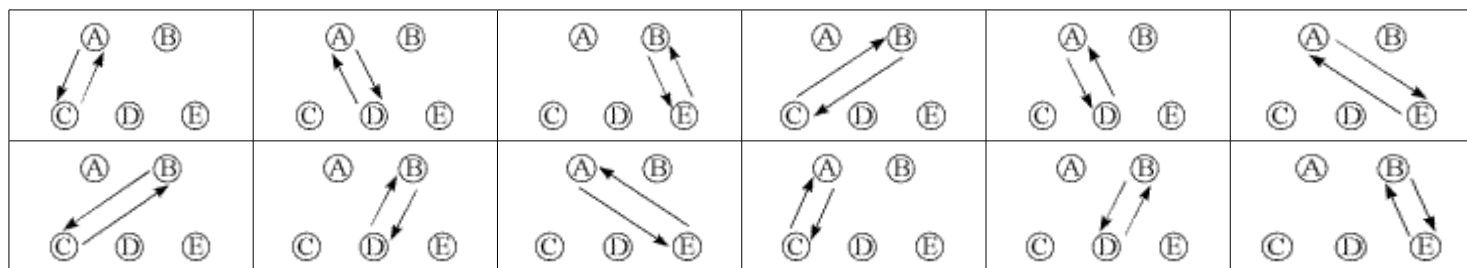


### W-feed with 3-count and 2-count



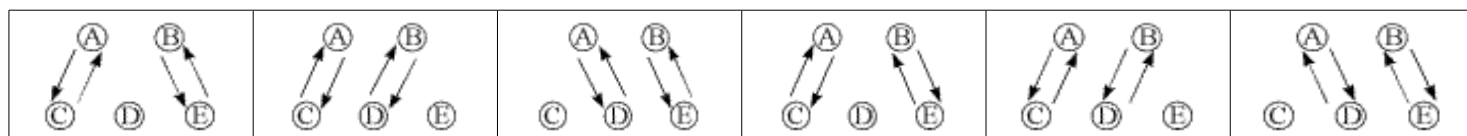
**Rhythms:** A & B: 2-count (left hand throws for B) C, D, E : 3-count

### W-feed with 3-count and PPSS



**Rhythms:** A & B : chocolate bar (PPSS) C, D, E : 3-count (PSS)

### W feed with PPS and 1-count



**Rhythms:** A & B : 1-count (ultimate) C,D & E : PPS

### W-feed with PPS and miscellaneous rhythms

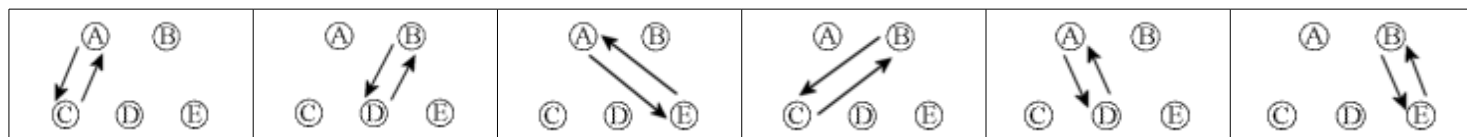


**Rhythms:** A & B : PPS, C : SPPSSP (SP-PS), D : SPSSPS (SSP), E : PSSPPS (harder to remember)

**Martin's Madness:** the different versions of [Martin's Madness](#) can be extended by having all of the feeders do the feed part; all of the feeders on one side will be doing the [Mildness](#) (straight passes) and the others the [Madness](#) (crossing passes).

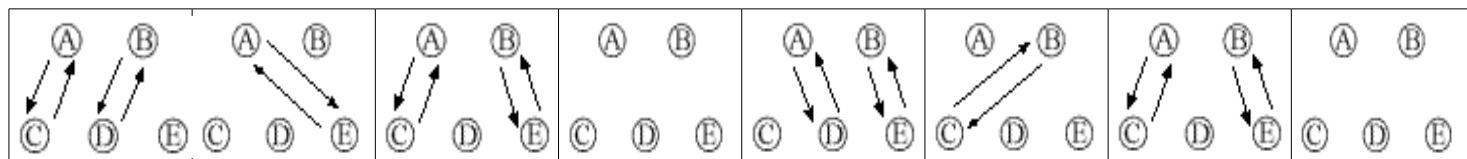
**Double typewriter feed**

A and B both do a L->R typewriter feed out of sync with each other.



**Variation:** try PPS or 1-count for the feedees.

**Lodi Low-down** A W-feed pattern with period 4, and then the cycle repeats on the other side.

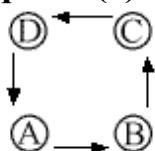


**Rhythms:** A & B: PPPSPSPS, C & E: PSPSSPPS, D: PSSS.

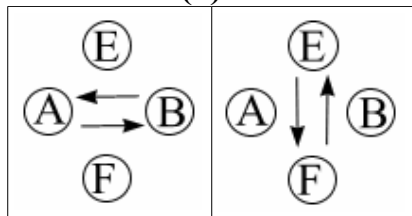
**13+ Clubs**

Adding a fourth (or fifth!) feedee to a standard [10-club feed](#) to make an N or W doesn't work in quite the usual way; the extra feedee has to do **34p22** (double return), or (more interestingly) popcorn: **444p3**.

**Square (4)** Four jugglers stand at the corner of a box and each person passes with at least 2 others.



Ordinary square patterns are generalizations of triangles: each person passes with their neighbours on either side. Thus most [triangle](#) patterns can be done in a square if each juggler ignores the person across from them. **Rhythms:** Ultimates, PPS, Bermuda Triangle work well. See [Triangle \(3\)](#) for more variations.

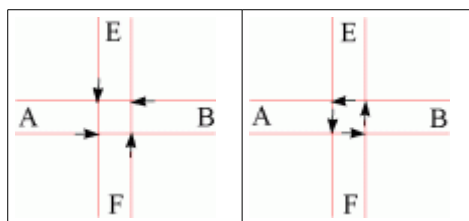
**The Cross (4)****Rhythms:**

Everything depends upon timing in this one. The four jugglers all pass with the same rhythm, but this can be done in several different ways, the only goal being to avoid collisions in the middle. In the **classic version**, everyone does 4-count; while A&B pass, E&F throw right-handed selfs (fig. 1) and vice-versa.

**Second option:** everyone doing 2-count; while A&B pass, E&F throw left-handed selfs.

**Third option:** Choose any rhythm. Everyone passes at the same time and as if by some miracle, it can work:

See the diagram: Observe the clubs as they pass through the middle. It helps a lot if each opposite pair passes a bit to the outside.



**14 clubs:** When this works it's a huge deal, and one may well wonder why. A&B and E&F do 7 clubs in doubles. To avoid collisions, each must be sure that he makes each of his throws just after the juggler to his right. If A starts first, F follows half a beat later, then B, and then E.

**Variation:** do 4-count on triple passes. If A starts with a triple (to B), F starts next, on A's LH self, with a triple to E. This variation is easier as there is less collision potential.

## Spiderweb (4)

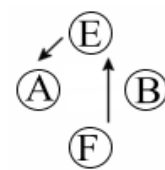
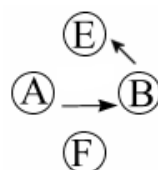
This pattern combines the Square and the Cross.

With **15 clubs**: the four of you stand in a square and do a **14 club cross** by doing 4-count on triples. Instead of your RH self throws, however, you throw a **RH double** to the person to your right (the person who threw the triple following you). Thus each person is doing **Triple across, self, double to the side, self**, out of sync.

The start is the same as for a [14 club cross on 4-count triples](#): if A starts, the next triple comes from F and A passes their doubles to F; simultaneously with A's first throw, B throws a double to E.

**Variation**: to make the doubles inside throws, switch the position of E and F.

E and F do LH selfs, B passes A and B do LH selfs, E passes a double and A a triple: a double and F a triple:

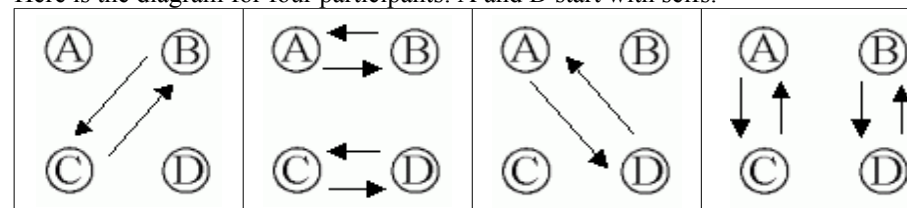


Etc.

## Feast (4+) Boston Circle, Clock

A feast is any pattern in which every juggler passes with every juggler around the circle, including themselves, everyone going in the same direction (usually clockwise, for some reason). A feast can be done with 3 or more jugglers but is usually seen with at least 4.

Here is the diagram for four participants: A and D start with selfs.



The sequence of passes for the square is as follows:

|   |   |   |   |   |
|---|---|---|---|---|
| A | s | B | D | C |
| B | C | A | s | D |
| C | B | D | s | A |
| D | s | C | A | B |

If there is an odd number of participants, just one person has to start with a self.

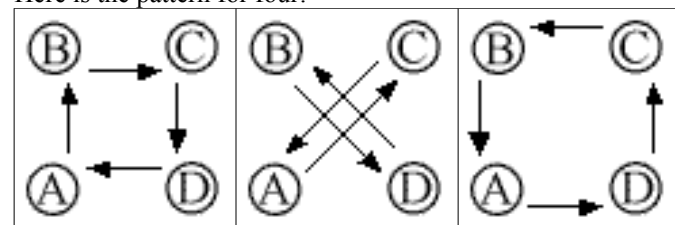
**Rhythms**: pretty much any rhythm.

**Variation (Feast and Famine)**: change directions after every four passes (or three passes, or five passes, or  $n-1$  passes).

## Selfless Feast (4+) Complete Feed

A feast in which every juggler passes with every other juggler (but not themselves). Unlike in a regular [feast](#), you are usually not passing to the person you are receiving from, thus it is a little harder: each juggler first passes to the person to their left, and proceeds around the circle. Also, sometimes passes cross in the middle, thus the timing needs to be accurate. Each person is essentially doing a [sweep feed](#) of all the others.

Here is the pattern for four:



|   |   |   |   |
|---|---|---|---|
| A | B | C | D |
| B | C | D | A |
| C | D | A | B |
| D | A | B | C |

**Rhythms**: pretty much any rhythm.

**Variations**: Feed back in the opposite direction so each person is doing a sweep feed R and L; thus for 4, add in a second across pass.

## 135 Sweep (4)

Each person sweeps R and L in a 5-count pattern, passing on beats 1, 3, and 5 and repeating going back. The sequence is thus **left self across self right right self across left** before repeating.

**Variation**: this generalizes to an odd-count sweep for any number of passers; for 5, a **1357 sweep**, for 6, a **13579 sweep**, etc.

**Veteran's Star** is a 5-person sweep feed on 3-count, starting with a RH pass to the second person to your right.

**Speed Star** is the same thing except on 1-count (!).

## Aidan's Feasts

These are a type of selfless feasts in which the two opposing pairs (AC and BD) juggle different counts so that their crossing passes don't collide in the middle (note that this shouldn't be a problem anyways if everyone is very good about keeping to time). Each juggler passes several times across the middle, one pass to each extreme (right and left).

**Variations:** for each pattern, at the end of a cycle each opposing pair switches their pattern to the other.

**A and C: 4-count; B and D: 3-count.** Since each beat is shown, an *s* stands for a self. B and D pass to each other 3 times, A and C pass to each other twice.

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | D | s | s | s | C | s | s | s | C | s | s | s | B | s | s | s | C | s | s | s | C | s | s | s |
| B | C | s | s | D | s | s | D | s | s | D | s | s | A | s | s | D | s | s | D | s | s | D | s | s |
| C | B | s | s | s | A | s | s | s | A | s | s | s | D | s | s | s | A | s | s | s | A | s | s | s |
| D | A | s | s | B | s | s | B | s | s | B | s | s | C | s | s | B | s | s | B | s | s | B | s | s |

**A and C: 2-count; B and D: 3-count.** B and D pass to each other once, A and C pass to each other twice.

|   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | D | s | C | s | C | s | B | s | C | s | C | s |
| B | C | s | s | D | s | s | A | s | s | D | s | s |
| C | B | s | A | s | A | s | D | s | A | s | A | s |
| D | A | s | s | B | s | s | C | s | s | B | s | s |

**A and C: 3-count; B and D: 2-count w/ triples.**

Here B and D avoid collisions by throwing triples to each other. TX means a triple pass to X and h means a hold.

|   |   |   |    |   |   |   |   |   |    |   |   |   |
|---|---|---|----|---|---|---|---|---|----|---|---|---|
| A | D | s | C  | s | C | s | B | s | TC | h | h | s |
| B | C | s | TD | h | h | s | A | s | D  | s | D | s |
| C | B | s | A  | s | A | s | D | s | TA | h | h | s |
| D | A | s | TB | h | h | s | C | s | B  | s | B | s |

**A and C: 2-count; B and D: PPS.** B and D pass to each other twice, A and C once.

|   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | D | s | C | s | B | s | B | s | C | s | D | s |
| B | C | D | s | D | A | s | A | D | s | D | C | s |
| C | B | s | A | s | D | s | D | s | A | s | B | s |
| D | A | B | s | B | C | s | C | B | s | B | A | s |

**A and C: 2-count; B and D: PPS.** This version is a typewriter: L, middle, R but not returning through the middle again.

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| A | D | s | C | s | B | s |
| B | C | D | s | D | A | s |
| C | B | s | A | s | D | s |
| D | A | B | s | B | C | s |

## Rush and Rest (4)

This is a feast variation in which extra passes are thrown in. The cycle goes **across right across self left self**.

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
|   |   |   |   |   |   |   |
| A | C | D | C | s | B | s |
| B | s | C | s | D | A | D |
| C | A | B | A | s | D | s |
| D | s | A | s | B | C | B |

## Bermuda Quadrangle (4)

This is a box pattern where each juggler does **PPPS** in a feast fashion, but the feast proceeds by means of clubs going in triangles.

|   |   |   |   |   |
|---|---|---|---|---|
|   |   |   |   |   |
| A | B | C | D | s |
| B | C | s | A | D |
| C | A | D | s | B |
| D | s | A | B | C |

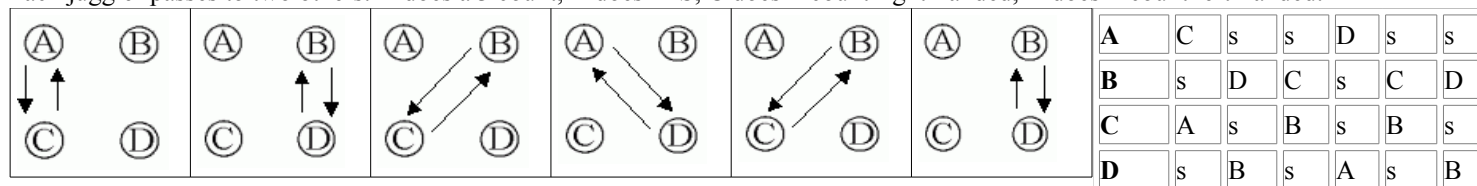
**Maya A longer version.**

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| A | D | s | B | C | s | B |
| B | C | s | A | D | s | A |
| C | B | D | s | A | D | s |
| D | A | C | s | B | C | s |



### 3-count Accommodation (4)

Each juggler passes to two others. A does a 3 count, B does PPS, C does 2-count right-handed, D does 2-count left-handed.



**Variation:** slow things down by adding in extra selfs, if you must, so everyone juggles (shudder) one-sided.

**Jim's 3-count Accomodation:** cross throws so that A is doing [Jim's 3-count](#); C and D will be doing [Jim's 2-count](#), and B will be doing ... some sort of [Madness](#) pattern.

### Alternating Triangles (4)

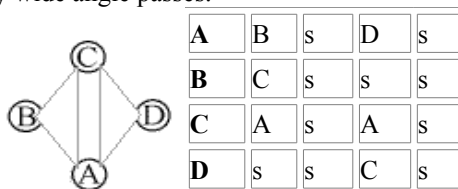
Though the layout is for a [box](#), it is doable (and possibly easier) if D and C face A and do dropbacks to B, in which case this is two merged three-person [lines](#). B and D can do dropbacks or just very wide angle passes.

A (feeder) does 2-count feed to B and D.

C (receiver) passes 2-count to A.

B and D do a 4-count, passing dropbacks to C.

**Variations:** different rhythms work as long as A and C pass twice as often (1-count vs 2-count, PPS vs 3-count, etc).



**Variation:** every four counts A and B switch roles (and thus D and C switch who they are passing to). This is clearly easier to do if D and C are *not* doing dropbacks.

**13-club Interlocking Triangles:** B, instead of doing a self, throws a triple across to D, then when D is doing their self, they throw the triple back.

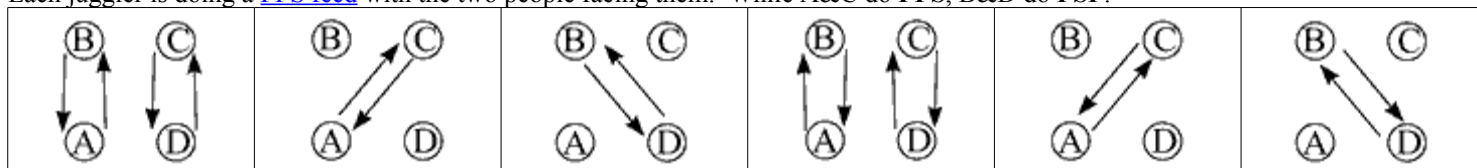
**Rotate the Feed** (A's position) so that everyone gets to do it. The full 16-count pass cycle is shown; in each block of four passes a different person is the feeder.

| Feeder: | A |   |   |   | B |   |   |   | C |   |   |   | D |   |   |   |
|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A       | B | s | D | s | s | s | D | s | C | s | C | s | B | s | s | s |
| B       | C | s | s | s | C | s | A | s | s | s | A | s | D | s | D | s |
| C       | A | s | A | s | D | s | s | s | D | s | B | s | s | s | B | s |
| D       | s | s | C | s | B | s | B | s | A | s | s | s | A | s | C | s |

**Variation:** do both switches of the feeder and rotate the feeders position. Tough!!

### PPS Cross Feed (4) (Two on Two, Double 3-count, Jump)

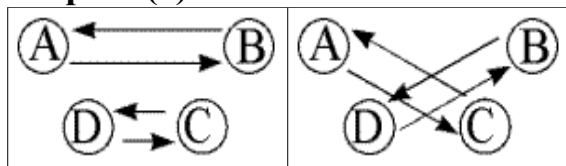
Each juggler is doing a [PPS feed](#) with the two people facing them. While A&C do PPS, B&D do PSP.



**Variations:** augment the passes so that every other pass is straight. The throws are no longer PPS but it's conceptually easier to follow. This can work in ultimates or 2-count (though you sometimes don't pass when you're supposed to).

**Variation:** everyone does [Martin's Mildness](#): A and D do diagonal passes (R to R, L to L) and B and C straights (or vice versa).

## Trapeze (4)



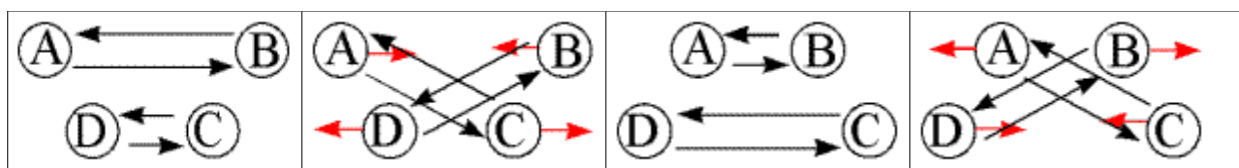
The Trapeze solves the interesting question of how to have 4 people all feeding while avoiding collisions when the clubs cross. Normally, if everyone's passes are dead on time, step 2 works without a hitch. Otherwise, it may be necessary to play with the distances (such as increasing the distance between A and B).

**Rhythms:** 2-count or 4-count

**Variation:** Other interesting solutions include forming a square and putting two people (A&C or B&D) on chairs or to play with precision in timing in a true [cross](#).

**13+ clubs:** with 14 clubs, each person passes triples in a 4-count with one person and singles in a 4-count with the other person on the opposite side. Think of this as two sets of 7 club 4-count triples, but replace all right selves with passes exchanged with the person on the other side who is in phase with you. You can do this with either the triples or the singles all thrown corner to corner and the others thrown to the person straight in front of you. Note that in this pattern, both the people on the opposite site from you pass to you at the same time every time, one with a single and one with a triple.

## Dynamic Trapeze (4) A moving version of [trapeze](#).



This involves moving forwards or backwards every other pass. Thus, jugglers always find themselves in the trapeze formation to make crossing passes, thus avoiding collisions. Each person moves immediately after each crossing pass so as to be in position for the next.

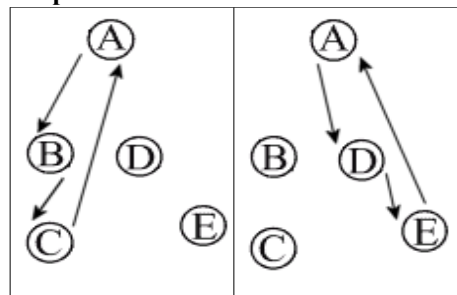
## Lines (4+)

These are just some possible positions for 4 jugglers standing in a line. Some of them may not be interesting on their own. However, they can be used as a transition between 2 others. You can try (using a few half-pirouettes for the jugglers in the middle) to go from each position to the others.

|  |   |  |
|--|---|--|
|  |   | These two go together. The principle is the same as in the <a href="#">cross</a> .         |
|  | A and D can do their passes in doubles, and can even use 7 clubs. |  |
|  |   | These are augmented versions of the classic <a href="#">dropback line</a> with 3 jugglers. |

**Variations:** boundless variations exist once 5 or more jugglers are involved. See [Long Lines \(6\)](#) for a few more ideas.

## Dropback Line Feeds



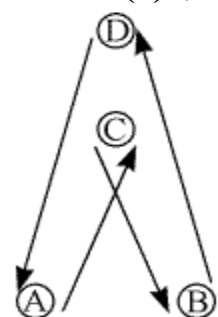
The concept is simple: arrange two or more [lines](#) with at least 2 jugglers each, and the front person of each line is merged to be the feeder.

With the minimum of 4 people, one of the lines can consist of only one person.

The diagram shows a dropback line feed for 5, with a 2-count feed.

**Variation:** A can do a [double 3-count feed](#) with BC and DE doing **3-count**.

## The Y (4) (Oogle)



**With 12 clubs:**  
**Rhythms:** any.

### Jim's 3-count Variations

- First pass is right hand crossing, second pass is right hand tramline, third pass is left hand crossing, fourth pass is left hand tramline.
- D and C do crossing passes, so everyone ends up doing Jim's 3 count. There are two possibilities with this. One is that you pass all your right hand passes to one person and all the lefts to another. Then some passes will be exchanges. The other possibility is that you alternate who you pass to.

**Variation:** alternate rounds of a standard Y with [dropback](#), or [reverse dropback](#), patterns (below).

### With 14 clubs

This works exactly like a [7-club 2-count](#) pattern with a staggered start: 2 jugglers (here C and D) starting first, followed a ½ a beat later by A and B. Everyone can do doubles, or just C and D (with A and B continuing in singles).

**Slingshot:** a 14-club pattern in which A and B feed C and D, and vice versa. B and D start with 4; all passes to and from D are triples. The pattern for passes is: A: C, D, B: D, C, C and D: A, B.

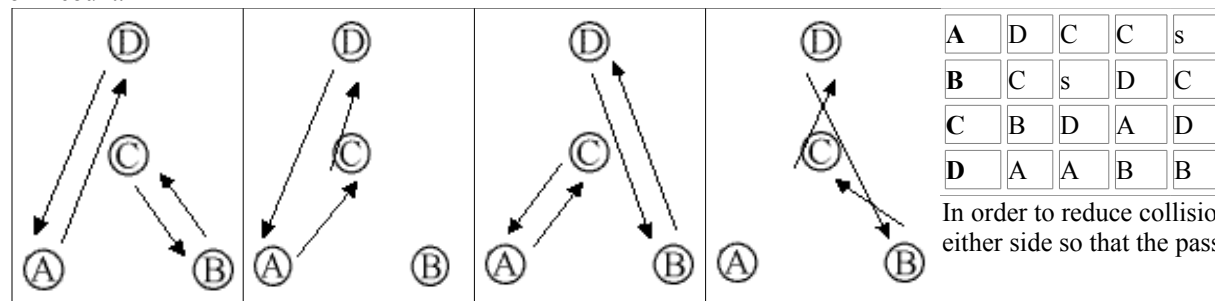
### Popcorn Y

**15 clubs:** Every juggler does 4-count popcorn (444p3): < 4 4 4p 3 | 4 4p 3 4 | 4p 3 4 4 | 3 4 4 4p >. The first juggler starts with their pass, and it cascades the passes around the Y.

**16 clubs** 4 clubs per person. Everyone starts at the same time and passes doubles.

## Two Harbour Y (4)

C throws dropbacks to D, who passes alternately to A and B. C and D juggle a 2-count while A and B do 1 round of 4-count and 1-round of 2-count.



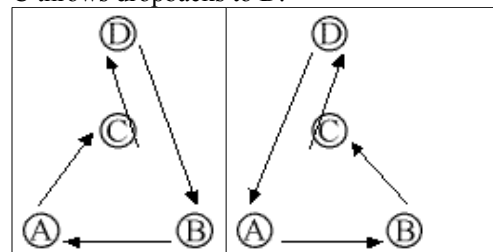
In order to reduce collisions, it helps if D moves to either side so that the passes clear C's head.

**Rhythms:** a 5-count can be used to work both hands equally. A 6-count vs 3-count would also work.

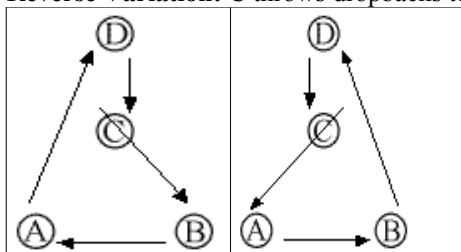
## Dropback Y (4)

A 3-count dropback.

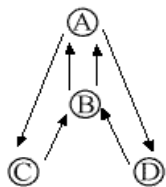
C throws dropbacks to D.



**Reverse Variation:** C throws dropbacks to the two corner positions.

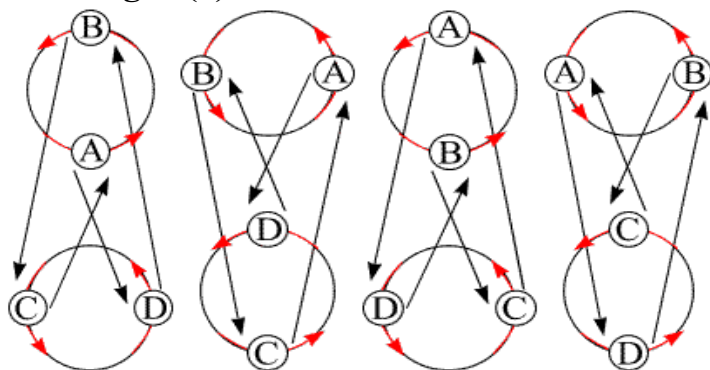


**Rhythms:** Any count will work, though in a count with even period all the passes will be from one side.

**Y2K (4)**

In this pattern B is the corner of two simultaneous triangles. B can either throw dropbacks to A, or B can face A and receive drop-forwards from C and D. B starts with 4 and throws 2 *simultaneous* passes, A starts with 2. C and D juggle a right-handed and left-handed 2-count to B.

**Variation:** stagger the start so that B and A are doing a normal 1-count.

**Rotating Y (4) (Oogle Boogie)**

As in the static version, each juggler always throws to the same person and receives from the same person (but those are two different people).

Each juggler must be exactly in the right position each time while moving in an (imaginary) circle. It's important to visualize and anticipate where one should be passing and where incoming passes will come in.

**Rhythms:**

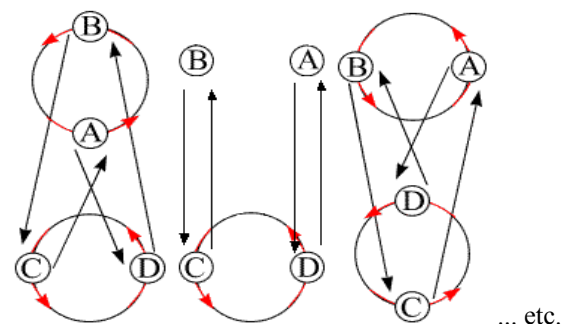
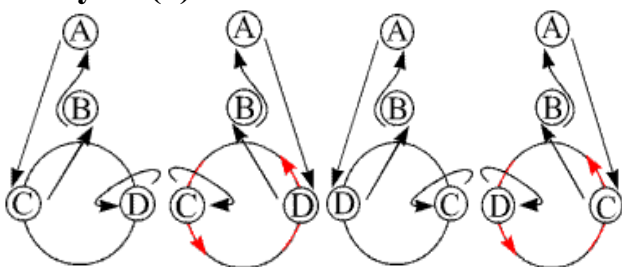
4-count (every other) or 6-count at first if it's too fast. You can also move only on every 2 passes (or 3, or 4...).

**Variation: Slow Oogle Boogie:**

Alternate Y formations with a standard box:

A and B turn  $\frac{1}{4}$  turn, then C and B pass and A and D as in a standard box; then move to the second position by having C and D turn; repeat.

**Variation:** find four other jugglers and do a [Twinned Rotating Y](#).

**Unicycle (4)**

A is the seat, B the fork, and C and D make the wheel with the circular path they follow. Passes from B to A are backdrops.

**Rhythms:** 3-count

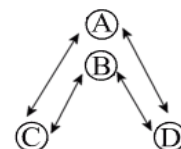
**Variation:** Along the same lines, see the [two-seated unicycle](#) (6 jugglers).

**Dart (4)**

Darts are just 12-club [Y](#) patterns on Ultimates (1-count). Since the back person (A) has no selfs they can stand very close to B, which makes it easier for C and D.

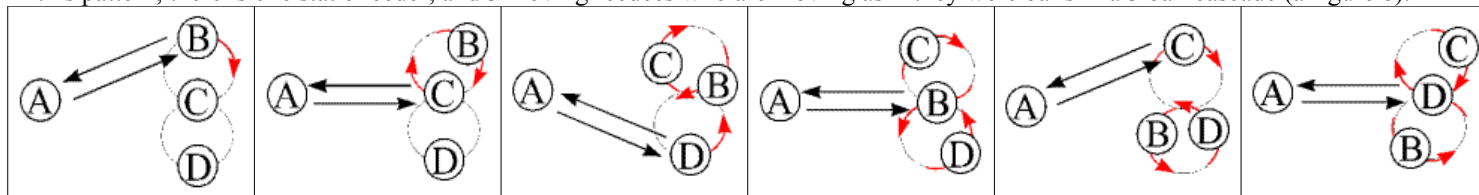
They can also be done in **sync** ultimates or **async**.

**Rhythm:** 1-count (ultimates).



## Speed Weave (4) (Weave)

In this pattern, there is one static feeder, and 3 moving feedees who are moving as if they were balls in a 3 ball cascade (a figure 8).



The feedees are always moving. They can make a very short pause each time they're throwing (and receiving) a club, i.e. each time they're in the center or on the outside (where B & D are in diagram 1). One always moves backward when on the outside after passing. When in the center, you move forward and to the side (and you'd better hurry because somebody is waiting to pass behind you).

The feeder passes **Right-Center-Left-Center-Right-Center-Left...** He should try to anticipate his fellow jugglers' movements (i.e. short on the center, and long on the outside).

**Rhythms:** With the *classical version*, the feedees are juggling a 6-count, which give them plenty of time to move (and to pick up should they need it), the feeder is doing 2-count.

**13 clubs:** in rhythms with the feeder doing 4-count (see [Twister Weave](#), with an extra feeder), the feeder can start with 4 clubs and throw triples, as in [7 club 4-count](#). The feeder must anticipate the feedee's locations; the feedees return a triple as normal.

**1-count Speed Weave:** if the feeder just tries to feed 1-count in the same rhythm problems will occur. One solution is to pass twice in succession to each feedee.

**Split 1-count Speed Weave:** a more interesting solution is for the feeder to pass **middle middle left right middle middle right left**. The feedees do the sequence **PPS PSS PSS PSSSSS**, or 1-count, 2-count, 3-count, 3-count, 6-count. The **PPS** happens as they are moving forward through the middle, the 6-count is as they are moving around behind approaching the middle.

**Siteswaps** (see [Gandini's Siteswap Weaves \(5+\)](#) for more ideas). If the feeder (A) only passes to the outside positions, then the three feedees (B,C,D) can, instead of moving in a regular cascade (**333...**), do other 3-object siteswaps: for example **441**, **531**, **423**.

## Simul Speed Weave

This is a moving version of the [Simul Feed](#). A passes simul on a 4-count (every 4 counts, they pass two clubs at once; one of the passes is hurried). A alternates passing to the centre and left, and centre and right. The weavers alternate 4-count and 8-count, i.e. **P SSS P SSS SSSS**. When they are on the outside positions, the feedees pass to the hand that is near to them, and when they are going through the middle, the feedees pass to the hand in the direction they are going (e.g. in the fourth figure, B would pass to A's RH). A always passes to LHs.

## Variations: Easy version with fewer passes:

In this slim version, the feeder only passes to the center. The feedees keep moving as in the classical version, but they only pass when in the center position. Erase the passes in diagrams 1, 3 and 5 and replace them with selfs.

## Rhythms:

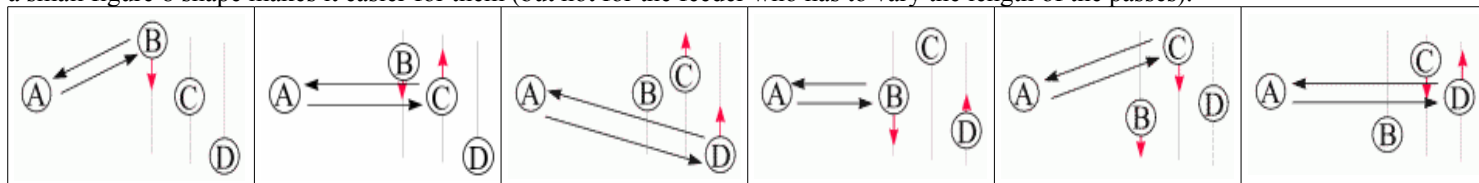
In the easy version with passes only to and from the middle (see speed-weave), feeder in 4-count and feedees in 12-count.

In a hectic version, feeder in 1-count and feedees in 3-count. Also try Bookends (**PPSPS**) for the feeder.

Also see: [Dresser Drawer Weave](#), [Gandini Siteswap Weaves](#), [Weave with 2 feeders \(Mr. Inside Mr. Outside Weave\)](#), [5-person Weave](#), [Interlaced Speed weave](#).

## Dresser Drawer Weave (4) (Feed Loom)

Like the classical [Weave](#), but in this pattern, the 3 feedees all have their own lines on which they're going to move. Not having to move on a small figure 8 shape makes it easier for them (but not for the feeder who has to vary the length of the passes).



**Rhythms:** In the usual version, the feeder is doing a 2-count and the feedees are doing a 6-count.

In an easy version with passes only to and from the middle (see [Speed Weave](#)), feeder in 4-count and feedees in 12-count.

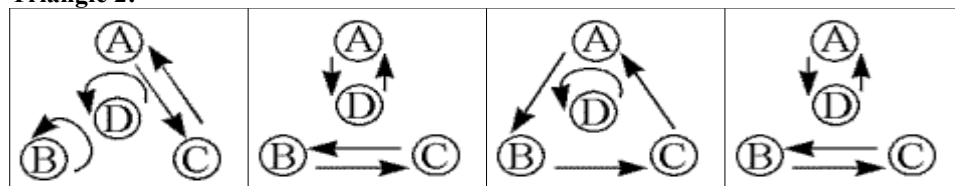
In a hectic version, feeder in 1-count and feedees in 3-count.

**Variation:** after the feedees return to their initial positions, switch to a [Speed Weave](#), and then back again.



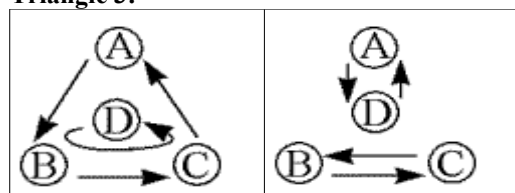
**4-Person Triangles (4)** These patterns are expansions of the 3-person versions., formed by adding a 4<sup>th</sup> person into the middle.

**Triangle 2:**



**Rhythms:**  
A : 2-count  
B : SS PS PS PS  
C : 2-count  
D : 4-count

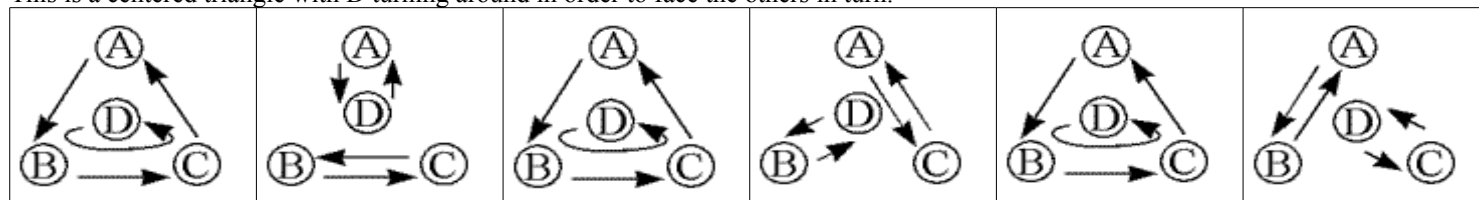
**Triangle 3:**



**Rhythms:**  
A B and C: 2-count  
D: 4-count

## The Rotator (4)

This is a centered triangle with D turning around in order to face the others in turn.

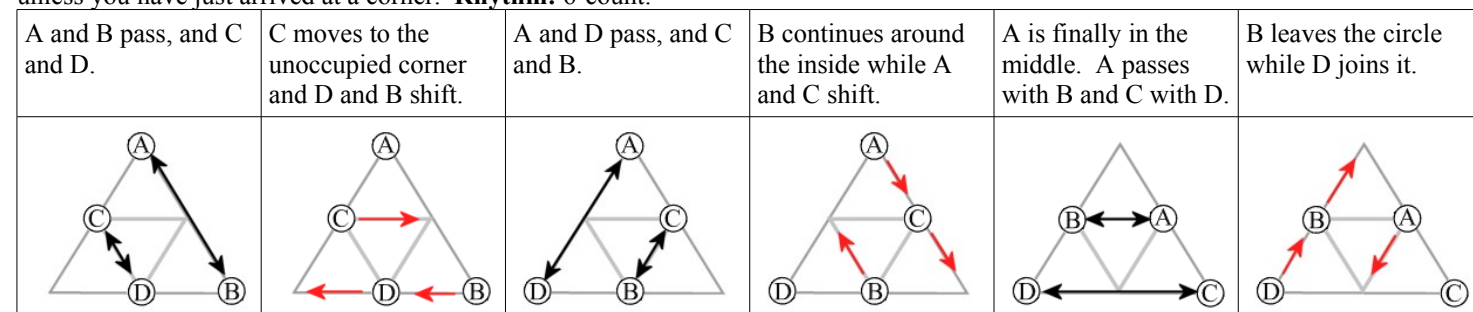


**Variation:** don't do the "triangle" passes and have D turn faster to pass with each person in turn.

## Trefoil (4)

A sort of triangle-within-a-triangle pattern.

A and B start at the corners of a triangle and C and D start at midpoints. Whenever you are at a corner, you pass with the other person at a corner and whenever you are at a midpoint, you pass with the other juggler at a midpoint. After a pass you move to another position unless you have just arrived at a corner. **Rhythm:** 6-count.



The cycle repeats from the last position, everyone has moved around a spot.

**Variation:** this pattern is similar to the [Clover](#), which has a cycle of 8 passes.

## 4-person Pulsar (4) An expansion of the [Pulsar](#).

This is a two count feed with the feed changing every two passes. The next feeder is to the LEFT of the previous one.

|   |                        |                     |
|---|------------------------|---------------------|
| <p>right middle</p>                         | <p>left right</p>      | <p>middle left</p>  |
| A is the first feeder and passes R, Middle. | B passes L and then R. | C passes Middle, L. |
| <p>right middle</p>                         | <p>left right</p>      | <p>middle left</p>  |
| D passes R, Middle.                         | A passes L, R.         | B passes Middle, L. |

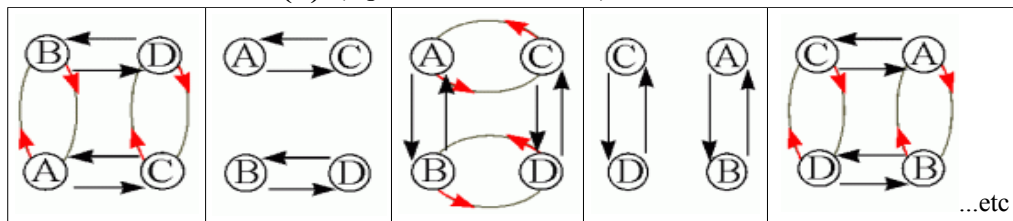
Hopefully you can see how the pattern continues from here...

## Tarim's Runaway (4)

This one is quite tricky (Tarim called it Runaway because when asked to try it out, people usually choose to run away). I would strongly advise you to first try the two static patterns on which this pattern is based: the [PPS cross feed](#), and the [ultimate line feed](#).

|  |  |
|--|--|
|  | <b>Ultimate line feed:</b>   |
|  | <b>Transition 1:</b><br>After a right hand pass, D catches the incoming pass and moves to the next position, ready for PPS with a RH start and starting outside, self, inside, inside...   |
|  | <b>PPS cross</b>   |
|  | <b>Transition 2:</b><br>A moves after a RH pass to B. Before that, he has taken care to say "now" to C on their previous RH pass (so that C goes back to 3-count). A goes to his new position with a RH pass to D 4 beats later. D, who has seen A moving, starts passing to him instead of doing self; he now is doing 1-count. |
| <b>Ultimate line feed:</b> Now you are back to the beginning, with different roles: D is the new feeder. |  |

## Double Rotation (4) (Square Dance, Minuet)

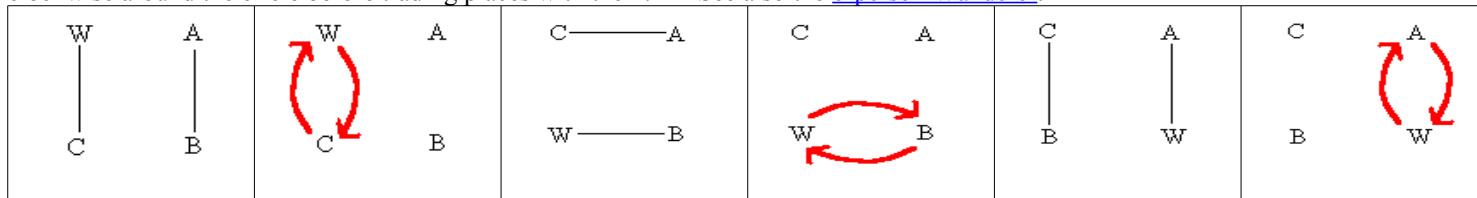


In general, you pass to the juggler across from you, change place with your neighbour beside you, make another across pass, turn 90 degrees, and start again.

**Note:** *alternate* going behind and in front when you change places.

**Rhythms:** 4-count (every other). It's also possible to do a 6-count while changing positions.

**Variation: The Wanderer:** Sort of a reduced version: one juggler (W) moves around the circle, passing with the next person anti-clockwise around the circle before trading places with them. See also the [6-person Wanderer](#).



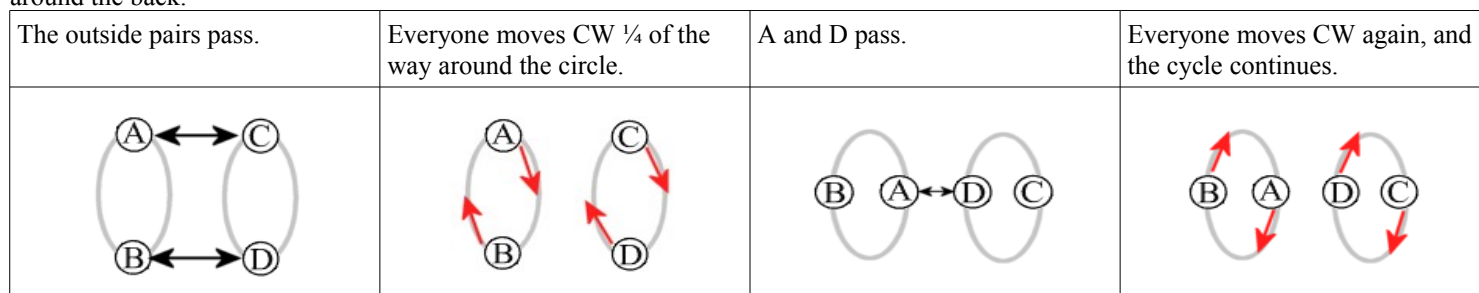
... and then we're back at the start, except that everyone has moved one place around the circle. To continue, A or C becomes the next wanderer and then you start up again.

**Rhythms:** 4-count, or even 3-count if you are fast! 6-count for a nice gentle version or just do 6-count while you are changing positions.

## Karamazov Shuffle (4) This pattern feels similar to the [Double Rotation](#).

Each pair of passers rotates around each other and passes with the other pair.

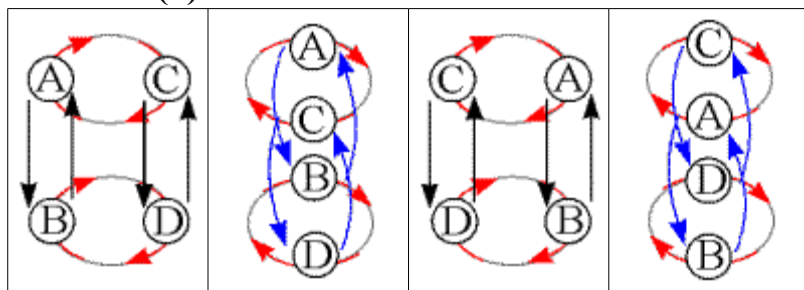
**Rhythms:** 4-count, a 3-count or even 2-count would be faster but could be done. Each person gets a self instead of a pass as they move around the back.



**Variation:** when everyone is in a line (third diagram), everyone can pass as in a [Line](#) pattern (B with D, and A with C).

**Variation:** if only one side rotates at a time, you can move into and out of [Y](#) formations.

## Rotation (4)



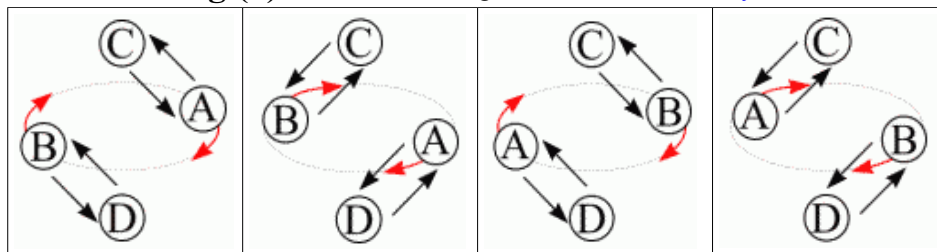
(blue passes are optional)

If you do the blue passes, either aim to avoid collisions, or do all blue passes as **doubles**.

If the two circles rotate in opposite directions, you get the [Karamozov Shuffle](#).

**Rhythms:** 4-count in both cases (it can be done in 6-count to simplify things in the version without the blue passes). Jugglers gone mad may try other, faster rhythms.

**Benzene Ring (4)** The benzene ring is in fact a [double unicycle](#) without the seats.



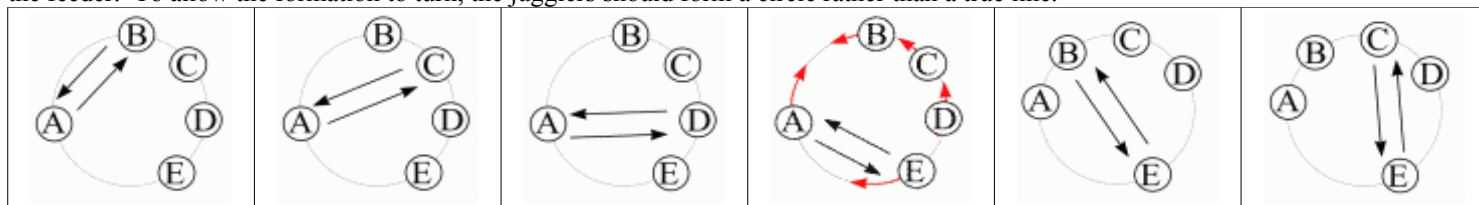
### Rhythms:

3-count (waltz): A & B have only 2 selfs for moving or turning (but the diagrams show a 4-count).

Try a slower rhythm (4-count or 5-count) if the 3-count proves too hard.

## Karamazovs' Feed (4+) (Rotating Feed)

Each juggler in turn becomes post in a [line feed](#), and in fact only makes one sweep through the line, after which the last feedee becomes the feeder. To allow the formation to turn, the jugglers should form a circle rather than a true line.



In the diagrams, A is the post at the beginning. He feeds the others in order, and the feeder changes with A's pass at the end of the line (here E). Everyone then repositions themselves (cf. diagrams 4 and 5) and E continues as post. The next feeder will be D, etc.

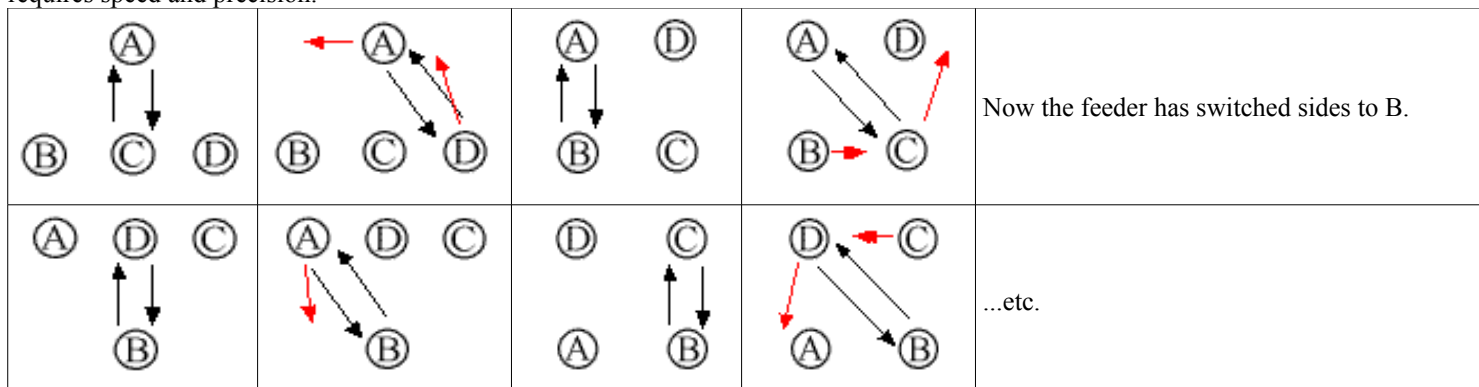
**Rhythms:** the classical version is 2-count for the post and 4-count for the others, now it's up to you to use your imagination.

**Variations:** Try this with a smaller or greater number of jugglers.

**Amoeba:** sweep back along the line before changing feeders: thus A passes BCDEDCB and then E passes to B to start their feed.

### Variation: El Niño (4)

This is a similar feed except the feeds trade sides.. The diagrams show both hand passes but to do the entire thing without any selfs requires speed and precision.



Now the feeder has switched sides to B.

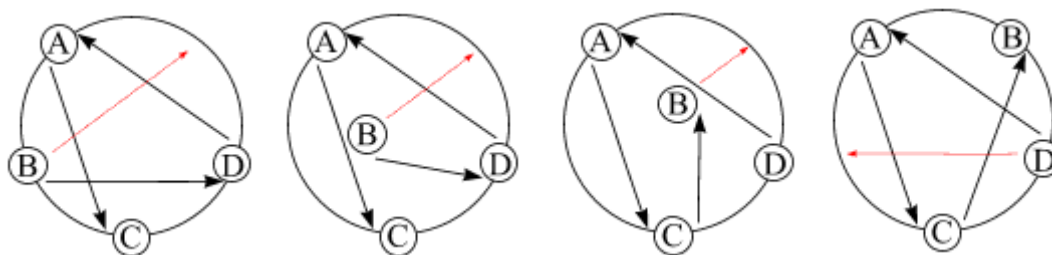
...etc.

After the last step the configuration is the same as at the beginning except everyone has moved 2 places CCW.

**Shooting Star (4)** This pattern is a [star](#) from which a juggler has been removed.

You should be familiar with the [star \(5\)](#) before trying this. C will start with no clubs; all the others get 3 clubs. Meanwhile, B does not receive any passes from the others, so when 3 passes have been made, he won't have any clubs left. At that moment, C will have 3 clubs, and will be about to throw a club in the hole. B now has to go through the pattern and be ready to catch C's pass (see diagrams). Once B is there, you start again from the beginning, but B now has C's role and D has B's.

Now, there are a few different ways to cross the pattern (running and hoping you won't get hit by a club is one of them): here is another one that works on a 2-count: B only does 2 passes in diagram 1. Before making his third pass, B steps in the middle of the pattern so that A's pass will travel just behind his neck (diagram 2). He now has to turn to be ready to catch C's first pass (diagram 3) while D's pass to A flies behind his back. By moving backward, he reaches his new position and can breathe again (diagram 4).

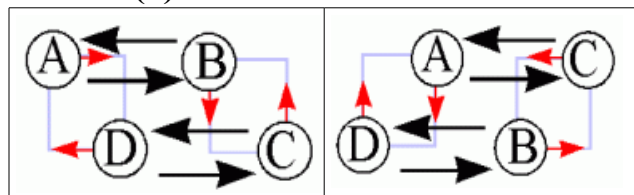


See also the other [runarounds](#). For a bigger version, see [Shooting Star for 5+](#).

**Variation:** B starts with 1 (or 2) clubs, then D runs when he has 1 (or 2) clubs, etc. Much faster!

**Rhythms and number of clubs:** The above version uses a 2-count and 9 clubs. But you can also play with the rhythm (between 2 and 4-count) and on the number of clubs (you can add 1 or 2 clubs--though I don't know exactly how--with the 4-count). The more clubs, the faster it gets.

## Pistons (4)



Two more diagrams would show the rest of the complete cycle. Each pair (AD, and BC) move in the same direction around a square, moving from corner to corner after each pass. Passes are made alternately to each of the two passers in the opposite square.

**Easier Variation:** If A and D rotate in the opposite direction (mirroring B and C) then each person always passes to the same receiver.

**Rhythm** any, I think.

Try [Pistons \(6\)](#), or [Prism](#) for larger numbers.



## Row Row Row Your Boat (4)

Four jugglers stand in a square facing in, and *sing*. The pattern is in the form of a canon (or round) - there are four verses, and each person starts with a different verse, so everyone gets to sing every part, at a different time to each other. The song is the traditional *Row, Row, Row Your Boat*.

To start, one juggler starts at Verse 1 and every other juggler should be singing the verse immediately AFTER the juggler on their RIGHT.

| Beat:   | 1      | 2   | 3      | 4   | 5      | 6    | 7      | 8   |
|---------|--------|-----|--------|-----|--------|------|--------|-----|
| Hand:   | R      | L   | R      | L   | R      | L    | R      | L   |
| Verse 1 |        |     |        |     |        |      |        |     |
| Sing:   | Row,   |     | row,   |     | row    | your | boat   |     |
| Pass:   | across |     | self   |     | self   |      | across |     |
| Verse 2 |        |     |        |     |        |      |        |     |
| Sing:   | Gent-  | ly  | down   | the | stream |      | **.    |     |
| Pass:   | self   |     | left   |     | left   |      | self   |     |
| Verse 3 |        |     |        |     |        |      |        |     |
| Sing:   | Merri- | ly, | merri- | ly, | merri- | ly,  | merri- | ly, |
| Pass:   | across |     | right  |     | right  |      | across |     |
| Verse 4 |        |     |        |     |        |      |        |     |
| Sing:   | Life   | is  | but    | a   | dream  |      | **     |     |
| Pass:   | self   |     | self   |     | self   |      | self   |     |

\*\* It is easy to forget the extra beats in Verse 2 and Verse 4 as there is nothing to sing here.

The pattern *could* be done without singing, but it is actually *easier* to keep count by singing along and associating the passes with certain words. Failing to sing is not in keeping with the pattern, and is frowned upon in polite circles.

**Variation:** 1-count (i.e. Verse 3 is ultimate instead of 2-count).

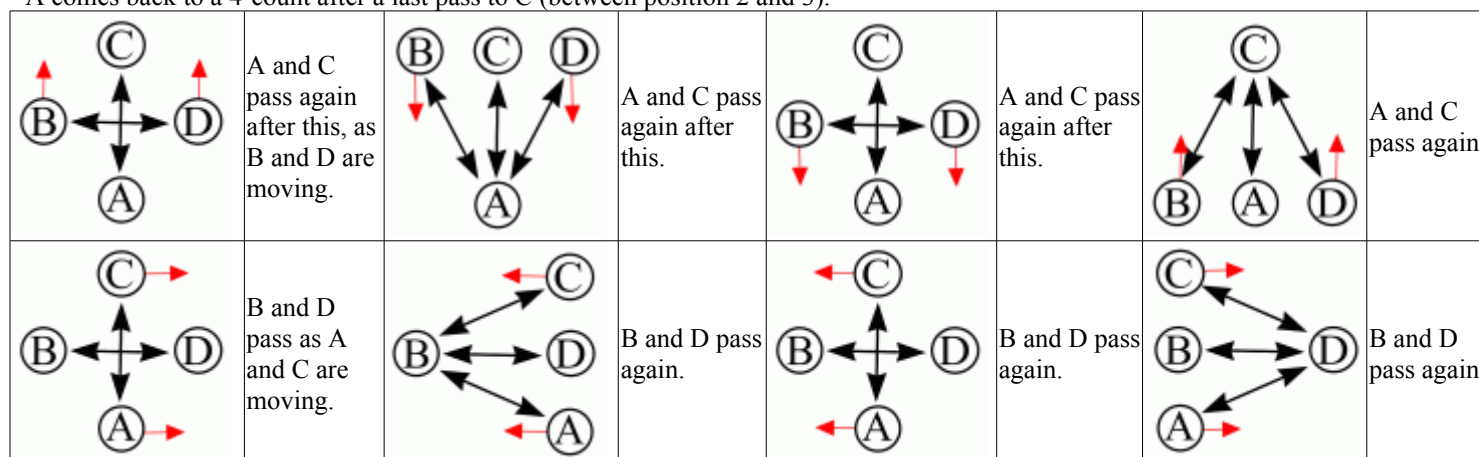
**Variation:** for a Canadian version, sing "Frere Jacques" (French or English lyrics): the passes follow the same rhythm.

## Shifty Ferret (4)

Shifty Ferret builds on the [sweep feed](#) and [the box](#) in order to create a dynamic pattern.

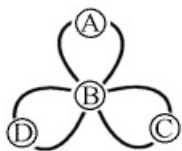
Here are the details of the pattern for just the first two parts:

- in the first one, A&C pass first, then B&D pass and start moving to position 2.
- A&C pass again (between position 1 and 2).
- A, after his passes to C, becomes feeder in a 2-count and feed D, C & B once.
- A comes back to a 4-count after a last pass to C (between position 2 and 3).



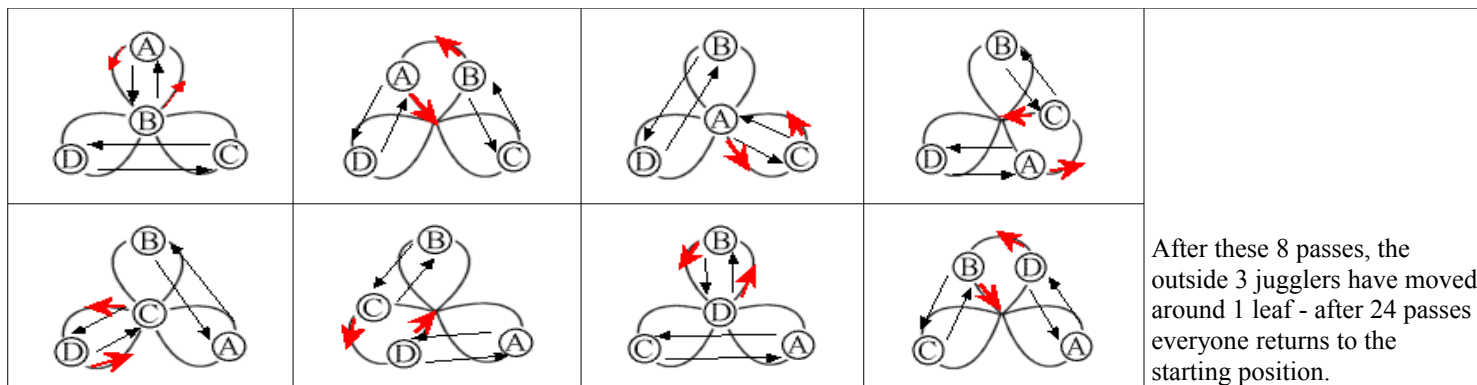
Jugglers alternate in fact between 2-count, 4-count and 8-count. But it's easier to try watch what's happening and pass accordingly than to remember the whole counting cycle.

## Three-Leaf Clover (4)



The idea of a clover is to have a juggler on each leaf and one in the middle. The movement pattern (see diagram) looks like a clover. The middle juggler keeps trading places with a leaf.

**Rhythms:** you will need a self or two to turn around as you go into and out of the middle, since A will pass with D, C, D and then B on their way into and out of the middle. So 3-count or above should work.

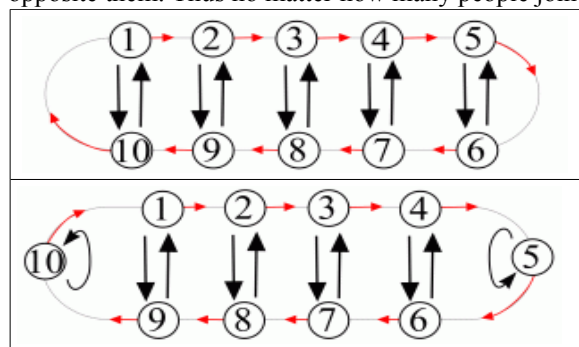


**Variations:** change who passes to whom as you move in and out; A could pass to B in the third step. Also, three people could pass in a triangle in every other step, for example ACD on the second step, BCD on the fourth step, etc.

**Four-leaf Clover:** add a fourth leaf and fifth juggler, the passing sequence is similar: every other pass starting from the first does not involve the center juggler (the two outside pairs pass), on the 2nd, 4th, etc passes the center juggler passes with the person they are facing.

## Moveable Feast (4+) A moving variation of the [feast](#).

Each juggler passes to all the others in turn, including themselves. The jugglers start in 2 lines facing each other and pass to the person opposite them. Thus no matter how many people join in, there are no awkward long passes.



These diagrams for 10 jugglers should give you a good idea of the pattern, even if they don't show a full cycle.

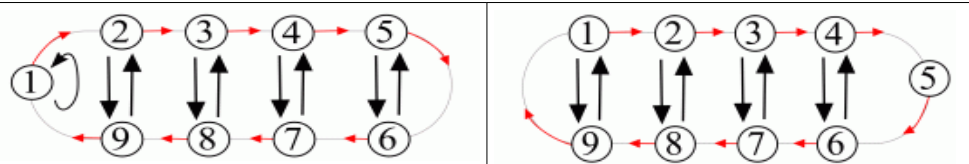
► After each pass, everyone moves 1 step to the left, so their next pass will be with a new partner (the person next to their last partner). In the diagrams, J7 passes with J4, then J3, then J2, ...

► After passing at the left end of each line (J5 and J10 in diagram 1), a juggler has 7 beats to change sides: 3 selfs, a pass to himself (!) and 3 more selfs. Some people might prefer to gather their clubs and start again on the other side.

► Adding jugglers to the pattern is fairly simple: you just join the end of a line.

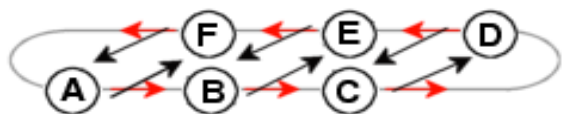
**Rhythms:** 4-count or 2-count is common, but anything possible in a [feast](#) works, which is pretty much anything. 6-count is slow and easy.

If you have an odd number of jugglers, then there will always be somebody changing lines: for example for 9 jugglers:



## Skinny Moving Feast (4+)

The principle is similar to the [Moveable Feast](#) except the lines are close together to allow the passers to walk forward instead of sideways. Also it allows an important variation, the [Slalom](#).



The pattern is the same as the [Moveable Feast](#) except that the lines move forwards instead of sideways, and thus the passes are just a bit to the side. The lines must keep close together for this to work well. When each juggler reaches the end of the line, they make a self pass while turning into the other line.

**Rhythms:** 6-count works well, 4-count is a bit hurried.

It is easy to add people on to the end of either side, in fact you can just walk up and join in the line with no difficulties.

## Slalom

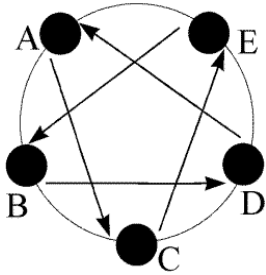
|  |  |
|--|--|
|  | <p>This is a nice variation adding more movement to the <a href="#">Skinny Moving Feast</a>. After each pass each juggler changes lines; you change places in front of the person you just passed with. The start is like the <a href="#">Skinny Moving Feast</a>.</p> |
|  | <p>After the pass everyone changes lines to the opposite side. Be careful at this point that you keep the two lines close together.</p>  |
|  | <p>Now everyone passes with the opposite line again.<br/>         ► C and F, since they are on the ends of their lines, have no one to pass with and so they do a <i>self</i>.</p>   |
|  | <p>Everyone changes lines again.<br/>         ► Since C and F are at the ends, they do not change lines, but rather they move forward in their own lines and turn around. F's next pass will be with E, and C with B.</p>  |

**Rhythms:** 6-count; 4-count is possible but then you are moving pretty quickly and it really feels like “slaloming”.

# 5+ -person Patterns

These patterns are generally presented in increasing order of the number of participants, though since many of these patterns can have variable numbers of participants this order is necessarily quite fluid.

## Star (5) (Pentagon, Pentagram)



The diagram (here passing with the right hand with the same rhythm) lays out what a star looks like. The timing of the passes is important, otherwise there's a risk of collisions between B's passes and A's (or C's) for example.

Note that each juggler could pass to either the person to their immediate right or two to the right (as in the figure): passing to their immediate right is quite difficult.

**Variation:** The star concept becomes interesting starting with 5 jugglers but more can be added: with an even number, you get [Overlapping Triangles](#) (for 6) or two disjoint patterns overlapping; with an odd number everyone passes to person across from them to the right. To make it more collision-prone, try passing (right-handed) to the person across from you on the left (i.e. A passes to D, who passes to B, etc).

See [Shooting Star](#) for a dangerous version with 4 people. See [Overlapping Triangles](#) and [Nonagon](#) for 6- and 9-person stars.

**Rhythms:** Um, all of them (I think; in the end it depends on whether you can avoid collisions). 3-count is nice, 1-count is very nice: work up to it with all the "in-between" rhythms: [PPSSS](#), [Chocolate Bar \(PPSS\)](#), [PPS](#).

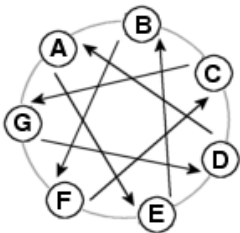
**16-20 clubs:** with more clubs, one or more jugglers must start with 4 and start early, and passes should be doubles (singles is harder to avoid collisions as it is faster). Generally if the others just wait until they have an incoming club to pass, the rhythm will sort itself out.

**18 clubs:** C, D, and E start with 4 and everyone starts in the order E, C & D, B & A, though in reality that rhythm is slightly fudged.

**20 clubs:** everyone starts with 4 and starts simultaneously, just passing an [8 club 2-count](#).

**Variation:** put another juggler in the centre and have them participate in some way: takeouts, dropbacks, etc. The centre juggler can rotate, receiving a pass from whoever they are facing and pass a dropback to the person behind them.

## Star for 7



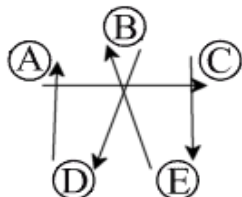
Note that each person can pass to either the first, second or the third person to their right: i.e. A can pass to either G, F or E. When passing to E (as shown), the passes are longer but collisions are less likely with G or F's pattern; when passing to F the pass is shorter but the pass is more likely to hit G's pattern.

**Rhythms:** any in which you can make the passes long enough.

**Variations:** see [Shooting Star for 5+](#) for a very dangerous pattern.

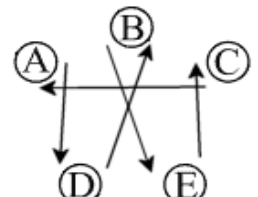
## Star Fruit (5) Topologically, the Star Fruit is a compressed 1-count [Star](#) with two reversed polarity passes.

This pattern is like a 1-count [W feed](#) with a twist: the outside pair of feedees, here A and C, exchange passes between their outside hands (A's RH and C's LH).

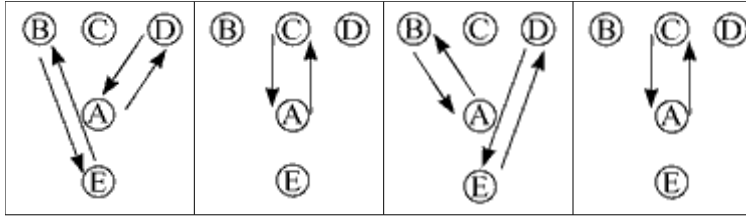


On the first pass, A and C make RH passes and the others make LH passes. A makes a RH pass to C's LH.

On the second (and subsequent passes), everyone returns the first passes to where they came from:



## Double Feed (5) (Apollo, Augmented Feed)



**Rhythms:** A in 2-count, -B, C, D & E are in 4-count. To make left hands participate, try **3-count:** A does PPS, everyone else does PSS.

Try this variation: just replace the middle diagram with A and C passing LHed:

- A in 1-count (ultimate)
- C in left-handed 2-count
- B, D, & E in right-handed 2-count

**Variation:** A on ultimates (1-count), C does PPS with A, and B, D, and E do 3-count. A passes to C, C, B, C, C, D. This is nice because E can stand closer to A as E always passes outside of A (RH to the right, LH to the left).

**Variation:** A does ultimates (passes to B,C,D,B,C,D), C is on 3-count, B, D, E on PPS.

**Extra club:** add a club (on a rhythm with A in 2-count). A starts with 4 clubs; E, B, & D start one count later, and C starts one beat after A's second pass (which is coming to him). E is unchanged.

**Variation:** E and C can exchange triples passes on E's self and C's self.

**Oogles & Klingons (5-7)** A few variations on the [Y](#) (Oogle) in which 1, 2 or 3 jugglers can be added to the pattern.

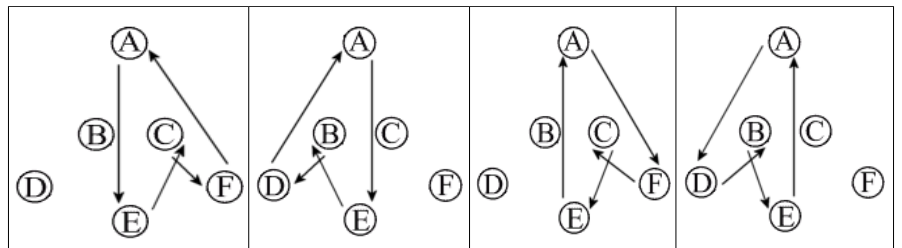
|   |  |  |  |  |
|---|--|--|--|--|
| <b>Double Oogle</b>                               |  |  |  |  |
| Add a juggler (H) and D passes dropbacks to them. |  |  |  |  |
|   |  |  |  |  |

## Overlapping Ys (6)

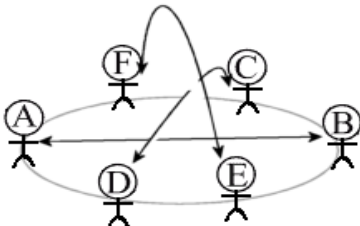
This pattern consists of two Ys merged side-by-side. The passes from A to E alternate which pattern they are in.

A and E do **PPS**; B, C, D, and F do **3-count**, with B and D starting with **self pass**.

**Variation:** for a faster version, A and E do 1-count and the others do a 2-count, so one Y is all left-handed.



**Pyramids (6+)** Viewed from the side, the clubs make a pyramid in the air.



A and B start things off by passing a low, fast, **6 club 2-count**. C and D do **7 clubs 2-count** so that their pattern clears the lower one. E and F then do a **7 club 4-count** on triples to pass over the other patterns.

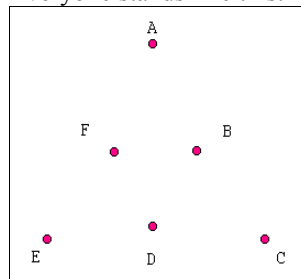
Anyone else showing up can then pass otopot: see how high you can get. The next pair could do 7 clubs on a slow 4-count on quad spins... or perhaps 8.

Then someone lies on the ground in the middle and takes a picture!



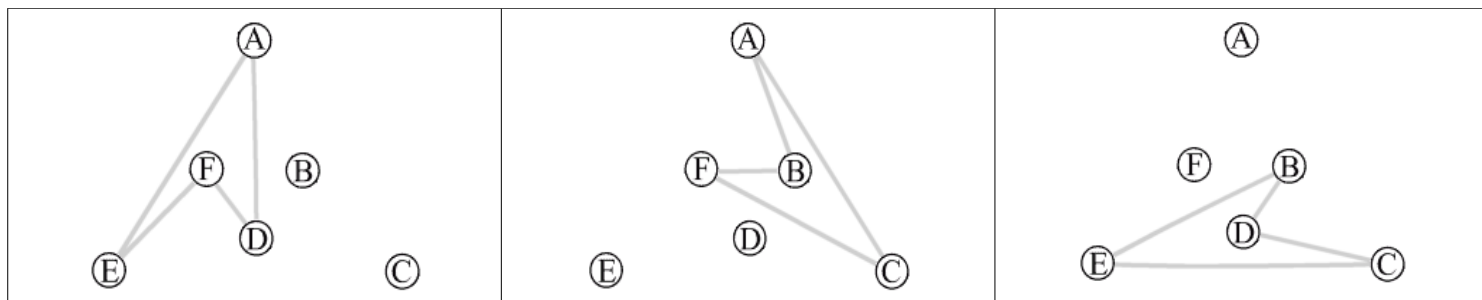
## Y Knot (6)

Everyone stands like this:



First, ADEF pass in a standard Y. Then ABCF, then BCDE, then ADEF, then ABCF, then BCDE before the cycle repeats. Each juggler is doing **PPS** (or variants thereof, with extra selfs thrown in).

|           |   |   |   |   |   |   |
|-----------|---|---|---|---|---|---|
| <b>A:</b> | E | C | s | D | B | s |
| <b>B:</b> | s | A | E | s | F | D |
| <b>C:</b> | s | F | D | s | A | E |
| <b>D:</b> | A | s | B | F | s | C |
| <b>E:</b> | F | s | C | A | s | B |
| <b>F:</b> | D | B | s | E | C | s |

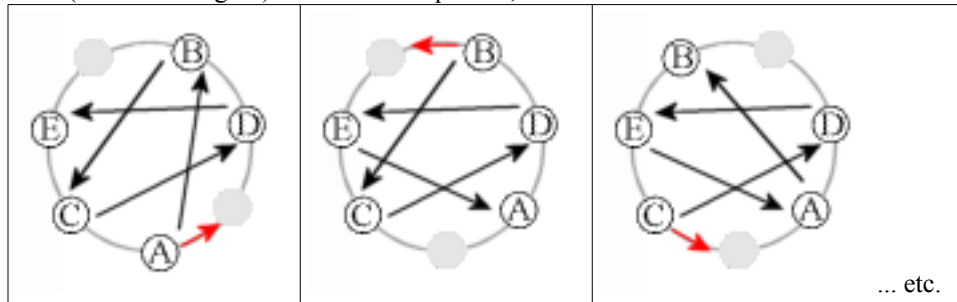


**Variations:** real Einsteins can find 6 different Y patterns here, which you could cycle between.

## Shooting Star (5+)

A generalization of the [4-person Shooting Star](#).

There are two "holes" in the 7-pointed star, represented by gray circles in the diagrams. Everyone except E starts with 3 clubs and passes as in the first figure; once A runs out of clubs (after 3 passes), they move to their right to occupy the vacant space, and E starts passing to them (see second figure). After 3 more passes, B will run out of clubs and move to their right and start receiving from A again, etc etc.



For one full cycle all of the jugglers will slowly work their way around the entire star by one position in order.

It is difficult to keep track of the correct positions so it may be helpful to mark out a 7-pointed star on the floor to keep things neat.

**Rhythms:** any in which you can make long and precise enough passes.

**Variation:** try it with **6 people**, only missing one person out of the 7. Then it takes a long time to do a complete cycle.

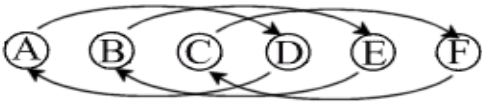
**Variation:** E starts with 1 (or 2) clubs, then A runs when he has 1 (or 2) clubs, etc. Much faster!

**Variations:** all of the [Star for 7](#) variations have Shooting Star versions, which you deduce easily by forming the pattern (minus one or more jugglers), and seeing who runs out of clubs and when. A nice version is passing two to the right with 5 people; this is like the [4-person Shooting Star](#) as you have to run across the pattern when you run out of clubs.

**Variations:** Shooting Stars are good ways of making larger and larger circles while missing more and more jugglers; while the practical limits of the [Star](#) top out at about 7 or 9, a Shooting Star can be done with, say, an 11-pointed star and 7 passers.

**Long Lines (6+)** These are a few of the common larger [Line](#) patterns (that do not involve [Dropbacks](#)).

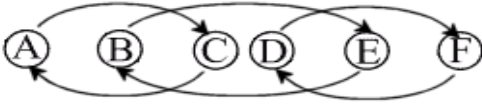
**Serial Line:** for  $2n$  jugglers, everyone simultaneously exchanges passes with the person  $n$  places away; e.g. for 6 people, the first and fourth exchange, second and fifth, and third and sixth. The visual effect is lovely as all the passes travel in the same direction at once.



As more people participate, the passes involved get longer.

**Rhythms:** for anything over 4 people, **7 club 4-count** (on triples) works well and looks great.

#### The Chain

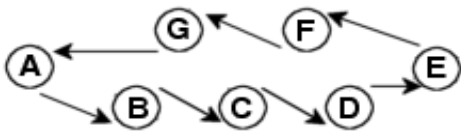


A slightly different arrangement works well as it can be arbitrarily extended without lengthening the passes. C and D stand back-to-back and pass to their partners outside. The visual effect is the same as the [Serial Line](#) but this is generally easier.

**Rhythms:** again, **7 club 4-count** works well.

**To extend** the Chain, the next pair (G and H) will have G standing back-to-back with E, and H on the other side of F, etc.

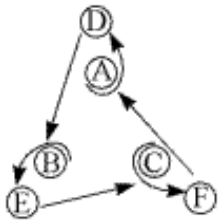
**Joining Lines:** by adding a feeder at one or both ends, or having complementary people receiving from one line and passing to the other, lines can be joined in many ways.



e.g: This is a four-person dropback line attached to a 3-person line by having the two front people (A and E) receive from one line and pass to the other.

**Variations:** try triangles, joining lines in W and N shapes, etc.

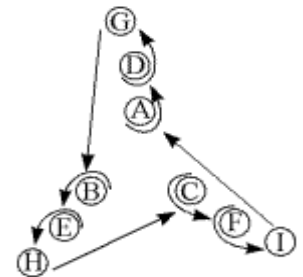
### Inside-outside Triangles (6+)



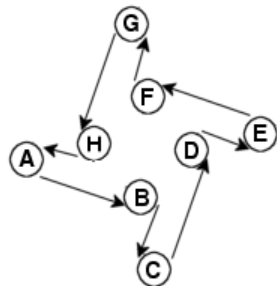
This pattern combines [dropback lines](#) with [triangles](#).

**Variations:** If the basic pattern is a 4 count, it is possible to pass separately in the 2 triangles ( inside and outside) on the beat of the self.

To enlarge this concept, it is also possible theoretically to add as many triangles as we want, as shown in the diagram on the right.



### Inside-outside Squares (8+)

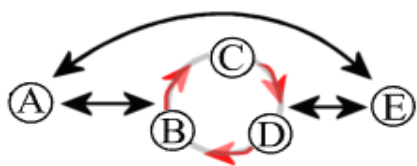


B, D, F, and H are throwing dropbacks to the outside persons. Add more people in fours by adding in more lines between the inside and outside (see [Inside-outside Triangles](#), above).

**Variations:** If the basic pattern is a 4 count, it is possible to pass separately in the 2 triangles ( inside and outside) on the beat of the self.

**Dropback Square:** the four inner persons can stand exactly halfway between the outside people; this is just a square with four [Dropback Lines](#) on the sides.

**Rotating Dropback Square:** on the self beats, B,D,F and H walk  $\frac{1}{4}$  turn around their inner circle to move to the next position. You will want to do **6-count** at least for this.

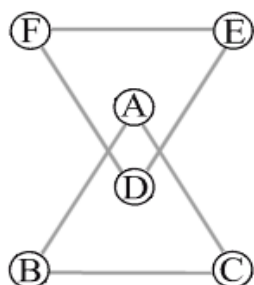
**Irvine Pinwheel (5)**

The picture can't particularly do it justice; what is happening here is that A and E are alternating passing triples to each other and passing singles to the inner circle: B, C and D are doing a 6-count and walking around in a tight circle, alternating passing to A and E. Thus A is feeding, alternating passing to E and whoever is in front of them in the middle, and similarly for E.

**Variations:** put more (or fewer) people into the middle and make the middle people have a longer (or shorter) count (8-count?).

**Interlocking Triangles (6)** Two or more [triangles](#) can be combined in various ways. Here are some of the simplest.**Argyled Triangles:**

A and D face each other and pass double 3-count (**PPS**) alternating passing with each other and the other people. B,C,E,F do 3-count, alternating with each other and A and D.



|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| A | B | D | s | C | D | s |
| B | C | s | s | A | s | s |
| C | A | s | s | B | s | s |
| D | s | A | E | s | A | F |
| E | s | s | F | s | s | D |
| F | s | s | D | s | s | E |

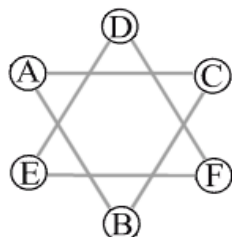
**Argyled Sock:**

Everyone passes double 3-count (**PPS**).

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| A | B | D | s | C | D | s |
| B | C | C | s | A | C | s |
| C | A | B | s | B | B | s |
| D | s | A | E | s | E | F |
| E | s | F | F | s | F | D |
| F | s | E | D | s | E | E |

**Overlapping Triangles (6)** Jugglers in either triangle do not exchange with the other.

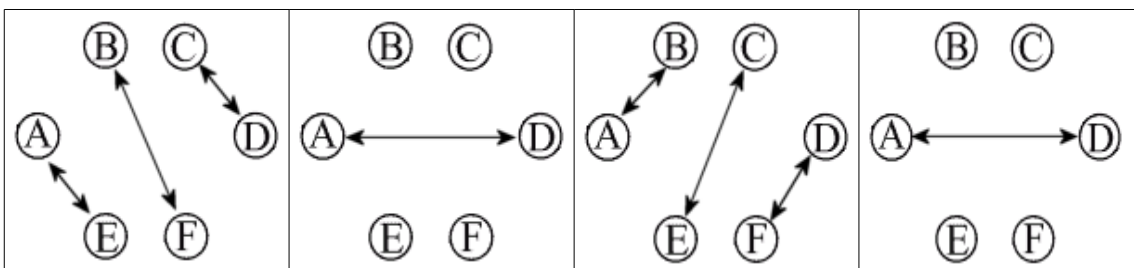
In patterns of this type; any [triangle](#) pattern can be used as long as collisions can be avoided.



**Rhythms:** try any [triangle](#) pattern for 9+ clubs in either triangle, and try having different patterns in each triangle.

**Diamond (6)**

|   |   |   |   |   |
|---|---|---|---|---|
| A | E | D | B | D |
| B | F | s | A | s |
| C | D | s | E | s |
| D | C | A | F | A |
| E | A | s | C | s |
| F | B | s | D | s |



**Rhythms:** any, I think.

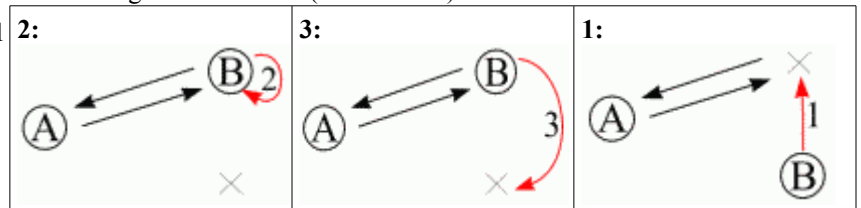
## Gandini's Siteswap Weaves (4+) You should be familiar with [Weaves](#) before trying this.

The principle is to use a feeder that will represent the brain of a giant juggler. The balls are represented by other jugglers (the feedees) who go back and forth between 2 positions (the Xs on the diagrams) where they pass with the feeder; these positions are the giant juggler's hands. We're also going to use a bit of siteswap theory.

The feeder passes alternately to both positions (and usually in a 2-count). A feedee will be either in one of the hands, or queuing behind if there is already someone there. When a feedee is in the hand, the feeder (at the same time as the pass is made) will yell to him a number (corresponding to a siteswap throw). The feedee then moves according to this number (let's call it  $n$ ) and we have:

- ▶ the number of right hand selfs before the next pass =  $n-1$
- ▶ if  $n$  is even, the feedee will queue again for the same position (hand)
- ▶ if  $n$  is odd, the feedee will change hands.

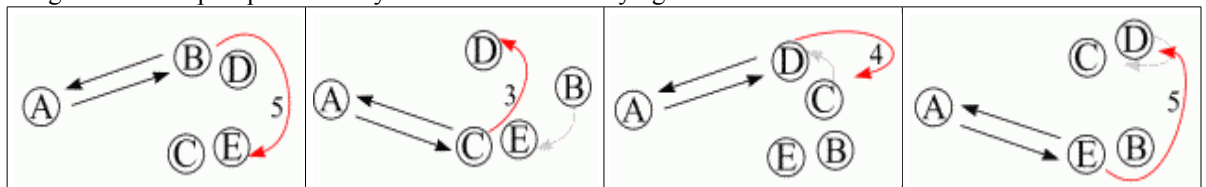
The diagrams show what a feedee should do when the feeder says 1, 2 or 3:



In general, the feeder will choose a working siteswap sequence, and the feedees in front of him will arrange themselves to start correctly (compare with how many balls in each hand you need for the true pattern), and off you go!

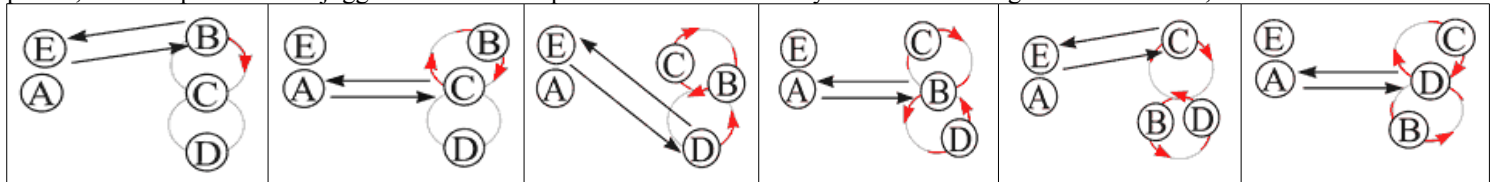
The feeder can choose to change the siteswap sequence at any moment since he's saying the numbers out loud.

Here is an example for 534 (4 feedees since it's a 4 object pattern):



## Weave with Two Feeders (5) (Mr. Inside Mr. Outside Weave)

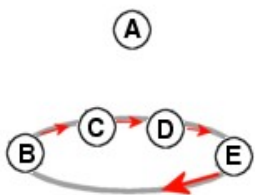
You just take the [speed-weave](#), but you give the feeder position to 2 people (A & E) who are then doing a 4-count. E makes the outside passes, while A passes to the juggler in the middle position. You can also try it with E standing on A's shoulders, or behind A.



**Twister Weave:** put the second feeder on the other side of the weavers (opposite A). Then B,C, and D turn around (180°) while they rotate and pass to E from the same position.

## 5,4,5,10 Trapezoid (5)

A [line feed](#) in which the line constantly rotates.



A (the feeder) does **PPS** to the positions E, D, self, C, B, self (L to R, from A's perspective). The feedees do **5-count, 4-count, 5-count** as they walk across from L to R, and then 10-count as they move around the back. A's first pass is to E who then starts their 10-count and moves to B's position. D's first pass starts their second 5-count, C starts with their 4-count, and B their 5-count (note that either E and B or C and D start with LH passes).

**Variation:** E moves around behind A to B's position.

## Double Weave (6)

Two [weaves](#) face each other; each opposing pair of jugglers passes only with each other. The standard weave pattern has jugglers moving forwards in the middle and backwards at the outside.



**Cross Corner:** switch the positions of D and F, so that the pairs AD and CF are passing long diagonal passes.



**Equidistant:** DEF do a reverse weave, moving forwards on the outside and backwards on the inside, so that pairs remain the same distance from each other at all times.

### Asynchronous Double Weave:

|   |   |   |   |
|---|---|---|---|
| A | D | s | s |
| B | s | E | s |
| C | s | s | F |
| D | A | s | s |
| E | s | B | s |
| F | s | s | C |

**Dresser Drawers:** weavers move in lines parallel to each other; see [Dresser Drawer Weave](#) for an indication of how the weavers move.

**Side Switching:** after A and D pass at the end, they switch sides, and similarly the other pairs.

**Synchronous:** each pair of opposing jugglers passes every 4 (or 3, 2...) beats, basically whenever everybody is aligned. Positions A and B switch while E and F switch, and then positions B and C switch while D and E switch.

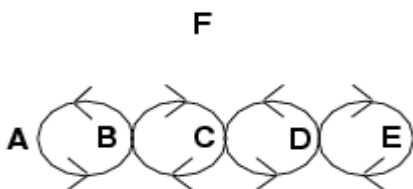
**Siteswap Weaves:** instead of moving in a regular cascade (333...), each trio of weavers can do other 3-object siteswaps: for example 441, 531, 423. (see [Gandini's Siteswap Weaves](#))

**Variations (7+):** add a feeder on one side (or both) and convert the weave on that side to a [Twister Weave](#).

## Five Person Weave (6)

The standard [Weave](#) pattern is generalized to have five weavers.

Here is the starting pattern and movement:



This is the 20-step sequence of movement: the square indicates where the pass goes to F. Note that F is making a sweep feed, feeding back and forth along the line. Each feedee starts moving right after they have passed.

|                   |                   |                   |                   |
|-------------------|-------------------|-------------------|-------------------|
| 1<br>■ A B C D E  | 2<br>■ A B C D E  | 3<br>■ A B C D E  | 4<br>■ B A C D E  |
| 5<br>■ B A C D E  | 6<br>■ B A D C E  | 7<br>■ B A D C E  | 8<br>■ B A D E C  |
| 9<br>■ B A D E C  | 10<br>■ B D A E C | 11<br>■ B D A E C | 12<br>■ D B A E C |
| 13<br>■ D B A E C | 14<br>■ D B E A C | 15<br>■ D B E A C | 16<br>■ D B E C A |
| 17<br>■ D B E C A | 18<br>■ D E B C A | 19<br>■ D E B C A | 20<br>■ E D B C A |

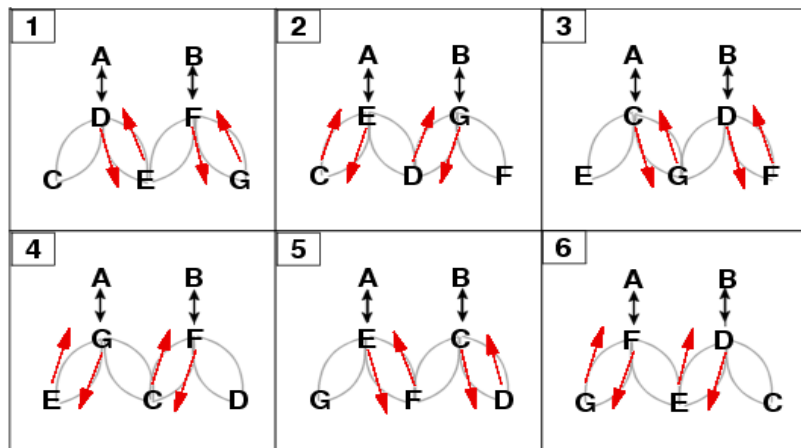


## The Blast (7)

This pattern is a [5-person weave](#) with two feeders.

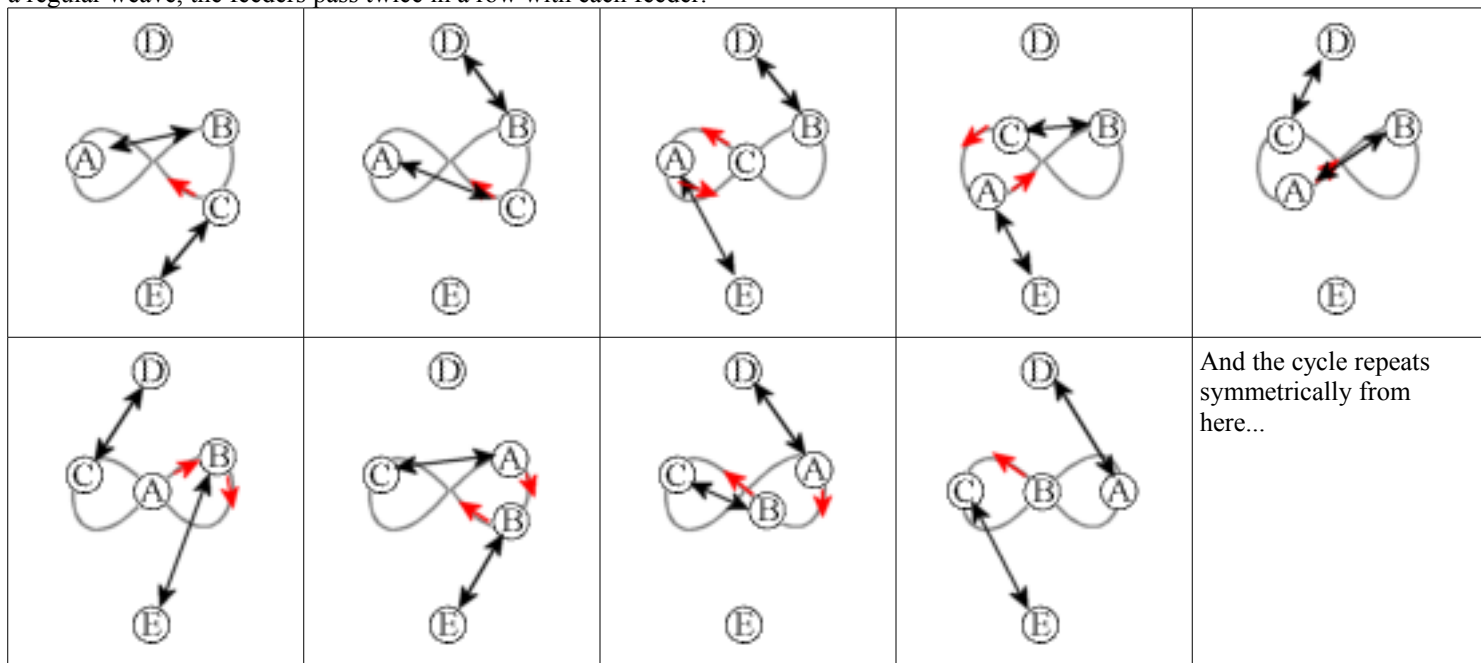
The table shows RH passes with a 4-count timing, so the five weavers are doing an 8-count.

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
| A | D | E | C | G | E | F | G | D | F | C |
| B | F | G | D | F | C | D | E | C | G | E |
| C | - | - | A | - | B | - | - | B | - | A |
| D | A | - | B | - | - | B | - | A | - | - |
| E | - | A | - | - | A | - | B | - | - | B |
| F | B | - | - | B | - | A | - | - | A | - |
| G | - | B | - | A | - | - | A | - | B | - |



## Strange Attractor (5)

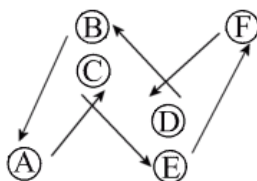
Here is a [weave](#)-like pattern with a feeder on either side; not only that, the weavers pass with each other as they move! Notice that, unlike a regular weave, the feeders pass twice in a row with each feeder.



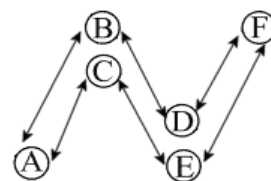
## Extended Ys and Darts (6+)

The 4-person patterns [Ys](#) and [Darts](#) can be extended arbitrarily as long as you have an even number of participants.

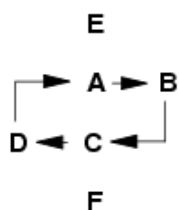
**Extended Y:**  
**Rhythm:** any



**Extended Dart:**  
**Rhythm:** 1-count,  
async or sync



## Benzene Ring (6+)



Two jugglers feed everyone else in the central "ring": for every two extra jugglers in the central ring, each person makes an extra pass to each feeder before cycling around the circle to face the next feeder.

E and F are feeding "typewriter" style to the positions in front of them: left, middle right, left, middle, right, etc (there are as many positions in front of the feeders as  $\frac{1}{2}+2$  the number of jugglers in the middle: 4 positions for 6 feedees, etc).

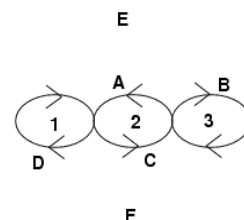
Feeders (E and F) are juggling **2-count** while feedees are on a **4-count**.

|   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | - | E | - | E | - | F | - | F | - | F | - | E |
| B | E | - | F | - | F | - | F | - | E | - | E | - |
| C | - | F | - | F | - | E | - | E | - | E | - | F |
| D | F | - | E | - | E | - | E | - | F | - | F | - |
| E | B | A | D | A | D | C | D | C | B | C | B | A |
| F | D | C | B | C | B | A | B | A | D | A | D | C |

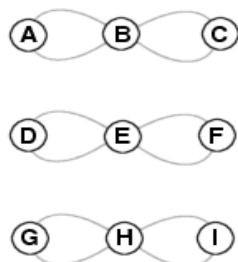
### Variation: Spiral Weave (6+):

Instead of following a simple loop pattern, the central jugglers move in a [weave](#) pattern. See the picture for movement pattern; the passing sequence can be deduced from the sequence for the [Benzene Ring](#): each feedee alternates which feeder they pass to.

This is similar to the [Twister Weave](#).



## Twister Sandwich (9)



D, E and F are doing a [Twister Weave](#) and the outside two feeders have been replaced by two separate [weaves](#). To help you remember who you pass to, just pass to the person directly across from you (vertically in the picture). A and I are passing at the same time, as are C and G, and H and B.

And good luck!

**Variation (12+):** add more twister weaves in the centre.

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| A | D | - | - | F | - | - |
| B | - | D | - | - | E | - |
| C | - | - | F | - | - | E |
| D | A | B | - | I | H | - |
| E | - | H | G | - | B | C |
| F | I | - | C | A | - | G |
| G | - | - | E | - | - | F |
| H | - | E | - | - | D | - |
| I | F | - | - | D | - | - |

## Weaving Lines (9)

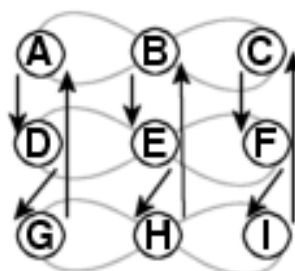
This insane pattern involves combining [Drop-back Lines](#) with [Weaves](#): each juggler is taking part in a line with the two people in the same column, and a weave with the people in the same row.

A, B and C face downwards, the rest upwards.

The weaves occur sideways and D, E, and F are passing dropbacks to G, H, I.

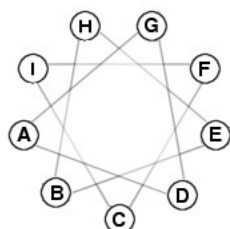
**Rhythm:** Everyone passes a 6-count to give lots of time to move between positions.

**Variations (10+):** I'm sure you can figure out crazy ways to add a feeder (in front of A,B,C) or extra weaves (to make longer dropback lines).



|   |   |   |   |
|---|---|---|---|
| A | D | - | - |
| B | - | E | - |
| C | - | - | F |
| D | G | - | - |
| E | - | H | - |
| F | - | - | I |
| G | A | - | - |
| H | - | B | - |
| I | - | - | C |

## Nonagon (9)



This pattern is just three [Overlapping Triangles](#). All passers must be very accurate to avoid hitting other people's patterns. Passes will need to be quite long, doubles may be useful.

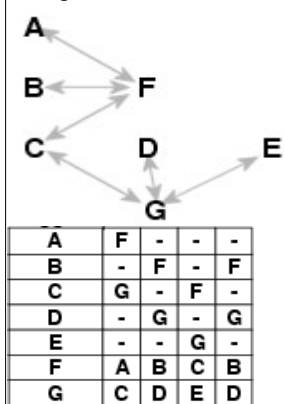
**Rhythms:** any [Star](#) or [Overlapping Triangle](#) rhythm will work, which is pretty much all of them; also try having different triangles do different rhythms.

**Hinges (7+)** Hinged patterns are [feeds](#) that are combined by one person (the *hinge*) who takes part in both feeds

The pictures show all of the passes in grey lines to indicate who is passing to who. To start: have the hinge(s) initiate the feeds by passing to their left and then their right, and the feeds go outwards from there.

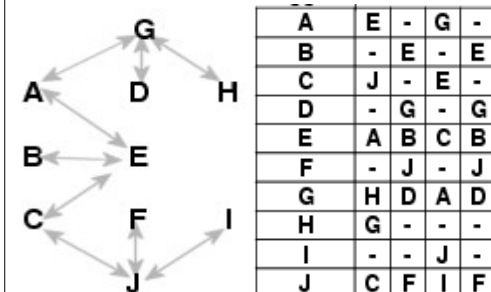
### 7-Person Hinge:

C is the hinge and F and G are feeders doing a standard sweep feed.



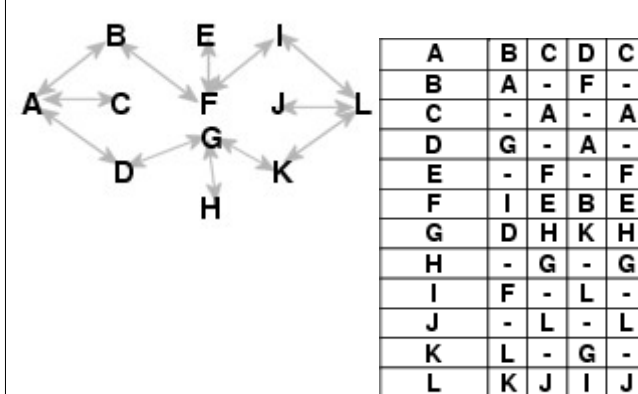
### 10-Person Hinge

Here A and C are the hinges, G, E and F are feeders.



### 12-Person Hinge

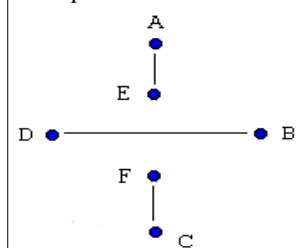
The hinges are B, D, K, and I; the four feeders are A, E, H and L.



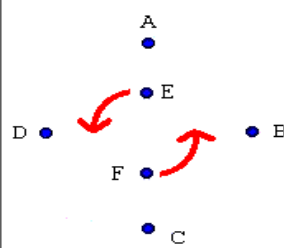
### Ball Bearing (6,8,+)

Two jugglers stand inside a [box](#) and circle around inside it.

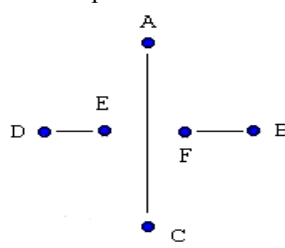
First pass:



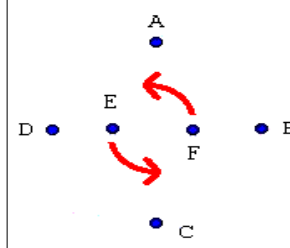
Then E and F rotate 1/4 turn.



Second pass:



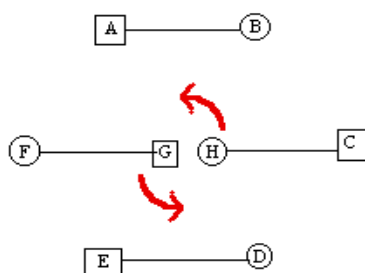
And continue around the circle...



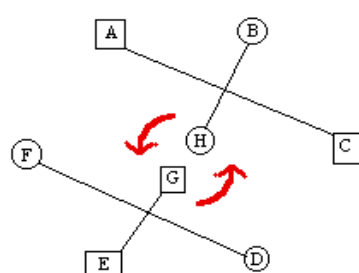
**Rhythms:** 4-count, 3-count. 2-count is probably a bit fast, especially since the long passes through the middle will take a long time. To help adjust for this, E and F can make two passes with D and B while A and C make one pass (or E and F make three passes to A and C's two).

**Variation (8):** make the outer formation a hexagon. The middle two circle around passing with the jugglers facing them, and the other four pass in two lines, on either side of the middle pair.

First pass:

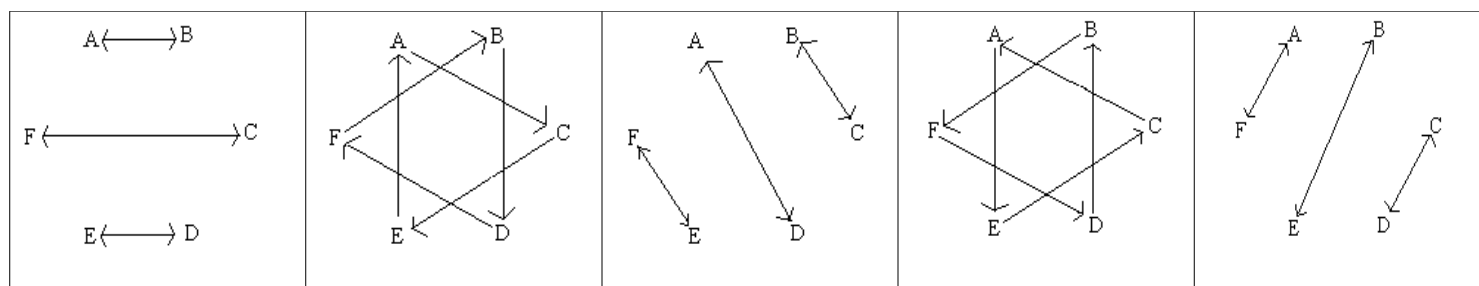


Second pass:



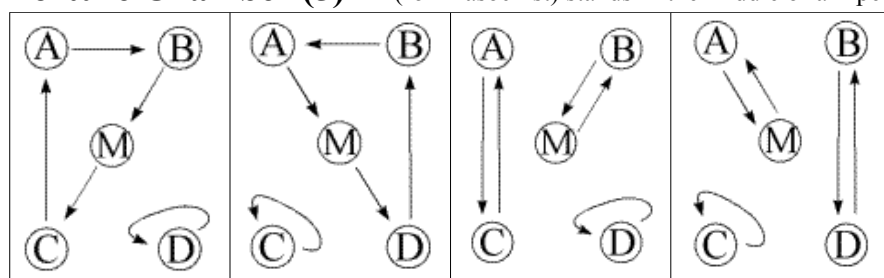
etc.

**Star of David (6)** This is a [self-less feast](#) in which not everyone's passes move around in the same direction.



... and then the cycle repeats. To adjust for the long passes through the middle, at the stages where passes go through the middle the outside two pairs can do two (or three) passes while the middle pair can do one (or two).

**Torture Chamber (5)** M (for Masochist) stands in the middle of a 4-person [box](#).



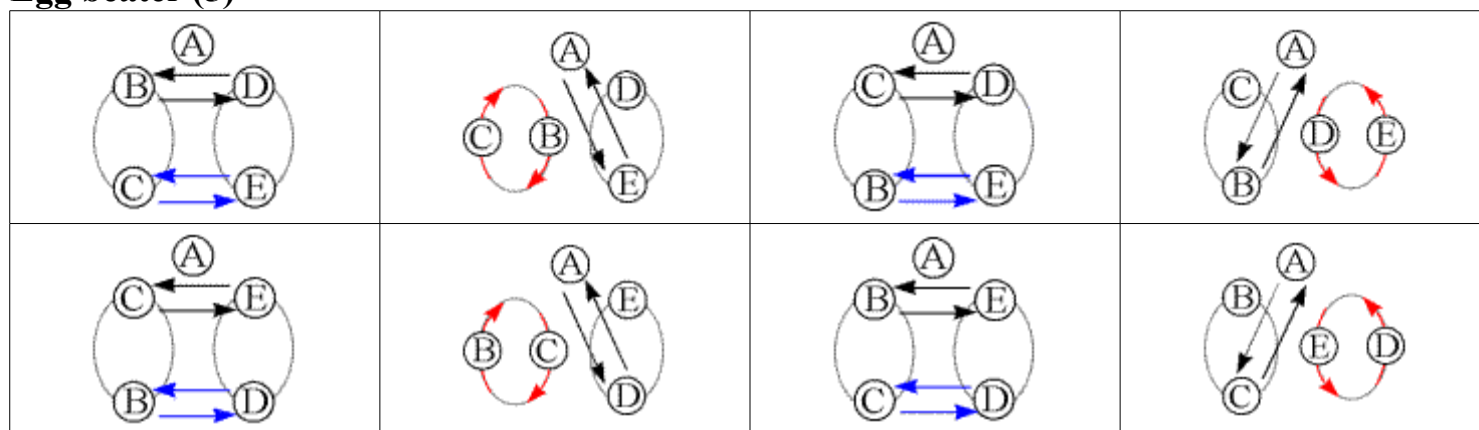
C and D do **4-count**. These should normally be the easiest positions, but they must be able to catch M's potentially hazardous passes. A, B, and M all do **2-count**. M faces A and B.

Positions A and B are a little harder. A should wait for a pass from C when throwing to B (steps 1 and 2): This makes a 90° angle. Also, they are doing 2-count, making a feed without a carriage return (cf. [feeds](#)).

Since M faces A and B, the passes to C and D are made blindly. Either the two passes are made over the shoulder (backdrops), or M can turn slightly and throw under his arm to C and over the shoulder to D.

**Variation:** Try 3-count: C and D do **3-count**, everyone else does **PPS**. You could try 2-count/1-count too. If you want to add more people, see [Torture Chamber for 7](#).

**Egg beater (5)**



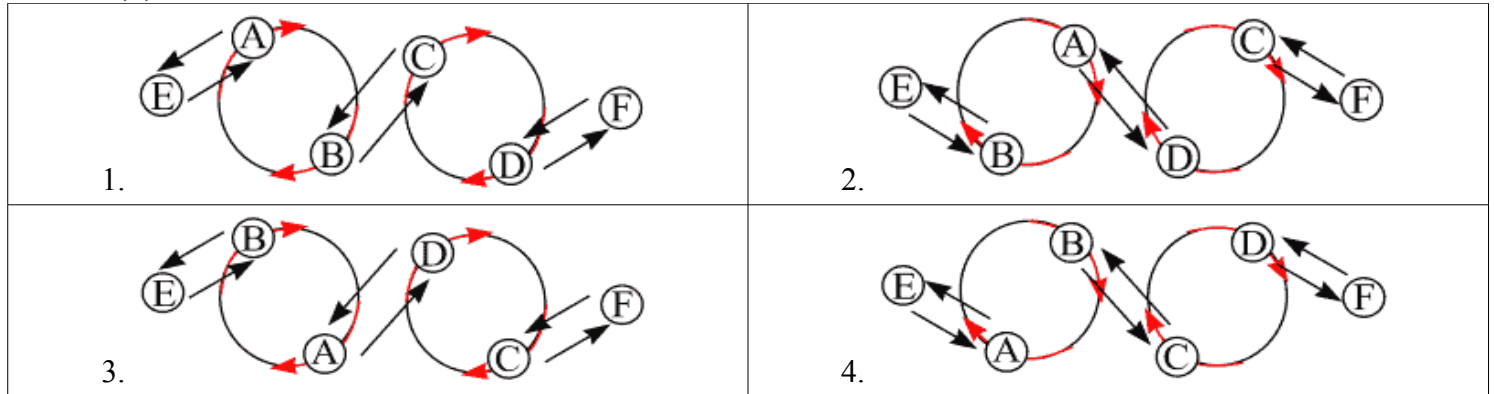
**Rhythms:** 2-count for A, SSPP PSSP for the others (PSPP PPS for the others with the blue passes).

**Handle in the Batter:** with all passes the same, A instead stands below C and D on the diagram above.

**Double-handled Egg Beater:** add an extra "handle" (feeder) in the opposite position to A: in every second diagram above, when A passes, they pass to the near person instead of the far one, and the extra feeder passes to the far one in the same manner.

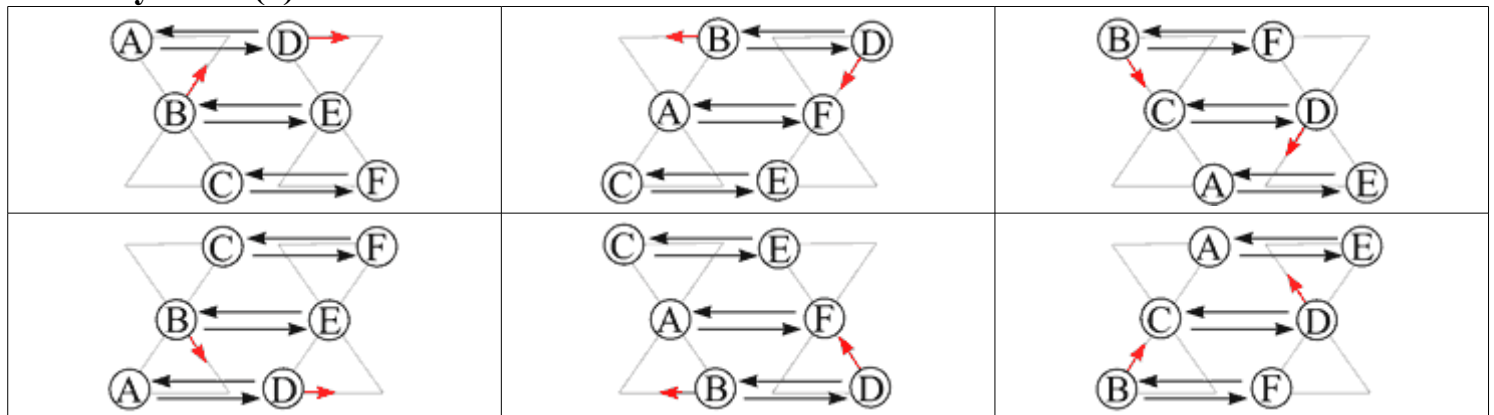
## Razor (6)

Some sort of confused [Strange Attractor](#)-like pattern.



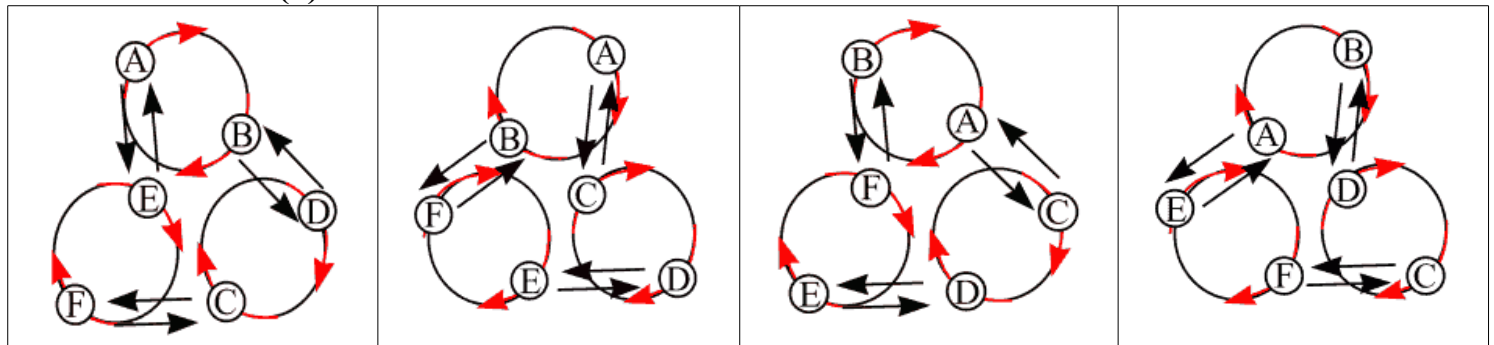
**Rhythms:** 3-count (very hard), 4-count or 6-count

## Butterfly Knot (6)



**Rhythms :** 4-count

## Electrical Razor (6)

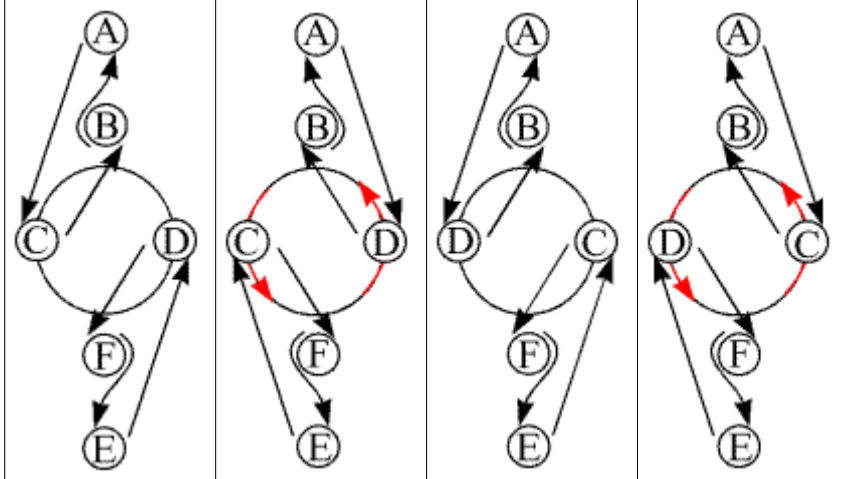


**Rhythms:** 3-count (very hard), otherwise 4 or 6-count

**Quad Razor (8):** make four circles of two jugglers each, arranged in a square. Each person passes twice with the same person in the circle adjacent on one side, and then twice with the same person adjacent on the other side.

## Double unicycle (6)

Recommended that you are familiar with the [Unicycle \(4\)](#).



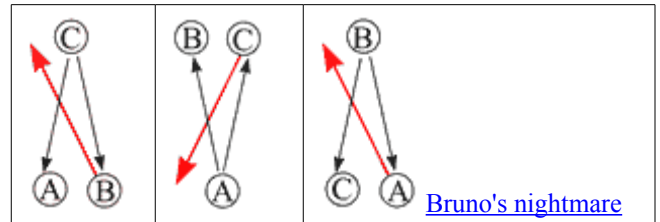
The [benzene ring for 4](#) can help you build up to this pattern, since it's a double unicycle without the seats. B and F are throwing dropbacks to the people behind them.

**Rhythms:** 3-count, perhaps 5-count would be easier.

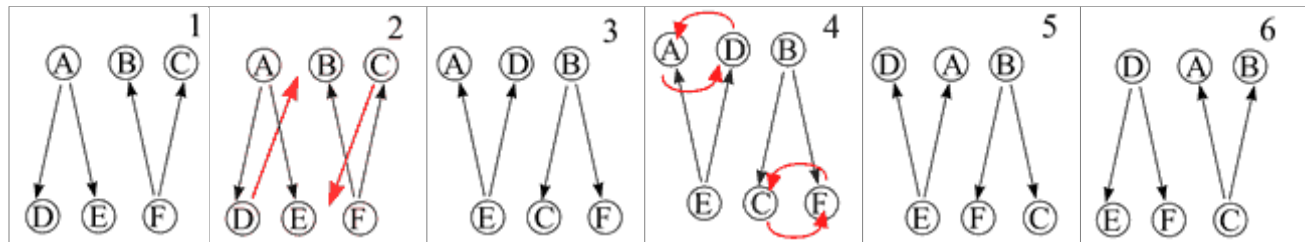
## Magermix (6)

I've never tried this pattern, since I'm even not sure how it goes. Please contact me if you know. On the right is a representation of [Bruno's Nightmare](#) (diagrams being slightly different than usual).

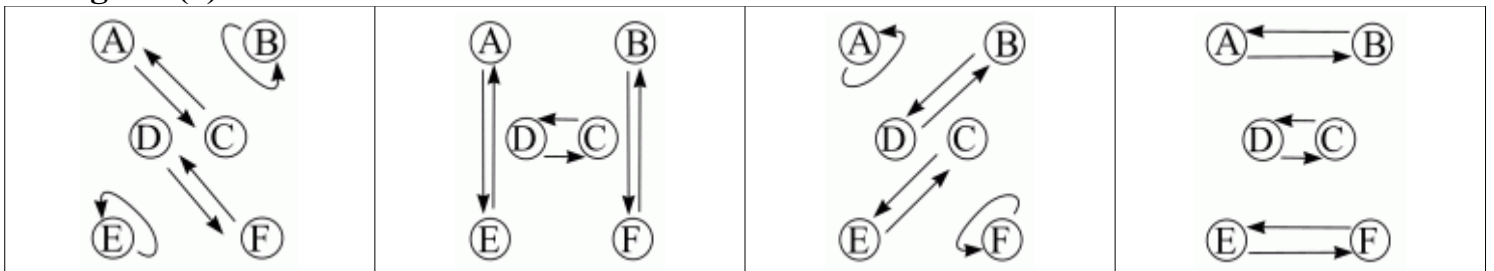
And below is what I think would be Magermix. In some sense we take 2 adjacent versions of Bruno's Nightmare and mix them together...



[Bruno's nightmare](#)



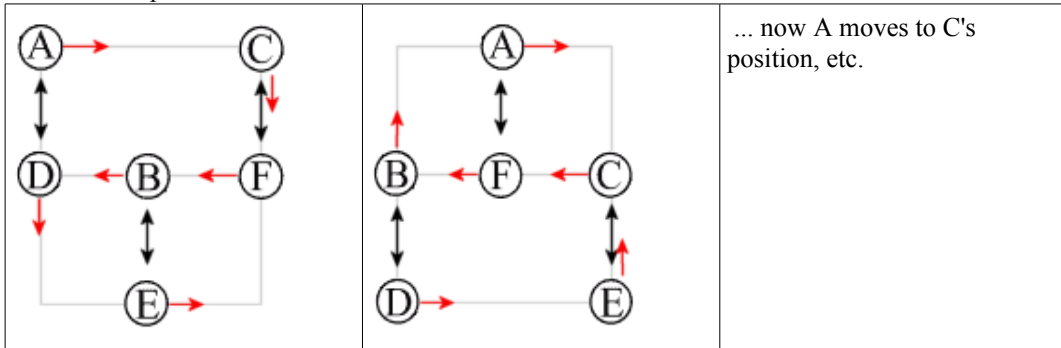
## Hourglass (6)



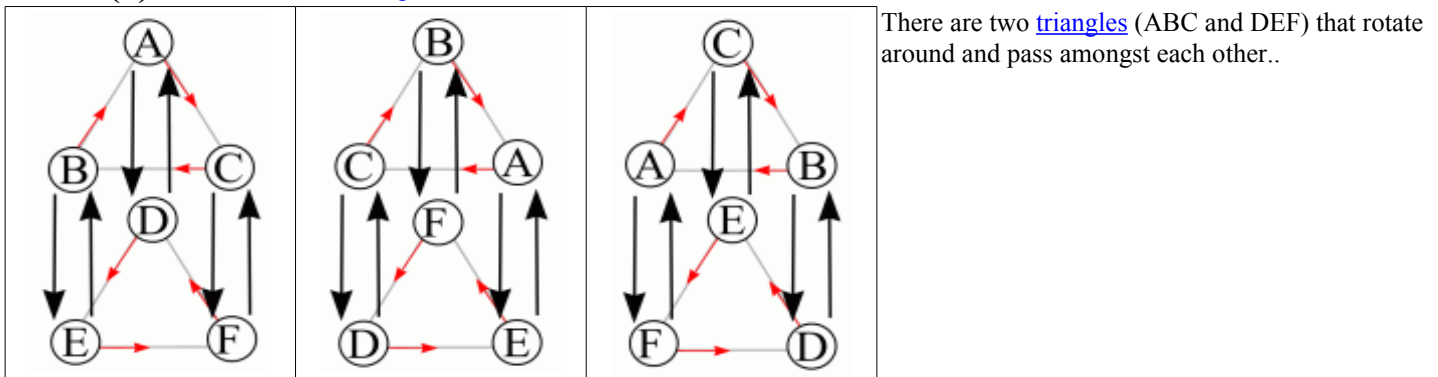


## Pistons (6)

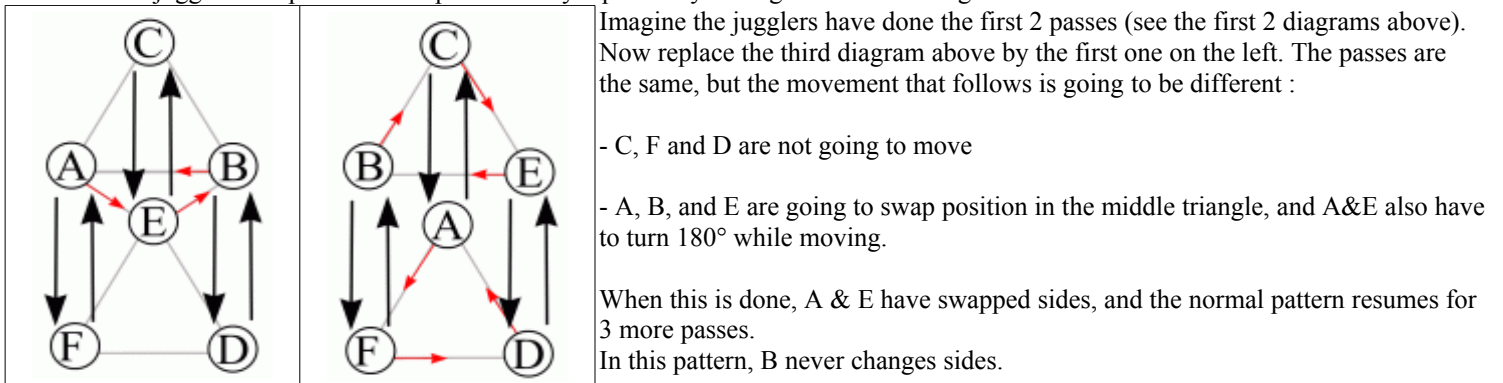
This is a nice generalization of the [4-person pistons](#). The pattern repeats after the following two sets of passes, with each juggler moved around in the positions.



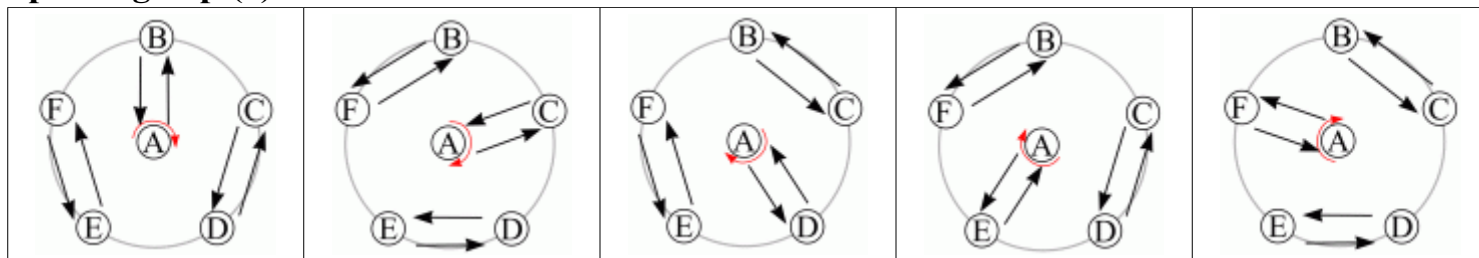
## Prism (6) Another variation of [pistons](#).



**Variation:** 2 jugglers swap sides in the pattern every 3 passes by having the middle triangle of 3 rotate.



## Spinning Top (6)



A turns in order to feed all the others alternatively.

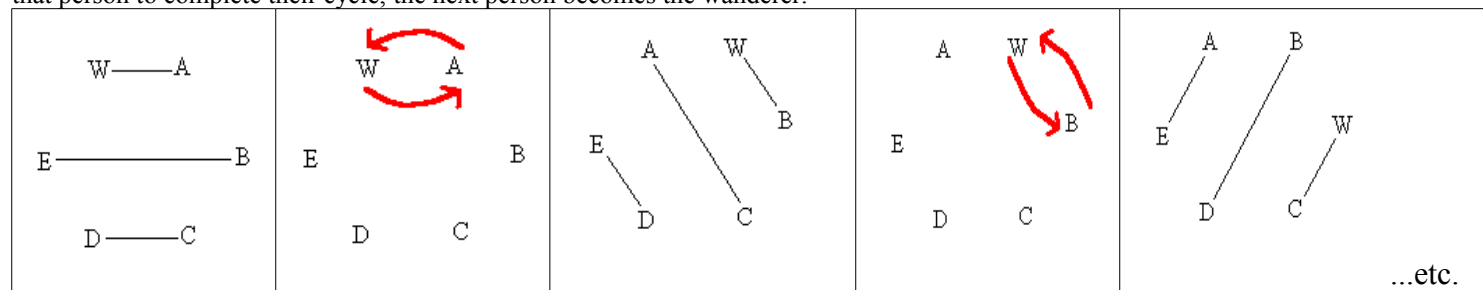
The 5 others alternate their passes between their 2 neighbours, except of course when they're passing to A (the next pass is then made to the right-hand neighbour).

**Rhythms:** You can try it with a [4-count](#) or [3-count](#).

## The Wanderer (6)

A generalization of the [4-person Wanderer](#) pattern.

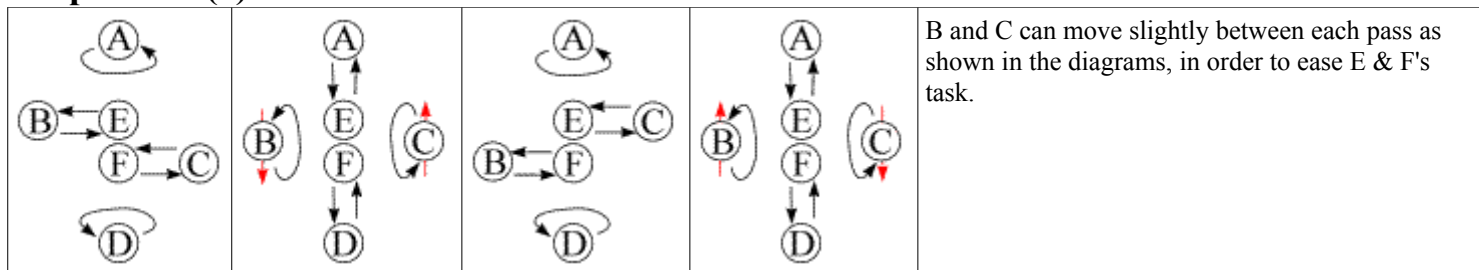
One person wanders around, passing with their neighbour and then swapping places with them. If you keep it together long enough for that person to complete their cycle, the next person becomes the wanderer.



The other jugglers, until it's their turn to pass with W, pass with their neighbours and then their opposite.

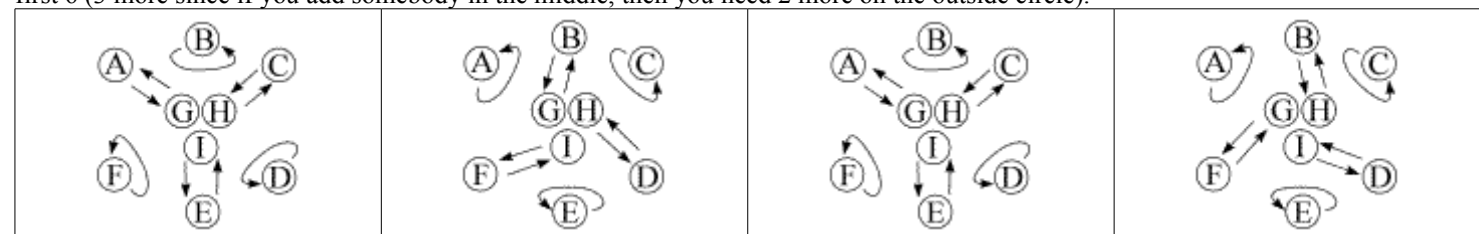
**Rhythms:** 4-count, or 3-count.

## It's possible (6)



B and C can move slightly between each pass as shown in the diagrams, in order to ease E & F's task.

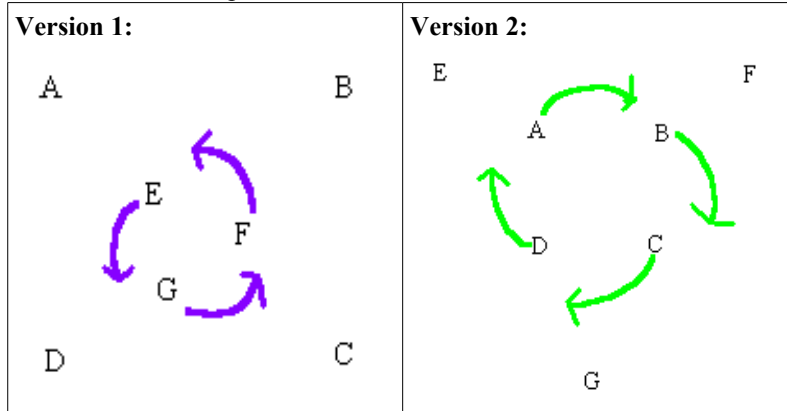
**Variation (Even Less Possible):** You can add 3 jugglers to the pattern by adding one in the middle, which will make it easier for the first 6 (3 more since if you add somebody in the middle, then you need 2 more on the outside circle).



On the outside circle, you then have 2 triangles (ACE and BDF) that are doing a 4-count with a gap between them. If you take each triangle individually, it's not possible (due to the amount of stuff and jugglers in the middle) for the jugglers in one triangle to add passes among themselves instead of their selfs. But some early or late doubles could work!!?

## Catherine Wheel (7)

Of the seven jugglers, we have three **3-counters** and four **4-counters**. Two of the 4-counters pass left handed. There are two possible arrangements for the jugglers. In the first the four counters start in a large square with the 3-counters standing back to back in a triangle in the middle. A and E pass on the first beat, then the four counters stand still and the three counters walk around anti-clockwise.



The passing sequence:

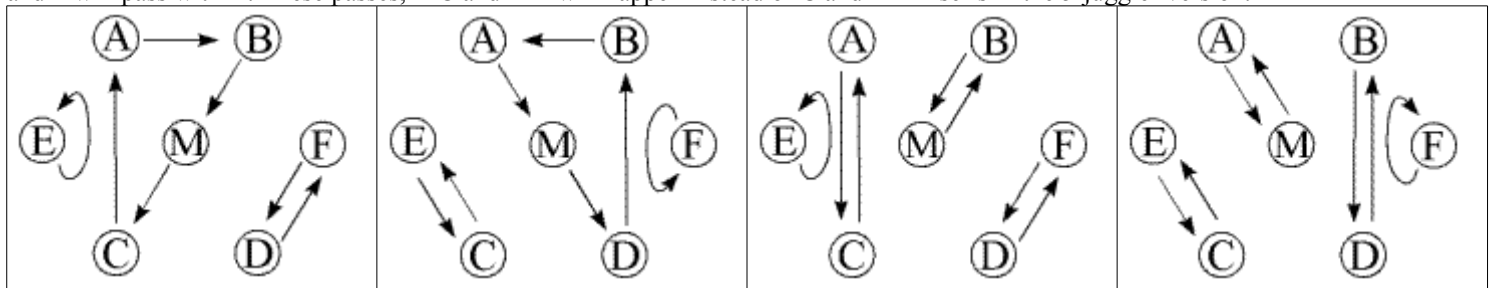
|    |   |   |   |   |   |   |   |   |   |   |   |   |
|----|---|---|---|---|---|---|---|---|---|---|---|---|
| A: | E | s | s | s | F | s | s | s | G | s | s | s |
| B: | s | F | s | s | s | G | s | s | s | E | s | s |
| C: | s | s | G | s | s | s | E | s | s | s | F | s |
| D: | s | s | s | E | s | s | s | F | s | s | s | G |
| E: | A | s | s | D | s | s | C | s | s | B | s | s |
| F: | s | B | s | s | A | s | s | D | s | s | C | s |
| G: | s | s | C | s | s | B | s | s | A | s | s | D |

**Variation:** both groups rotate in opposite directions.

**Rhythms:** many different rhythms are possible, try 4-count/4-count, 3-count/3-count, or 2-count/3-count if you walk fast.

## Torture Chamber (7)

Take the [torture chamber for 5](#) and add 2 jugglers to make it 7. These extra 2 jugglers are going to do a simple 4-count: E will pass with C and F will pass with D. These passes, E-C and F-D will happen instead of C and D RH selfs in the 5-juggler version.

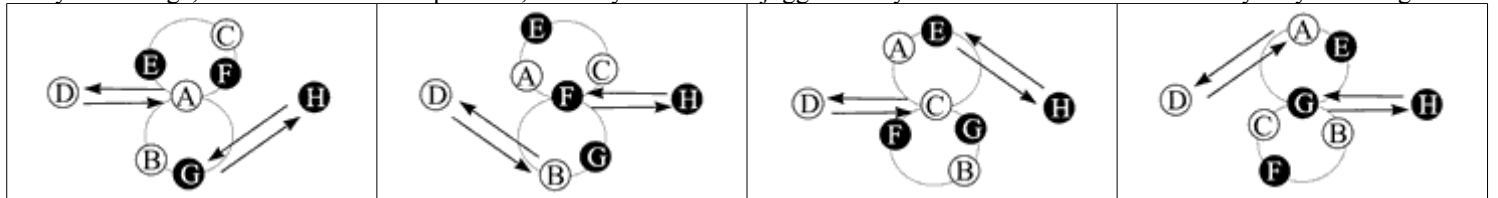


If E and F get bored (since they're only doing a 4-count), they can add another club to the pattern, and replace their RH selfs with some triple passes to each other. Then it's as if they're juggling a [7-club 4-count](#) in triples, but making passes to C and D instead of their RH selfs (in red in the above diagram).

Also see [more people in torture chambers](#).

## Interlaced Speed-weave (8)

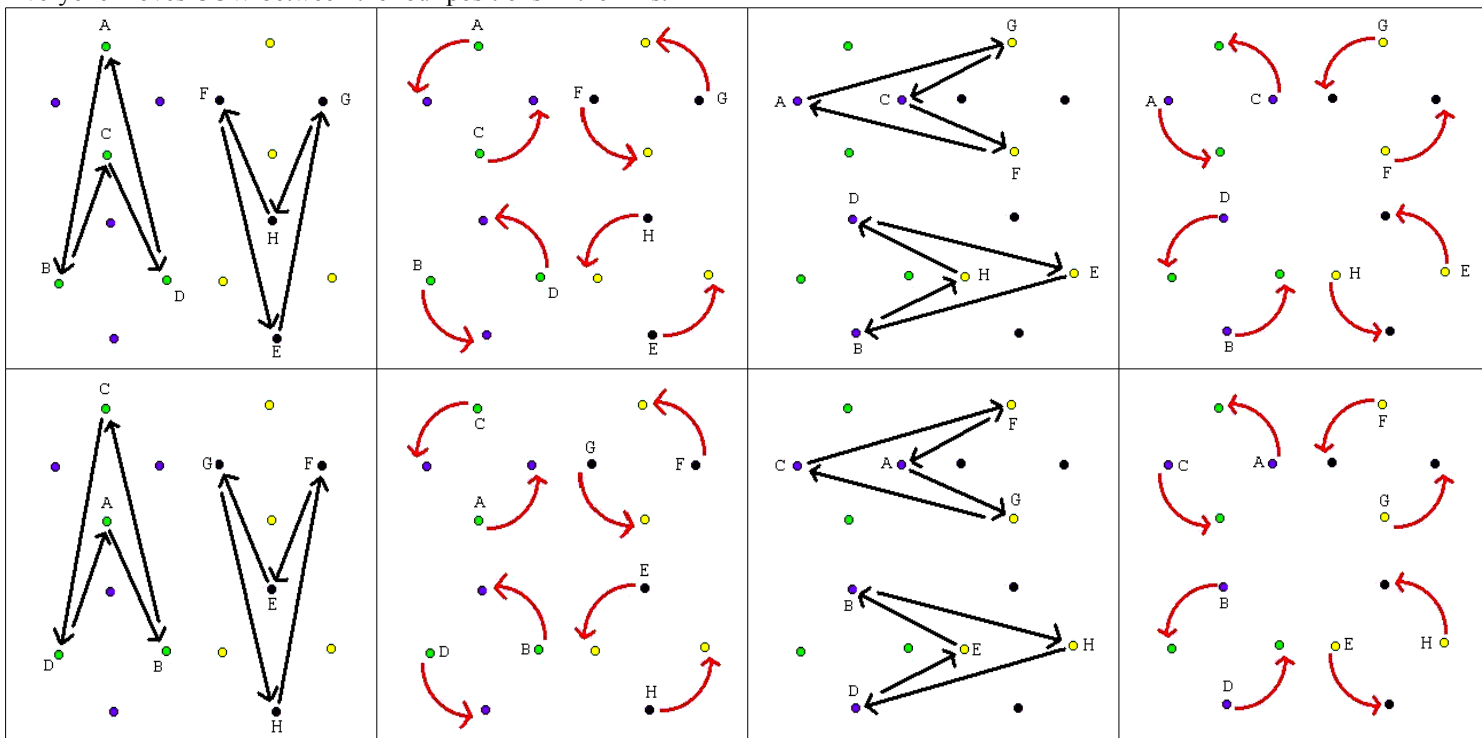
That's what it is, 2 [speed-weaves](#), one inside the other. A, B & C are facing D and are doing a classical speed-weave. E, F, & G are facing H and are doing a speed-weave but rotating in the opposite direction (going backward when at the center position). I've not tried it yet, and to my knowledge, no one has. If this is possible, I think you'll have to juggle slowly in order to make room for everybody in the figure 8.



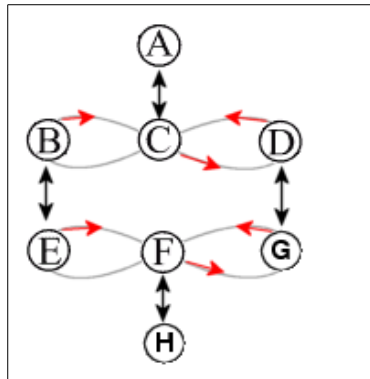
## Twinned Rotating Ys (8)

This mixes two rotating [Ys](#) into one giant pattern. Juggle this on a 5-count, to give you time to do the changes.

Everyone moves CCW between the four positions in their Ys.



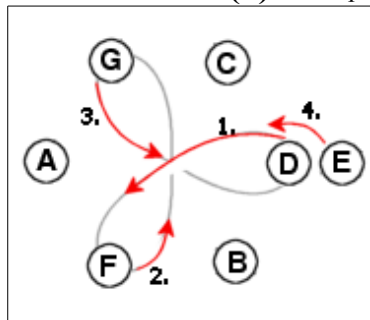
## Double Twister Weave (8)



This pattern comes from cloning the 3 central weavers in the [Twister Weave](#), and having the two weaves pass with each other. It is easier than the [Interlaced Speed Weave](#).

The 6 people in the middle do normal [Weaves](#). When they are at the positions of C or F they pass to their appropriate feeders, and when they are at the ends (B + E, D + G) they pass to the other line.  
- This entails the weavers constantly turning around as they weave; watch out for collisions!

## Suwon Clove (7) A simpler version of [The Clove](#).



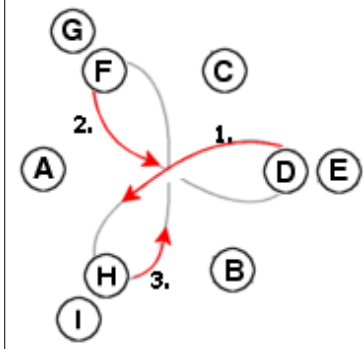
The four feedees (D,E,F,G) move through a [Clove](#) formation, except instead of passing with each other they pass with three feeders (A,B,C) who are fixed in position.

- Feedees are on 16 count (7 RH selfs between passes), and pass to the feeder in front of them as they move through the middle of the clove.

- Feeders are on 12 count (5 RH selfs between passes).

To start, D and A pass as D moves through the middle. There is a RH self, and then F moves into the middle and passes with C, then G, and then E.

**The Clove (9)** Six feedees move through a [Clove](#) formation, but instead of passing with each other they pass with three feeders.

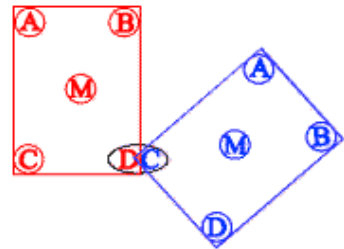


This pattern has three feeders (A,B,C) who stay in the same place, and 6 “clovers” (feedees) who walk through the clover formation. The clovers do **10-count**, alternating passing between the feeder to their *right* as they stand at the outside of the pattern, and the feeder to their *front* as they pass through the middle of the pattern. Feeders do a **6-count**, alternating passing to the feedee to their *left*, and the feedee coming towards them through the middle.

- To start, A makes their first pass to D as they come through the middle, then C will make a pass to their left to E on the next RH throw beat, then F comes into the middle and passes to B on the next RH throw beat, then A makes a pass to their left to G, then C passes to H through the middle, etc.
- It helps to have one person keep count aloud by announcing the sequence of passes: “A and C and B and A...”.
- It may help to have the feeders stand on chairs to make it easier for the feedees to find their way.

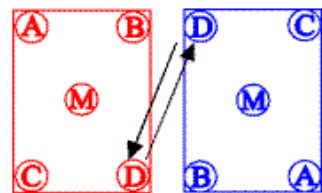
**Quad Clove (11):** add an extra feeder, to make a four-leaf clover, and one extra feedee.

**More people in Torture Chambers (10+)** The idea is to connect several [Torture chambers](#).



The first technique is to use one of the jugglers in a 4 counts ( C or D but here the pivot is **D/C** who is actually only one person) as a link between two chambers in which he is participating simultaneously.

This principle can then be continued (linking **D** to another chamber) until one circle is closed ( 3 chambers may be enough with 12 very good jugglers).



The other technique is to align two chambers alongside each other. The passes are the same at every moment in the two chambers. The two jugglers **D** and **D** are not then in 4-counts anymore, but in 2-counts, making passes between each other instead of selfs.

With this technique, you can align as many chambers as the number of jugglers allows since C can also be used as a link.

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## Fun Ideas and Passing Games

In any 3+ person pattern, figure out how to *change roles* on the fly. Especially entertaining with 3-person [feeds](#).

**Randomize (Jim's) the Receivers:** In any pattern in which there are 3 clubs per person, if all passers are good with [Jim's 3-count](#) and its relatives, then it doesn't matter which hand the passes arrive to. Everyone needs to watch for collisions, though.

**Intersecting Patterns (generalizing Feeds):** put two of the same (or different!) patterns beside each other, with one or more people common to both. Then do both patterns and figure out what the people in common have to do (probably pass twice as often, for starters: it is easier if you arrange it so that they don't have to pass in both patterns at the same time!). Even more fun with moving patterns. A (possibly) easier version is...

**Sharing Patterns:** put two patterns side by side and figure out how jugglers can move from one to the other (*i.e.* swap with someone in the other pattern).

**Chaser:** in a large circle, everyone starts with 2 clubs, except 2 differently-coloured clubs (the *leader* and *chaser*). Start by passing the leader randomly followed by the chaser, continue passing them around randomly... add extra chasers for more fun.

**Mingling:** passers wander around randomly; a pass is only made when eye contact is made. Ideally verbal communication is disallowed; to make it easier agree on a rhythm (RHed 4-count, 6-count, etc).

### Random Pattern Generation:

1. stand in positions at random
2. discuss what tricks you want to work on (including drop-back, drop-forward, passes to side, etc.) and work them in.
3. assign passing lanes
4. Adjust count or add / subtract tricks (or clubs) to make it doable.

**Takeouts and Other Interactions:** fix a pattern and rhythm and then have extra people figure out how to do takeouts and steals.

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