

## Relay 4 x 400m

Unlike the 4x100m relay the 4x400m relay involves a 'visual exchange' with the outgoing runner watching the incoming runner throughout the exchange process. This is because speeds can vary more sharply at the end of a 400m leg and with the exception of the 1st exchange, there can be a lot of jostling if teams exchange close together. Therefore it is important that the outgoing athlete can see this unfold and take the baton from the incoming runner. As with the 4x100m exchange the outgoing runner must make their hand visible and stable as they present it back. The baton is received in the left hand and switched to the right within the first few strides. Once the teams have broken to the inside lane (leg 2 in most senior competitions) the outgoing runners for the next leg face the inside of the track having been placed by the track judges in the order of the race as the preceding leg passes the 200m point. The lead team at the 200m point is placed on the inside and the outgoing runners must stay in this order no matter what the position of their team when the incoming runners actually reach them. As a result a fast finishing athlete may have to move out in the home straight towards their waiting outgoing team mate.

### EXCHANGE METHODS

The outgoing runner must be running as the baton is exchanged so that valuable time is not lost – maintaining baton speed is the key to good exchanges – but it must be remembered that the incoming runner is likely to be extremely fatigued. Given the often congested nature of the 4x400m exchange zone, outgoing athletes must be prepared to hold their ground forcefully and work quickly out of the exchange zone. Therefore practicing a moving visual exchange at a pace appropriate for the end of a 400m leg is vital. The incoming runner keeps the baton down as they run into the exchange zone and pushes the baton forward at the last moment. The outgoing runner completes the simulation, running out after the exchange and changes hands. This should all be practiced under pressure, therefore involve several teams. Some teams accelerate for a few strides before turning to watch the incoming runner, but this can cause problems in losing sight of the incoming runner especially in closely contested legs.

### RUNNING ORDER CONSIDERATIONS

Tactical considerations are crucial in selecting a 4x400m team and deciding upon the running order. The relative speed and strength of the 4 individuals selected must be considered. A basic principle will be that the team needs to be in contention and not adrift from the field going into the final leg, so it is rare to have the two 'weaker' runners running first. An athlete's ability to change pace is a consideration for the last leg in particular; perhaps most important is the 'anchor leg' runner's mental strength.



### Fundamentals of a training program

- To develop a well co-ordinated relay team, much technical work must be done focusing on exchanging the baton and matching the speeds of the runners in the exchange zone.
- For 4x100m relays athletes should work in pairs and work upon develop exchange skills of passing and receiving the baton non-visually. This can start at a walking pace and develop to a jog, but ultimately must be performed at top speed. Exchanges should alternate right-left-right-left and all athletes should become used to giving and receiving with both right and left hands.
- Further work in pairs at increasing speed should introduce the defined 20m exchange zone with the incoming runner coming in at speed from approximately 50m. Check marks and the acceleration zone should be introduced for increasing precision.
- Ultimately practice has to be done at maximum speed with check marks adjusted accordingly. Teams should consider slightly reduced distances for check marks when a 'safe' exchange is sought, perhaps in qualification.
- 4x400m relays also need to be practiced for the visual exchange. This should be done at 400m tempo and can be built into other training sessions. It is worthwhile having other 'teams' involved in the practice to mimic the congestion found during the 4x400m exchange.

# Relays

## Relay Basics

Relays present athletes with a rare treat – working as part of a team. A well drilled team can sometimes outperform a group of more talented individuals. There are 2 main relay events on the track, the 4x100m relay and the 4x 400m relay (indoors, the 4x 200m relay is also a recognized event). Whatever the relay distance, the 2 key factors are the speed with which the baton is carried by each runner and the efficiency of baton transfer between runners. This aspect requires considerable practice, evaluation, refinement and more practice.



### Basic Rules of Relays

- In all standard relay events, 4 runners must relay the baton around the track. Whatever the distance, the baton is passed within a twenty meter zone, the 'exchange zone'. Transferring the baton too soon (before entering the zone), or too late (after exiting the zone) will result in disqualification.
- In the 4x100m relay, the outgoing runners on legs 2, 3 and 4 can use some or all of a ten meter 'acceleration zone' in which they accelerate so that when the baton is exchanged, the speeds of the incoming and outgoing runners are matched, thus maintaining baton speed. For exchanges in the 4x 400m relay, the outgoing runner must start within the exchange zone.
- The 4x 100m is run entirely in lanes. The 4x 400m relay can be run with a three-bend stagger where the 2nd leg athletes break from their lane to the inside lane after their first bend is complete. In 4x 400m relays where there are 4 or less teams, the race can be run with a one-bend stagger. Then it is the 1st leg runner who breaks. The break line is identified by flags or markers on the inside and outside of the track; athletes breaking from their lane before crossing the break line are disqualified. If the baton is dropped it can be picked up provided this is done by the athlete who dropped it and as long as in so doing they do not lessen the distance covered nor impede another athlete. The incoming runners must remain in their lanes until after all exchanges have been completed on that particular leg.

The 4x100m relay exchanges are 'non visual' because, having commenced their run, the outgoing runners do not look back but rely on practice to ensure that the exchange takes place in the middle or towards the end of the exchange zone without hesitation or breaking.

#### LANE DISCIPLINE

- Runners should keep to the correct side of the lane thus preventing collisions, enhancing the position and speed of the baton during the exchange.

- The first and third leg runners should run on the inside of the lane, even after exchanging the baton. Receive and race with the baton in the right hand.
- The second and fourth leg runners should run on the outside of the lane, even after exchanging the baton. Receive and race with the baton in the left hand.

- At all times during the 4 x 100m race the baton should be in the middle of the lane.

#### EXCHANGE DISTANCE

- This is to the distance between the incoming runner and the outgoing runner when the baton is exchanged.
- The greater the distance between the runners when the baton is exchanged, the faster the baton gets to the finish line.

#### RACING YOUR PARTNER

- To promote the fact that the 4 x 100m is about the speed of the baton, particularly through the exchange zone, the concept of racing your partner through the exchange zone is a useful strategy.
- The goal of the incoming runner is to race the outgoing runner to the end of the exchange zone.
- The goal of the outgoing runner is to run away from the incoming runner.



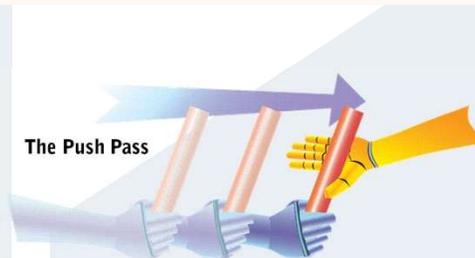
#### THE ACCELERATION ZONE

The 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> leg runners in a 4x100m relay can utilize some or all of a 10m acceleration zone, to enable them to build up speed before receiving the baton within the exchange zone. The intention is that, at the moment when the baton is exchanged, both runners are running at the same speed. The acceleration zone potentially gives around 27 meters for the outgoing runner to achieve a speed which matches that of the incoming runner before the exchange must take place. Deciding how much of the acceleration zone to use and when the outgoing runner should start to run depends upon many factors and considerable practice is essential if both runners are to be confident about making a good fast exchange.

Check Marks (fig1) are placed on the track to give a visual cue for the outgoing runner to start sprinting. The check mark must be easily visible. It should be placed on the opposite side of the lane to the outgoing runner so that it can be seen with minimal turn of head and body. The check marks are usually measured in foot lengths (pigeon steps) by the outgoing runner and typically number between 15 and 30. It must be appreciated that the distance used for this is specific to every pair of athletes, their relative speed capabilities and the prevailing conditions (wind, track condition, heat or final etc).

#### EXCHANGE METHODS

Several exchange techniques can be used and both upsweep and downsweep have been popular in the past. The 'Push Pass' is now the preferred exchange method for New Brunswick and Canada teams. This technique is described here from the perspective of the incoming and the outgoing runners.



The Push Pass

#### THE INCOMING RUNNER:

- You are responsible for the exchange
- Ensure you are in the correct lane
- Know where the exchange zone is and where you aim to pass the baton
- Race the outgoing runner to the end of the exchange zone - maintain speed
- Shout clearly for target (e.g. "stick")
- Wait for the hand to be presented
- Spot the target and firmly push the baton forward into the hand firmly (there should be maximum distance between you and the outgoing runner)
- Know emergency command (e.g. "wait")
- Do not anticipate the pass nor slow down to make the pass.
- Stay in lane until all traffic has passed.

#### THE OUTGOING RUNNER:

- Locate your lane and exchange zone, correctly placing your check mark as soon as permissible; clear the lane of all other check marks
- Take same starting position each time; a consistent acceleration pattern is imperative
- Be aware of incoming runner but concentrate on the 'GO' mark.
- Remain focused and be patient. Do not panic and start too soon
- Leave when a (predetermined) part of the incoming runner crosses the GO mark
- Get eyes forward and explode off the mark
- Race the incoming runner to the end of the exchange zone - accelerate as rapidly as possible
- Look forward at all times
- Respond immediately to the command of the incoming athlete
- Present the incoming runner with a high, flat, steady hand
- Grasp the baton firmly

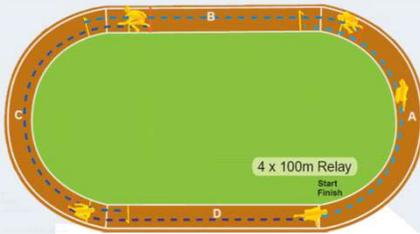
#### RUNNING ORDER CONSIDERATIONS

There are some important considerations in deciding the make up and running order of a relay quartet. The first leg runner should be a good starter, able to cope with the additional pressures that starting brings and should also be able to run the bend well (along with the 3<sup>rd</sup> leg runner).

The 2<sup>nd</sup> and 3<sup>rd</sup> leg runners have the greatest distance to run (up to 130m including acceleration and running to the end of the exchange box at the end of their leg), whilst the 4<sup>th</sup> leg runner who runs the 'anchor leg' must have the composure to receive the baton under extreme pressure and the speed to win the race!

In reality, all runners should be able to carry the highest speed possible through to the end of their leg and thus maintain the speed of the baton through the exchange or to the finish line.

If athletes have differing baton exchange abilities this should have a bearing on the running order: the first leg runner only passes the baton on, whilst the anchor leg runner just has to receive it.



#### Equipment for Relays

The baton – a hollow tube - must be between 280mm and 300mm in length and 12 to 13cm in circumference. Athletes in the 4x 100m should carry self adhesive tape strips [of maximum dimensions 5cm x 40cm] to be used as check marks [see event outline]. Coaches and team managers should always ensure that such tape is readily available. [At major championships this tape is provided for the teams.]