



## RELAY TRAINING FOR THE LITTLE ATHLETE

A coaching guide | Stephen Cowburn

## ***Introduction***

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This guide has been written principally for use by Little Athlete Relay Coach's. The information and advice it offers has been gathered over several years of relay coaching with boys and girls in the U9 to U15 age groups and is based on the practical experience.

## ***Warming up***

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Before any training session commences it is very important that the athletes are sufficiently 'warmed up'.

Normal sprint warm up are OK but it is a good idea to also include a few exercises that include handling/changing of the relay baton.

## **Exercises**

- Joggle relay
- Joggle relay with exercise
  - Sit ups
  - Push ups
  - Mogles
  - Star jumps
  - Cartwheel
- Continuous lap (good for developing change timing skill required for 4x200 and medley)
- Indian file
- Seated 'row'

## ***Basic Principles***

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While we need to understand the details of good relay running the basics can be summed up in a few points:

- The athlete with the baton should be running as fast as they can at all times
- The baton change should occur with both athletes as close to max speed as possible
- Free space should be maximized on each change
- The relay team should be selected based on the strengths of the athlete relative to the portion of the race they will contest.

## **Model Relay Technique**

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Using the 4x100m relay race as an example we next discuss the model technique.

### **Hand Change Sequence**

When considering the most efficient sequence of baton pass/receive we need to consider where in the lane each athlete should run their leg and where they will be at the time of baton change (see lane discipline).

The first athlete will start on the bend and, so as to not run any further than necessary, will run close to the inside of the track. The second athlete is therefore required to wait at the change box on the outside of the lane. For the baton to change athletes easily the first athlete must carry the baton in the Right hand and the second athlete must take the baton in the Left hand.

The second athlete to third athlete change is the reverse of this, and so on.

Right, Left, Right, Left (RLRL) is therefore the preferred sequence for baton pass/receive.

A couple of points spill out of this:

- Firstly with a RLRL sequence the baton is always in the centre of the lane.
- The first and third athletes, running the bend, will generally lean into the corner slightly. With a RLRL the baton is in clear space on their outside and away from the adjacent lane athlete.

### **Pass Method**

There are three basic baton passing methods – Push, Up and Down.

A Push pass is where the outgoing athlete (outgoing) athlete's hand is held facing palm forward (vertical) and the baton is pushed into the hand in a forward motion by the incoming athlete. Generally requires the outgoing athlete to have their arm out to the side thereby losing free space'. Most commonly used by senior athlete apparently because of upper body muscle mass prohibiting them stretching their arm backwards.

An Upwards pass is where the outgoing athlete's hand is held facing palm down and the baton is placed in the hand in an upward motion by the incoming athlete. Not seen very much nowadays but common in the schools system of years past. Requires a slightly unnatural motion of the incoming athlete to place the baton on the upward swing of the arm.

A Downwards pass is where the outgoing athlete's hand is held facing palm up and the baton is placed in the hand in a downward motion by the incoming athlete. This is the most common method used in junior relays. Incoming athlete and outgoing athlete athletes can assume the correct arm position easily and the downward motion is complementary to the normal running action of the incoming athlete.



## Responsibility

It is very important that each athlete knows what they are responsible for.

### Incoming

- To maintain maximum speed approaching the change zone and until, even shortly after, the change has been completed.
- To loudly and clearly call for the outgoing athletes 'HAND' when close enough to make the change.
- To place the baton in the outgoing athlete athletes hand in a positive downward motion.
- To maintain position in their side of the lane.

### Outgoing

- To commence running, accelerating as fast as possible, when the incoming athlete reaches the check mark
- To run normally (not with receiving hand back) until called.
- To maintain an open steady outstretched hand with which to receive the baton when called
- To maintain position in their side of the lane
- To make sure that the baton exchange occurs in the Change Box
  - not to receive the baton before the start of the change box and
  - not to exit the change box before baton change has occurred.

In the unfortunate event the baton is dropped it is the athlete who dropped the baton's responsibility to pick it up. This can occur at any time no matter where the baton come to rest however athletes from other teams must not be impeded while retrieving the baton.

If the baton is dropped during the act of passing the baton (pass is incomplete) it is the incoming athlete's responsibility to retrieve it and pass to the outgoing athlete.

### **Lane Discipline**

For a short time, during the actual exchange of the baton, two athletes are in close proximity to each other in the same lane. Lane discipline refers to requirement on the relay athlete to keep to their half of the lane thus minimizing the potential to run into the other athlete. Using the RLRL approach:



- 1<sup>st</sup> athlete runs the bend tight to the inside of the lane. The baton is in the right hand (middle of the lane).
- The 2<sup>nd</sup> athlete is waiting at the first change box on the outside of the lane. This athlete will receive with the left hand (middle of the lane).
- During the change each athlete keeps to their half of the track until the change is complete and the outgoing athlete is clear of the change box.

## Sighted or Blind

The change of the baton can be either sighted or blind.

A sighted change refers to the practice of the outgoing athlete looking back for the incoming athlete/baton until the change has been completed.

A blind change refers to the change taking place while the outgoing athlete is looking forward away from the baton and incoming athlete at the time of the change.

Which is best?



Some points to consider:

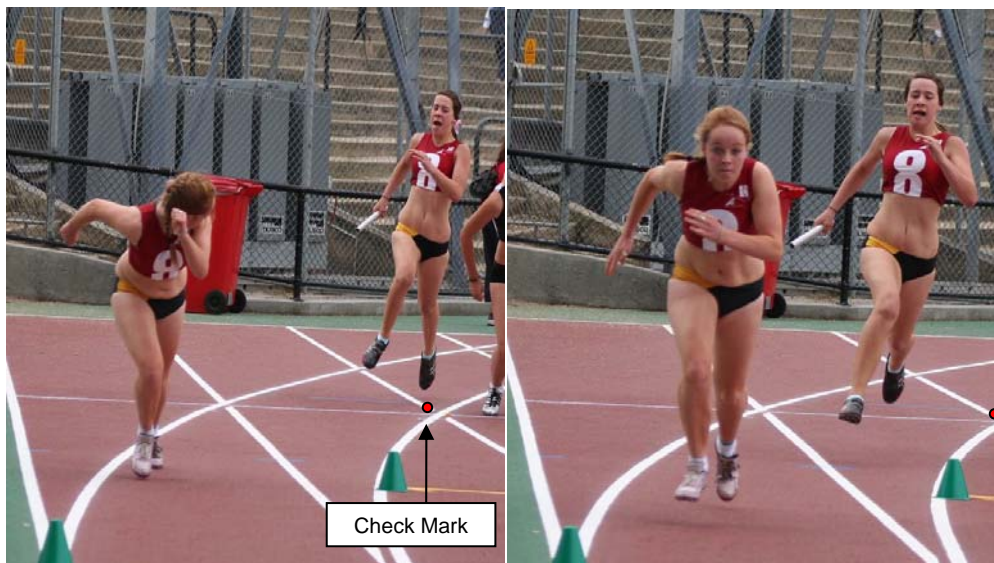
- An athlete looking backwards cannot possibly run at maximum speed
- An athlete looking backwards, especially on a bend, is likely to run out of lane.
- With both athletes in sight of the baton there is an increased tendency for each to try to reach for the others hand/baton – responsibility is unclear

Blind changes need some practice to build confidence but are clearly the better option.

## Check Mark

When does the outgoing athlete know when to start running?

You can get away with either the incoming athlete telling (shouting to) the outgoing athlete to start running or the outgoing athlete making their own mind up. In both cases however a judgment call is required often at a time of high anxiety or when the athlete is under pressure.



In some races where 'unlaned' changes occur this cannot be avoided (4x200 3-4<sup>th</sup> change & Medley 3-4<sup>th</sup> change) however where possible a check mark should be used.

A check mark can be anything from a piece of tape to an old washer. It is simply a mark on the track that tells the outgoing athlete when to start running (i.e. when the incoming athlete reaches the Mark)

It is placed on the opposite side of the track (not on the line) to the outgoing athlete approximately 6 walking paces outside the beginning of the change box (or acceleration zone if use is permitted)

Of all the practice that takes place at a relay session most time is spent trying to fine tune the check mark position so that the incoming and outgoing athlete are at maximum speed when the change takes place (in the change box).

## Free Space

Do you ever wonder why a relay team can cover a set distance faster than an individual athlete? Sure 4 athletes will become less fatigued than an individual athlete over the same distance but equally some time may be lost during the baton changing. One reason is because of the 'Free Distance' – distance that does not have to be run but that is gained in the act of passing the baton.



With incoming and outgoing athlete arms at full stretch this free space may equate to around 1.5 metre each change. With three changes per race this is 4.5 metres the baton does not have to run.

## Communication

When does the outgoing athlete know when to put out their receiving hand? The outgoing athlete will commence running normally (once the incoming athlete reaches the check mark). When the incoming athlete is close enough to make the change a loud call of 'HAND' (or similar short sharp pre arranged call) is made whereupon the outgoing athlete extends the receiving arm.

Despite the best planning and preparation things can still go wrong. Athletes need to communicate with each other whenever this happens to best overcome the situation. Most common problems occur at the time of change so at all training sessions practice good communication between changing athletes and develop a simple 'message' language both understand.

Typical problems to prepare for are:



- Incoming athlete will not reach outgoing athlete before end of change box – a command of 'SLOW' or similar is issued by incoming athlete.
- Outgoing athlete is on wrong side of track (usually coupled with wrong receiving hand out) – a command of 'SIDE' or similar is issued by incoming athlete
- Outgoing athlete is jogging and not accelerating from start - a command of 'GO' or similar is issued by incoming athlete

### **A 4x100 change**

- First athlete commences in lane with baton in Right hand. Runs close to inside of lane
- Second athlete is waiting just inside change box (or acceleration zone if use permitted) on outside of track. Outgoing athlete's body is facing away from the incoming athlete but is looking towards incoming athlete and at the Check Mark which is positioned on the inside of the track some 6 paces away
- When the incoming athlete reaches the Check Mark the outgoing athlete turns and faces forward and commences running as fast as possible.
- When the incoming athlete is within passing range of the outgoing athlete the incoming athlete issues the request (shouts loudly) 'HAND!' Note – this should occur inside the Change Box
- The outgoing athlete upon hearing the 'HAND!' command from the incoming athlete fully extends the receiving arm, open handed with palm facing up.
- The incoming athlete, now within passing distance and faced with the outgoing athletes extended arm, firmly plants the baton into the outgoing athletes hand in a downward motion
- Once the baton has been passed the incoming athlete should slow down very gradually, avoiding a sudden slowing down. Like taking your foot off the accelerator without applying the brakes.
- The outgoing athlete speeds off to the next change

The window of time, when passing and outgoing athlete athletes are traveling at the same speed and are close enough to affect transference of the baton, is very small.

Emphasis on practice, especially in the final stages of preparation before a competition, should be on fine tuning the placement of Check Marks so as to:

- Differences in athlete running speed
- Adjust for slow starters, fast finishers
- Give the athletes confidence in their markers
- Ensure baton change occurs with both athlete as close to max speed as possible

### Points to note

- The outgoing athlete's arm should not be extended too high or too low – optimally at an angle of approximately 10-30° from horizontal. The arm should be straight behind the athlete and as still as possible (not waving around).
- The outgoing athlete should accelerate as fast as possible from the beginning and not 'wait' for the incoming athlete. If you have worked out the timing correctly the pass will happen at maximum speed.
- Stress to the outgoing athlete the need for hard acceleration, not a slow jog, off the mark. Also stress to the incoming athlete the need to maintain full speed and not to slow down when approaching the change zone.
- Stress the importance to the outgoing athlete of providing the incoming athlete with a big, still target with which to make the transition. Watch for the outgoing athlete extending the receiving arm prematurely – the outgoing athlete must run normally, using both arms, until the command 'HAND' is issued.

### Common Faults

- Outgoing athlete putting wrong hand out
- Outgoing athlete's arm low and not outstretched
- Outgoing athlete jogs away rather than at maximum acceleration
- Incoming athlete slows approaching change box
- Outgoing athlete leaves before incoming athlete has reached Check Mark
- Change occurs before/after change box

### ***Team Strategy***

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How do you decide who should run what leg? In a 4x100 all legs are 100m so does it matter?

In reality, even in a 4x100m relay race, each leg is quite different and has unique characteristics. To be at your best you need to match the leg characteristics with your relay team.

For example, in a 4x100m, the 2<sup>nd</sup> and 3<sup>rd</sup> legs are longer than the 1<sup>st</sup> and 4<sup>th</sup> mainly because athletes in these legs have a receive and a pass to make. 1<sup>st</sup> and 4<sup>th</sup> athletes only have either a pass or receive to make. Also the first athlete is the only athlete to start from a stationary position. All other athletes start from a rolling start.

## Relay Races by 'Leg' Characteristics

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### 4x100m

- 1<sup>st</sup> leg – starts on bend. Shortest leg. Passes baton only (and while sighted). Suits athlete with good start technique, fast reactions, and good bend runner. Only athlete to commence from a stationary start.
- 2<sup>nd</sup> leg – long leg, straight. Receives and passes baton. The 2<sup>nd</sup> & 3<sup>rd</sup> legs of the 4x100 are the longest legs. Typically, excluding other factors, you would put your fastest athletes on these two legs. As leg 2 is contested on the straight consider the 'strength' of the athlete especially if required to run into a head wind. Tall/short athletes are more affected by wind.
- 3<sup>rd</sup> leg – long leg, bend. Receives and passes baton. This leg is contested completely on the bend. Bends are generally contested better by shorter athletes. Of your two fastest athletes, all things being equal, the shorter athlete may be better on this leg.
- 4<sup>th</sup> leg – short leg, straight. Receives baton only. Not uncommon for the slowest athlete in the squad to run this leg because it is a short leg and the athlete has a rolling start. Also athlete only has to receive baton. Suits a determined finisher that can hold form under pressure.

### 4x 200m

- 1<sup>st</sup> leg – starts on bend. Passes baton only (and while sighted). Suits athlete with good start technique, fast reactions.
- 2<sup>nd</sup> leg – Receives and passes baton. Has to receive and pass baton – suit good baton changer
- 3<sup>rd</sup> leg – Runs the bend in lane then breaks lane at beginning of straight. Receives and passes baton. Pass must occur between blue lines. Technically the hardest leg of the 4 x 200. Athlete has to receive the baton in lane, break lane at beginning of straight, 'find' the outgoing athlete and pass baton between blue lines. Cannot use a Check Mark. (Note - Unlaned changes can be congested and interference is possible which could lead to disqualification). Suits confident athlete.
- 4<sup>th</sup> leg – Receives baton between blue lines. Receives baton only. 4<sup>th</sup> leg athlete has to enter track between blue lines and establish (and hold) a receiving position. Cannot use a Check Mark. Stress to 4<sup>th</sup> athlete not to move out of position – responsibility is with 3<sup>rd</sup> athlete to find and go to 4<sup>th</sup> athlete. Suit a strong confident athlete.

## Medley

- 1<sup>st</sup> leg – 100m. Good starter/bend runner. Quick reactions. Passes baton only. Suits athlete with good start technique, fast reactions.
- 2<sup>nd</sup> leg – 100m. Straight. Receives and passes baton. Has to receive and pass baton – suit good baton changer
- 3<sup>rd</sup> leg – 200m. Breaks lane at beginning of straight. Receives and passes baton. Pass must occur between blue lines. Technically the hardest leg of the Medley. Athlete has to receive the baton in lane, break lane at beginning of straight, 'find' the outgoing athlete and pass baton between blue lines. Cannot use a check mark. (Note – Unlaned changes can be congested and interference is possible which could lead to disqualification) Suits confident athlete.
- 4<sup>th</sup> leg – 400m. Key to success in Medley. Receives baton only. 4<sup>th</sup> leg athlete has to enter track between blue lines and establish (and hold) a receiving position. Cannot use a Check Mark. Stress to 4<sup>th</sup> athlete not to move out of position – responsibility is with 3<sup>rd</sup> athlete to find and go to 4<sup>th</sup> athlete. The 4<sup>th</sup> (400m) leg constitutes half the race so clearly success in this event requires a strong 400m athlete.

## ***A Final Word On Relay Technique.***

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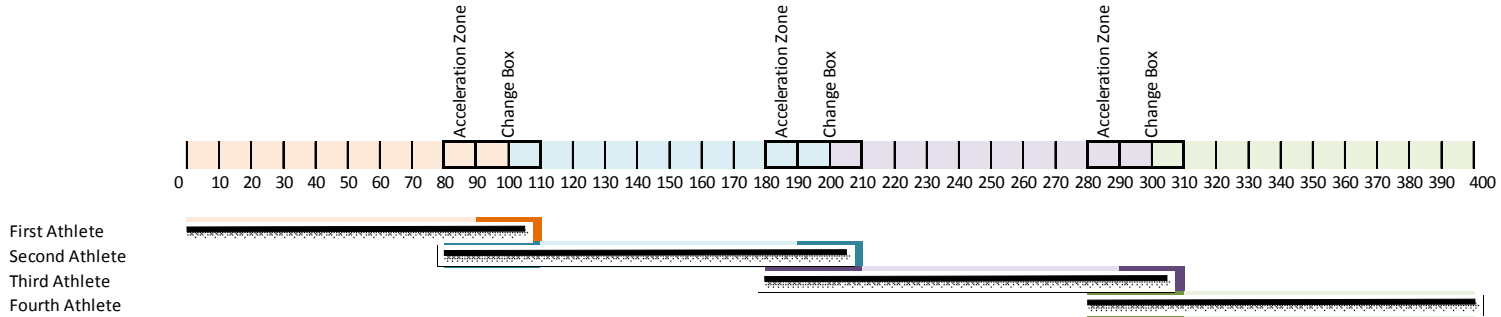
The major point to get across to your squad is that it is the speed in which the baton travels the allotted distance that determines the success of the team.

***'Who so ever is in possession of the baton should at all times be traveling as fast as possible'.***

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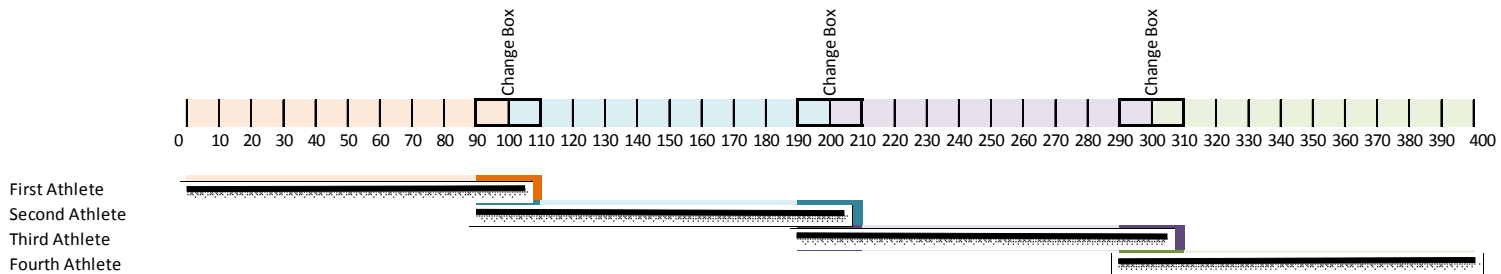
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**Acceleration Zone (U12 - U15)**



	Min	Max	Typ.	Comments
First Athlete	90	110	105	Only athlete to start from standing start - needs good start technique and reaction time. Only a pass to make. Shortest Leg. Bend Run.
Second Athlete	80	130	125	Rolling start. Pass and Receive to make. 1 of 2 Longest Legs. Straight Run. Probably hardest leg.
Third Athlete	80	130	125	Rolling start. Pass and Receive to make. 1 of 2 Longest Legs. Bend Run.
Fourth Athlete	90	120	120	Rolling start. Only a Receive to make. 2nd Shortest Leg. Straight Run.

**No Acceleration Zone (U9-U11)**



	Min	Max	Typ.	Comments
First Athlete	90	110	105	Only athlete to start from standing start - needs good start technique and reaction time. Only a pass to make. Shortest Leg. Bend Run.
Second Athlete	80	120	115	Rolling start. Pass and Receive to make. 1 of 2 Longest Legs. Straight Run. Probably hardest leg.
Third Athlete	80	120	115	Rolling start. Pass and Receive to make. 1 of 2 Longest Legs. Bend Run.
Fourth Athlete	90	110	110	Rolling start. Only a Receive to make. 2nd Shortest Leg. Straight Run.