UTS greyhounds safety and welfare research

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University of Technology Sydney

Dubbo greyhounds racing track

David Eager, Hasti Hayati and Imam Hossain – April 2018

Dubbo greyhound racing track

Track overview

Track specification at a glance

Bends: 51 m

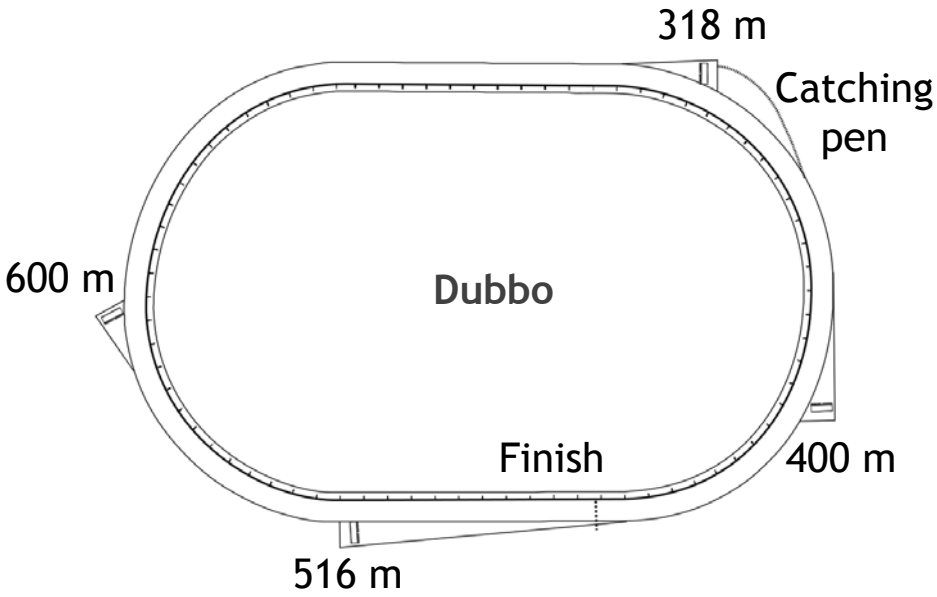
Length of straight sections: 63 m

Inner track cross fall for bends apexes: 7.76% (4.44˚)

Inner track cross fall on the straights: 3.79% (2.17˚)

Track path has no transition between straight and bend

Track has a combination of straight and bend starts



UTS injury category

Rating	Incapacitation Period	Typical injury types
Minor injuries-1 (MINa)	0 days	Mild skin abrasion/grazes
Minor injuries-2 (MINb)	1-10 days	Grade 1 muscle injury Mild skin laceration
Medium injuries (MED)	11-21 days	Join/ligament sprain Skin laceration Grade 2 muscle injury
Major injuries (MAJ)	Greater than 21 days	Grade 3 muscle injury Bone fracture
Catastrophic (CATb)	Euthanised post-race	Euthanised post-race, unable to be retired or unable to race NB: does not include all data (deaths)
Catastrophic (CATa)	Deceased or euthanised on race day	Severe skull or spinal trauma Complex / Open / Join fracture

Injury levels

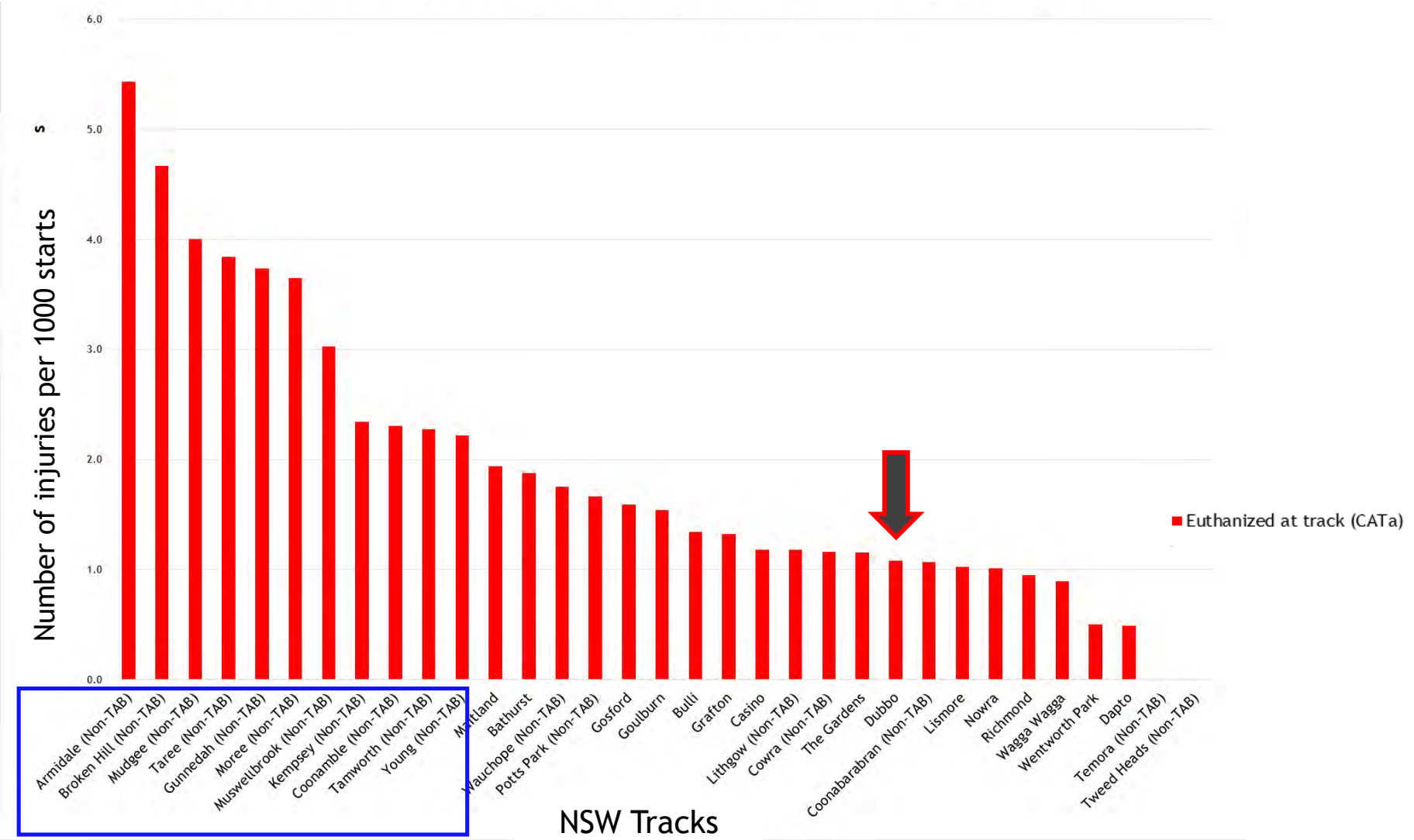
Level 1	CATa + CATb
Level 2	CATa + CATb + MAJ
Level 3	CATa + CATb + MAJ + MED
Level 4	CATa + CATb + MAJ + MED + MINa + MINb

Dubbo greyhound racing track

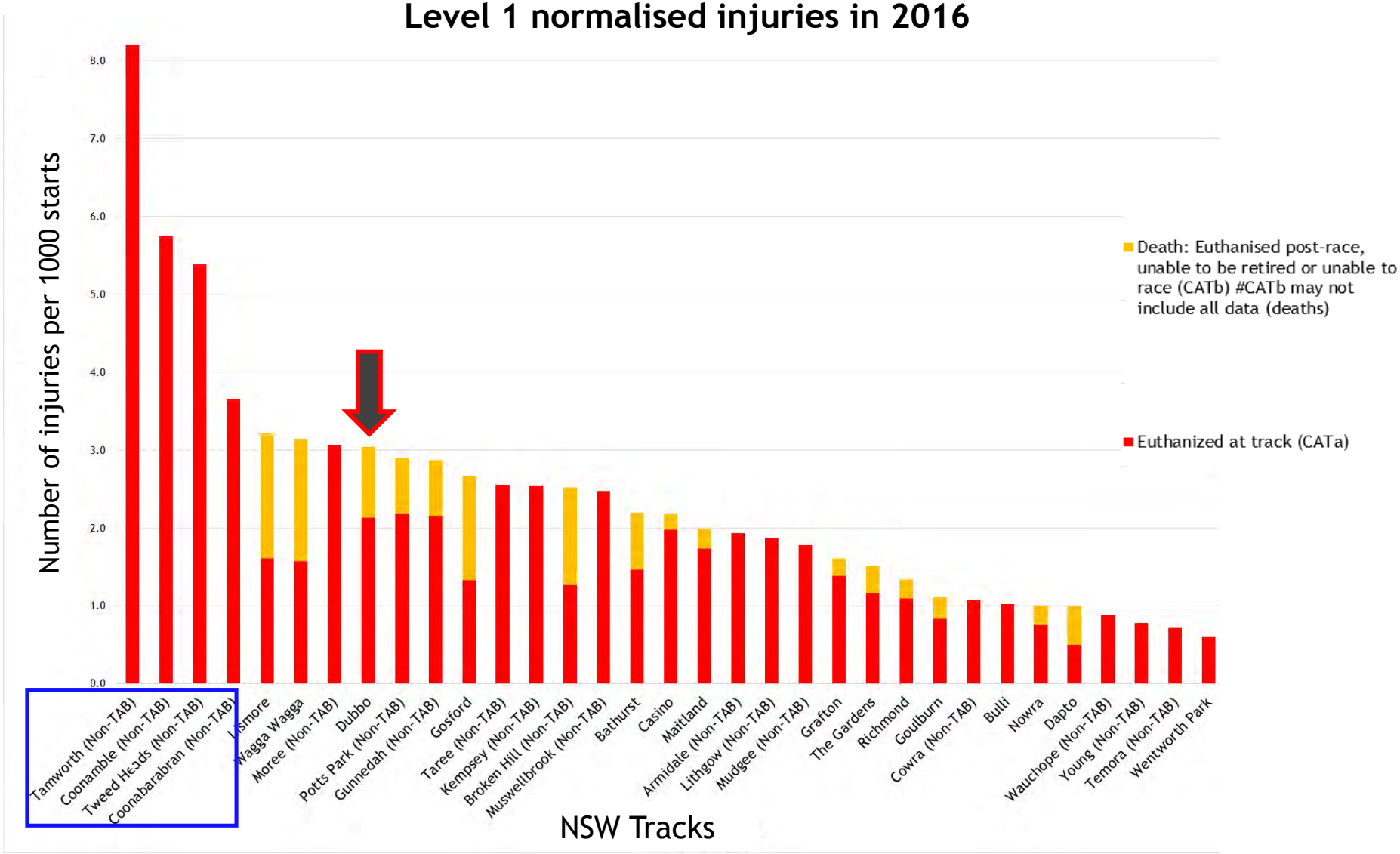
Interventions date

Hoop lure introduced on 29th June 2017 at Dubbo track

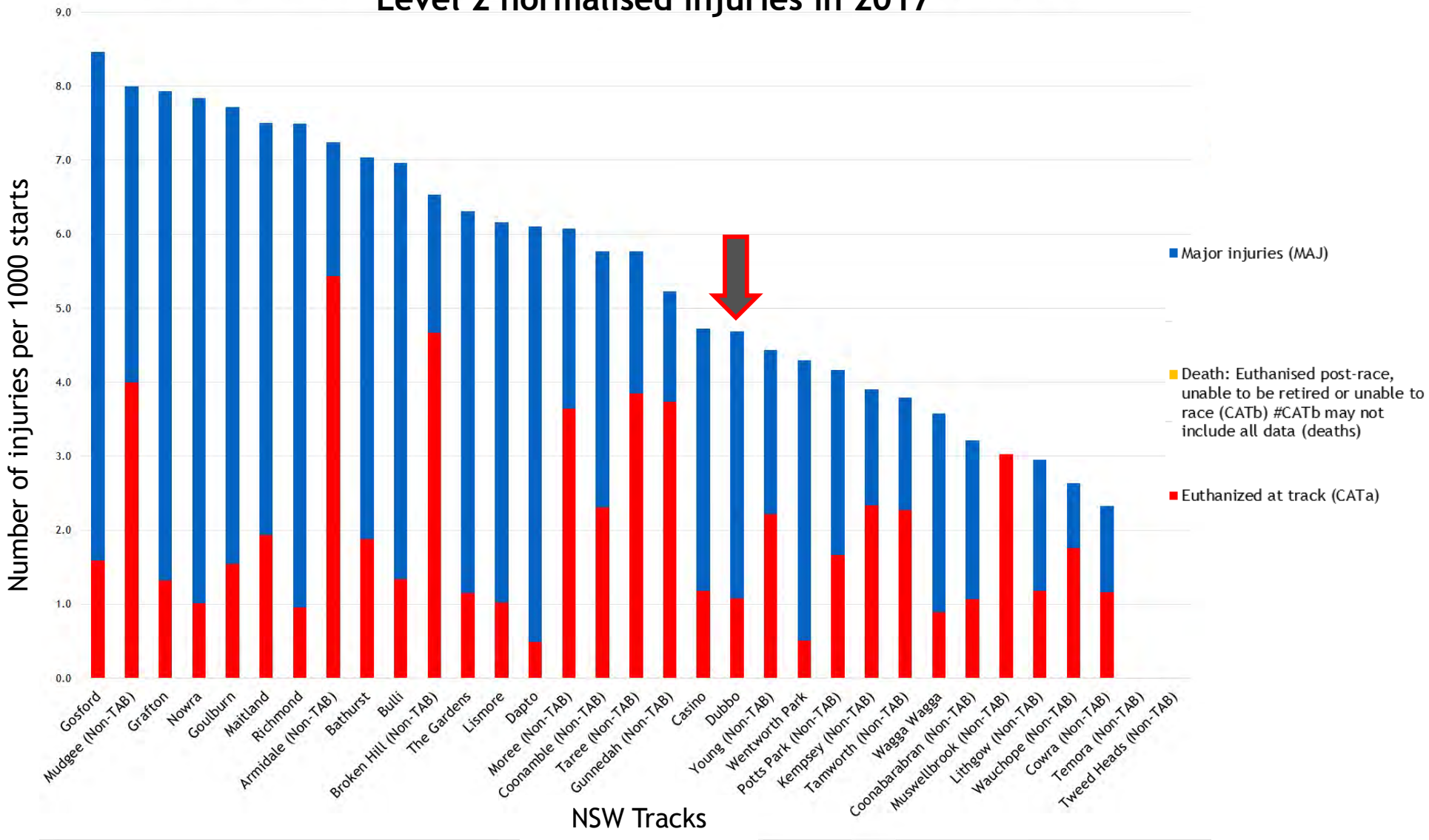
Level 1 normalised injuries in 2017



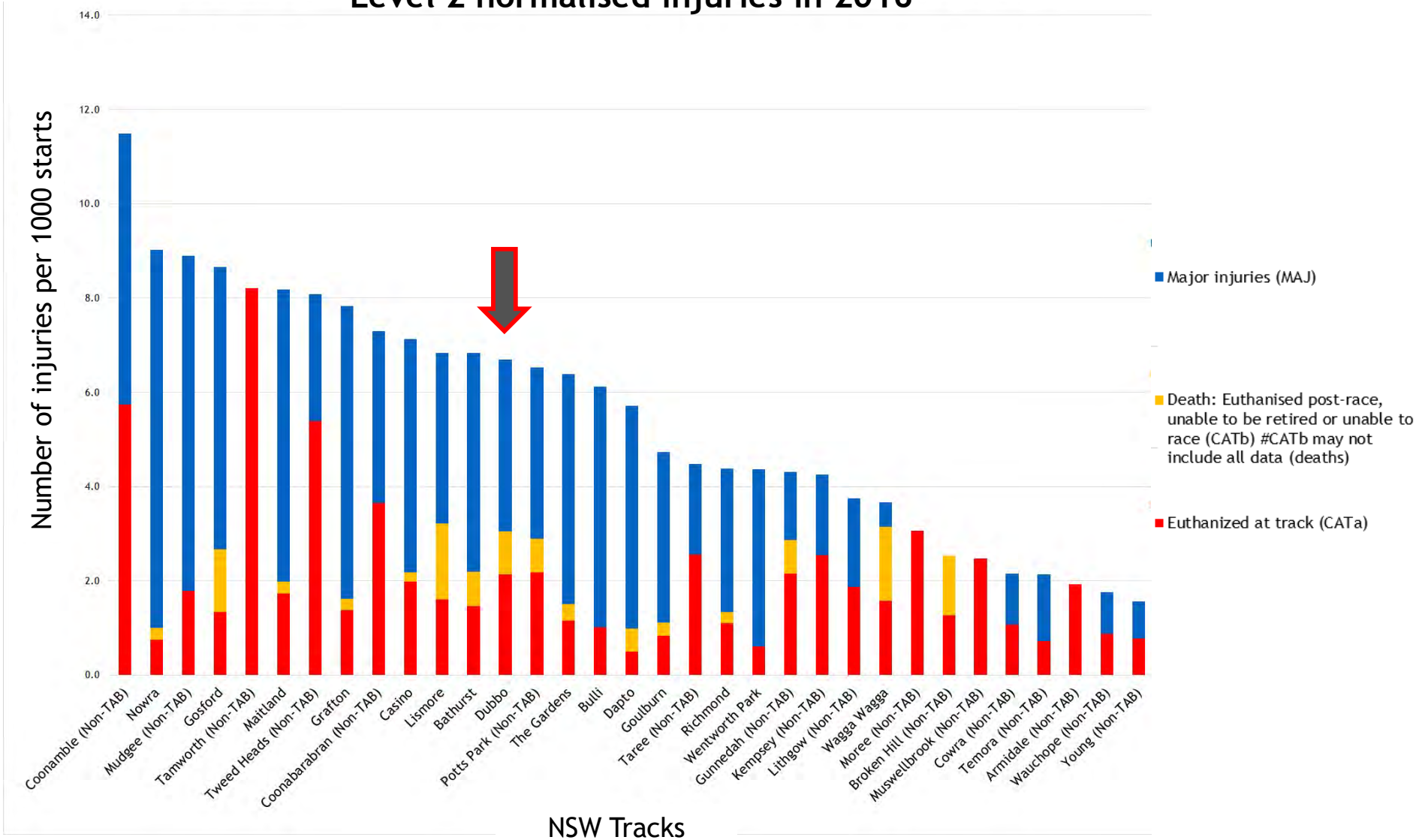
Level 1 normalised injuries in 2016



Level 2 normalised injuries in 2017



Level 2 normalised injuries in 2016



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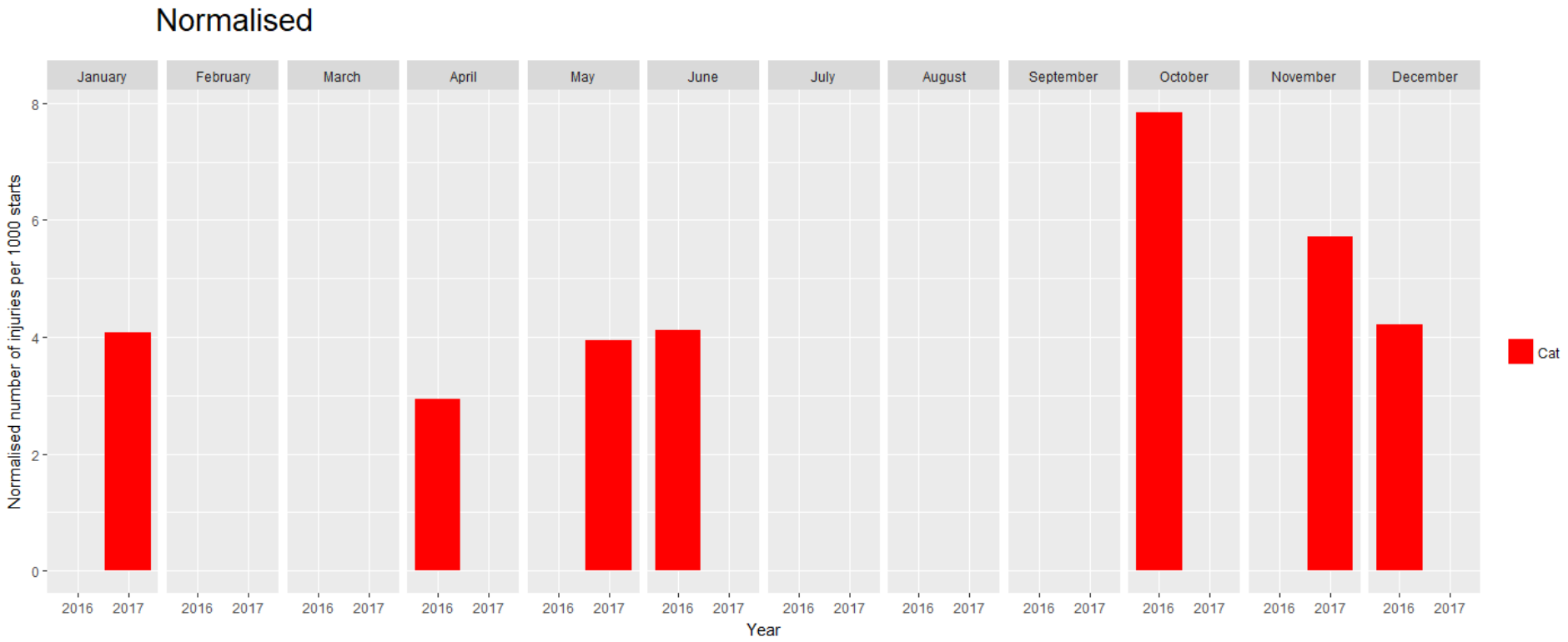
Level 1 injuries 2016 and 2017



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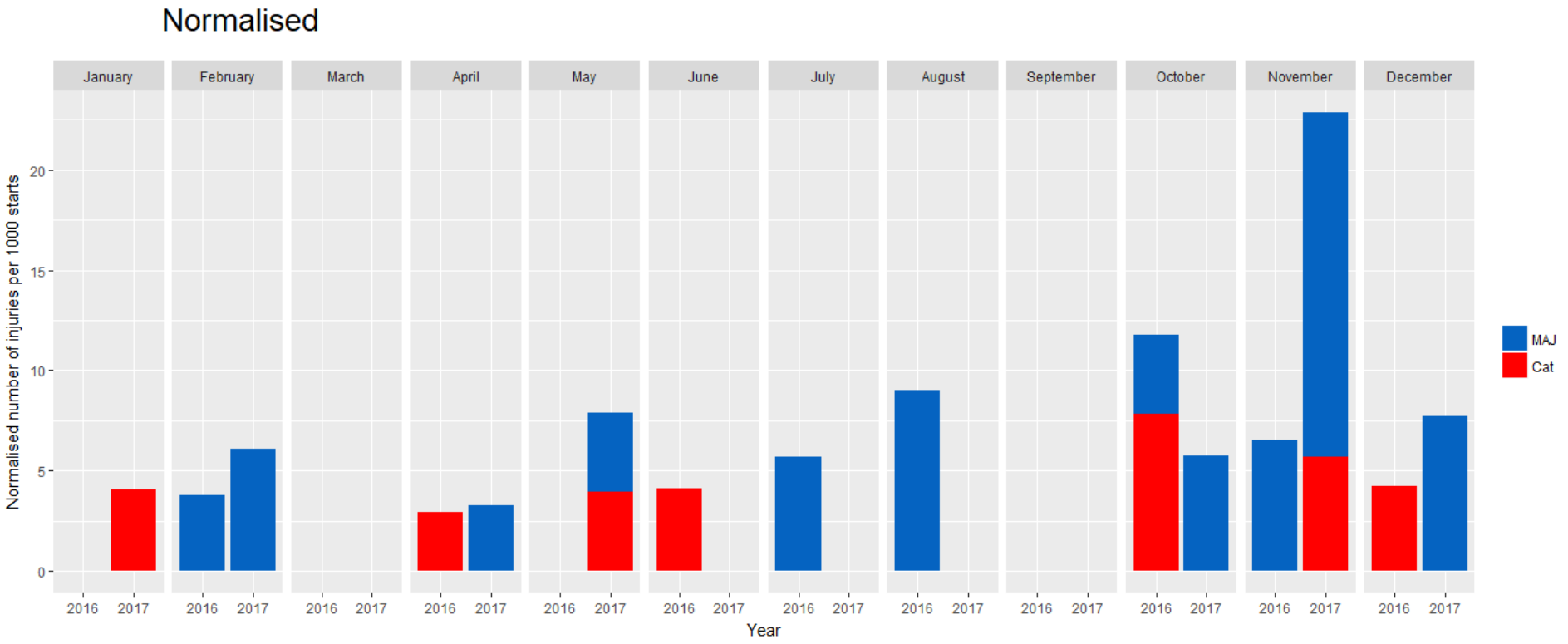
Level 2 injuries 2017 and 2016



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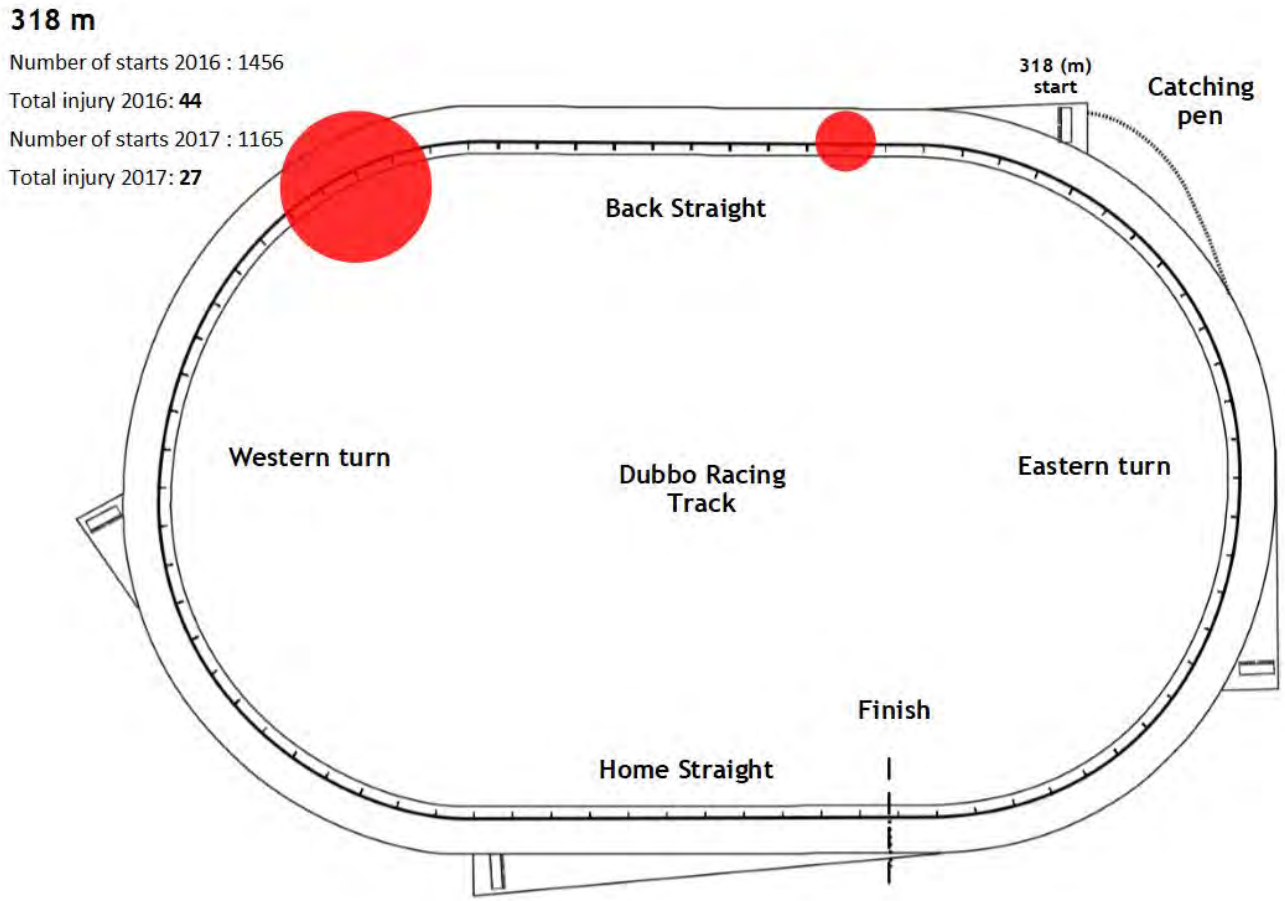
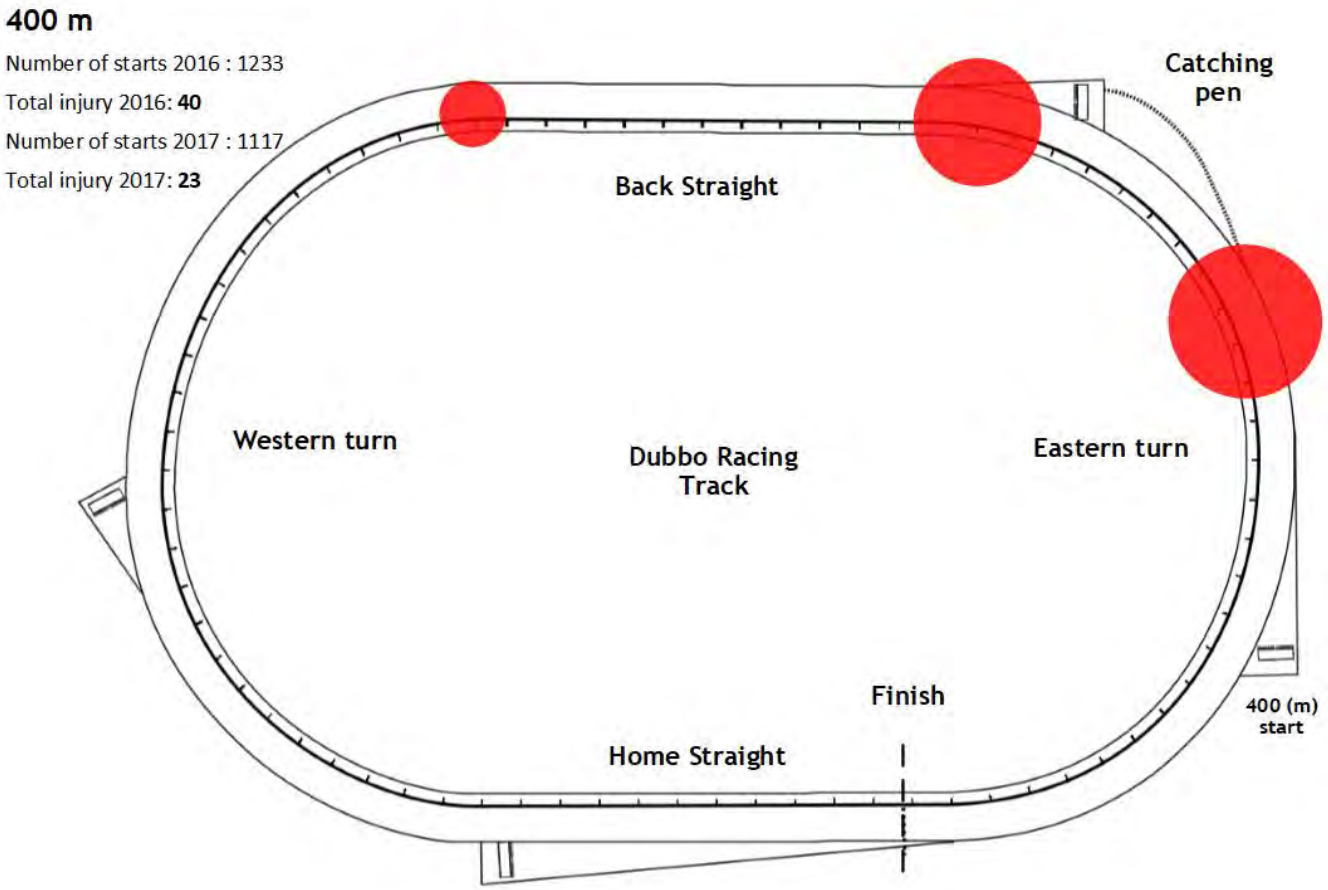
Injury locations 2016 and 2017



Dubbo greyhounds racing track

Injury locations 2016 and 2017



Dubbo greyhounds racing track

Injury locations 2016 and 2017

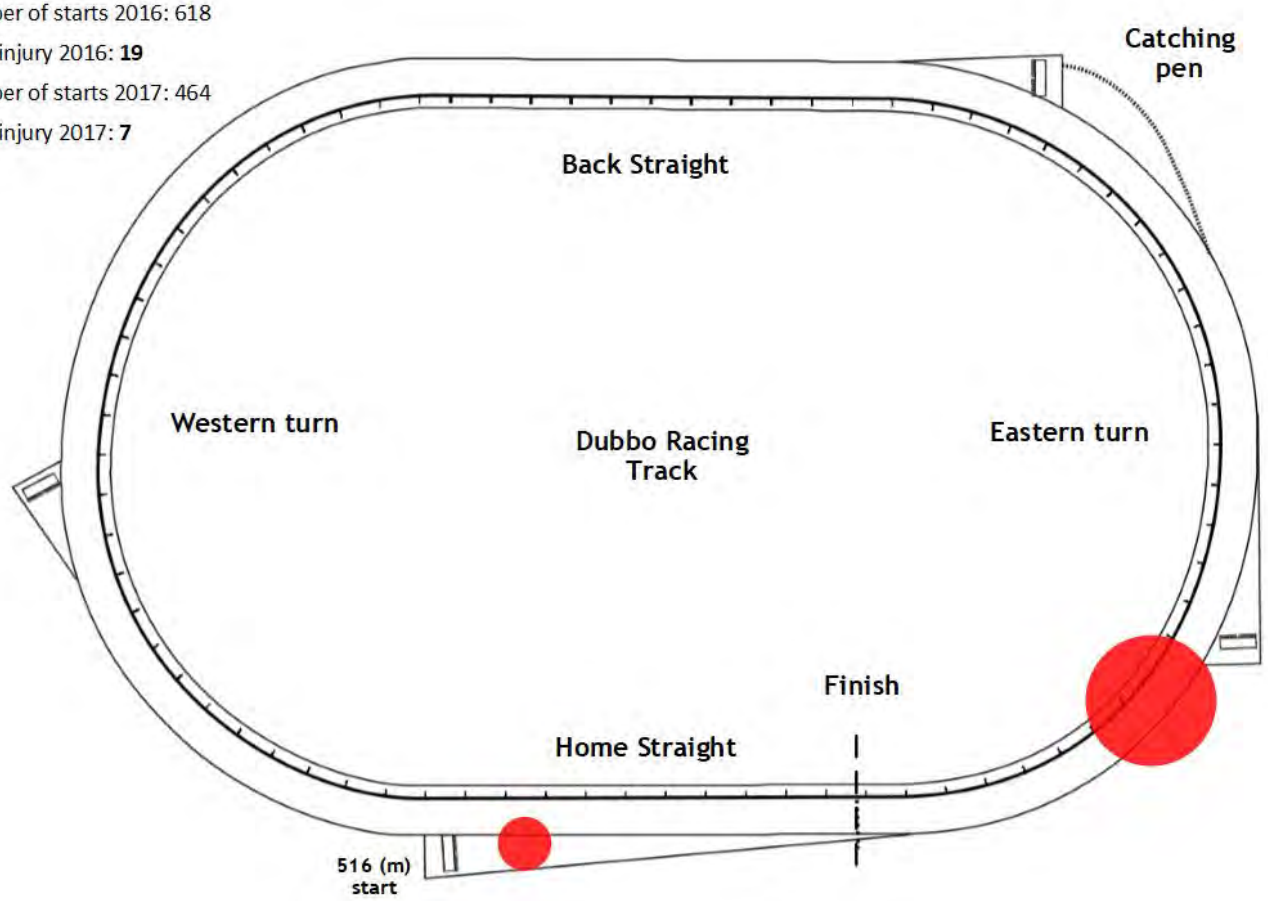
516 m

Number of starts 2016: 618

Total injury 2016: **19**

Number of starts 2017: 464

Total injury 2017: **7**



Greyhounds stride analysis

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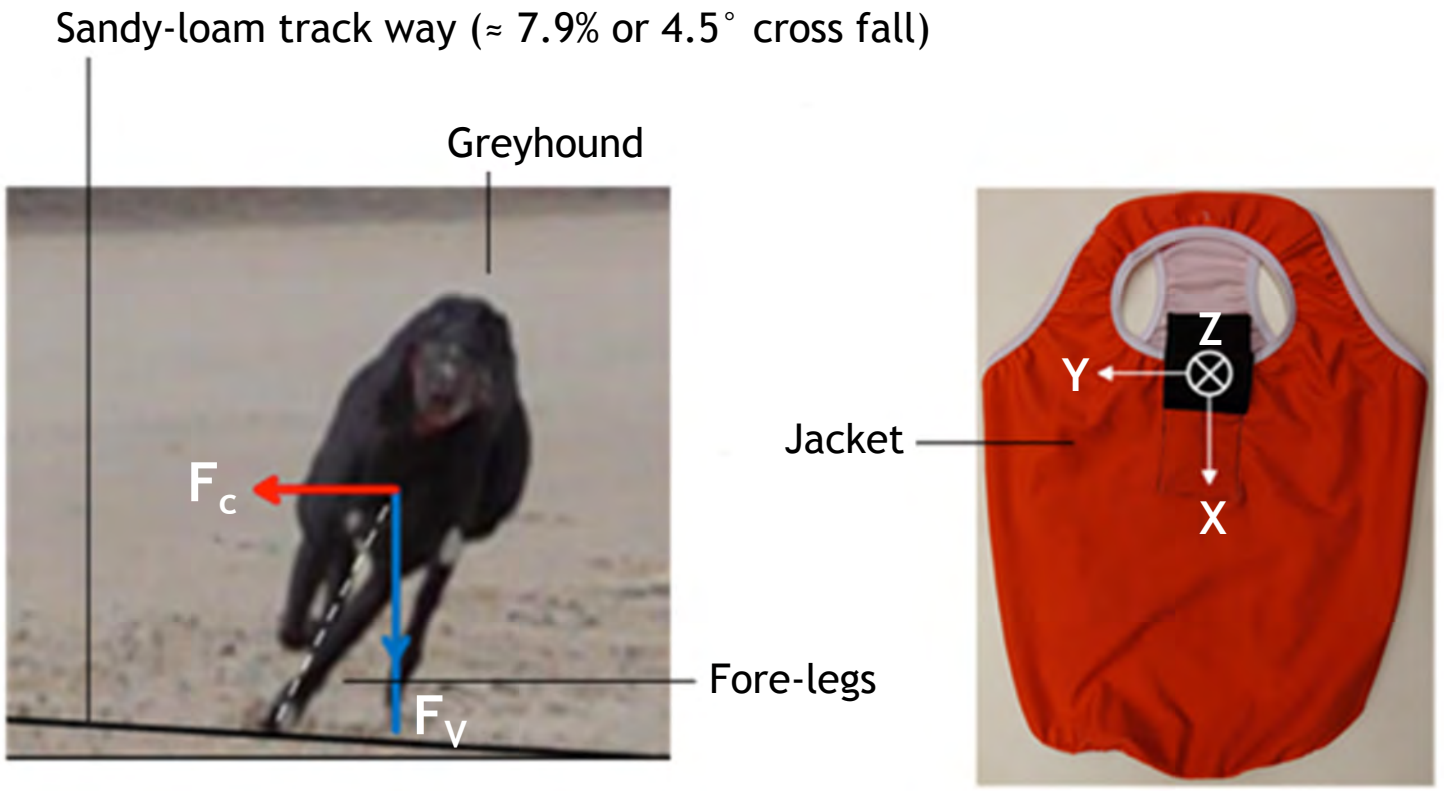
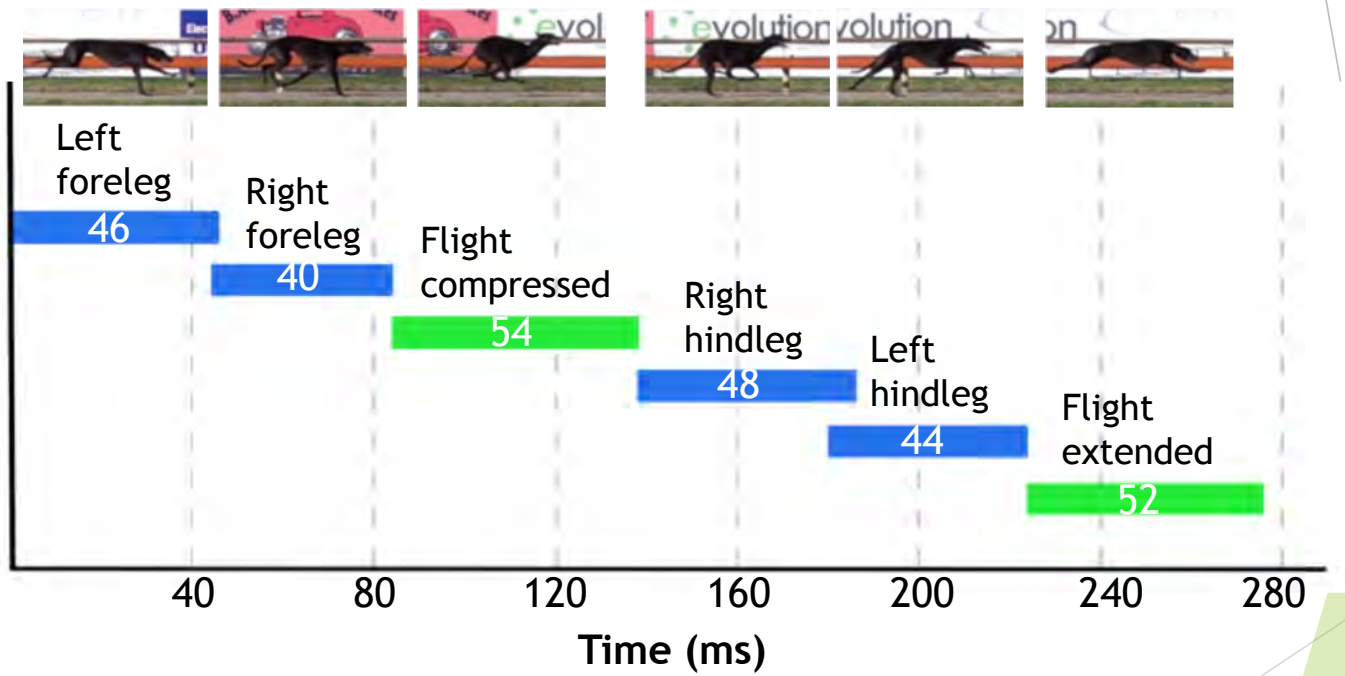
Greyhounds stride pattern

Acceleration data acquisition



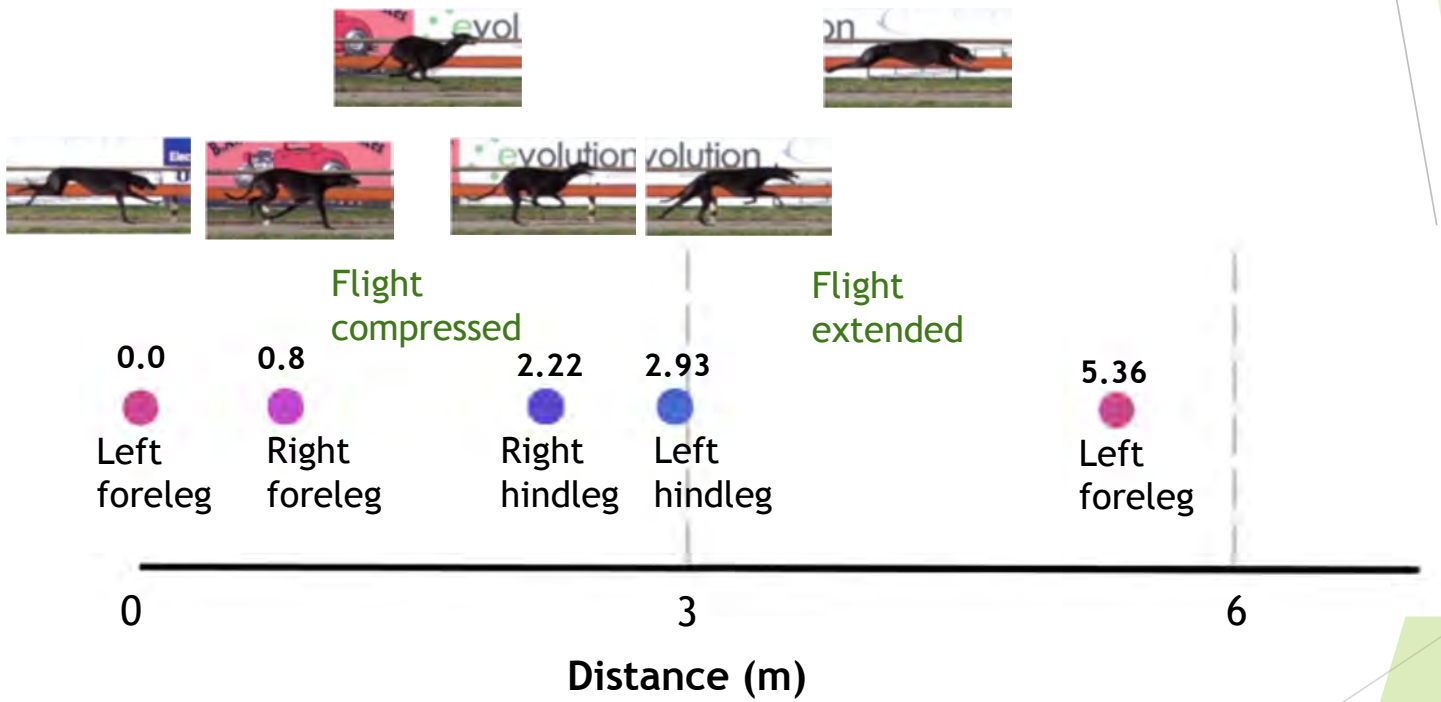
Greyhounds stride analysis

Straight running



Greyhounds stride analysis

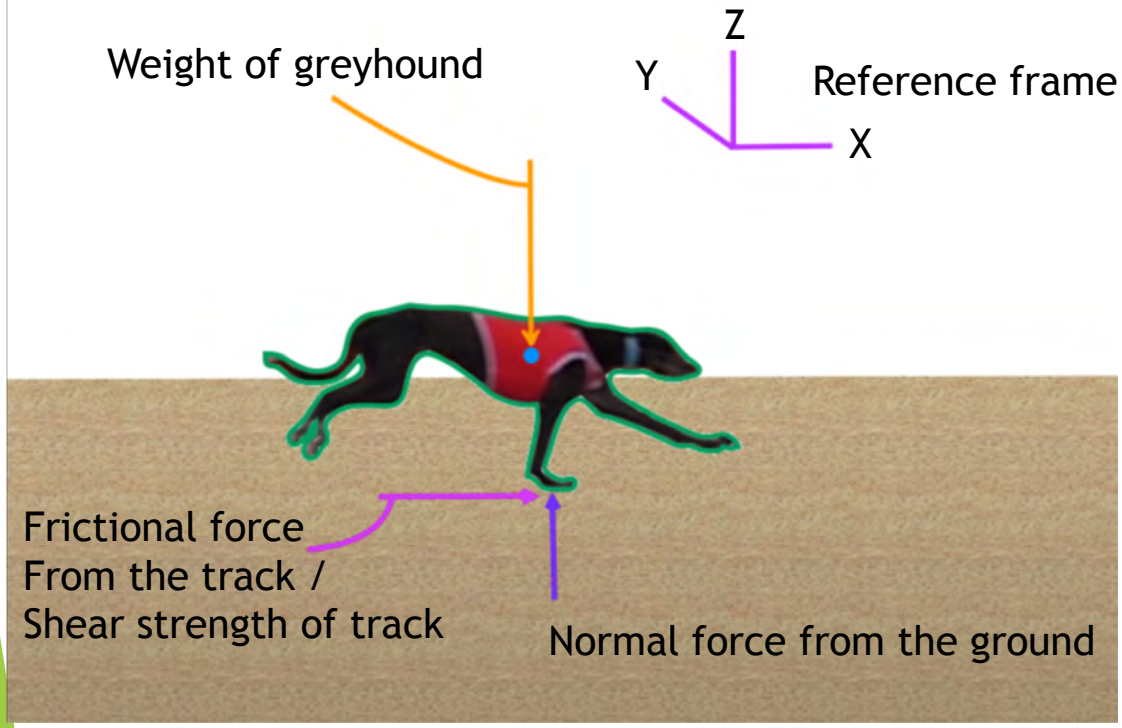
Straight running



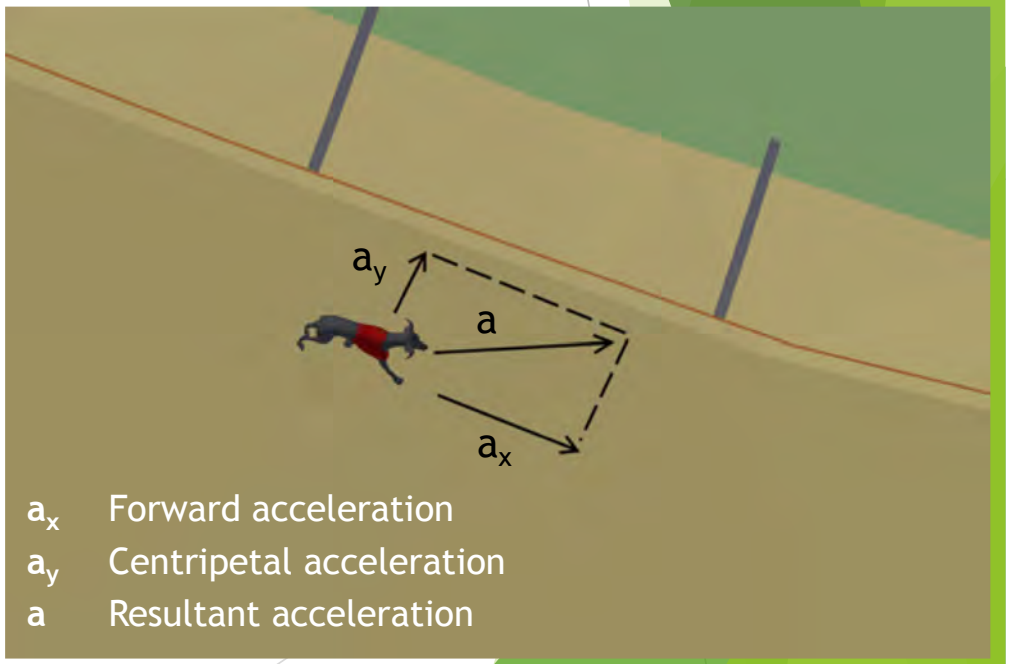
Track design investigation

Track design investigation

Greyhounds on the bends



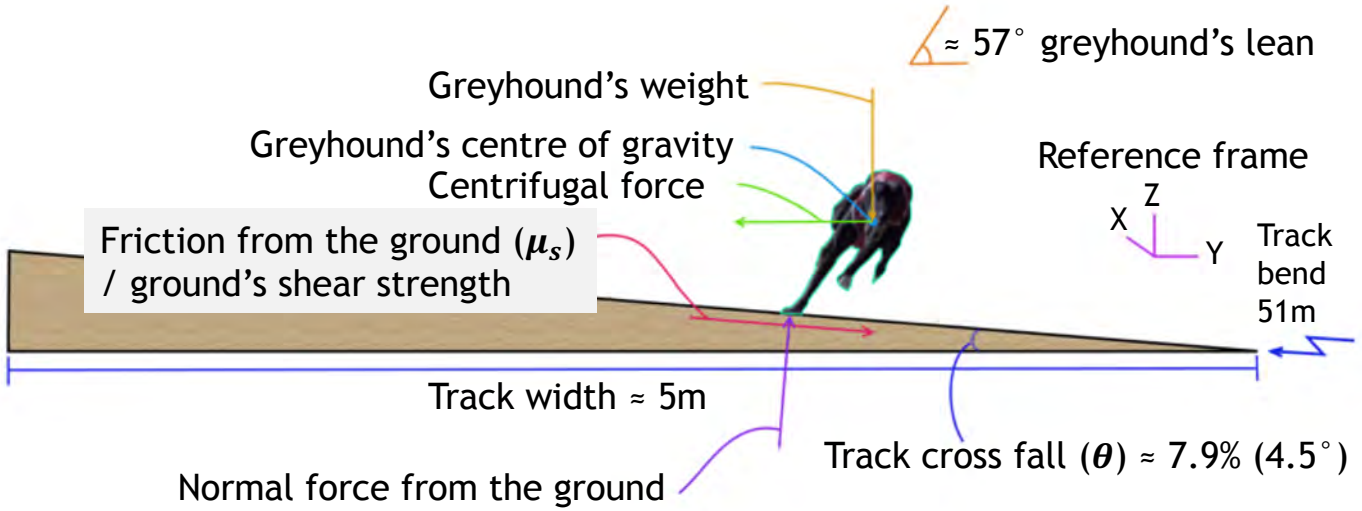
Major forces acting on a greyhound on the straight side view



Acceleration of a greyhound on the bend top view

Track design investigation

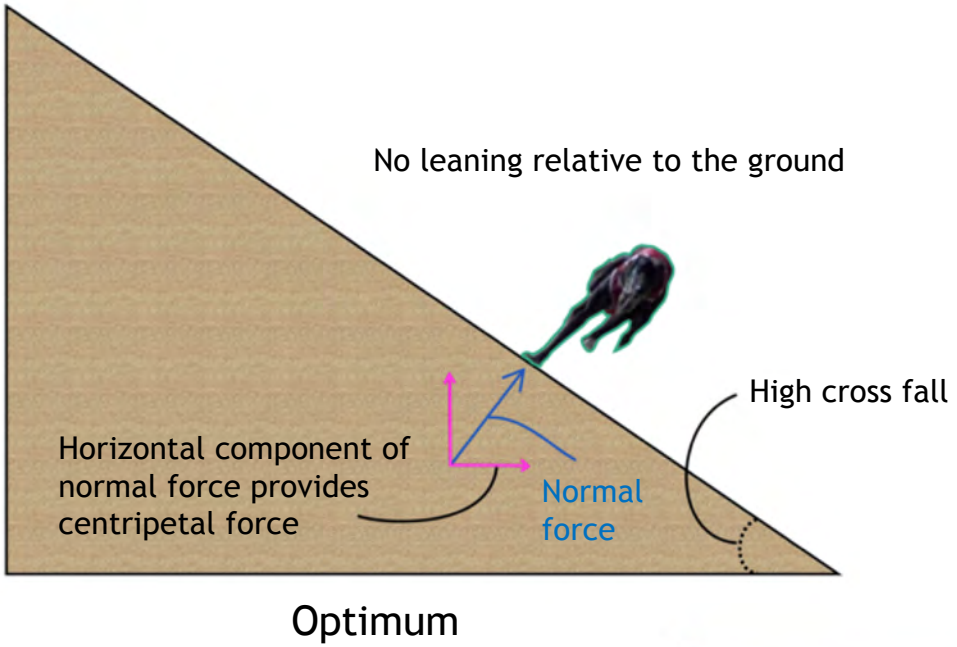
Greyhounds on the bends



Forces acting on a greyhound on the bend front view

Track design investigation

What can be done for cross falls at the tracks

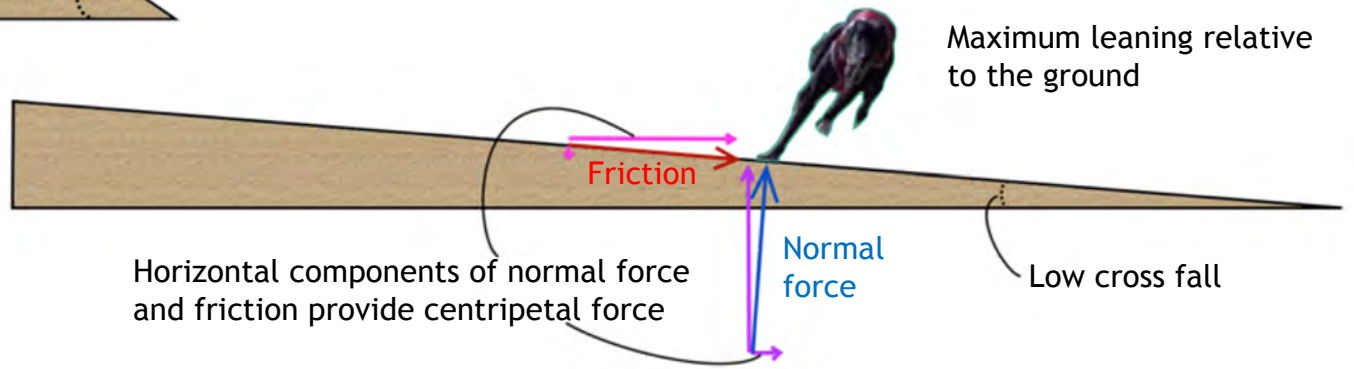


Optimum

Optimum cross falls

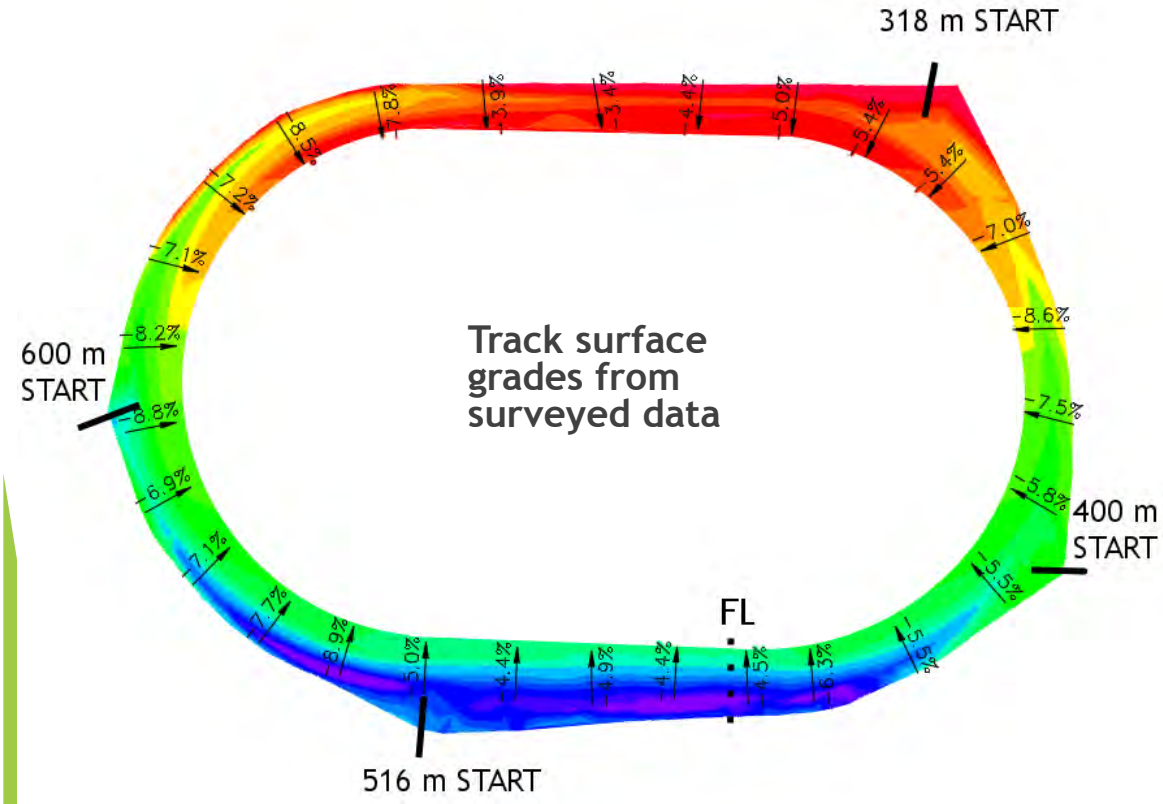
Track bend (m)	Track cross falls (%)	Track cross falls (deg)
45	78.1	38
50	70	35
55	62.5	32
60	57.7	30
65	53.2	28
70	46.6	25

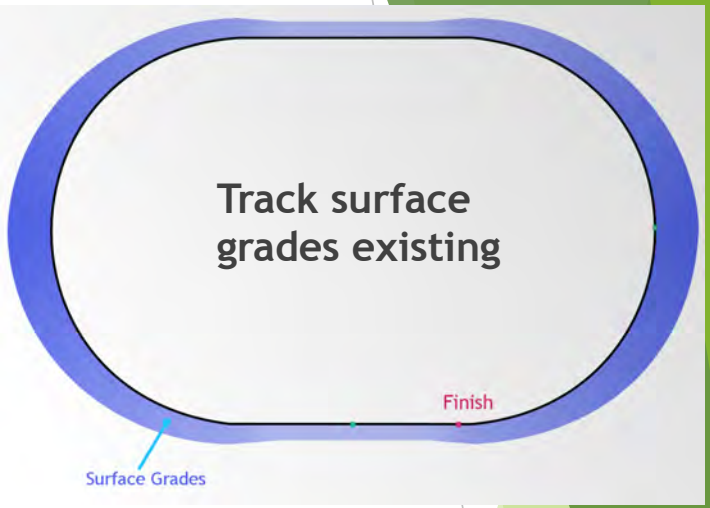
Current

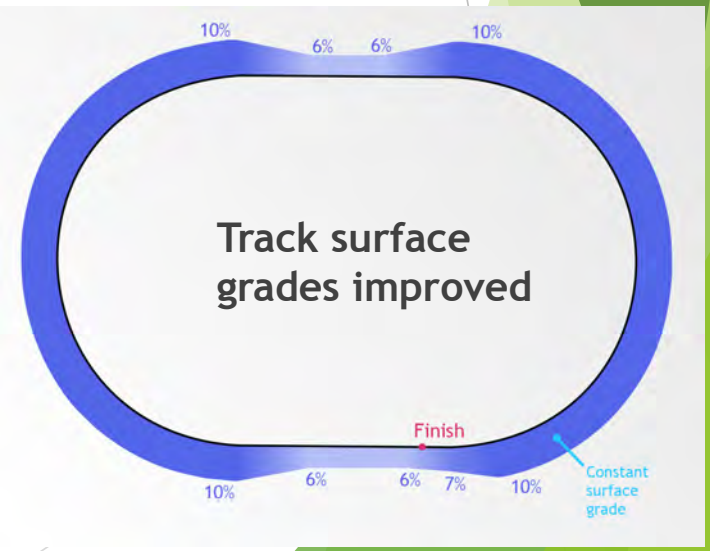


Track design investigation

What can be done for cross falls at the tracks



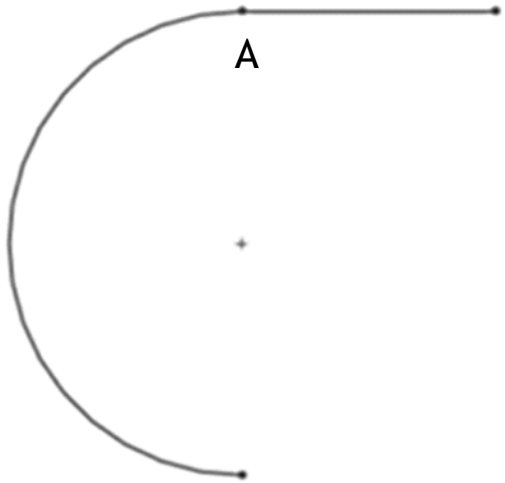




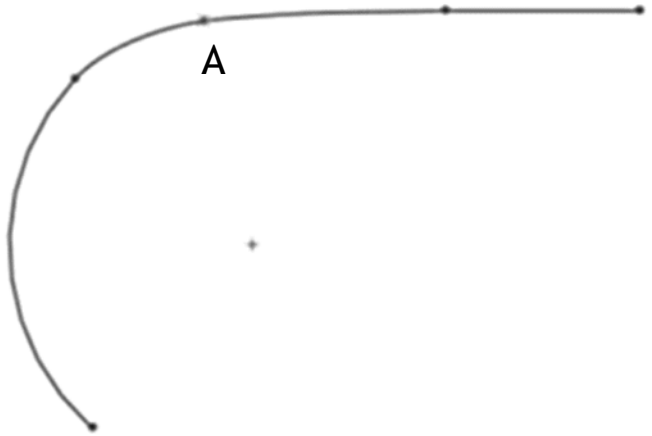
Track design investigation

Continuity of a track path

First order

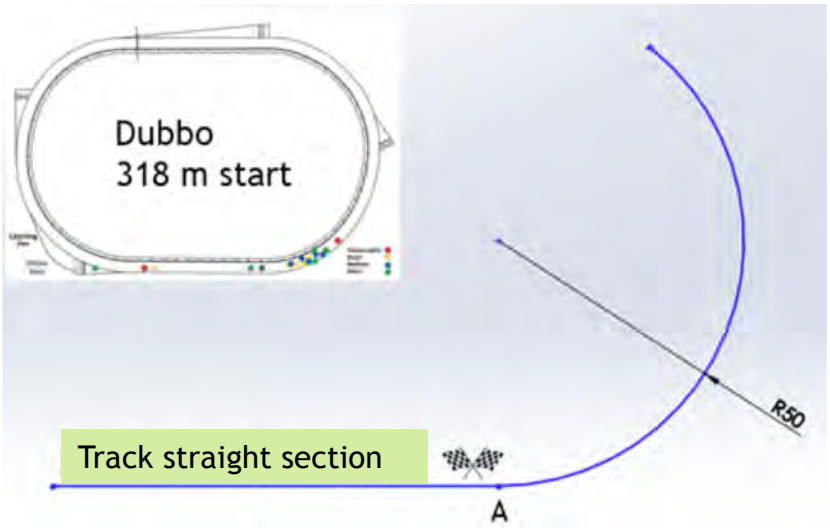


Second order

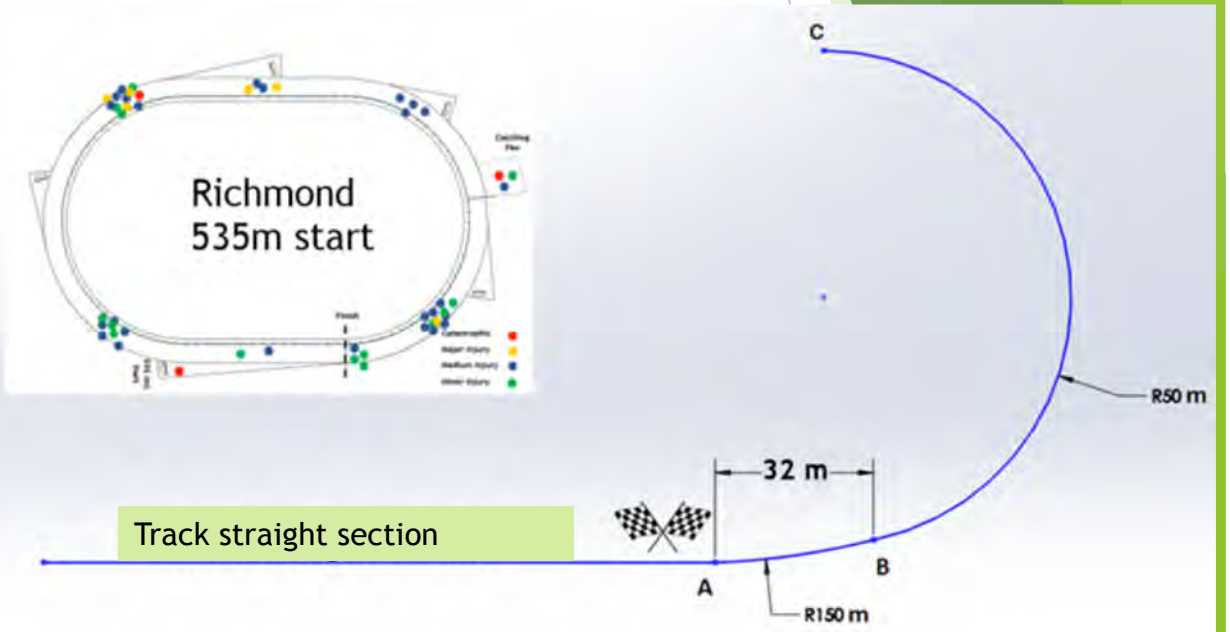


Track design investigation

Straight to bend path types in GRNSW tracks



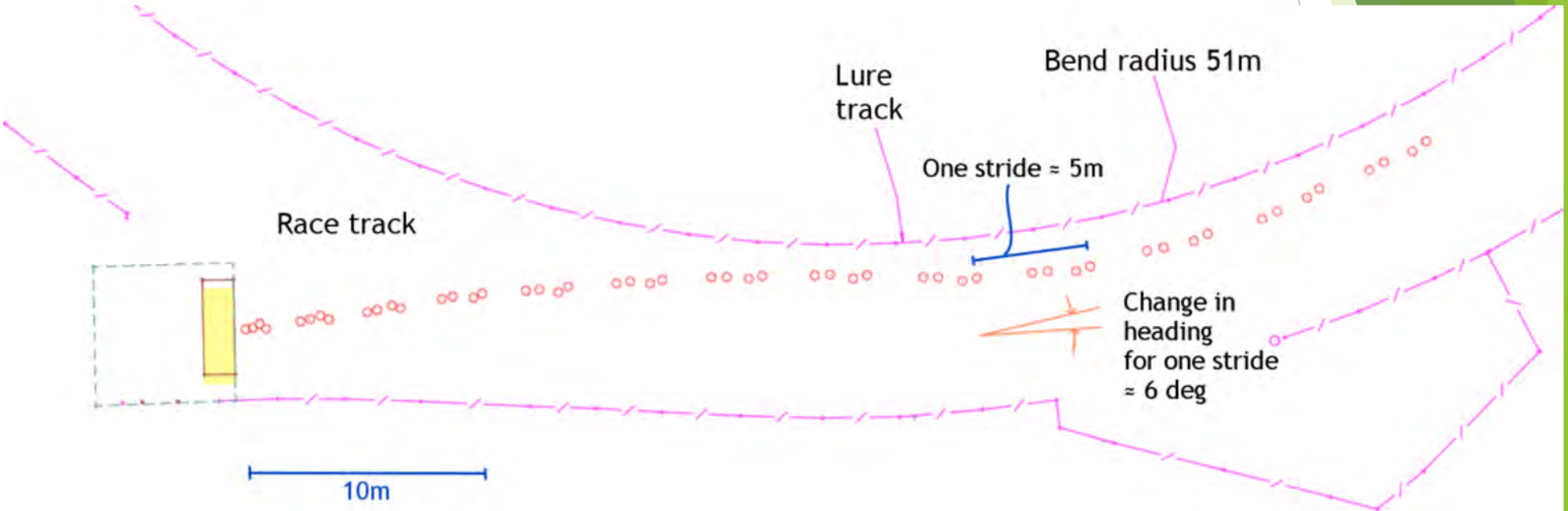
No transition (N)



Part transition (P)

Track design investigation

Case study Richmond 400 m starts immediate bend



Most injury prone GRNSW tracks starts and corners

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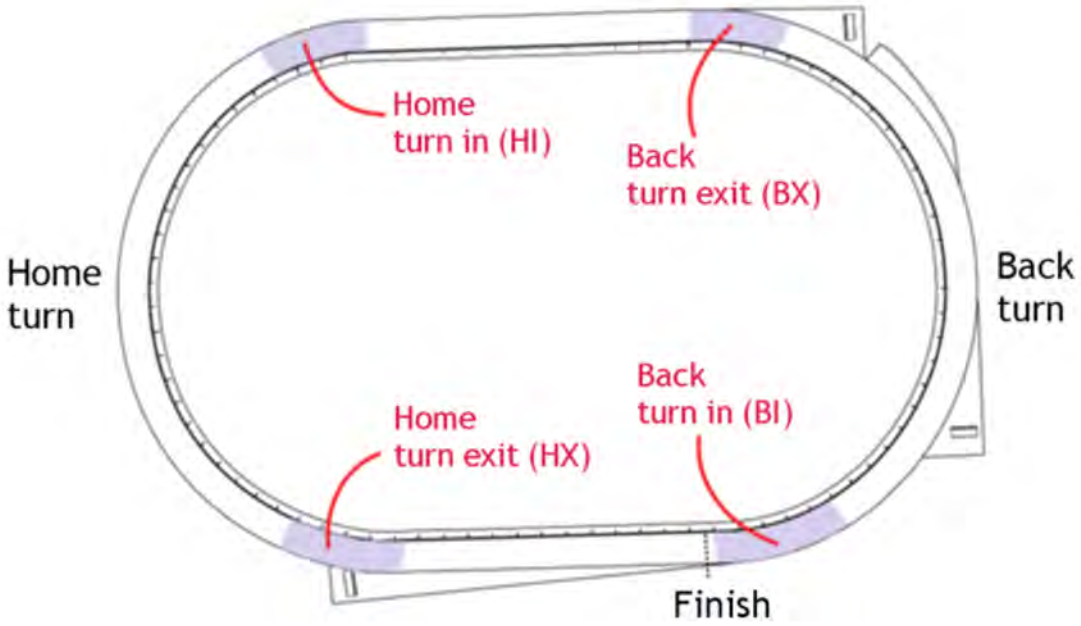
Most injury prone GRNSW tracks starts and corners in 2016

Worst five starts and corresponding corners

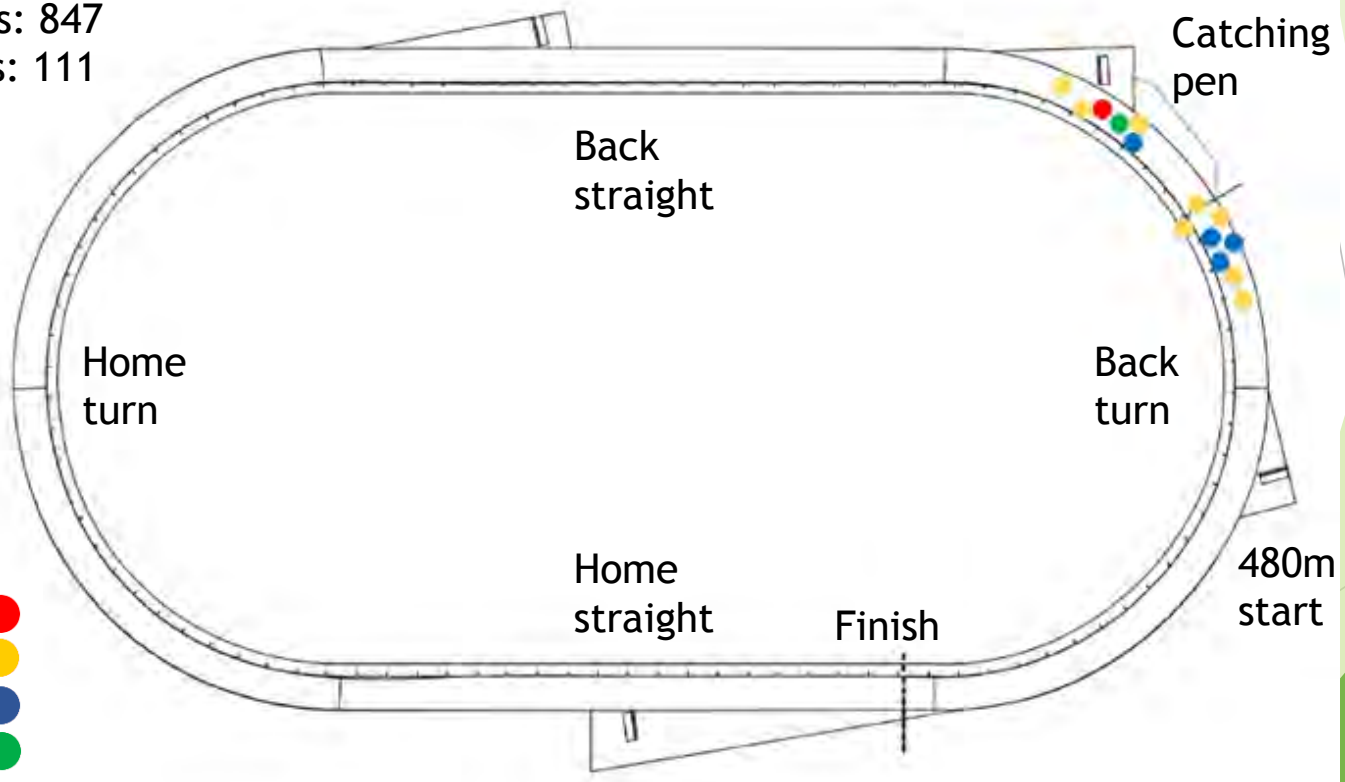
1. Grafton 480 m starts Back turn exit corner
2. Nowra 365 m starts Back turn exit corner
3. Grafton 305 m starts Home turn in corner
4. Casino 484 m starts Back turn in corner
5. Gosford 515 m starts Back turn in corner



Most injury prone GRNSW tracks starts and corners in 2016

Grafton 480 m starts Back turn exit corner

Number of starts: 847
Number of races: 111



Catastrophic
Major injury
Medium injury
Minor injury

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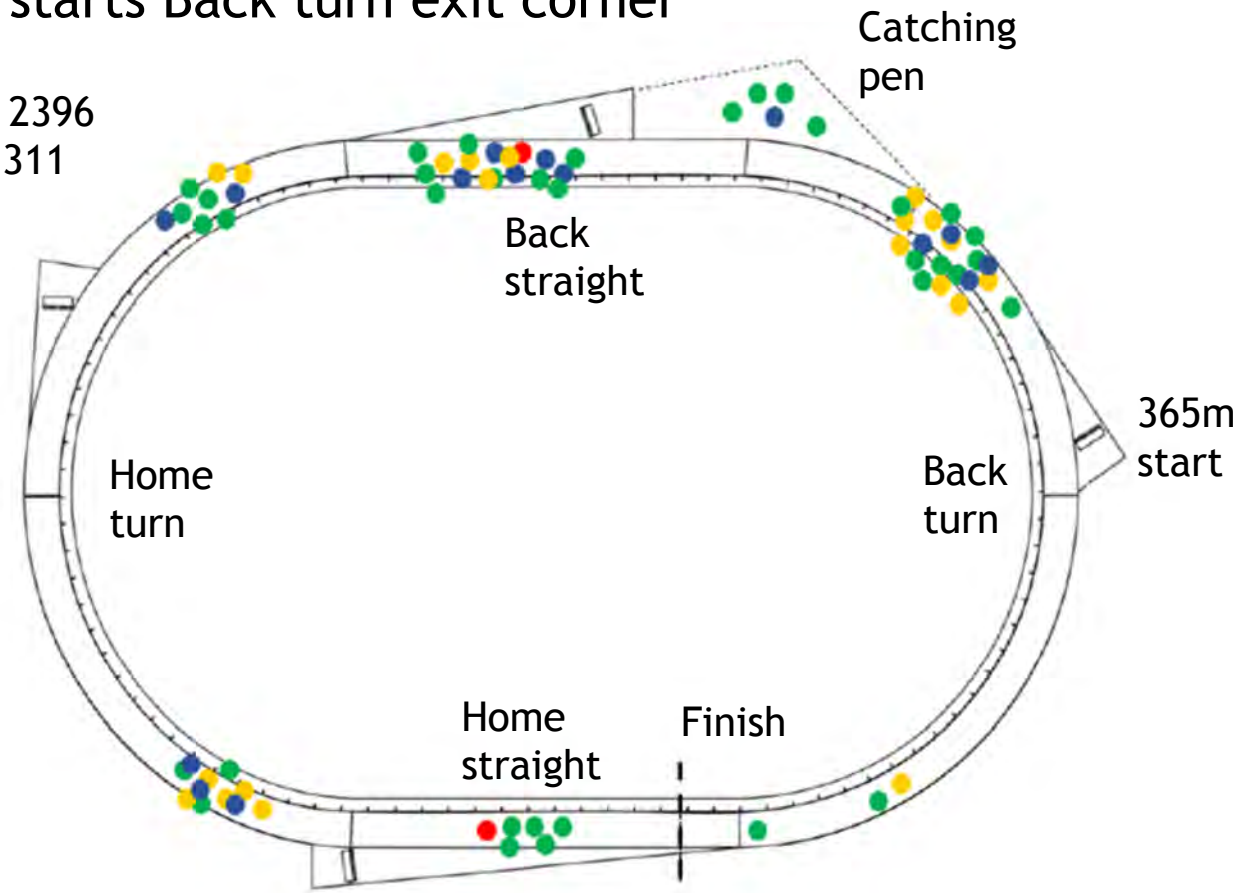
Most injury prone GRNSW tracks starts and corners in 2016

Nowra 365 m starts Back turn exit corner

Number of starts: 2396
Number of races: 311



Catastrophic
Major injury
Medium injury
Minor injury

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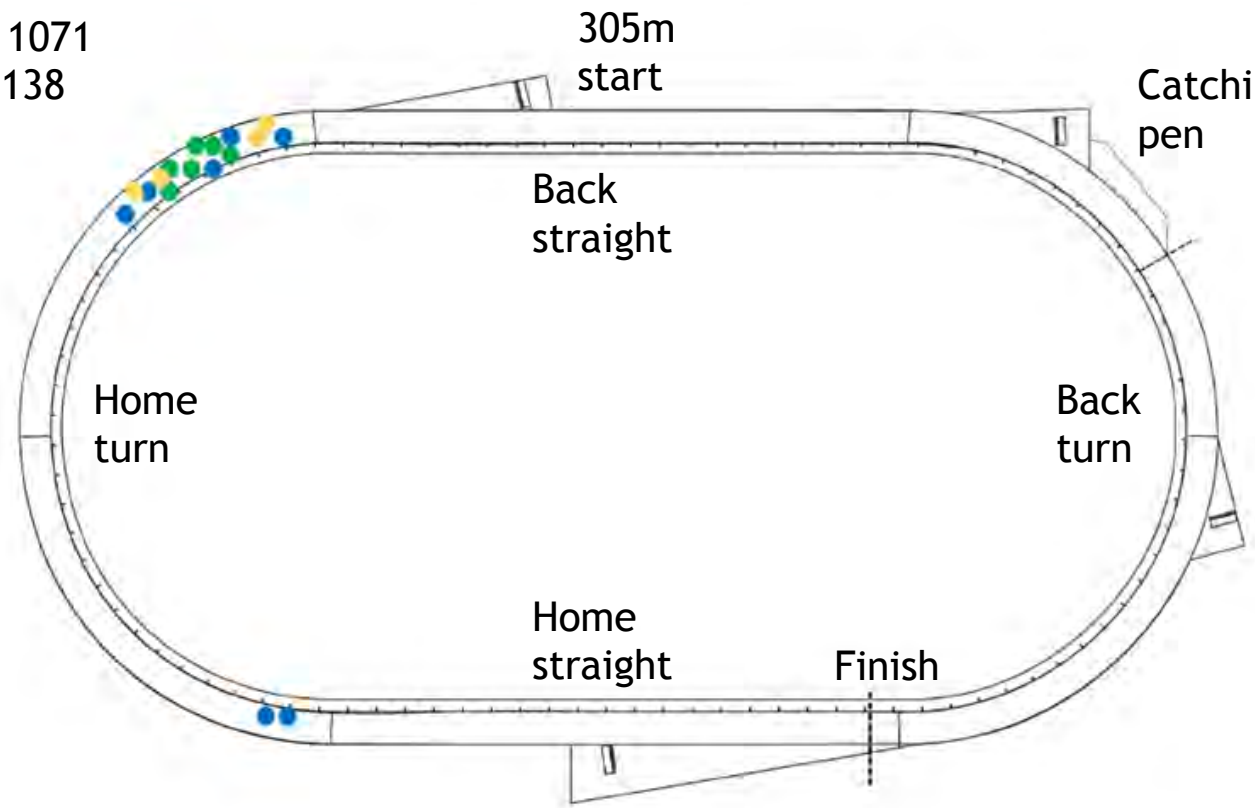
Most injury prone GRNSW tracks starts and corners in 2016

Grafton 305 m starts Home turn in corner

Number of starts: 1071
Number of races: 138



Catastrophic
Major injury
Medium injury
Minor injury

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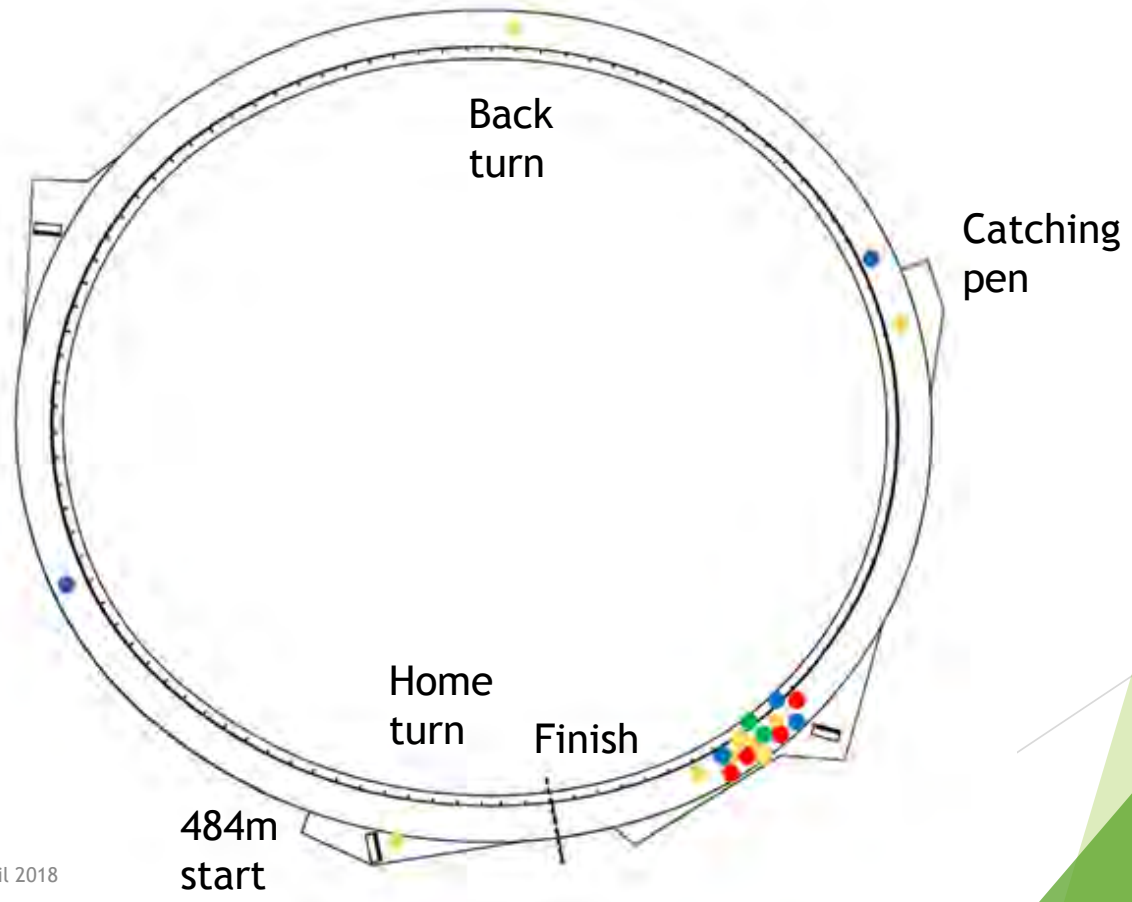
Most injury prone GRNSW tracks starts and corners in 2016

Casino 484 m starts Back turn in corner

Number of starts: 1943
Number of races: 252



Catastrophic
Major injury
Medium injury
Minor injury

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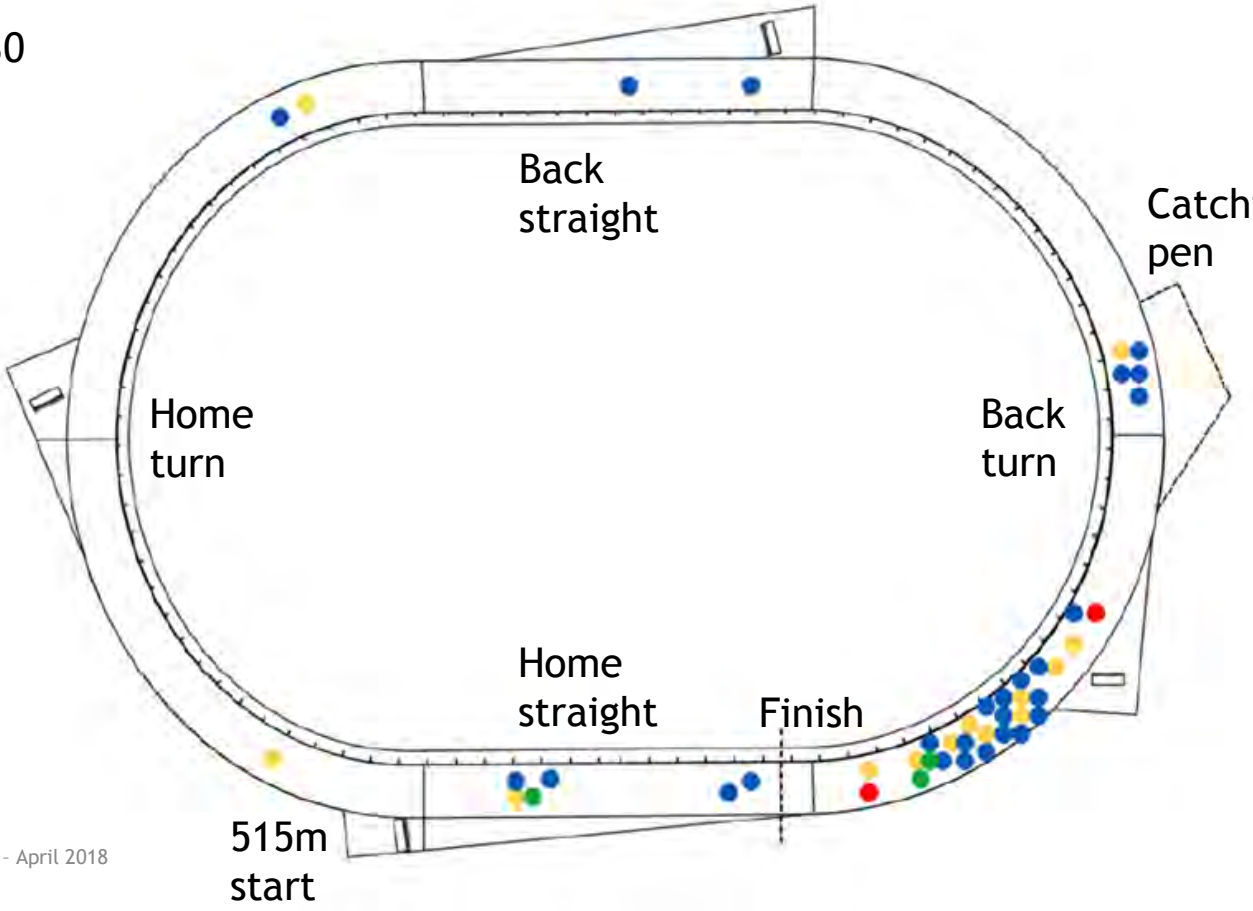
Most injury prone GRNSW tracks starts and corners in 2016

Gosford 515 m starts Back turn in corner

Number of starts: 2130
Number of races: 277



Catastrophic
Major injury
Medium injury
Minor injury

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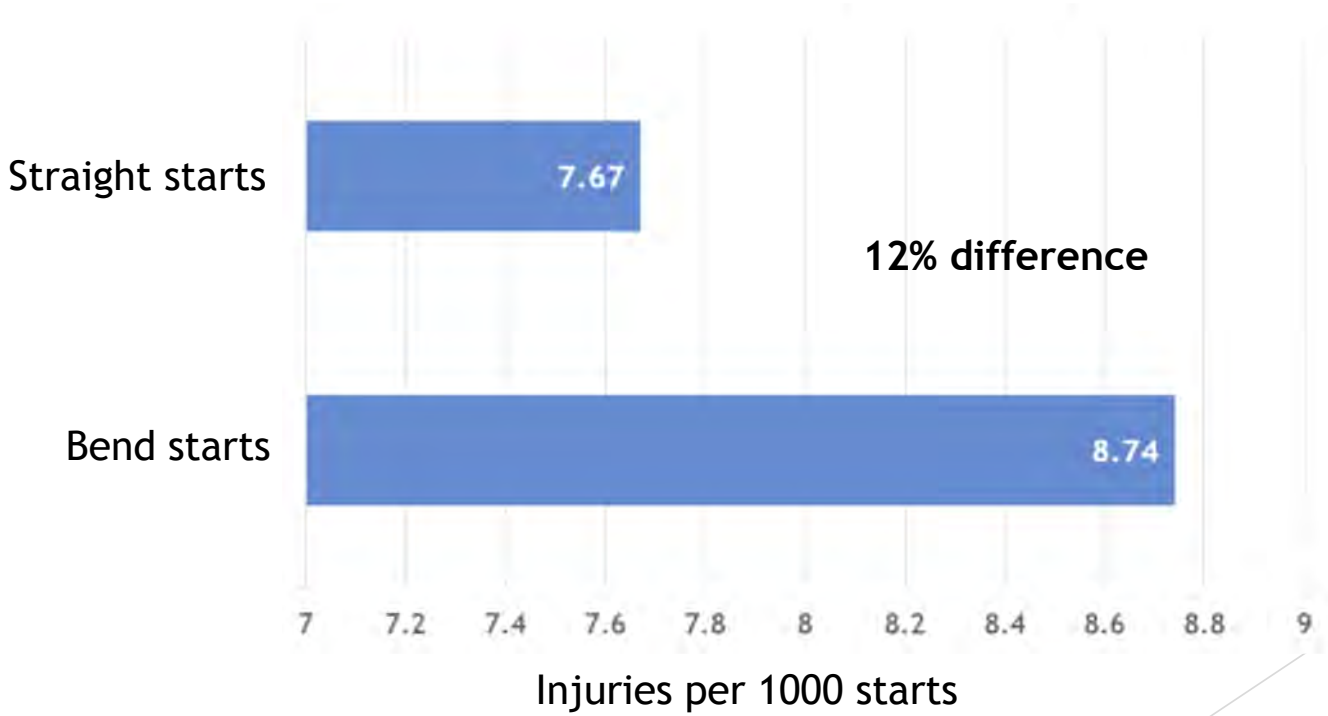
UTS phase I recommendations

Average injury rate for Level 2 injuries 2016



Q & A