

# Will's passing patterns

by Will Murray, <http://web.csulb.edu/~wmurray>

I wrote down these notes after a convention in Alby, Sweden in January 2007 and last updated them on January 15, 2019. The point was just for me to remember stuff I would like to work on with my wife Rhonda Murray and my other passing friends. The notes are very Will- and Rhonda-centric (e.g. “Inventor” really means “who taught us the pattern”), but other people are welcome to try them if they’re interested. Let me know how it goes!

I made the diagrams below using JoePass!, an outstanding program by Wolfgang Westerboer.

On my website, I have more complete articles on several classes of patterns that are not listed in these notes:

- Two person passing patterns by Will:
  - Long Beach Popcorn
  - Scratch Your Head
  - 7 Club Doubles
- Moving and stealing patterns by Aidan Burns and the German takeout artists:
  - Bounceabout
  - Chopabout
  - Scrambled V
  - Scrambled 3V

Other good resources for passing patterns:

- Aidan’s page at <http://www.geocities.ws/aidanjburns/passing.html>.
- Madison book at [http://www.madjugglers.com/sites/default/files/Madison\\_Patterns\\_V1-2.pdf](http://www.madjugglers.com/sites/default/files/Madison_Patterns_V1-2.pdf).
- The passing database at <http://www.passingdb.com/>.
- The passing wiki at [http://passingwiki.org/wiki/Main\\_Page](http://passingwiki.org/wiki/Main_Page).
- Mark Weston’s compendium at <http://www.varietyartsdirectory.com/resources/PassingPatternsAug06.pdf>.
- jugglingfan’s list at <http://jugglingfan.org/wiki/pmwiki.php/Patterns/Main>.
- Aerial Mirage Jugglers at <http://www.gnerds.com/juggle/patterns.php>.
- Berkeley patterns at <http://www.berkeleyjuggling.org/patterns.php>.

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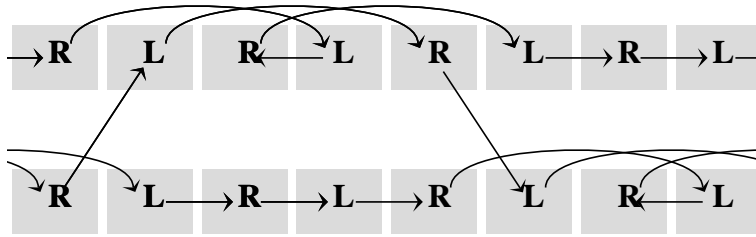
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# 1 55513p



Clubs: 7  
 Inventor:  
 Will and Rhonda...

Jugglers: 2  
 We got this from Peter Kaseman, but other people do it.  
 can do this forever, with occasional tricks (replacing 5551 with 7441, 6451, 5641, 7531, 4444 on singles, etc.).

## Related patterns

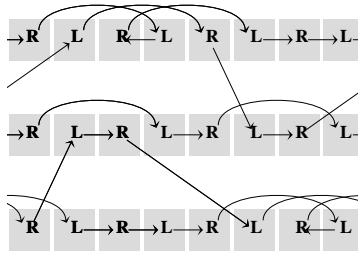
Add a club:

Par, which is symmetric.

Other related patterns:

Sympar  
55513pFeed

# 2 55513pFeed



Clubs: 11  
 Inventor:  
 Will and Rhonda...

Jugglers: 3  
 Will  
 haven't done this. Will did it with Peter and Greg Kennedy in Winston-Salem, and later with Laura. It's a little weird for the feeder to figure out, but ultimately not too hard.

## Related patterns

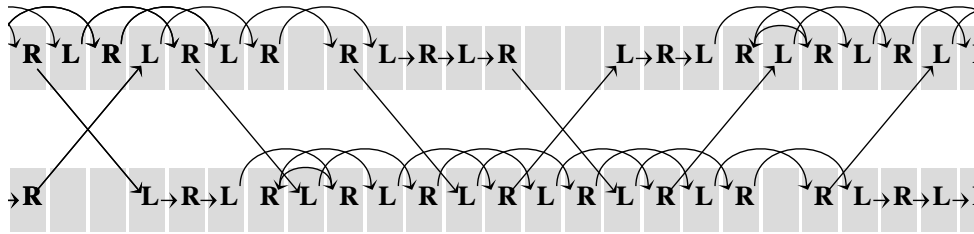
Subtract a club:

This could be done with 10 clubs with the feeder just doing all 3's. But that might be boring for the feeder and might also create a collision possibility when he is passing to the person on his left and receiving from the person on his right.

Other related patterns:

55513p

### 3 5vs3



Clubs: 8  
 Inventor:  
 Will and Rhonda...  
 Comments:

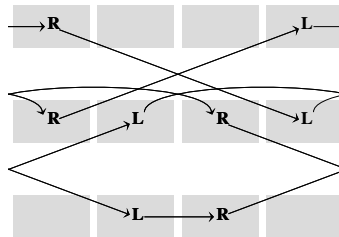
Jugglers: 2  
 Rhonda  
 can occasionally get this for a few cycles.  
 Good practice for 10 club 4-count and the 15 club feed. You can also feed 14 clubs by having the feeder do 4 club double singles 2-count and the feedees doing 5 club 4-count. Will has done this with Peter and Laura.

#### Related patterns

Other related patterns:

[5vs3vs3](#)

### 4 5vs3vs3



Clubs: 11  
 Inventor:  
 Will and Rhonda...  
 Comments:

Jugglers: 3  
 Will  
 have gotten this with Athena long enough for someone to lie down underneath us and film it.  
 Good practice for the 15 club feed.

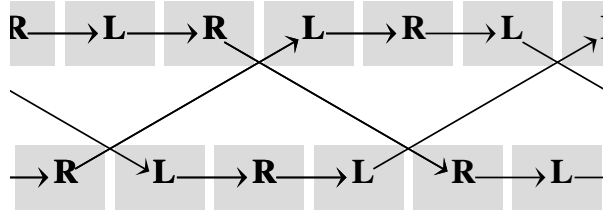
#### Related patterns

Other related patterns:

[5vs3](#), [ShootingGallery](#) (righty-lefty version of this)



## 5 7club3count



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

folklore

can run this all day.

This is 966, the symmetric version of 7 club doubles.

Jon's workshop in Alby suggested changing (4.5) 3 to 4 (3.5) (French 3-count), 3 (4.5) 3 to 5 (4.5) 1, or (4.5) 3 3 to (4.5) 4 2.

### Related patterns

Add a club:

996 (8 club PPS)

OllerupPopcorn-10-7-7

Subtract a club:

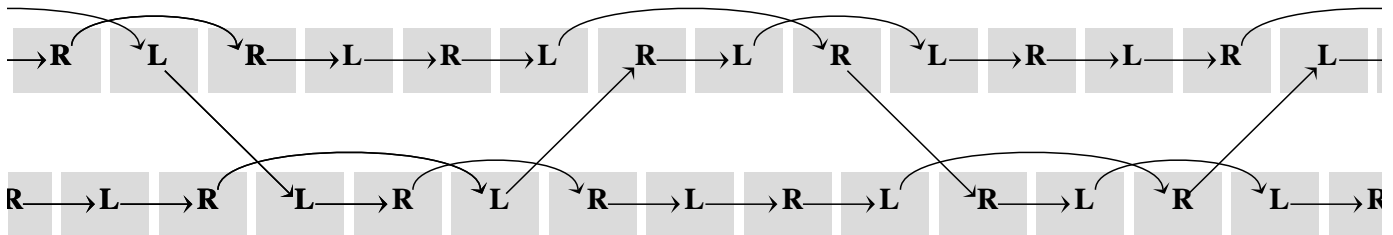
FrankZappalot (855)

Other related patterns:

Techno

PPSfeed

## 6 7countFrenchPopcorn



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

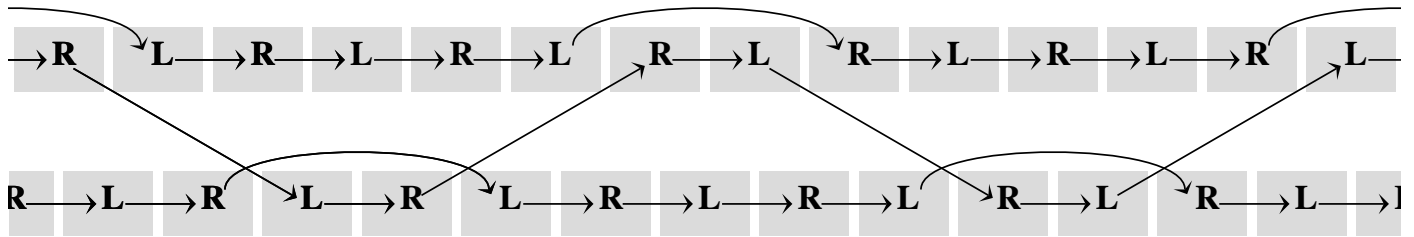
Jugglers: 2

Jon and Mandy, in a workshop in Ollerup.

may never have tried this.

This is 10 6 6 6 8 6 7, the Frenchified 7countPopcorn. In this one, the same club goes back and forth each time. Another way to think about it is as 534(pass)333, so you can replace the 534 with different 4-club siteswaps and 333 with different 3-club siteswaps, as in 55513p. (If you replace 534 with 444, you get the slow version of French 3-count.)

## 7 7countPopcorn



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

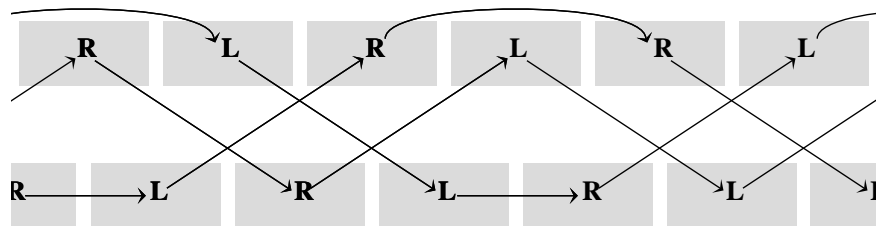
Jugglers: 2

Jon, in his workshop in Alby, but it's folklore.

did this in Toulouse in 2013.

This is 10 6 6 6 9 6 6, the symmetric version of standard 7 club popcorn.

## 8 867777



Clubs: 7

Inventor:

Will and Rhonda...

Jugglers: 2

Will

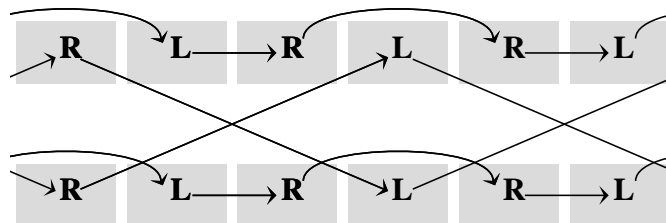
did this at the Lee house in October 2012. It's not too hard.

### Related patterns

Other related patterns:

[Bookends-86777](#), [JensThreeCount \(868677\)](#), [FrenchCanadian7Count \(8686777\)](#)

## 9 8club3count



Clubs: 8

Inventor:

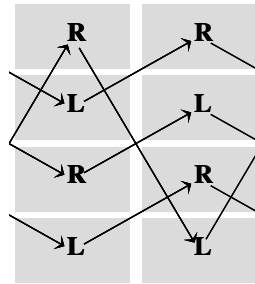
Will and Rhonda...

Jugglers: 2

Rhonda, among others

may have done this. Will did it with Colin in Portland.

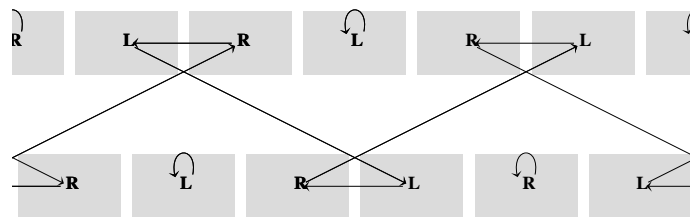
## 10 8SinglesSwitchingSides



Clubs: 8  
 Inventor:  
 Will and Rhonda...  
 Comments:

Jugglers: 2  
 Mandy  
 don't work on 8 singles much.  
 You can also pass crossing and throw the single self straight up. This works better than some of Mandy's other challenges (e.g. 10 club 5-count, 3-count, and 1-count.)

## 11 942



Clubs: 5  
 Inventor:  
 Will and Rhonda...  
 Comments:

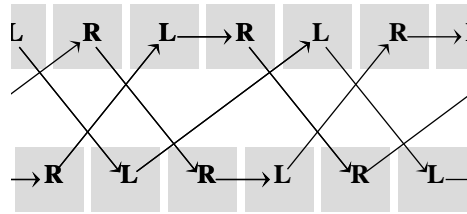
Jugglers: 2  
 Daniel  
 haven't done this. Daniel and Will did it successfully in Irvine.  
 This has three "magic" clubs and two clubs that stay on their own sides. You can make the 4's actual flips instead of just holding them.

### Related patterns

Add a club:

945  
ChristophsColors (972)

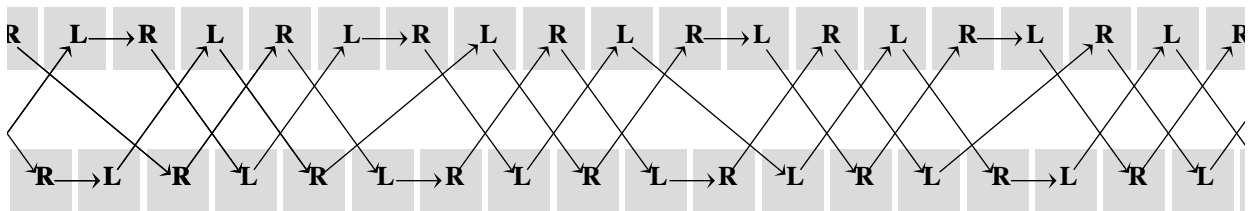
12 966777



Clubs: 7  
 Inventor:  
 Will and Rhonda...  
 Comments:

Jugglers: 2  
 Doreen, in San Diego  
 haven't tried this. It worked with Doreen.  
 This is a nice 7 club 4 handed pass pass self. For a synchronous one, see Ampersand.

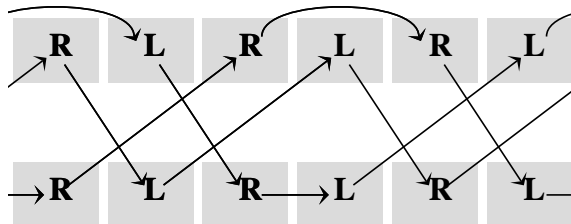
13 9countPopcorn



Clubs: 7  
 Inventor:  
 Will and Rhonda...  
 Comments:

Jugglers: 2  
 Evi, but Clara taught it to Will in Durham.  
 did this at the Lee house in October 2012. It's fun when you get the sequence down.  
 Each person does 967776777. The 9 club is magic.

## 14 Ampersand



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Rhonda, from Tom Hamill's 6-club Nizer's Nightmare.  
can run this all day.

For a 7 club 4 handed pass pass self, see [966777](#).

### Related patterns

Add a club:

[Ampersand8](#)

Subtract a club:

[Nizer's Nightmare](#)

[6-club PPS](#)

Other related patterns:

It's also fun to do crossing singles and straight doubles.

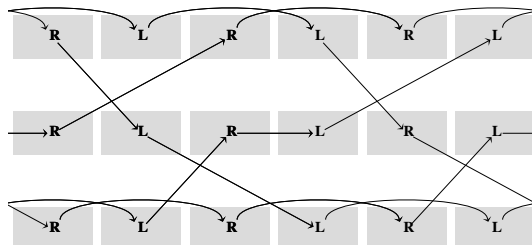
[979728](#) (thanks, Caspar!) is very similar, but slightly harder.

[AmpersandSwitch](#)

[AmpersandFeed](#)

[Ollerand](#)

## 15 AmpersandFeed



Clubs: 11

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

Will

haven't tried this. Will did it with Peter and Stefan in Québec in 2015.

This is quite fun. There are some collision issues but you can figure out how to avoid them. Feeder starts with three and does extreme extreme self middle middle self. Left feedee starts with four and does pass heff heff. Right feedee starts with four and does heff pass heff.

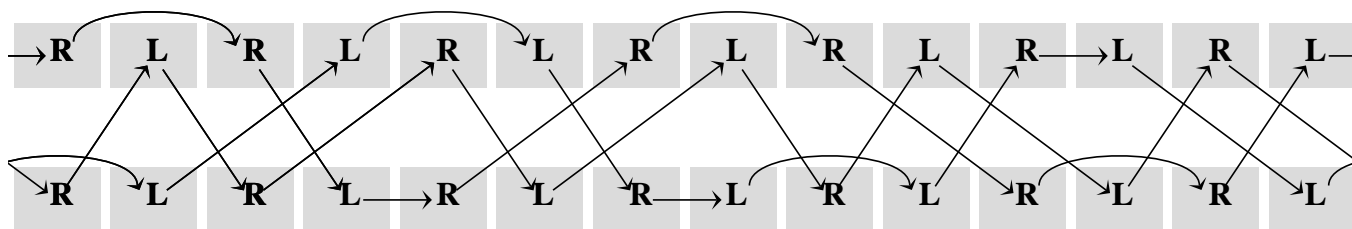
### Related patterns

Other related patterns:

We should also try crossing singles and straight doubles.

[Ampersand](#)

## 16 AmpersandSwitch



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Ellen Winters

have not tried this. Will did it with Ellen in Québec in 2015.

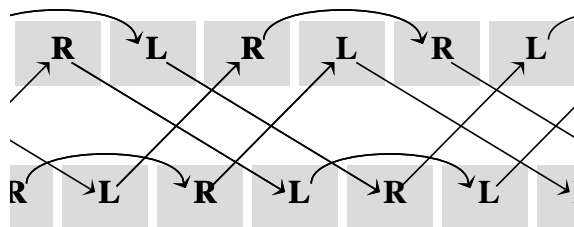
This is Ampersand with two people switching the two roles. It's rough on the head but quite fun.

### Related patterns

Other related patterns:

Ampersand

## 17 Ampersand8



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Rhonda, from basic Ampersand.

can run this a bit.

This is just 8 club 1-count (97) with heffs on every third throw (PPS).

### Related patterns

Subtract a club:

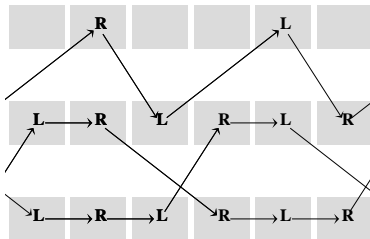
Ampersand

868677

Other related patterns:

This is 979788. You can also do it with half as many passes, 978888.

## 18 AntoniosAngst



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Antonio, in Vitoria

did this in Irvine in August 2009.

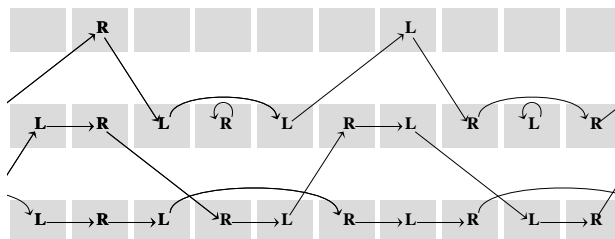
This is really a two person pattern; the top line in the diagram above is just to show that the top person is throwing multiplexes. Will starts with two in each hand and throws left to right self, then right multiplex with one club going as a single to his left hand and one as a crossing double to Rhonda's right, then right to left self, then left multiplex. Rhonda throws standard three-count, passing straight, with the first pass from the left hand, maybe slightly techno-ish.

### Related patterns

Other related patterns:

[AntoniosAnxiety](#), [FiveWithBenefits](#)

## 19 AntoniosAnxiety



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Antonio, in Vitoria

did this in Irvine in August 2009.

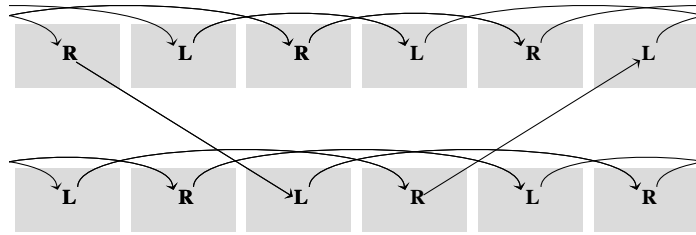
This is really a two person pattern; the top line in the diagram above is just to show that the top person is throwing multiplexes. Will does the same thing as in [AntoniosAngst](#), except that he has time to do an extra 2 in the hand that just threw the multi (and do it as a shoulder throw, albert, or whatever). Rhonda throws [BogotaPopcorn](#), passing straight, starting with a triple from the left hand. She has to wait a little on the triples since the incoming passes are doubles instead of the normal singles in [BogotaPopcorn](#).

### Related patterns

Other related patterns:

[AntoniosAngst](#), [FiveWithBenefits](#)

## 20 Banana



Clubs: 9

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Stefan Brancel and Ben Hestness

are working on this. Will got a few runs with Peter in Québec in 2015.

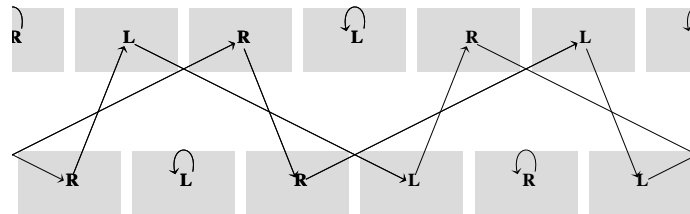
This is 5 5 5 4p 4 4. Make the 5's doubles and the 4's singles.

### Related patterns

Other related patterns:

[Plantain](#), [PlantainFeed](#)

## 21 BlackBeastOfArrgh



Clubs: 6

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will, but of course others have too. I think Daniel named it.

have worked on this. It's quite challenging, but doable and really fun.

This is 945, one of the monsters to slay en route to the holy grail, [ZapOpusTwo](#).

The 9 clubs are magic.

You can start with [ZapOpusOne](#) and have one person go into the Black Beast, since the two are compatible with each other.

To start, the person throwing crossing has two clubs in each hand. She throws left to left crossing double and then a right to right crossing zap. The other juggler starts with one club in each hand, waits as long as possible, and then throws a right to left straight double and then a left to right straight zap.

(This is the way Will and Rhonda start because Rhonda doesn't want to throw a left zap when she has two clubs in her left hand. For other people, it might make more sense for the straight person to start with four clubs and the crossing person to start with two. Then each person can start with a right double.)

### Related patterns

Add a club:

[ZapOpusTwo](#) (975, the holy grail)

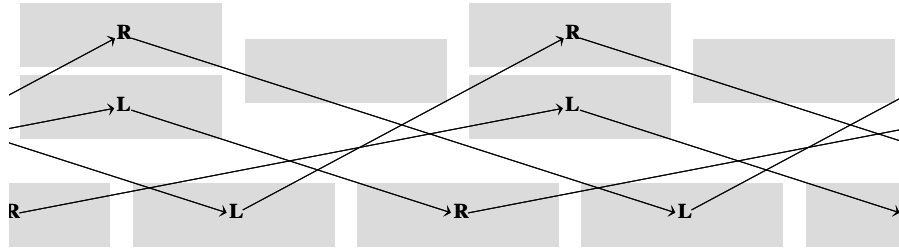
999582, which is the Black Beast (almost; it's 952 instead of 954) against 998. This is pretty tough, but doable with Caspar in Millstreet in 2014. Easier than the grail.

Subtract a club:

942



## 22 Blinky



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

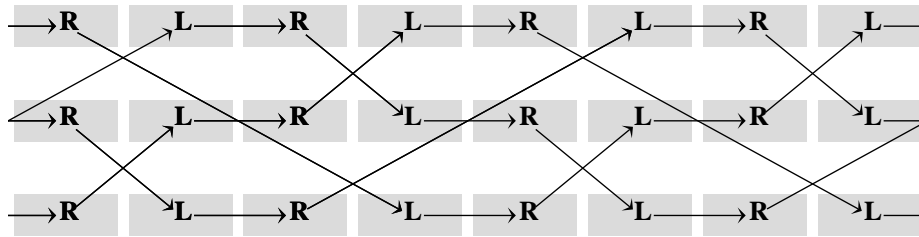
Jugglers: 2

Christoph, who learned it with Evi and Nikki

have never done this. Will did it with Christoph in Someren, with some success.

This is an eight club, right-handed, funky wunky one-count. It's not really harder than the standard eight club one-count with straight doubles versus straight singles, and it's quite fun. You can code it by using four red and four green clubs so the whole pattern flashes red to green.

## 23 BogotaLine



Clubs: 10

Inventor:

Will and Rhonda...

Comments:

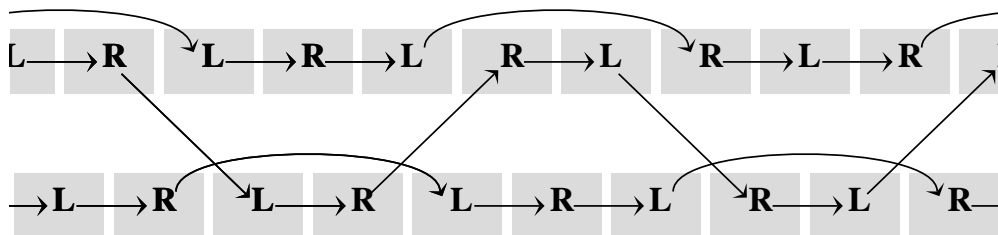
Jugglers: 3

someone in Bogotá, probably Nene.

probably did this in Bogotá.

To do this, the middle person has to make every left hand throw over the head and do a half pirouette. This gets pretty dizzying. Maybe I'm misremembering this?

## 24 BogotaPopcorn



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Wilson "Nene" Vargas taught it to us, but it's folklore as five-count popcorn. can run this.

We had fun doing this one with Steve Healy. We used oversize tennis balls for the clubs that do triples.

You can replace the 5 3 with 4 4.

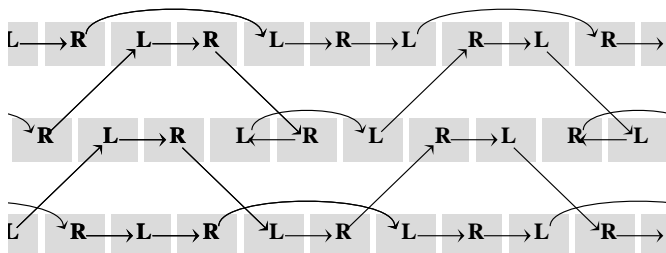
### Related patterns

Other related patterns:

BogotaFeed

BogotaBigFeed

## 25 BogotaFeed



Clubs: 10

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

Jon?

have never tried this. Will did it with Rasmus and Jon in Alby.

Fairly tricky for the feeder because the passes are coming from unexpected places. Would be fun to do with Steve Healy sometime using tennis balls for the triples.

This is asymmetrical. The clubs from the different feedees do different things in the feeder's hands.

### Related patterns

Add a club:

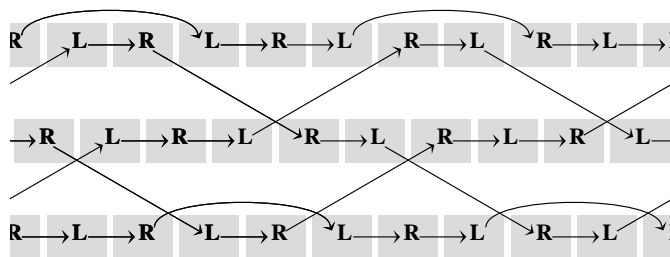
BogotaBigFeed

Other related patterns:

BogotaPopcorn

Why not (This is what the feeder is doing.)

## 26 BogotaBigFeed



Clubs: 11

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

Will

have never tried this. Will did it with Rasmus and Jon in Alby.

Symmetric version of the classic 11 club feed from the 7 club 6-count popcorn.

Fun for the feeder and not as hard as it might seem.

### Related patterns

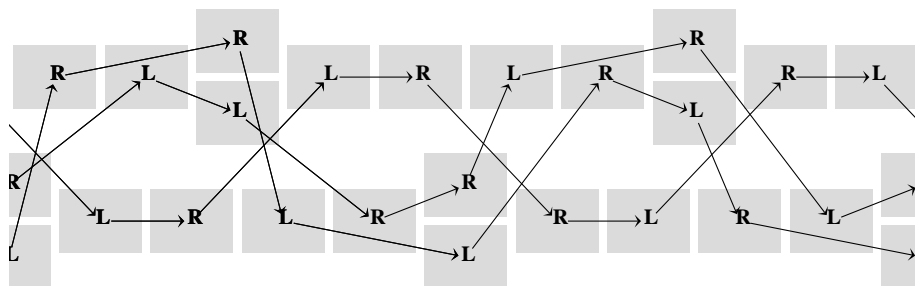
Subtract a club:

BogotaFeed

Other related patterns:

BogotaPopcorn

## 27 Bookbag



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Christoph and Brook.

haven't done this. Christoph taught it to Will at Lee in 2014 and we got some multis.

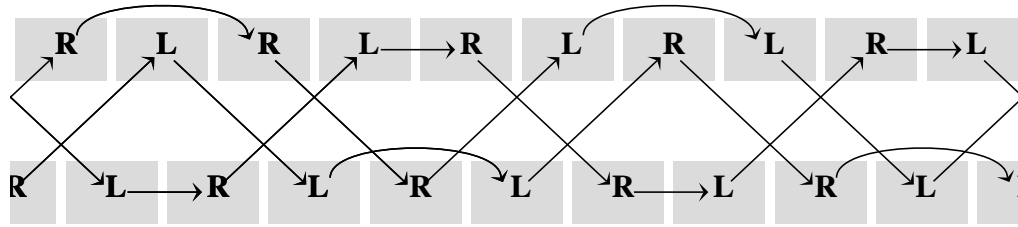
This is Bookends-86777 with the heffs replaced by gathers and multiplex passes: Change (pass) (pass) (self) (pass) (heff) [repeat] to (pass) (pass) (self) (pass) (collect) (self) (multiplex) (self) (pass) (heff). The trick is throwing the multi to the right height (trial and error) and catching them right: The catcher throws the heff just before the multi arrives. If he throws it too early, it lands with the multi. So hold that club as long as possible and throw the heff at the last moment before the multi arrives. It's quite fun.

### Related patterns

Other related patterns:

Bookends-86777

## 28 Bookends-86777



Clubs: 7

Inventor:

Will and Rhonda...

Jugglers: 2

Jon and Mandy, at their workshop in Ollerup.

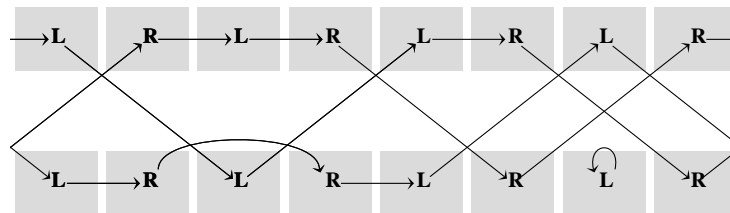
did this in Millstreet in 2014. It's not too hard.

### Related patterns

Other related patterns:

[Bookbag](#), [867777](#), [JensThreeCount \(867777\)](#), [FrenchCanadian7Count \(8686777\)](#)

## 29 BoulderCountdown



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Staffan in Boulder in 2014

have not done this. Will did it with Staffan in Millstreet in 2014.

Like the [CopenhagenCountdown](#), both jugglers are doing 3-count, then 2-count, then 1-count, then 2-count. (So it's really a countdown and then countup.) But it's easier just to memorize the sequence of throws: PSSPSPPS. (Eight beats, so it's not symmetric.) For the second juggler, one of the selves is replaced by a hold.

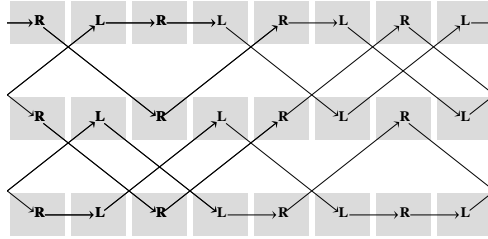
I can't remember if the original pattern had straight passes or crossing. This one has crossing to avoid collisions, but you could also switch one juggler's hands (preferably, the top line so he starts PSSPSPPS right-handed) and make all the passes straight.

### Related patterns

Other related patterns:

[CopenhagenCountdown](#), [BoulderFeed](#), [BoulderBigFeed](#)

## 30 BoulderBigFeed



Clubs: 11  
Inventor:  
Will and Rhonda...

Jugglers: 3  
Staffan in Millstreet in 2014  
have not done this. It would be fun to try, but it might be pretty tough for the feeder. Might be collision-prone too.  
Comments:  
Feedees Tom and Mary are doing the BoulderCountdown and the feeder is throwing straight singles to TMMT MTTM.

### Related patterns

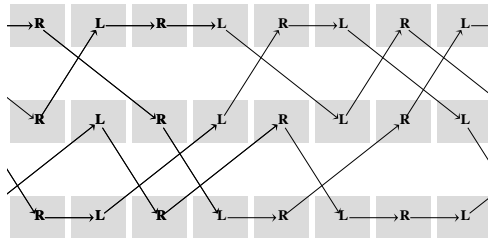
Subtract a club:

BoulderFeed

Other related patterns:

BoulderCountdown

## 31 BoulderFeed



Clubs: 10  
Inventor:  
Will and Rhonda...  
Comments:

Jugglers: 3  
Staffan in Millstreet in 2014  
have not done this. It would be fun to try.  
Comments:  
Feedees Tom and Mary are doing the BoulderCountdown and the feeder is throwing straight singles to TMMT MTTM.

### Related patterns

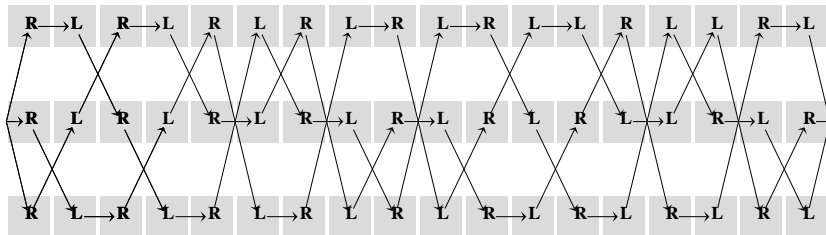
Add a club:

BoulderBigFeed

Other related patterns:

BoulderCountdown

## 32 BrunosAmbidextrousNightmare



Clubs: 9

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

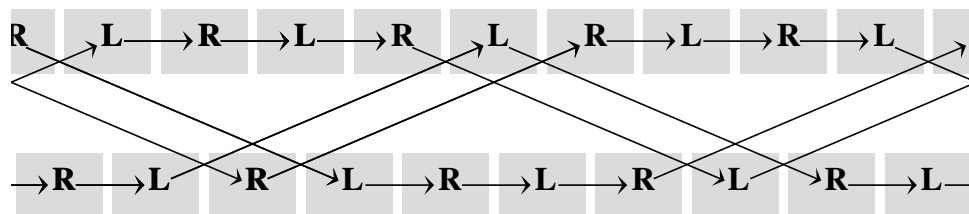
Staffan and Jochen in Durham.

haven't worked on this because Will wishes to preserve his marriage. Will worked on it with Aidan and James in Durham with reasonable success.

The diagram above doesn't show the selves. The full "9-count" pattern is PSSPSSPSS. When you do this, imagine Bruno's hands juggling the three jugglers. If the feeder starts in Bruno's right hand, as in the pattern above, everyone starts right-handed. The 7-count pattern is PSPSPSS, and you use the same starting rule. The 5-count pattern is PSPPS, and you use the opposite rule: If there are two balls in Bruno's right hand, everyone starts right-handed. (The 3-count version would be PPP with the original rule, but this doesn't seem feasible.)

The reason for this is that on the third pass, the feeder is leading one feedee up through the middle. If the feeder is in Bruno's right hand, he that third pass should come from his right hand so that giving the feedee a big lead spreads the clubs out instead of making them crash in the feedee's face. So you want that pass on an odd beat. In the 9-count and 7-count, that pass is on beats 7 and 5, respectively. In the 5-count, that pass is on beat 4, so you reverse the rule.

## 33 ChaChaPeter



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Peter, in December 2006.

have never tried this. Will and Mandy got it for a few throws in Alby, but it's tough.

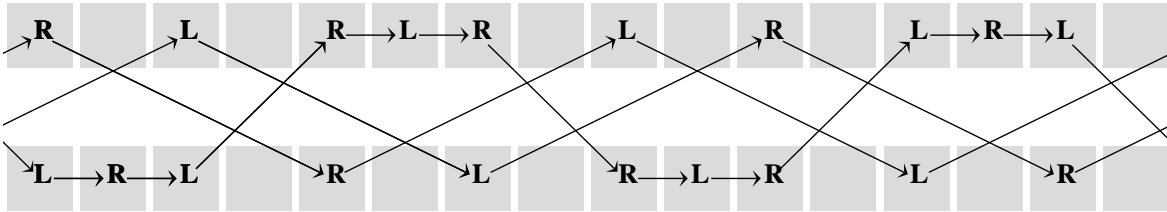
Symmetric version of [ChocolateBar](#)

### Related patterns

Other related patterns:

all the other ChaChas

## 34 ChaChaWill7



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will, in December 2006, inspired by Peter.

have never tried this. Rhonda and Staffan worked on it in Lexington.

It's probably best to do this with triples and lofty singles.

### Related patterns

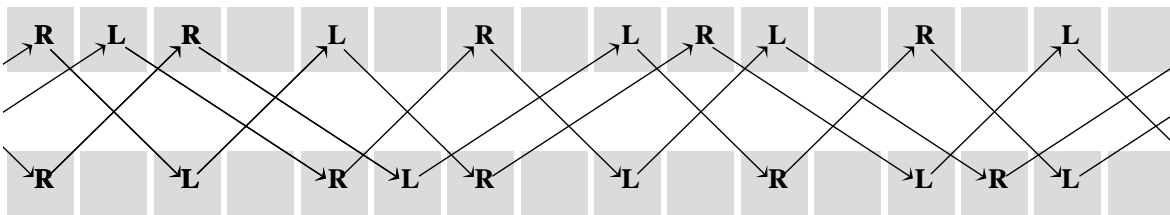
Subtract a club:

The lofty single pass is always the same club, so you can practice a six-club pattern without this club.

Other related patterns:

all the other ChaChas

## 35 ChaChaWill7club1count



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will, in December 2006, inspired by Peter.

tried this in Alby, but it was surprisingly hard. Staffan and Will got several cycles of this in Lexington. It is doable and fun!

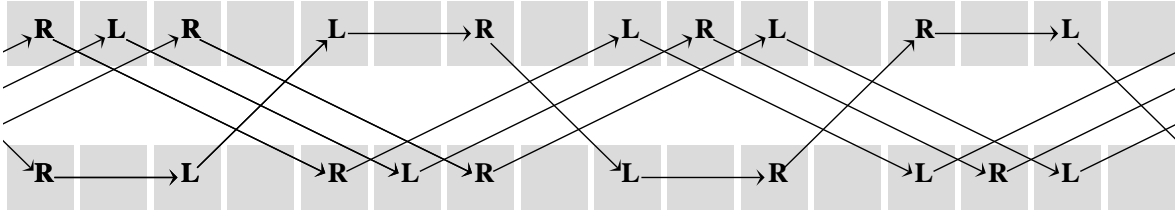
Try this with lofty singles and doubles. They may get a little random, but that's ok. In particular, the top juggler should really loft the first left-handed single (i.e., the second left-handed throw), to avoid rushing the bottom juggler.

### Related patterns

Other related patterns:

all the other ChaChas

## 36 ChaChaWill8



Clubs: 8

Inventor:

Will and Rhonda...

Jugglers: 2

Will, in December 2006, inspired by Peter.

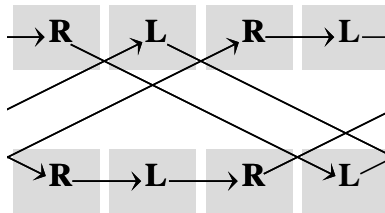
tried this in Alby, and got it for a few rounds. It may be possible.

### Related patterns

Other related patterns:

all the other ChaChas

## 37 ChocolateBar



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Luke Emery

may or may not have done this. Will has done it fairly successfully with Peter and with Mandy.

Right-handed version of [ChaChaPeter](#)

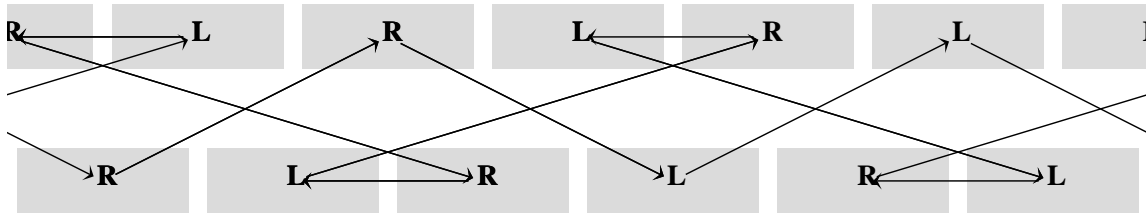
### Related patterns

Other related patterns:

all the other ChaChas



## 38 ChristophsColors



Clubs: 6

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Christoph Shumacher

have not done this. Will did it with Christoph in Durham.

This is 972. Do it with 3 red and 3 yellow clubs, so that all doubles are yellow and all singles are red. Or do it with 2 red, 2 blue, and 2 yellow clubs, so that each double and answering single are the same color. The former looks better to jugglers in the pattern, and the latter looks better to spectators.

### Related patterns

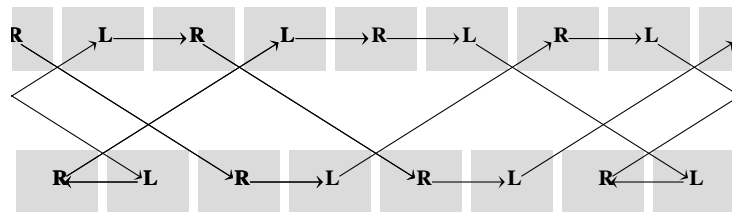
Add a club:

ZapOpusTwo

Subtract a club:

942

## 39 CopenhagenCountdown



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Jon and Trevor Lewis, in Jon's back yard in Copenhagen

have not done this. Will did it with Staffan in Millstreet in 2014.

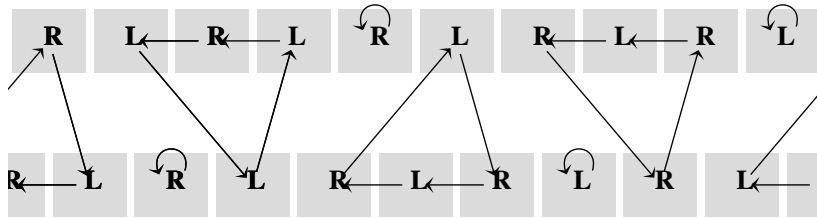
Jon wrote this up in Kaskade 66. Both jugglers are doing 3-count, then 2-count, then 1-count, then 2-count. (So it's really a countdown and then countup.) But it's easier just to memorize the sequence of throws: PSSPSPPS. (Eight beats, so it's not symmetric.) For the second juggler, two of the selves are replaced by zips. However, if you start as in the diagram above, the very first zip is replaced by a normal self. The siteswap is 9629669669969929.

### Related patterns

Other related patterns:

BoulderCountdown, BoulderFeed

## 40 CosmicZap



Clubs: 4

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Daniel

have never tried this. Will did it with Daniel at the Lee house in December 2011.

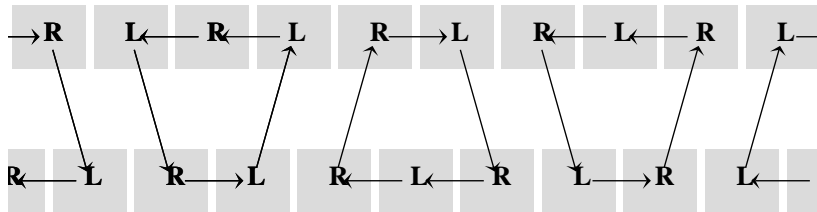
Locally, this is 57224.

### Related patterns

Other related patterns:

[DanielsDivorce](#)

## 41 DanielsDivorce



Clubs: 4

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Daniel, just after his divorce party with Doreen.

have never tried this. Will did it with Daniel at the Lee house in December 2011.

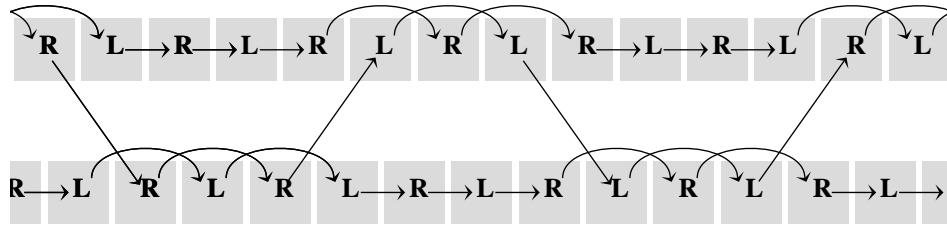
Locally, this is 55226. Since the 226 are all the same club, it is fun to do this as front-back-front, or back-front-back.

### Related patterns

Other related patterns:

[CosmicZap](#)

## 42 DDD1



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Doreen and Daniel, in Durham

have not done this.

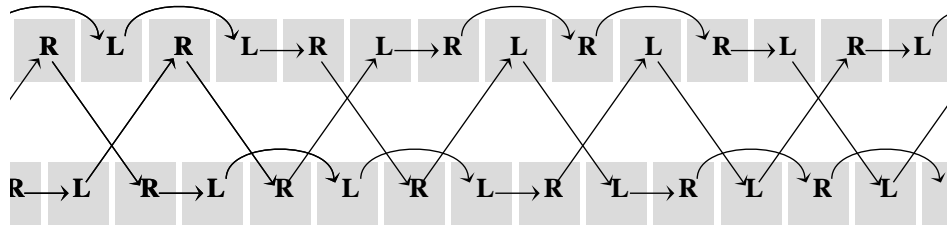
This is 7868686. The same club is passed every time, so this could be color-coded.

### Related patterns

Other related patterns:

[DDD2](#), [FrenchCanadian7Count](#), [SuperNovaScotia](#)

## 43 DDD2



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Doreen and Daniel, in Durham

have not done this.

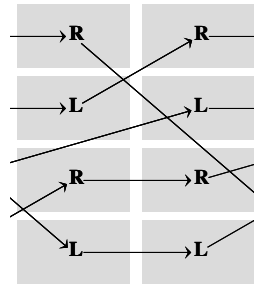
This is 7786786. The same clubs are passed every time, so this could be color-coded.

### Related patterns

Other related patterns:

[DDD2](#), [FrenchCanadian7Count](#), [SuperNovaScotia](#)

## 44 EvilTwin



Clubs: 9

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Peter, with Stefan Brancel

haven't tried this. Will has done it with Peter, Stefan, and Rasmus.

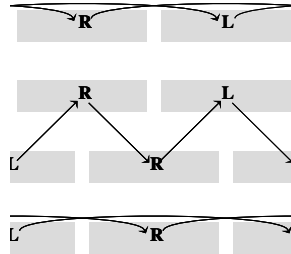
This turns into a 14 club feed, with the feeder throwing triple singles. Will did this with Peter and Stefan at Purdue in 2014.

### Related patterns

Other related patterns:

[GoodTwin](#), [FraternalTwin](#), and [UnpoppedPopcorn](#)

## 45 FiveWithBenefits



Clubs: 9

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Antonio, in Vitoria

have not done this. Will and Antonio got it to work a bit.

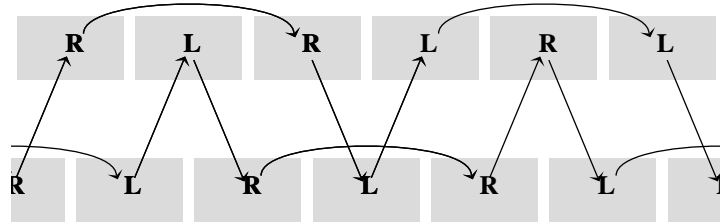
This is just five club one count with each hand throwing a multi on every throw and one club coming back to the hand that threw it.

### Related patterns

Other related patterns:

[AntoniosAngst](#), [AntoniosAnxiety](#)

## 46 FrankZappalot



Clubs: 6

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will

can do this a bit. With practice, we should be able to run it.

This is just 855.

### Related patterns

Add a club:

Subtract a club:

Heffalump (885), 7club3count (966)

A good warmup for this is ZapHeff (84445).

Another 4-club version is 552 (FrankZappalite?), which is a good way to start learning this. Then you do 552 vs. 558, which is already challenging.

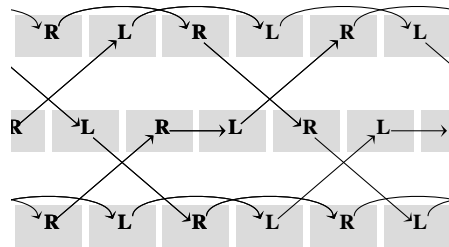
Of course, there is also 5-club one count, which is pretty hard with zaps.

It is also fun to do 852 and 582, which can be done separately, or one person can do one and the other person can do the other. Will has worked on these with Athena, and gotten them after a while.

Other related patterns:

FrankZappaFeed

## 47 FrankZappaBigFeed



Clubs: 11

Inventor:

Will and Rhonda...

Jugglers: 3

Will

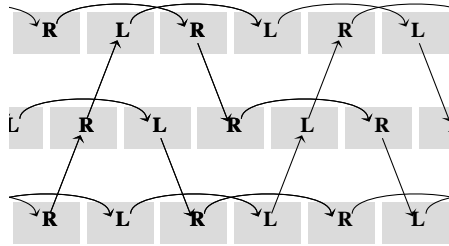
have never tried this, but it might be feasible with good four-club jugglers.

### Related patterns

Add a club:

FrankZappaFeed

## 48 FrankZappaFeed



Clubs: 10

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

Will

worked on this with Jason in Highgate, with Louis in Vitoria, and with Caspar and Rasmus in Jamul. Hard but possible.

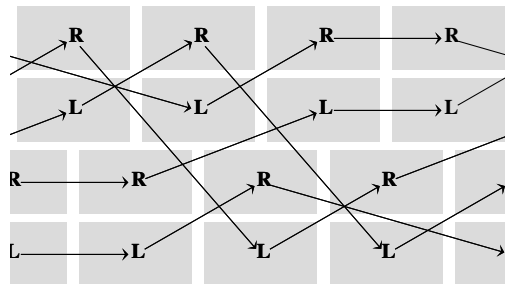
Frank Zappa feeds the heffalumps!

### Related patterns

Add a club:

FrankZappaBigFeed

## 49 FraternalTwin



Clubs: 9

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will, based on Peter's UnpoppedPopcorn.

haven't tried this. Peter and Will worked on it in Bowling Green in 2013, with some success.

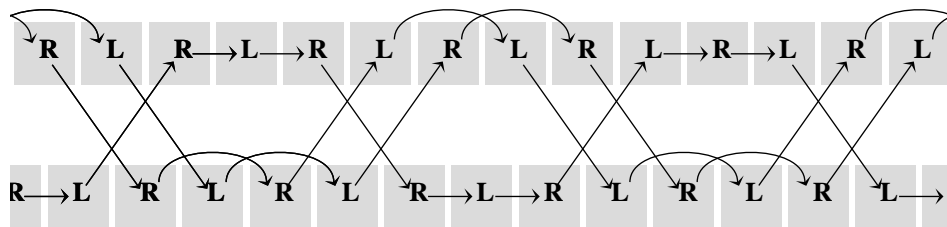
This was an attempt to stretch out UnpoppedPopcorn and get more passes into it, but it got weird because the two people are doing the same throws in different orders.

### Related patterns

Other related patterns:

GoodTwin and EvilTwin

## 50 FrenchCanadian7Count



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Doreen and Daniel, in Durham  
have not done this.

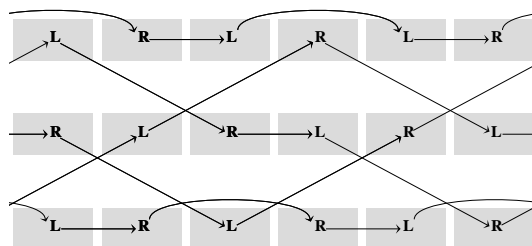
This is 7778686. The same clubs are passed every time, so this could be color-coded.

### Related patterns

Other related patterns:

[DDD1](#), [DDD2](#), [SuperNovaScotia](#)

## 51 FrenchFeed



Clubs: 11

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

Christoph Shumacher

have not done this. Will did it with Doreen and Matt in Isla Vista, fairly successfully.

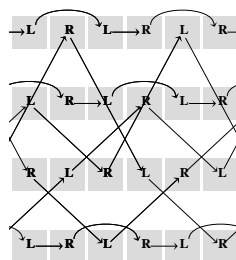
The feedees are essentially doing French 3-count, except that the passes are 4's instead of 3.5's. This seems easier than the traditional 11 club PPSfeed, but maybe that's the effect of having Doreen and Matt as partners.

### Related patterns

Other related patterns:

French 3-count, [PPSfeed](#), [FrenchFeedForFour](#)

## 52 FrenchFeedForFour



Clubs: 15

Inventor:

Will and Rhonda...

Comments:

Jugglers: 4

Staffan suggested that Christoph Shumacher's FrenchFeed for three could be extended.

have not done this. Will would really like to try it.

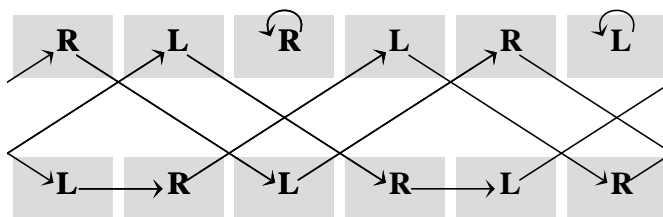
The feedees are essentially doing French 3-count, except that the passes are 4's instead of 3.5's.

### Related patterns

Other related patterns:

French 3-count, [PPSfeed](#), [FrenchFeed](#)

## 53 FrostFrenzy



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Martin

have never done this. Will does it with Martin, sometimes with long runs.

All passes are very floaty singles, although it might work nicely with doubles. (It's very strenuous on singles.) How to start: The top person holds four clubs and starts with pass, self, pause, pass, pass, pause, pass, pass, pause, . . . . The bottom person holds three and starts like 7 singles, throwing pass, self, pass, pass, self, pass. . . . To avoid collisions, he should throw the second pass on each side more inside.

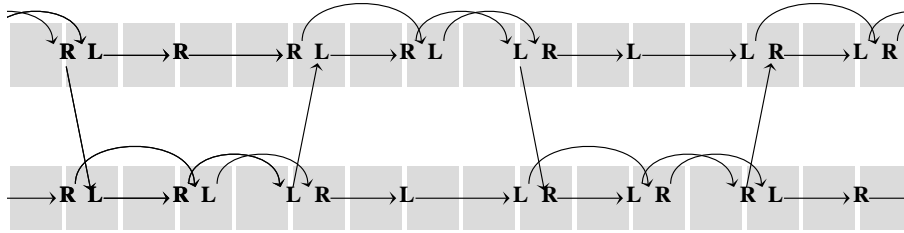
### Related patterns

Other related patterns:

FeedingFrenzy, a 10 club pattern in which the feeder does pass pass pause and the feedees do pass self self (I think).



## 54 GallopHeffalump



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Rhonda, as a way of making the galloping box  $((4, 2x)^*)$  symmetric. are working on this as of 2017 and starting to make progress.

The passes are zaps. So the sequence is zap-single, [heff single], double-single, double-double.

## 55 Gasteiz

6 7 6 6 7 8 9  
7 8 9 6 7 6 6

Clubs: 7

Inventor:

Will and Rhonda...

Jugglers: 2

Lisa Kollmer

haven't done this. Will did it with Lisa at the Lee house in December 2014.

### Related patterns

Other related patterns:

Vitoria

## 56 Goodnight

7 6 9 6 9 6 6 (cross 7, straight 9)  
9 6 6 7 6 9 6 (straight 7, cross 9)

Clubs: 7

Inventor:

Will and Rhonda...

Comments:

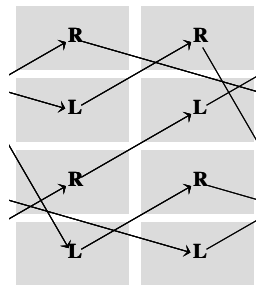
Jugglers: 2

Lisa Kollmer and Ross

haven't done this. Will did it with Lisa at the Lee house in December 2014.

Lisa says this isn't too hard, so it's a good one to try if you want to master something quickly and then go to bed.

## 57 GoodTwin



Clubs: 9

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Peter, with Stefan Brancel

haven't tried this. Will has done it with Peter, Stefan, and Rasmus.

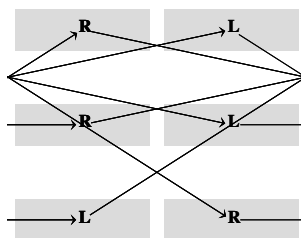
This turns into a 13 club feed, with the feeder passing 8-club singles. Will did this with Peter and Stefan at Purdue in 2014.

### Related patterns

Other related patterns:

EvilTwin, FraternalTwin, and UnpoppedPopcorn

## 58 GorillaMixed



Clubs: 12

Inventor:

Will and Rhonda...

Comments:

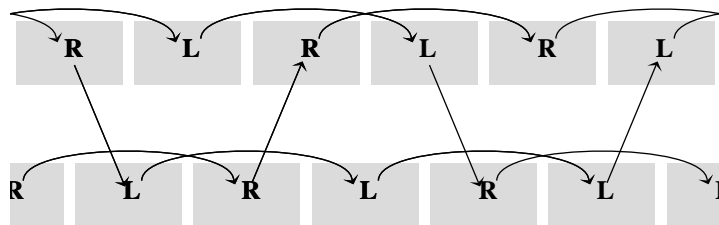
Jugglers: 3

Will

haven't tried this, but should sometime. It might work with double and single passes.

The standard 12-club gorilla feed is two unrelated 6-club patterns, which tend to drift in and out of synch. In this feed, the clubs visit all three jugglers, and it might be easier to keep the rhythm.

## 59 Heffalump



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will

can do this a bit. With practice, we should be able to run it. Will has also started to get it with Dave.

This is just 885. It feels a lot like solo 441.

### Related patterns

Add a club:

Subtract a club:

8-club PPS (996)

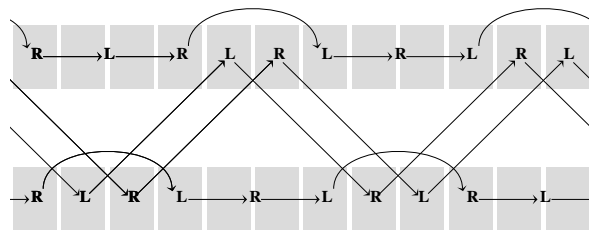
FrankZappalot (855)

We haven't tried 774, but it doesn't sound too interesting.

Other related patterns:

FrankZappaFeed

## 60 IrrationalGoat



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Staffan in Durham, in an attempt to find a mixed rhythm pattern that is not as extreme as the ChaChas.

haven't tried it together, but we each did it with Staffan and Jason with some success. It's not that bad once you figure out which clubs you're supposed to catch. This is homotopic to Svendborg1.5, with self doubles instead of self triples. That changes the rhythm and probably makes it a bit easier.

This pattern has endless names. Andy called it the Lumberjack because Rhonda and Staffan were wearing matching lumberjack shirts on its maiden flight. Staffan said he couldn't name it after himself because "it's not that great!" So he called it Irrational Goat Choking on Popcorn, and the rest of us called it the Pattern Unworthy of Staffan, the Pattern Formerly Known as Staffan's Pattern, Drunken Goat, or just the Goat.

### Related patterns

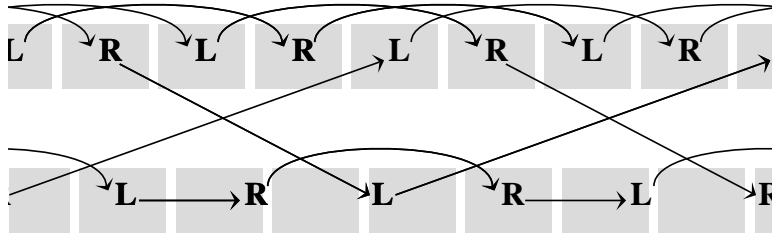
Subtract a club:

You can learn this pattern by taking out one club on one side, the club that does the self double. In that case, that side throws no self double and no selves, so that person just throws two double passes and then waits to throw the next two.

Other related patterns:

All the ChaChas

## 61 Jar



Clubs: 9  
Inventor:  
Will and Rhonda...

Jugglers: 2  
Jim and Rhonda  
can run this for a while on good days.

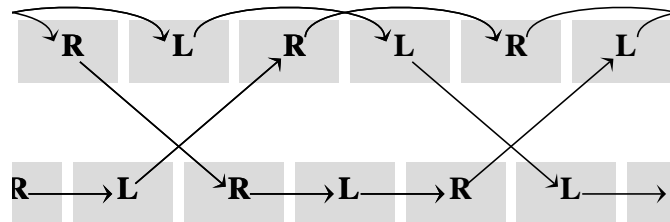
### Related patterns

Other related patterns:

[Nine3count](#), [Nine4count](#)

This becomes a 14-club feed with the feeders doing 534p.

## 62 JensThreeCount



Clubs: 7  
Inventor:  
Will and Rhonda...  
Comments:

Jugglers: 2  
Will  
have done this, and Will has done it with Jen. It's not too fast.  
This is 868677.

### Related patterns

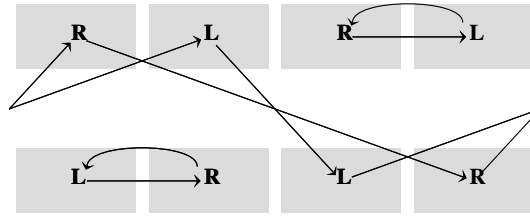
Add a club:

[Ampersand8](#) (979788)

Other related patterns:

[Bookends-86777](#), [867777](#), [FrenchCanadian7Count](#) (8686777)

## 63 JerrysJewel



Clubs: 6

Inventor:

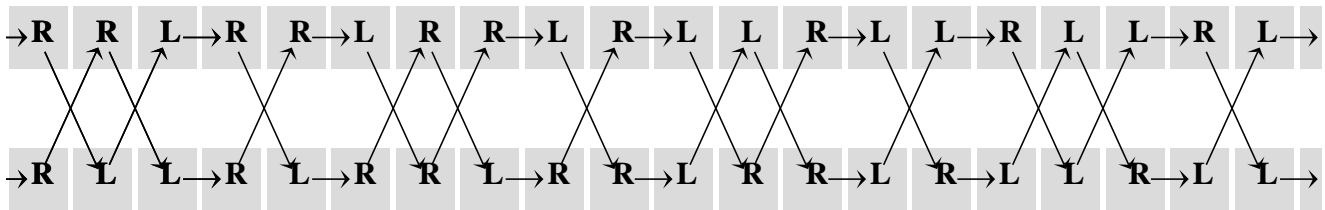
Will and Rhonda...

Jugglers: 2

Will, after Jerry Martin asked us in Québec to do something with the first six balls he ever bought in San Francisco in 1977.

do this as a side by side pattern with balls, and would like to try it with clubs sometime. It's fun!

## 64 JimsBookends



Clubs: 6

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Ross, in Ollerup

have done this, fairly successfully.

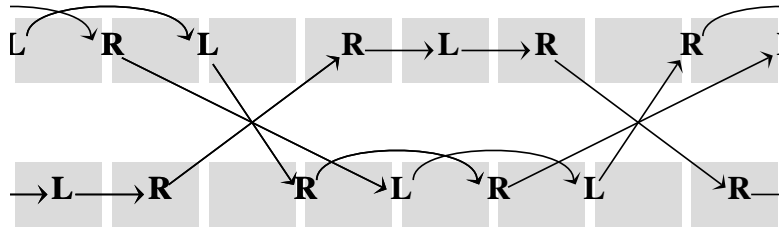
This is PPSPS with one person throwing straight and one crossing.

### Related patterns

Add a club:

There is probably a seven club version with double passes, but I haven't worked it out.

## 65 JonsWeeder



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will, from suggestions from Jon in Madrid  
may have worked on this in Madrid.

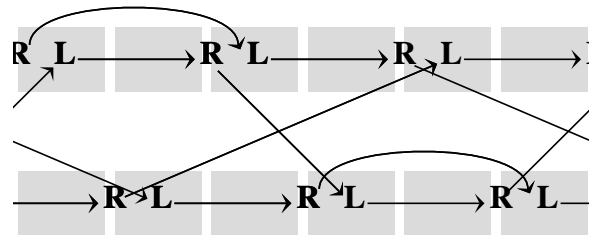
The point of this is to get passes of three different heights peaking simultaneously.  
The 44 solo could also be done as a 53.

### Related patterns

Other related patterns:

all the other Weeders

## 66 LongBeachPopcorn



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will, inspired by Nate and Adam's 13 club feed

can run this all day, with occasional syncopations (see LongBeachPopcOrrn).

See Will's article.

Luke Emery pointed out that this is just the staggered four-handed siteswap D77797, where staggered means you use the hand order AR-AL-BR-BL. This describes the timing quite accurately.

### Related patterns

Add a club:

LongBeachSuperPop

9 club 2-count

Subtract a club:

LongBeachWimpyPop, i.e. 7 club traditional 6-count popcorn

5 3 (4) 3 (or (6) 3 3 3) vs. 3 3 3 (4), which might be a good way to begin learning right-handed double selves.

Other related patterns:

Lopsided Popcorn

WaR

Right-handed 8 club PPS (9 club 2-count with a hole)

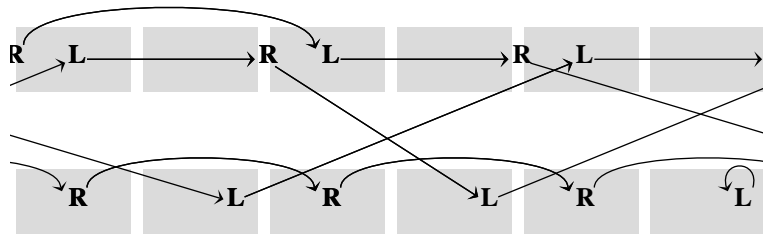
12 club feed (feedees doing 4-count triples, or single passes with right-handed double selves)

13 club feed

LongBeachCycle

LongBeachSpiderweb

## 67 LongBeachPopcOrrn



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

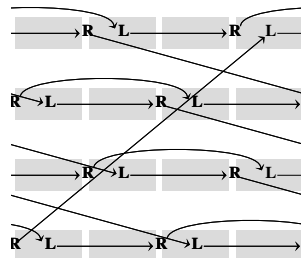
Jugglers: 2

Isaac Orr

haven't worked on these enough.

You can switch in and out of this from the regular pattern, (6) 3 5 3 (4) 3, without disrupting your partner. Or just do the first two throws, 4 (5) instead of (6) 3. Other possible syncopations include replacing 5 3 with 4 4 or replacing (4) 3 with 4 (3). You can also replace (6) 3 5 3 (4) 3 with (6) 3 (6) 3 3 3.

## 68 LongBeachCycle



Clubs: 17

Inventor:

Will and Rhonda...

Comments:

Jugglers: 4

Will

have never tried this.

This can be done in a square passing left (four collisions), a square passing right (no collisions), a Y (one collision), or two facing two (two collisions).

### Related patterns

Other related patterns:

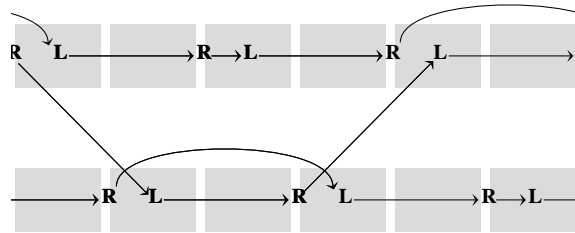
LongBeachPopcorn

LongBeachSpiderweb





## 71 LongBeachWimpyPop



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Luke Emery, but generations of IJA competitors have done it.  
have done this.

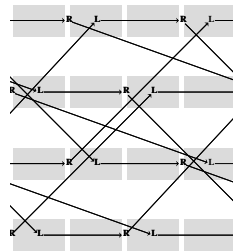
In Luke's staggered four-handed notation, this is 975777. This is just the standard seven-club popcorn with all the throws brought down by one spin. Ideally, then, the right hand would throw flats to the left for the 5's.

### Related patterns

Add a club:

LongBeachPopcorn

## 72 LongBeachSpiderweb



Clubs: 17

Inventor:

Will and Rhonda...

Comments:

Jugglers: 4

Will

have never tried this.

Must be done in a square since each person is either passing or receiving from every other person.

### Related patterns

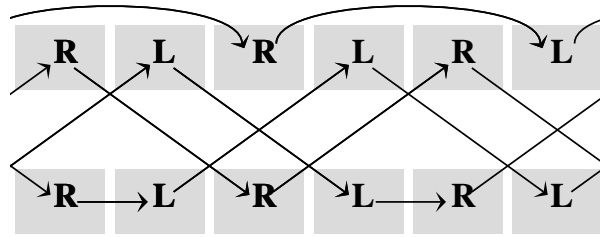
Other related patterns:

LongBeachPopcorn

LongBeachCycle

Spiderweb

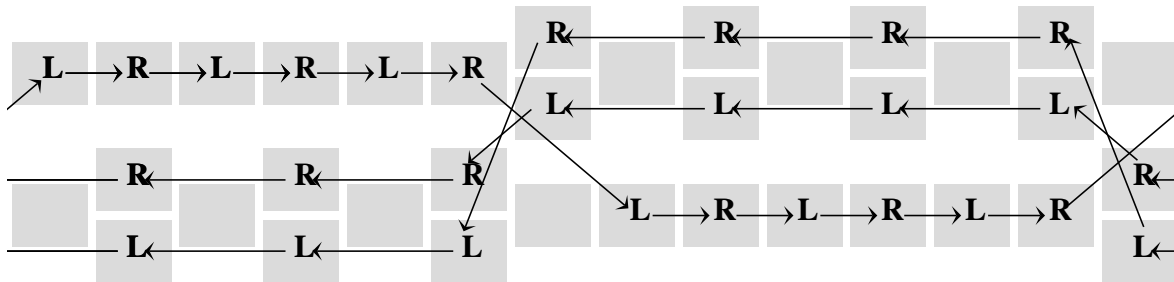
### 73 LopsidedPPS8



Clubs: 8  
 Inventor:  
 Will and Rhonda...

Jugglers: 2  
 Will  
 have had little success with this.

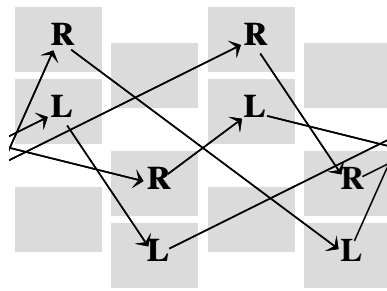
### 74 LukasHandoff



Clubs: 3  
 Inventor:  
 Will and Rhonda...  
 Comments:

Jugglers: 2  
 Lukas from Freiburg, in Ollerup  
 haven't tried this, but it should be doable.  
 The high throw should be a really high triple. It's fun to do the low throws as zero spin chops, as vertical flats, treblas, shoulder throws, or whatever. You can even stand back to back and hand them back by your hips or over the shoulders (do a half flip to set them up).

## 75 LukeEmerySimul



Clubs: 8  
Inventor:  
Will and Rhonda...

Jugglers: 2  
Luke, in discussion on the Passout list have never tried this. Will has tried this with Mandy in Millstreet, with Berengar in Alby, and with Rasmus in Someren. I'm about ready to give up on it.

### Related patterns

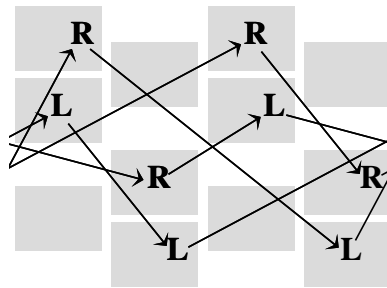
Subtract a club:

You can have just one person throwing simul triple-singles while the other throws single-singles, and lots of other combinations.

Other related patterns:

LukeEmerySimulDoubles

## 76 LukeEmerySimulDoubles



Clubs: 8  
Inventor:  
Will and Rhonda...  
Comments:

Jugglers: 2  
Will, in an attempt to make LukeEmerySimul easier have never tried this.  
This gallops RLLR, which might make it interesting, or extremely hard.

### Related patterns

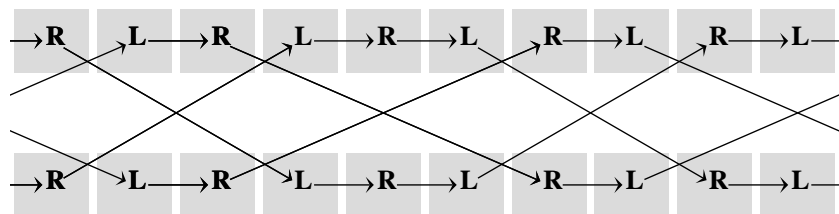
Subtract a club:

probably the same possibilities as LukeEmerySimul

Other related patterns:

LukeEmerySimul

## 77 LukesVolleyclub



Clubs: 8

Jugglers: 2

Inventor:

Luke

Will and Rhonda...

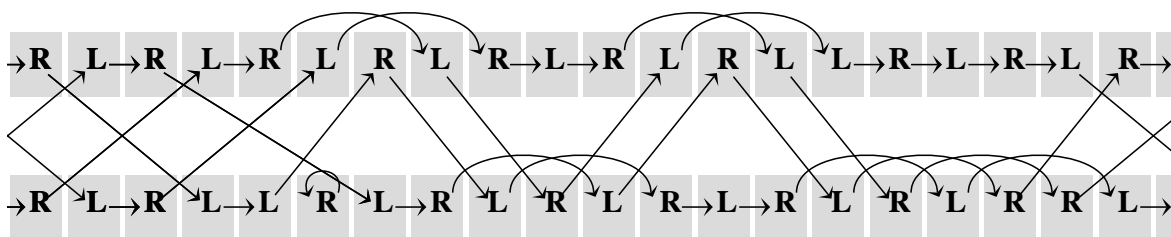
have never tried this. Luke says it's quick, but not too hard.

### Related patterns

Other related patterns:

Volleyclub

## 78 MarchingToSvendborg



Clubs: 8

Jugglers: 2

Inventor:

Rhonda, as a transition between 2-count and Svendborg

Will and Rhonda...

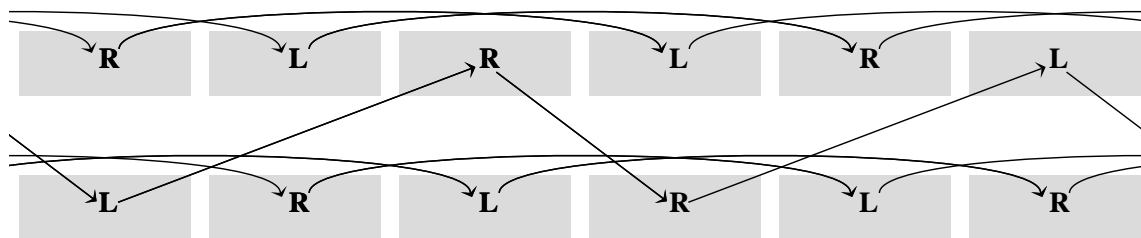
haven't quite done this yet.

### Related patterns

Other related patterns:

SvendborgPopcorn, of course

## 79 Nine3count



Clubs: 9

Jugglers: 2

Inventor:

Rhonda, en route to Lexington in 2008.

Will and Rhonda...

have never tried this.

### Related patterns

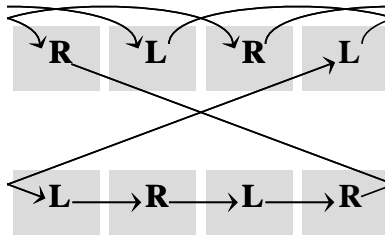
Subtract a club:

Will's warmup pattern is  $\begin{pmatrix} (3) & 5 & 5 \\ 4 & 4 & (3) \end{pmatrix}$ , with the 5s as doubles and the 4s as singles.

Other related patterns:

Nine4count Jar

## 80 Nine4count



Clubs: 9

Inventor:

Will and Rhonda...

Jugglers: 2

Will

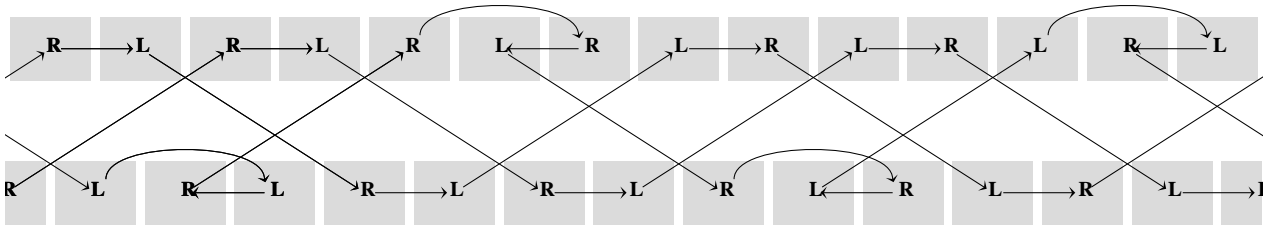
tried this in Alby and got it a bit.

### Related patterns

Other related patterns:

[Nine3count](#), [Jar](#)

## 81 NotWhy7Base



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

can't remember, but it's from Passout in Lublin.

have never tried this.

This is 6899629 (local: 6969892).

### Related patterns

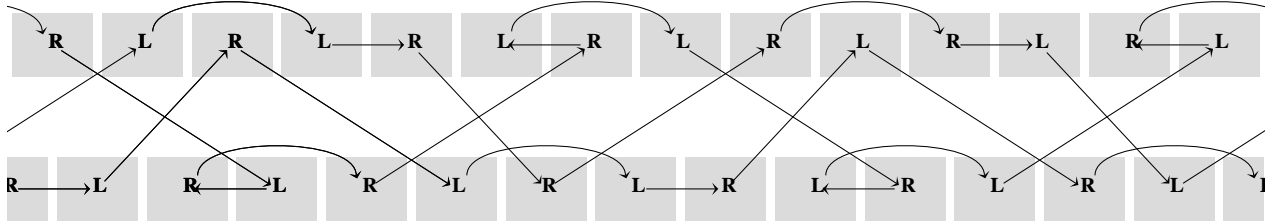
Subtract a club:

Other related patterns:

[WhyNot](#)

[WhyNot7Base](#), [WhyNot7-1](#), [WhyNot7-2](#), [NotWhy7-1](#), [NotWhy7-2](#)

## 82 NotWhy7-1



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

can't remember, but it's from Passout in Lublin.

have never tried this.

This is 9788926 (local: 9896782).

### Related patterns

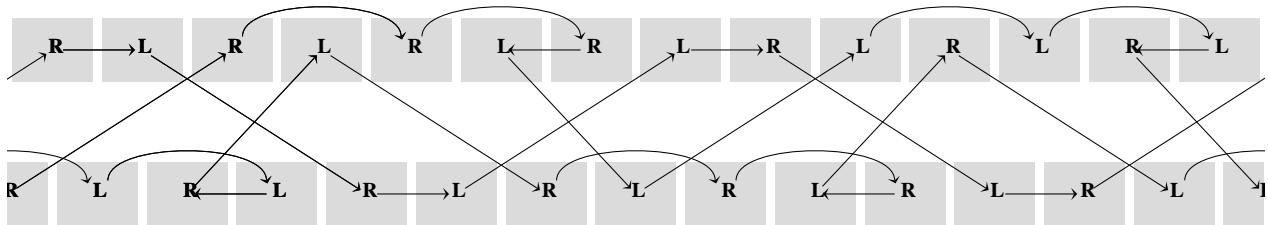
Subtract a club:

Other related patterns:

WhyNot

[WhyNot7Base](#), [WhyNot7-1](#), [WhyNot7-2](#), [NotWhy7Base](#), [NotWhy7-2](#)

## 83 NotWhy7-2



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

can't remember, but it's from Passout in Lublin.

have never tried this.

This is 6897829 (local: 6989872).

### Related patterns

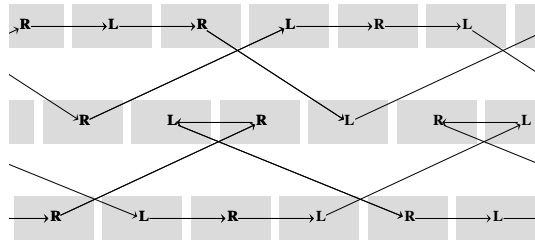
Subtract a club:

Other related patterns:

WhyNot

[WhyNot7Base](#), [WhyNot7-1](#), [WhyNot7-2](#), [NotWhy7Base](#), [NotWhy7-1](#)

## 84 OhneMich



Clubs: 10

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

Christian "Radieschen" Rimpau

did this in Lublin in 2017 with Staffan, under Radieschen's tutelage.

Radieschen says this is an old pattern from Munich, where a juggler was invited to join in and said they could do it "ohne mich" (without me). It's quite fun, challenging but not impossible. Each feedee is doing Techno, the top line throwing straight singles and the bottom throwing crossing singles. The feeder is throwing outside-outside-zip-inside-inside-zip, all floaty singles, all straights. The six-handed siteswap is dd99eb939, so the feeder (beats 2 and 5) does de3, the straight feedee (beats 6 and 3) does 9b9, and the crossing feedee (beats 1 and 4) does d99.

### Related patterns

Subtract a club:

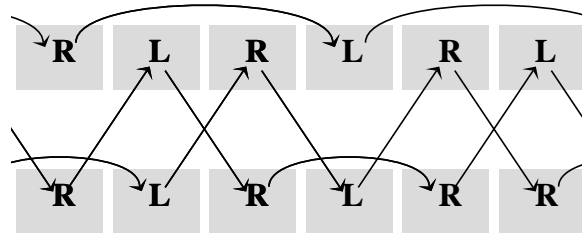
Other related patterns:

Martin's Madness, which has a similar pattern for the feeder.

Radieschen suggests d899ab939 as a 9-club feed, with the 8 as a zap.

Techno

## 85 Ollerand



Clubs: 7

Inventor:

Will and Rhonda...

Jugglers: 2

Will

can do this for a bit, with lots of staggering around.

### Related patterns

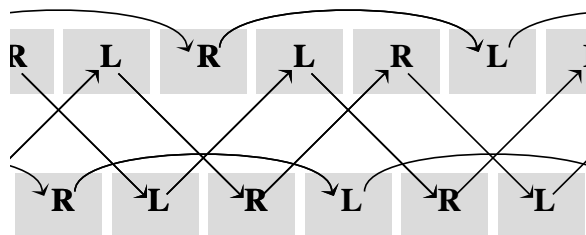
Add a club:

Other related patterns:

OllerupPopcorn-10-7-7

Ampersand

## 86 OllerupPopcorn-10-7-7



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will

have never succeeded at this. Will did it with Caspar in Pasadena on Christmas Eve, 2012.

Each of the  $\binom{4}{3}$  groups of three hands has exactly two clubs cycling through it. (See [ZapOpusOne](#). And John Spinoso noticed that 552 has the property that each of the  $\binom{4}{3}$  groups of three hands has exactly one club cycling through it.

### Related patterns

Subtract a club:

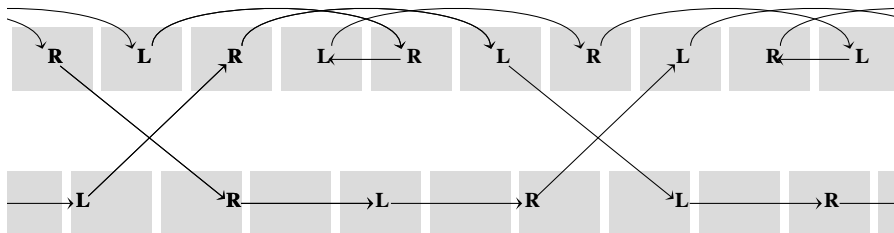
Ollerand

966 (7 club 3-count)

7 club 1-count

10 7 7 4 7 7, which might be a good warmup for this.

## 87 OneUnderPar



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Martin, in Someren

can run this for a bit.

This is just Par against standard six club three-count; the timing works perfectly. It's a great warmup for Par.

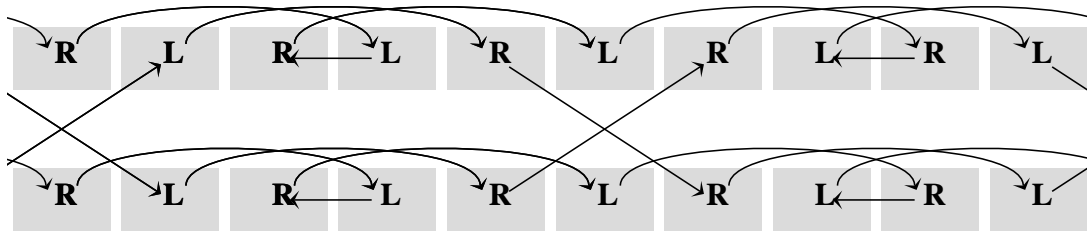
### Related patterns

Add a club:

Par



## 88 Par



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Peter and Rhonda, in Lexington in 2008.

worked on this with lots of people in Durham. The record is around four or five 5551's each.

To make this right-handed, do two passes instead of one, i.e. replace 5 5 5 1 4p with 5 5 5 1 4p 4p.

### Related patterns

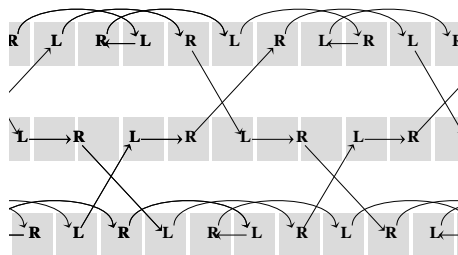
Subtract a club:

Sympar, OneUnderPar, 55513p. All of these are good warmups for Par. (Do 55513p left-handed.)

Other related patterns:

55515p3

## 89 ParFeed



Clubs: 11

Inventor:

Will and Rhonda...

Jugglers: 3

Will

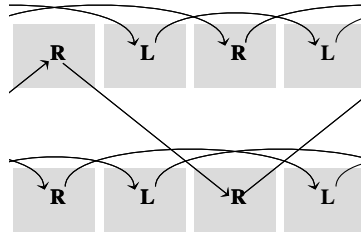
haven't tried this. It might be pretty hard.

### Related patterns

Other related patterns:

Par, Sympar

## 90 Plantain



Clubs: 9

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will, as a shorter version of Stefan and Ben's Banana

are working on this; it actually seems doable, but we're not there yet.

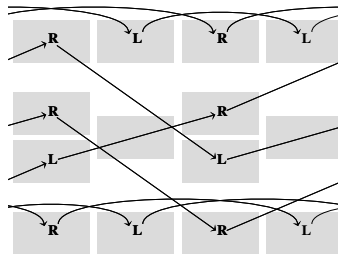
This is 5 5 4p 4. Make the 5's doubles and the 4's singles.

### Related patterns

Other related patterns:

Banana, PlantainFeed

## 91 PlantainFeed



Clubs: 13

Inventor:

Will and Rhonda...

Jugglers: 3

Will

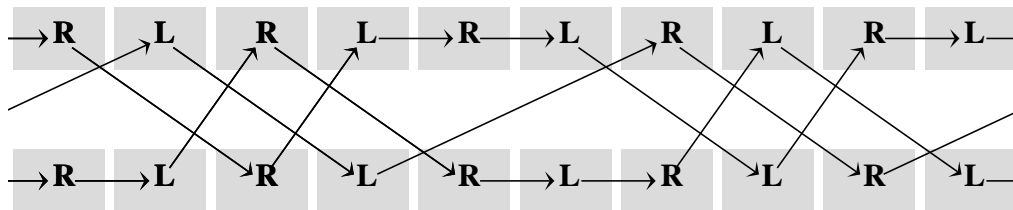
haven't tried this. Gotta learn Plantain first.

### Related patterns

Other related patterns:

Banana, Plantain

## 92 PPSS



Clubs: 7

Inventor:

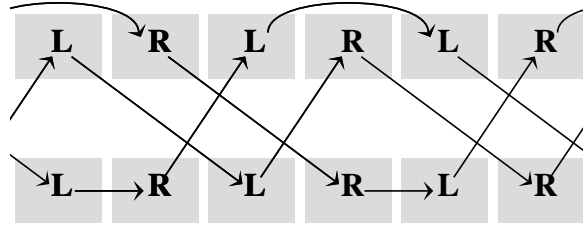
Will and Rhonda...

Jugglers: 2

Jon and Mandy, at a workshop in Ollerup.

haven't tried this, but it's feasible.

## 93 PPS444333Crossing



Clubs: 7

Inventor:

Will and Rhonda...

Jugglers: 2

Will

did this in January 2007. It's amusing for a little while.

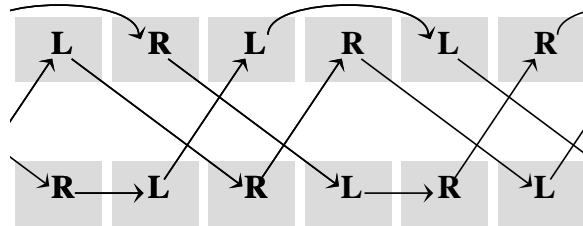
### Related patterns

Other related patterns:

Ampersand

PPS444333Straight

## 94 PPS444333Straight



Clubs: 7

Inventor:

Will and Rhonda...

Jugglers: 2

Will

did this in January 2007. It's amusing for a little while.

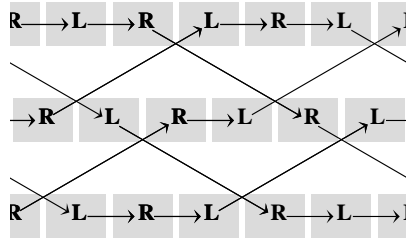
### Related patterns

Other related patterns:

Ampersand

PPS444333Crossing

## 95 PPSfeed



Clubs: 11

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

This is folklore.

can probably run this.

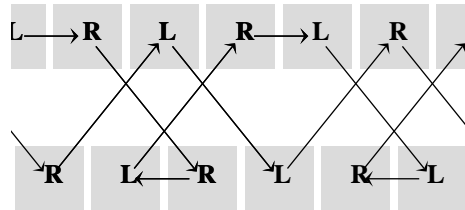
fun for the feeder

### Related patterns

Other related patterns:

[7club3count](#), [FrenchFeed](#)

## 96 Programmer1



Clubs: 6

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Doreen and Staffan, in San Diego

can probably run this.

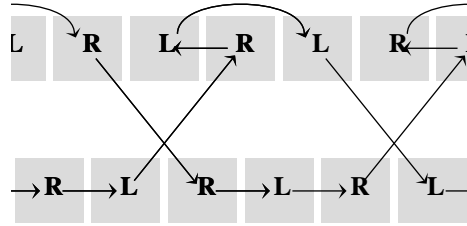
The point of this one is that either side can “program” the other one into switching sides. To program the switch in one direction, do 3.5p 3.5p 1 [3] 3.5p 3.5p 3; in the other, do 3.5p 3.5p 3 [3.5p 3.5p] 3.5p 3.5p 1. (Note that the union of the throws in the two transitions is the same as the set of throws of the juggler doing more clubs, a common feature of programming patterns.)

### Related patterns

Other related patterns:

[Programmer2](#), [WhyRei](#)

## 97 Programmer2



Clubs: 6

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Doreen and Staffan, in San Diego  
have never tried this.

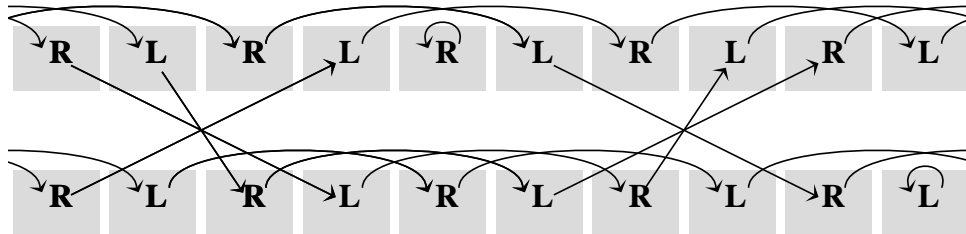
The point of this one is that either side can “program” the other one into switching sides. To program the switch in one direction, do 3.5p 4 1 [3] 3.5p 3 3; in the other, do 3.5p 3 3 [3.5p 3] 3.5p 4 1. (Note that the union of the throws in the two transitions is the same as the set of throws of the juggler doing more clubs, a common feature of programming patterns.)

### Related patterns

Other related patterns:

[Programmer1](#), [WhyRei](#)

## 98 Raw



Clubs: 9

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Rhonda or Will

have never tried this.

This may be way too hard unless we can do the 5's on doubles, which may not work because of the 3's. It might be slightly easier if we switch the hands of the bottom person so he leads with the right hand and the passes are diagonal.

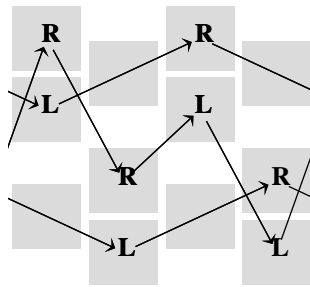
### Related patterns

Other related patterns:

[Weeder](#)



## 102 ScratchYourNose



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Luke Emery

did this in the UVA Cage in August 2013.

This is just like Scratch Your Head, but with self doubles that cross instead of going straight up. It shouldn't be as hard as it is.

### Related patterns

Add a club:

Like Scratch Your Head, you could in theory make the passes doubles and add more clubs.

Other related patterns:

ScratchYourBrain

## 103 Self centered

centered.eps Local: 7 6 7 8 7 2 7 8 2

Clubs: 6

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

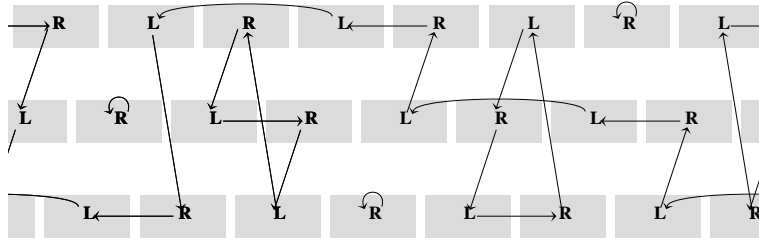
Christian from Zurich

haven't tried this. Will did it with Christian in Someren.

The point of this one is that the passes are easy, but the self sequence is tricky, so you think about the selves. A (crossing passes) starts with four clubs at the beginning of the sequence. B (straight passes) starts with 2 clubs and does 7 8 2 7 6 7 8 7 2 ...

You can color code this by having the clubs A throws in order be white, blue, red, red, and the clubs B throws be white, blue. Then the white clubs do the passes and zips, the red does the heffs for A, and the blue does the heffs for B.

## 104 Shamrock5



Clubs: 5

Inventor:

Will and Rhonda...

Jugglers: 3

Take That Out, a.k.a. Florian, Jochen, and Jochen

have done this, but Will mostly does it with Athena and Dave.

### Related patterns

Add a club:

Other related patterns:

#### Shamrock6

Assume Dave is starting with 3 clubs, Athena is to his left, and Will is to his right. Then the hand order is DR, WL, AR, DL, WR, AL. The global siteswap for the 5-club version is 50673955, and the local one is 57503569. For the 6-club version, replace the 0's by 8's. Here is what Dave's hands do:

575 Zap out the first three clubs.

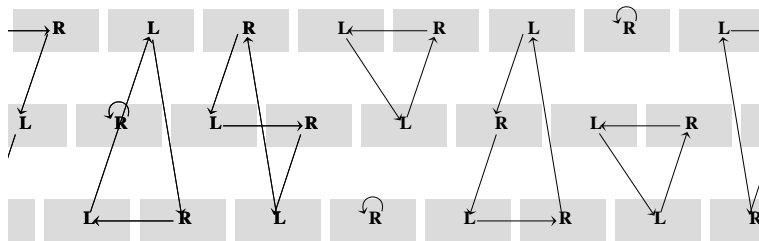
8 Lob a club (caught from Will's left) left-handed to Athena's left.

35 Hand the club that Will just handed him over from his right to his left, and then hand it to Athena's right.

6 Just hold a club in his right hand.

9 Throw a self from his left to his right.

## 105 Shamrock6



Clubs: 6

Inventor:

Will and Rhonda...

Jugglers: 3

Take That Out, a.k.a. Florian, Jochen, and Jochen

have done this, but Will mostly does it with Athena and Dave.

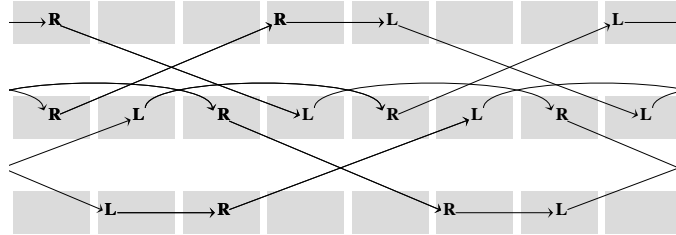
### Related patterns

Subtract a club:

#### Shamrock5



## 106 ShootingGallery



Clubs: 11

Inventor:

Will and Rhonda...

Comments:

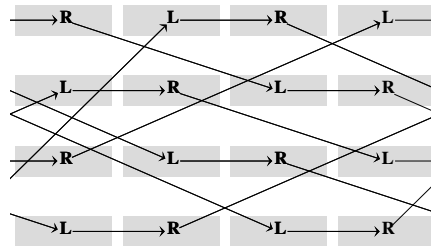
Jugglers: 3

Will

have tried this with Jim, not very successfully.

This is a righty-lefty version of 5vs3vs3, and you can start it directly from that. Either the feeder starts throwing to the feedees' right hands, or the feedees just move over.

## 107 Spiderweb



Clubs: 15

Inventor:

Will and Rhonda...

Comments:

Jugglers: 4

Madison jugglers

can run this with strong right-handed passers.

We should try this sometime passing singles and doubles instead of doubles and triples.

### Related patterns

Add a club:

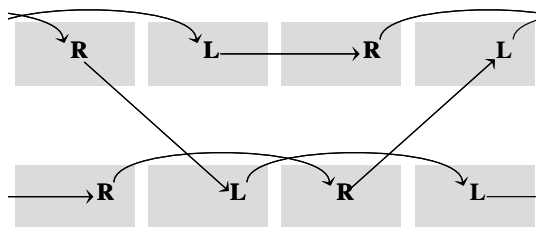
[LongBeachSpiderweb](#) (17 clubs)

[Tarantulaweb](#) (16 to 18 clubs)

Subtract a club:

Warmup versions of this pattern, omitting some of the triples.

## 108 Steves4count



Clubs: 7

Inventor:

Will and Rhonda...

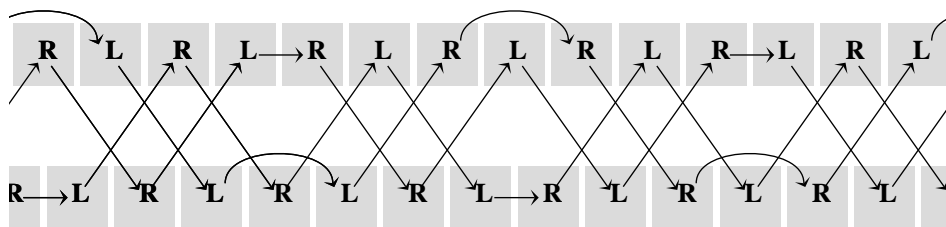
Comments:

Jugglers: 2

Steve Healy and Rhonda  
can run this.

If you do the 4's as singles, then you have to do the 3's a little fast. It would probably work better to do the 4's as doubles, but it's fun to do the fast version.

## 109 SuperNovaScotia



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Doreen and Daniel, in Durham  
have not done this.

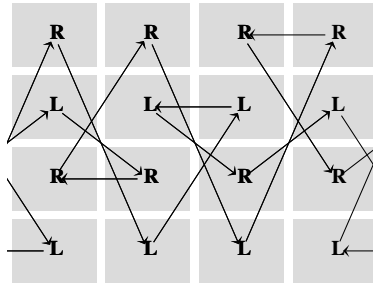
This is 7777786. The same clubs are passed every time, so this could be color-coded.

### Related patterns

Other related patterns:

[DDD1](#), [DDD2](#), [FrenchCanadian7Count](#)

## 110 Squirrel6



Clubs: 6

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Scott Morrison

can do this.

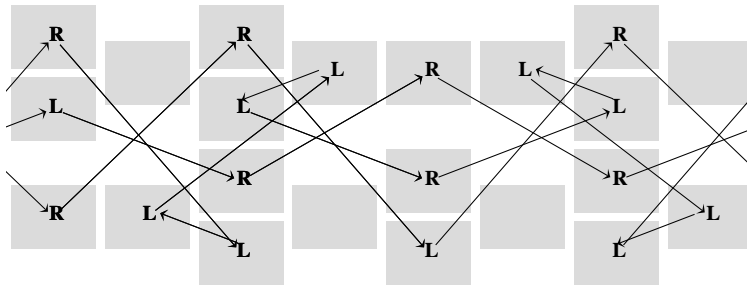
In every beat, 3 clubs are being passed. I don't know of any other pattern with that many clubs passed at once.

### Related patterns

Add a club:

Squirrel7

## 111 Squirrel7



Clubs: 7

Inventor:

Will and Rhonda...

Jugglers: 2

Peter, in Jamul in 2013.

can do this.

### Related patterns

Add a club:

Subtract a club:

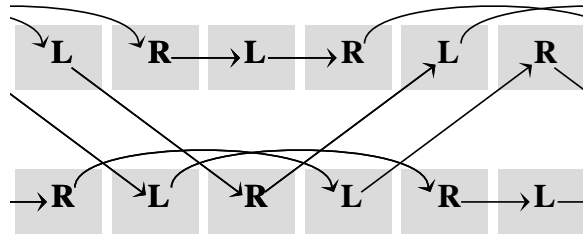
Other related patterns:

There is also a 9-club version with double spins, but Will hasn't tried it.

Squirrel6

This has a cha-cha rhythm, so it could be considered in that class.

## 112 SvendborgPopcorn



Clubs: 8

Inventor:

Will and Rhonda...

Jugglers: 2

Mandy and Jochen Pfeiffer, but they deny memory of it can do this for a bit on a good day.

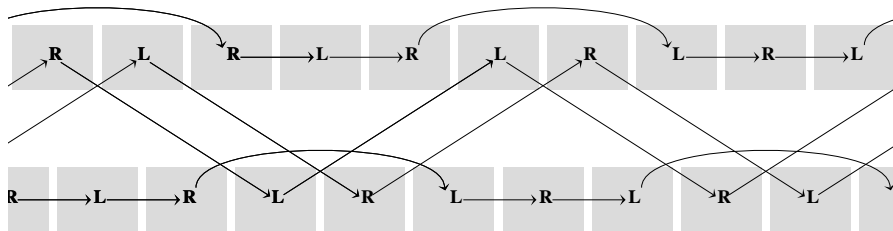
### Related patterns

Other related patterns:

MarchingToSvendborg

You can also do 5 (4) (4) 3, right-handed vs. left-handed with straight passes, or both right-handed with crossing passes. (Will and Rhonda ran the right-handed version pretty well in Durham.) Or you can add  $n$  extra triples and  $n$  extra singles.

## 113 SvendborgOnePointFive



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Doreen, but she says it's an old one.

have never tried this. Doreen and Will got good runs of it in Isla Vista.

This is homotopic to IrrationalGoat, with self triples instead of self doubles. That changes the rhythm and probably makes it a bit harder.

This is also the symmetrized version of the compressed SvendborgPopcorn.

To start it, Will holds five clubs and throws two straight doubles, right hand first.

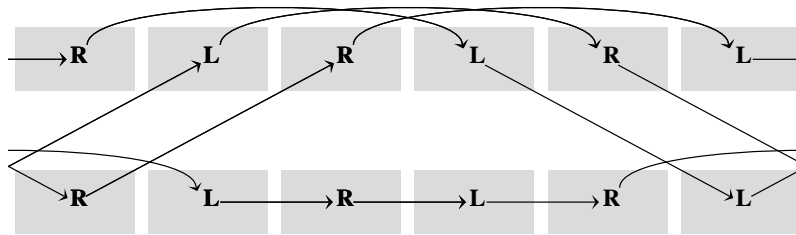
Rhonda holds three clubs, waits, and starts with a right self triple.

### Related patterns

Other related patterns:

SvendborgPopcorn

## 114 SvendborgLopsided



Clubs: 8

Inventor:

Will and Rhonda...

Jugglers: 2

Luke Emery

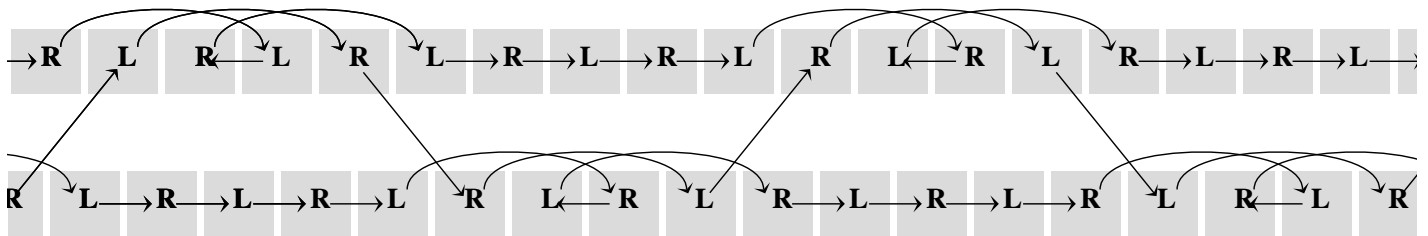
have never tried this. Peter and Luke do it.

### Related patterns

Other related patterns:

All the other Svendborgs.

## 115 Sympar



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will

can do this pretty well now.

Do the 3's really fast.

### Related patterns

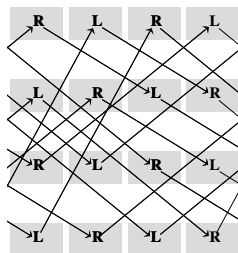
Subtract a club:

Par

Other related patterns:

55513p, the right-handed version

## 116 Tarantulaweb



Clubs: 16 to 18  
 Inventor:  
 Will and Rhonda...

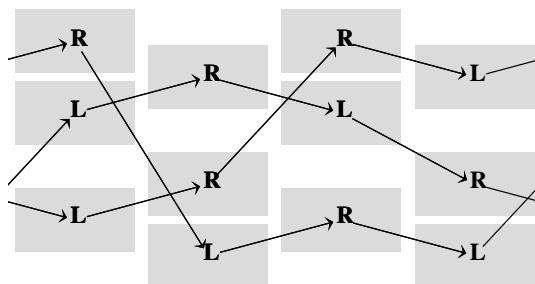
Jugglers: 4  
 Luke Emery  
 yeah, right. I would like to see the jugglers who can do this!

### Related patterns

Subtract a club:

This is the Spiderweb with hohos added after every throw. (Right doubles followed by left doubles to the same person, right triples followed by left triples to the same person.) You could make it a 16 or 17 club pattern by only adding some of the hohos.

## 117 Techno



Clubs: 7  
 Inventor:  
 Will and Rhonda...  
 Comments:

Jugglers: 2  
 folklore, but I got it from Jon.  
 can run this.  
 This is just 7 club 3-count on singles. It's fun with tricks like chops.

### Related patterns

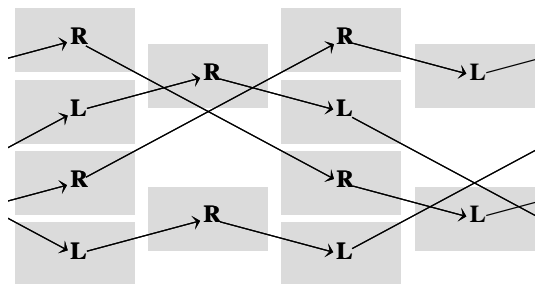
Add a club:

Other related patterns:

#### Techno8

For an extra challenge (thanks Rasmus!), replace the single self throws with a three club box throw, that is, replace  $(4x,2)$  with  $(2x,4)$ . For bonus points, while doing this, also switch up the pass-self throws, that is, change a right straight pass and left crossing single self to a left crossing pass and right single heff self. Will did the former at Lee with Rasmus in 2015, but hasn't yet tried the latter.

## 118 Techno8



Clubs: 8  
 Inventor:  
 Will and Rhonda...

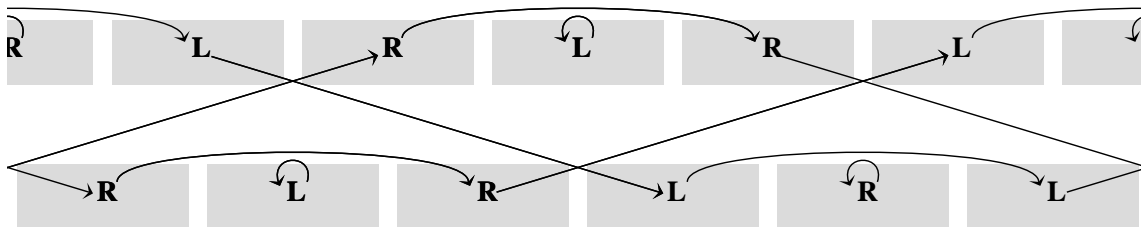
Jugglers: 2  
 Aidan and Rasmus, but I got it from Doreen.  
 tried this and got it a bit. It's challenging but fun.

### Related patterns

Subtract a club:

Techno

## 119 Towers



Clubs: 7  
 Inventor:  
 Will and Rhonda...

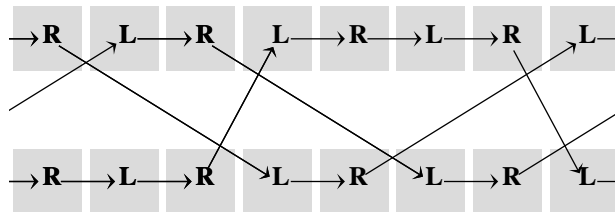
Jugglers: 2  
 Rasmus  
 have never tried this. Will did it with Rasmus in Durham.

### Related patterns

Other related patterns:

This is 948, which is homotopic to Scratch Your Head. To see this, take out the 4's and then make the left and right hand throws simultaneous. Rasmus likes to do it with the 8's as singles, which makes it quite challenging. He said it can be done against Techno. When he did it with doubles, it worked well with Techno, but when he did it with singles, the other guy complained.

120 TTSeS



Clubs: 7  
 Inventor:  
 Will and Rhonda...  
 Comments:

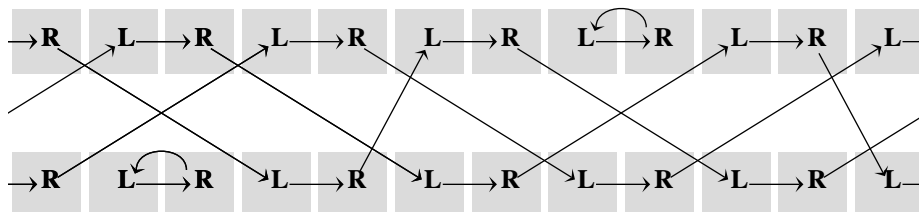
Jugglers: 2  
 lost in the mists of time.  
 haven't tried this, but could probably run it.  
 Each person's right hand does triple triple self single.

Related patterns

Other related patterns:

TTTTHS

121 TTTTHS



Clubs: 7  
 Inventor:  
 Will and Rhonda...  
 Comments:

Jugglers: 2  
 lost in the mists of time.  
 haven't tried this, but could probably run it.  
 Each person's right hand does triple triple triple triple handacross single. In fact, the handacross is superfluous and you can do a flourish instead.

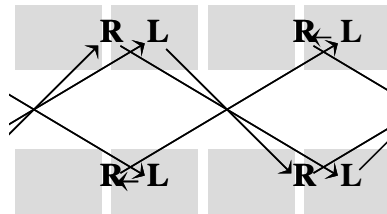
Related patterns

Other related patterns:

TTSeS



## 122 TurboWeeder



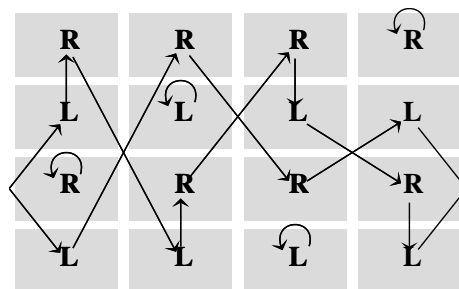
Clubs: 7  
 Inventor:  
 Will and Rhonda...

Jugglers: 2  
 Will  
 can run this.

### Related patterns

Other related patterns: all the other Weeders

## 123 TucsonTwostep



Clubs: 6  
 Inventor:  
 Will and Rhonda...  
 Comments:

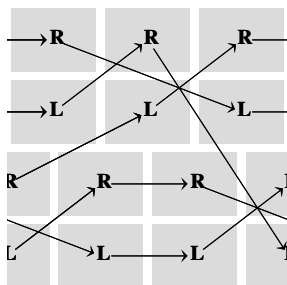
Jugglers: 2  
 Rhonda  
 can do this. Rhonda learned it with Dave in Tucson.  
 One of the points of this pattern is that every pass is a collision. But it still works if you choose lanes for the straights and pass the diagonals wide.

### Related patterns

Add a club:

WillMakesMyDreamsComeTrue. You can mix and match these patterns to get a seven club pattern, which we did successfully in Isla Vista in 2010.

## 124 UnpoppedPopcorn



Clubs: 9  
 Inventor:  
 Will and Rhonda...  
 Comments:

Jugglers: 2  
 Peter, with Stefan Brancel  
 haven't tried this, but we each did it with Peter in Jamul.  
 This is really fun, and easier than you would expect a nine club popcorn to be if you can do five club triple singles. It's essentially the old triple-self, double-pass, single-self sequence.

### Related patterns

Other related patterns:

[GoodTwin](#), [EvilTwin](#), and [FraternalTwin](#)

## 125 Vitoria

7 7 6 6 7 8 8 (straight 7, cross 9)  
 7 8 8 7 7 6 6 (cross 7, straight 9)

Clubs: 7  
 Inventor:  
 Will and Rhonda...  
 Comments:

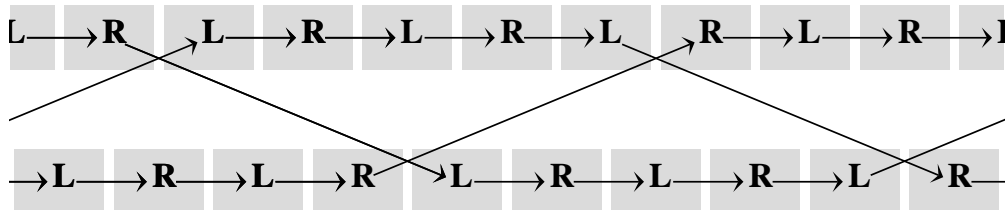
Jugglers: 2  
 Lisa Kollmer  
 haven't done this. Will did it with Lisa at the Lee house in December 2014.  
 This color codes nicely: Three clubs do all passes, and each person keeps two clubs.

### Related patterns

Other related patterns:

[Gasteiz](#)

## 126 Volleyclub



Clubs: 7  
 Inventor:  
 Will and Rhonda...  
 Comments:

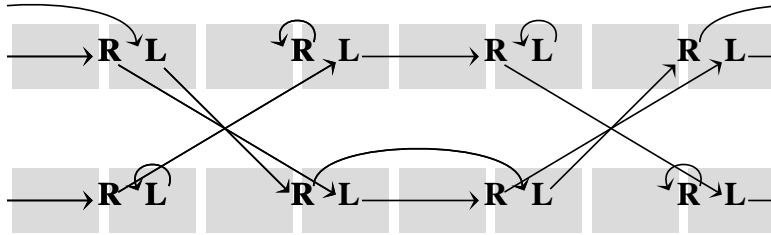
Jugglers: 2  
 Jon, in his workshop in Alby  
 have never tried this. Will and Ross got it for a bit in Alby.  
 This is 11 6 6 6 6, the symmetric version of 4 count triples.

### Related patterns

Add a club:

In theory, you could also do 11 11 6 6 6, or 11 6 11 6 6. The former is locally similar to Luke's Volleyclub, but it has one person throw the two high passes and then the other throw two, whereas with Luke's pattern, they throw both of them simultaneously. The latter is symmetrized Chocolate Bar.

## 127 Weeder



Clubs: 7  
Inventor:  
Will and Rhonda...

Jugglers: 2  
Will watering down a pattern by Rhonda (hence the name WDR)  
can run this.

### Related patterns

Add a club:

Weeder8

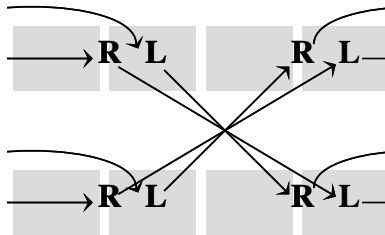
Subtract a club:

Weeder6

Other related patterns:

all the other Weeders

## 128 Weeder8



Clubs: 8  
Inventor:  
Will and Rhonda...

Jugglers: 2  
Will  
can probably run this.

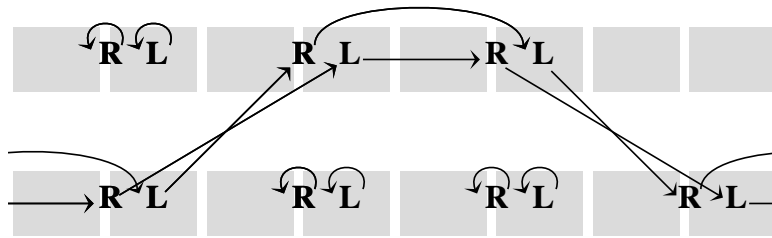
### Related patterns

Other related patterns:

all the other Weeders

This is just two people doing double singles and passing two out of four.

129 Weeder6

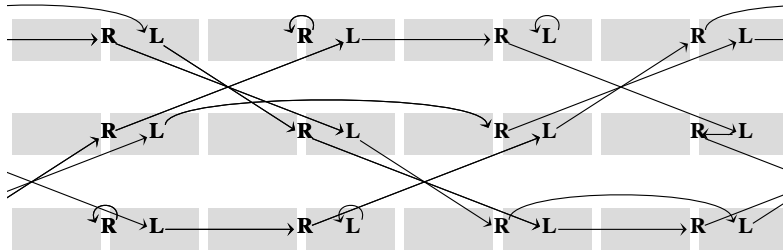


Clubs: 6  
 Inventor: Will and Rhonda...  
 Jugglers: 2  
 Will could probably run this.

Related patterns

Other related patterns: all the other Weeders

130 WeederFeeder

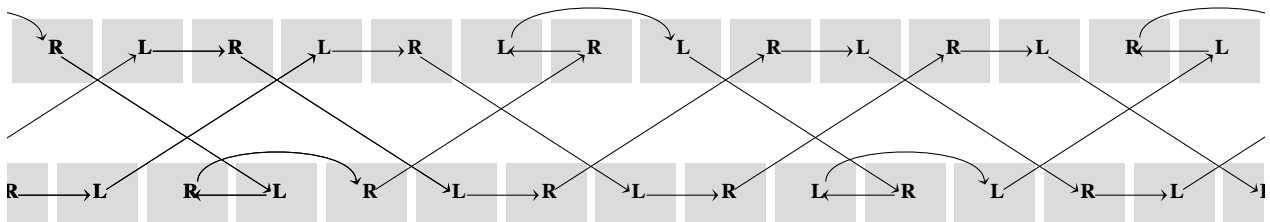


Clubs: 11  
 Inventor: Will and Rhonda...  
 Jugglers: 3  
 Will may never have tried this.

Related patterns

Other related patterns: all the other Weeders

131 WhyNot7Base



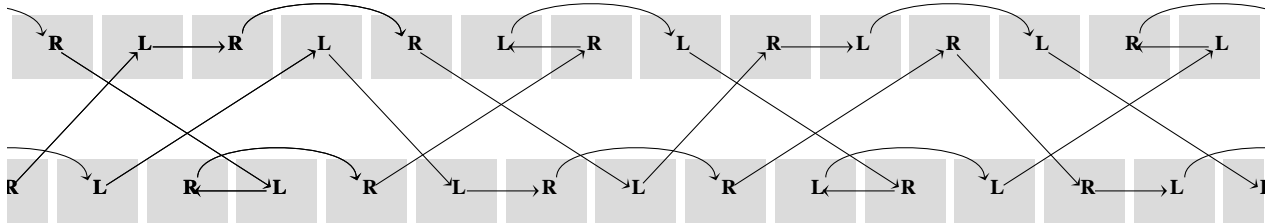
Clubs: 7  
 Inventor: Will and Rhonda...  
 Comments: Jugglers: 2  
 can't remember, but it's from Passout in Lublin.  
 did this at the Capitol in August 2013.  
 This is 9968926 (local: 9696982).

Related patterns

Subtract a club: WhyNot

Other related patterns: [WhyNot7-1](#), [WhyNot7-2](#), [NotWhy7Base](#), [NotWhy7-1](#), [NotWhy7-2](#)

## 132 WhyNot7-1



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

can't remember, but it's from Passout in Lublin.

worked on this at the Capitol in August 2013 but didn't master it yet.

This is 9968827 (local: 9687982).

### Related patterns

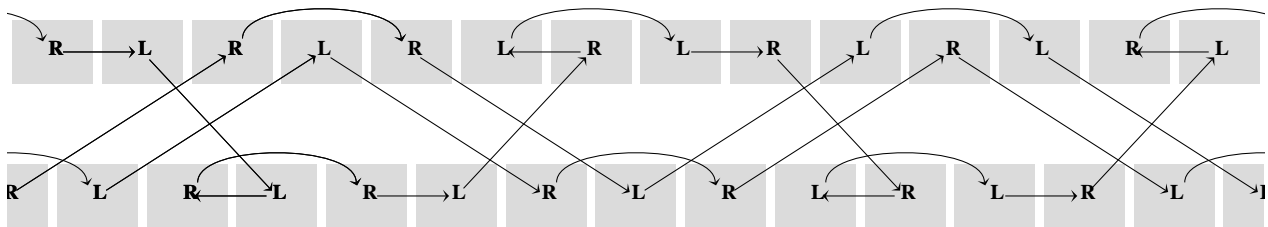
Subtract a club:

Other related patterns:

WhyNot

[WhyNot7Base](#), [WhyNot7-2](#), [NotWhy7Base](#), [NotWhy7-1](#), [NotWhy7-2](#)

## 133 WhyNot7-2



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

can't remember, but it's from Passout in Lublin.

have never tried this.

This is 6978829 (local: 6789982).

### Related patterns

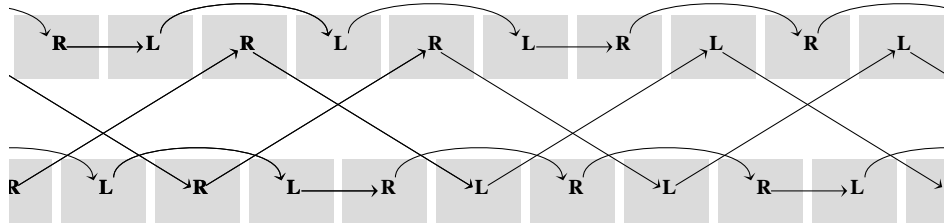
Subtract a club:

Other related patterns:

WhyNot

[WhyNot7Base](#), [WhyNot7-1](#), [NotWhy7Base](#), [NotWhy7-1](#), [NotWhy7-2](#)

### 134 WhyNot8-1



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

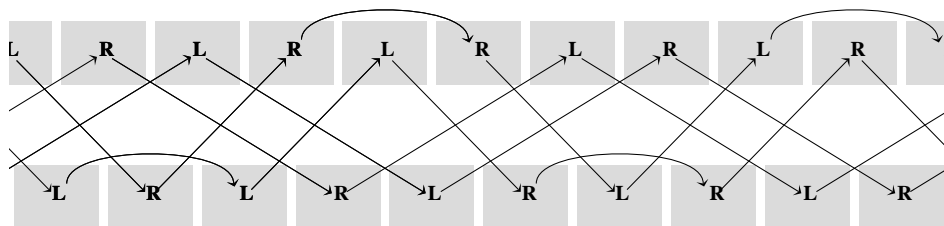
Jugglers: 2

Will, trying and failing to satisfy Rhonda and Steve Healy's demands for an 8-club Why Not.

have never tried this.

This is 99688.

### 135 WhyNot8-2



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

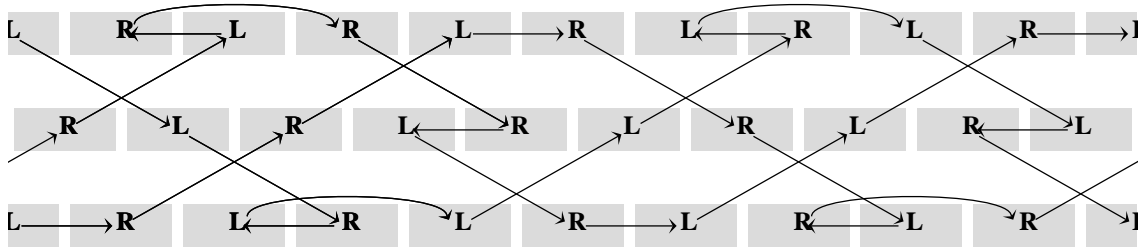
Jugglers: 2

Will, trying and failing to satisfy Rhonda and Steve Healy's demands for an 8-club Why Not.

have never tried this.

This is 97978.

## 136 WhyNotFeed



Clubs: 9

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

Christian Kästner, who is definitely from Pittsburgh and not at all from Germany, have never tried this. Will did it with Dave and Christian at Sturtevant in 2013.

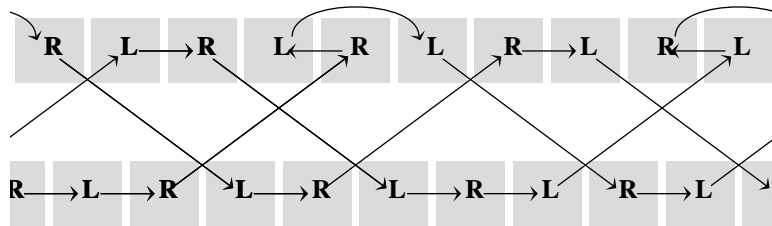
The feedees are doing Why Not (heff zip pass self pass) and the feeder is throwing outside outside outside outside zip inside inside inside inside zip. The feeder starts with five clubs and the feedees each start with one in each hand.

### Related patterns

Other related patterns:

WhyNot

## 137 WhyRei



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Doreen and Staffan, in San Diego have never tried this.

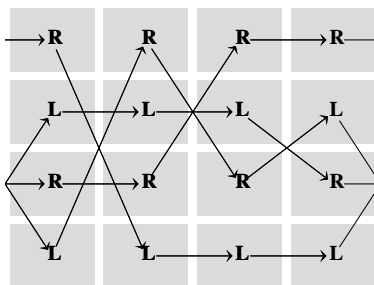
WhyRei is the name of a German detergent. The point of this one is that either side can "program" the other one into switching sides. To program the switch in one direction, do 4.5p 3 4.5p 4 1 [4.5p 3 3] 4.5p 3 4.5p 3 3; in the other, do 4.5p 3 4.5p 3 3 [4.5p 3] 4.5p 3 4.5p 4 1. (Note that the union of the throws in the two transitions is the same as the set of throws of the juggler doing more clubs, a common feature of programming patterns.)

### Related patterns

Other related patterns:

Programmer1, Programmer2

## 138 WillMakesMyDreamsComeTrue



Clubs: 8

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Rhonda

haven't done the full pattern yet. We have done the seven club version on both sides, so the full pattern should be doable.

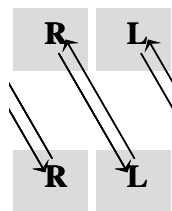
One of the points of this pattern is that every pass is a collision. But it still works if you choose lanes for the straights and pass the diagonals wide.

### Related patterns

Subtract a club:

TucsonTwostep. You can mix and match these patterns to get a seven club pattern, which we did successfully in Isla Vista in 2010.

## 139 Windmill



Clubs: 4

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

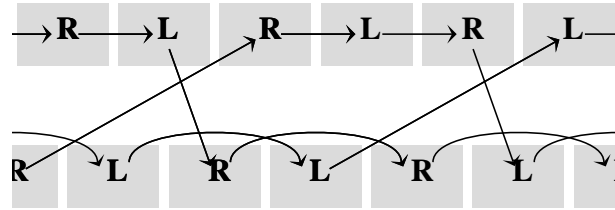
Get The Shoe, a.k.a. Florian and Jochen.

have never done this.

This looks good with Jochen juggling and Florian doing really fast windmilly steals.



# 140 ZapFour



Clubs: 7  
 Inventor:  
 Will and Rhonda...  
 Comments:

Jugglers: 2  
 Will  
 have never done this.  
 This is just 988 vs. 665. It could also be done with all crossing passes.

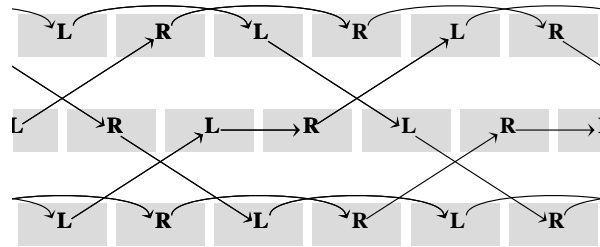
## Related patterns

Other related patterns:

All the other ZapFours.

788 and 788 vs. 998

# 141 ZapFourFeed11



Clubs: 11  
 Inventor:  
 Will and Rhonda...  
 Comments:

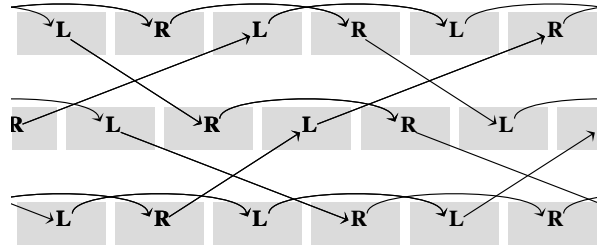
Jugglers: 3  
 Will  
 have never done this.  
 This is 788 and 788 vs. 776.

## Related patterns

Other related patterns:

All the other ZapFours.

## 142 ZapFourFeed11+



Clubs: 12

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

Will

have never done this. Will did it with Menno and Christine in Someren and it's quite easy and fun.

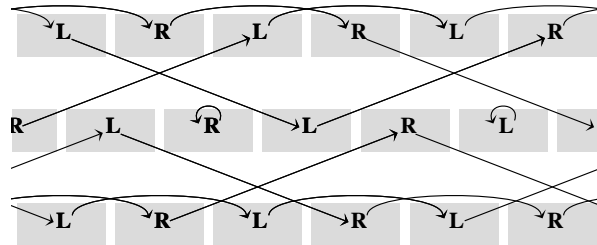
This is 788 and 788 vs. 998.

### Related patterns

Other related patterns:

All the other ZapFours.

## 143 ZapFourFeedHigh



Clubs: 12

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

Will

have never done this.

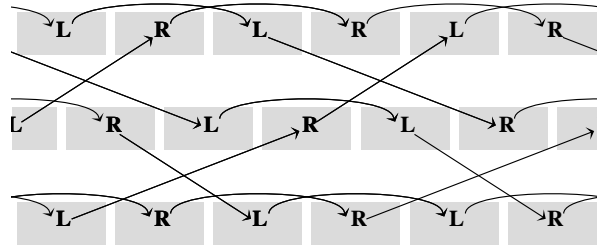
This is 988 and 988 vs. 994.

### Related patterns

Other related patterns:

All the other ZapFours.

## 144 ZapFourFeedLow



Clubs: 12

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

Will

have never done this. It looks hard.

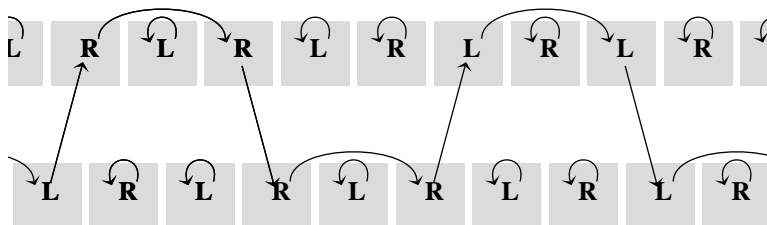
This is 988 and 988 vs. 778.

### Related patterns

Other related patterns:

All the other ZapFours.

## 145 ZapHeff



Clubs: 5

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Athena and Dave

haven't tried this.

This is 84445. Each hand holds one club, and there is a fifth one zapping around. When the extra club comes to a hand, that hand does a heff to make time to catch the extra one and rezap it.

### Related patterns

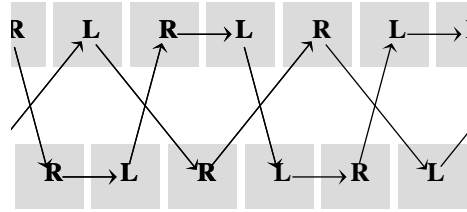
Add a club:

89445, 84945, 84495, and 95556 all sound challenging, but might be interesting and possible since they're only six clubs.

Other related patterns:

This is a good warmup to [FrankZappalot](#) and [Heffalump](#).

## 146 ZapOpusOne



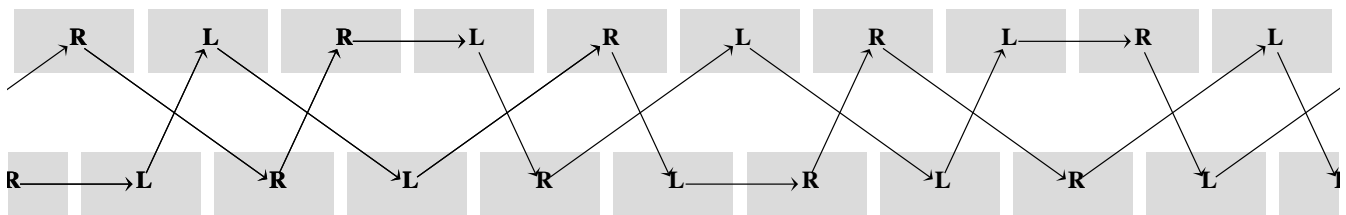
Clubs: 6  
 Inventor:  
 Will and Rhonda...  
 Comments:

Jugglers: 2  
 Will  
 can run this all day.  
 This is interesting because each of the  $\binom{4}{2}$  pairs of hands has exactly one club moving back and forth between the two hands. This is easy to see if you use six different colored clubs. (See [OllerupPopcorn-10-7-7](#). And John Spinosa noticed that 552 has the property that each of the  $\binom{4}{3}$  groups of three hands has exactly one club cycling through it.)  
 To start it, Rhonda holds two clubs in each hand. She throws a right crossing zap, then a left straight lofty single, then a right crossing self, then repeat on the other side. Will starts with one club in each hand and does a right crossing self, then a left straight zap, then a right crossing lofty single, then repeat on the other side.  
 It's fun to throw the zaps as chops. Will did this with Doreen in Göttingen and with Amiel in Jamul.  
 It's also fun to have one person go into the [BlackBeastOfArrgh](#), since the two are compatible with each other.

### Related patterns

Other related patterns: All the other Zaps.

## 147 ZapOpusOnePointTwo-75756



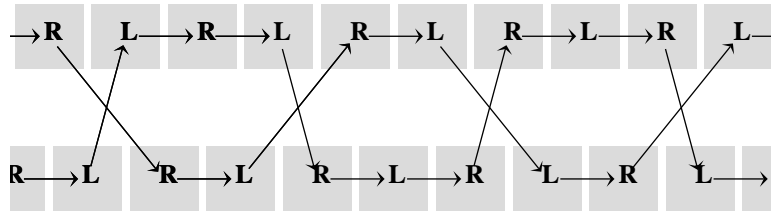
Clubs: 6  
 Inventor:  
 Will and Rhonda...

Jugglers: 2  
 Daniel  
 haven't tried this. It might be hard.

### Related patterns

Other related patterns: All the other Zaps.

## 148 ZapOpusOneHalf-75666



Clubs: 6

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will

can run this all day.

There are a couple collision dangers where crossing zaps go under crossing passes. If you keep the zaps low and the passes high, and focus on the timing (the passes are thrown slightly before the zaps), they aren't problems and you don't have to choose lanes.

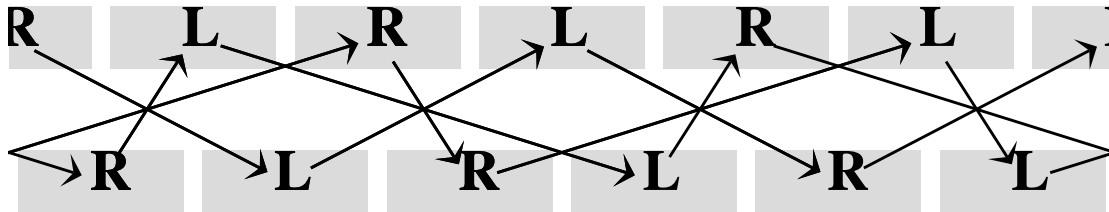
The same club is zapping every time, so it may help in remembering the sequence to use a different color club for that one at first.

### Related patterns

Other related patterns:

All the other Zaps.

## 149 ZapOpusTwo



Clubs: 7

Inventor:

Will and Rhonda...

Comments:

Jugglers: 2

Will

haven't had much success with this. Will started to get it with Caspar at the Lee house in December 2012.

The world now calls this pattern Willy Wonka's Holy Grail, and there is a growing list of dragon patterns to slay as you approach the grail. (A dragon throw is a single 95 combination.)

One would be the grail against 7 club 1-count (977757), although it's not easy.

### Related patterns

Add a club:

978 is hard, but feasible for a few rounds. Will has done it with people like Ross, Berengar, Mandy, Peter, Rasmus, and Brook.

Subtract a club:

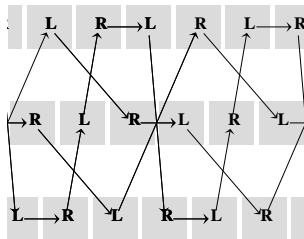
756 is ZapOpusOne, which is fun.

456 might be called ZapOpusZero, and might be a good way to learn zaps.

BlackBeastOfArrgh (945)

972 is ChristophsColors.

## 150 ZapTriangle



Clubs: 9

Inventor:

Will and Rhonda...

Comments:

Jugglers: 3

Will

haven't tried this but really should.

This could be varied by switching who stands where. It could also be changed to a LLLRRR hand order, but with LRLRLR, all the throws are straight, which seems less likely to give collisions. The zaps here are a little faster than regular zaps (2.3 instead of 2.5) and the singles are a little higher (3.7 instead of 3.5).

### Related patterns

Other related patterns:

ZapOpusOne

## 151 Other 7-club chestnuts

Some old favorites that haven't yet gotten added to the master list:

- Every other triples (makes a nice 11-club feed)
- Singles versus triples (good practice for 8 triples)
- Eleven club gorilla feed (all passes are doubles for the easiest rhythm)
- Classic popcorn (the right hand throws triple self, double pass, single self)
- Classic popcorn elongated (as above, but replace 3(2)1 with 3(2)(2)1(2))
- Lopsided popcorn (one juggler does triple self, double pass; the other does single self, double pass; good practice for 10-club feed and 11-club feed respectively)
- 11-club feed from 7-club one count
- Oddz Goddz (RRLl: really hard but doable if you lob the passes super high)
- Staggered goddz (one person feeds doubles to the other person's right and left hands; the other person does Oddz Goddz)
- French 3-count (867)
- Fast slow simul (Only hard because of the collision. To avoid it, the fast person should throw the crossing pass from the inside to the outside, and the slow person should throw that pass from the outside to the inside. To start, fast person (with 4 clubs) throws to slow's left hand, and slow person (with 2 clubs in right hand) throws from right hand to fast's left hand.)
- Classic PPS (Keep the singles low and the doubles high. There's a collision risk, but you can avoid it if you watch for it.)

## 152 GALLOP patterns

### 152.1 GALLOP notation

GALLOP is a system to generate (mostly) right-handed passing patterns from solo siteswaps in which the two passers play the two hands of a giant juggler doing the solo siteswap. The theory was developed by Staffan Ulfberg.

In GALLOP, the left hand always throws single selves (except in patterns with 1s in them; ignore those if you're new to this); and the right hands make throws dictated by the siteswap. Just like in solo siteswaps, **even numbers** come back to the same "hand" (remember, each hand is a juggler), so even numbers are selves unless they have x's on them. **Odd numbers** cross to the other "hand", so odd numbers are passes. Remember, all these throws are from the right hand except 1s:

- 0 zip self to left hand
- 1 early fast crossing left single (this is the one exception to the right hand passing rule)
- 2 fast single self to left hand
- 2x straight zap pass
- 3 floaty straight single pass
- 4 double self to left hand
- 4x straight double pass
- 5 high straight triple pass
- 6 straight quad pass
- 6x quad self to left hand

The total number of clubs is the number in the solo siteswap, plus four (one club in each juggler's hand is not represented in the solo siteswap).

Examples:

- 3 traditional seven-club singles
- 4 two people doing four-club double singles, not passing
- 4x traditional eight-club doubles
- 5 traditional nine-club triples
- 423 traditional six-count, seven-club popcorn with lower spins
- 534 Long Beach Popcorn

## 152.2 Six clubs

- 330 good for practicing the notation
- 312 challenging but doable; good for practicing 1s
- 411 quite hard but I have had some success with Rhonda

## 152.3 Seven clubs

All of these are feasible; I have worked on most of them with Staffan:

- 4 2x (What I really mean by this is  $(4, 2x)(2x, 4)$ . The solo siteswap is the three-ball box.)
- 4x 4 2x 2x
- 42333 (Local: 43323)
- Three variations: 20355, 25305, 25350.
- 441 (Challengingly awkward.)

## 152.4 Eight clubs

- 552 (Nine-club triples with a gap; compatible with Long Beach Popcorn.)
- 5344 (Lopsided Popcorn; useful for learning the feedee position of a 13-club feed.)
- 55253 (Local: 55523)
- Synchronous patterns with quads. I worked on these with Peter Kaseman at IJA 2018 in Springfield; we had some pleasant success with many of them. Below I'm listing the sequence for one juggler; the other juggler starts halfway through:

- 6 4x 4x 2 Easier sequence, so it's a good one to start with.
- 6 2x 4x 4 Fun and doable.
- 6x 4 4 2x We didn't try this. It might not be that interesting.
- 6x 2 4 4x Fun and doable.
- 6x 4 4x 2 Great fun; click here for a video.
- 6x 2x 4x 4x Might be boring; it's just doubles with an occasional high throw and zap.
- 6 4x 4 2x Unpleasant to catch the zap under your falling quad.