



# UC DAVIS VETERINARY MEDICINE

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CAHFS Accession #: [REDACTED]

## FINAL REPORT

Ref.#: [REDACTED]

Coordinator: Monika Samol, DVM, Resident

E-Signed and Authorized by: Samol, Monika on  
1/30/2019 10:36:28AM

**Email To:**  
ARTHUR, RICK  
RMARTHUR@UCDAVIS.EDU

**Incident Track:**  
SANTA ANITA RACETRACK  
285 West Huntington Road,  
Arcadia CA 91007  
Los Angeles County

**This report supersedes all previous reports for this case**

**Date Collected:** 01/04/2019    **Date Received:** 01/05/2019

**Comments:** CHRB - Need owners complete infor.

### Case Contacts

Submitter	GRANDE, TIM	[REDACTED]	[REDACTED]	Arcadia	CA	91007
Bill To	CALIFORNIA HORSE RACING BOARD	916-263-6000	1010 Hurley Way Suite 300	Sacramento	CA	95825
Report To	UZAL, FRANCISCO	[REDACTED]	[REDACTED]	San Bernardino	CA	92408
Report To	ARTHUR, RICK	[REDACTED]	[REDACTED]	Sierra Madre	CA	91024
Attending Vet	Stead, Dana	[REDACTED]	[REDACTED]	Arcadia	CA	91006
Trainer	DESORMEAUX, KEITH	[REDACTED]	[REDACTED]	Maurice	LA	70555

### CHRB - Related Information

Horse's Name:	[REDACTED]	Human Injury?	
Tattoo:	[REDACTED]	Death Related to:	Race
Age:	3.00 Years	Track Surface:	Turf
Gender:	Neutered Male	Location on Track:	3/8 Pole
Taxonomy:	Thoroughbred Horse	Insured?	N

Medications: Dormosedan (Detomidine); Pentobarbital;

### Laboratory Findings/Diagnosis

A 3 year old [REDACTED] Thoroughbred [REDACTED] submitted with a history of left front fetlock luxation with open, complete lateral condylar fracture, biaxial proximal sesamoid bone fractures and suspensory apparatus failure

Catastrophic breakdown of left front fetlock with suspensory apparatus failure

#### LEFT FRONT

#### ACUTE CHANGES

1. Fracture of the proximal sesamoid bones (PSB)
  - a) Open, biaxial, comminuted, articular, transverse, apical with predisposing lesion located within the medial proximal sesamoid bone
2. Complete, open luxation of the fetlock joint with palmar displacement of the distal MCIII. There is no lateral condylar fracture of MCIII.
3. Full thickness, transverse rupture of the palmar annular ligament

4. Full thickness, transverse and longitudinal rupture of the intersesamoidean ligament
5. Marked, transverse incomplete tearing, incomplete split, fraying of fibers of the superficial digital flexor tendons
6. Marked, complete split and fraying of fibers of the deep digital flexor tendons
7. Severe fraying of fibers of the lateral and medial short and cruciate ligaments
8. Severe fraying of fibers and complete transverse rupture of the lateral and medial collateral ligaments of fetlock
9. Severe fraying of fibers and complete longitudinal rupture of the collateral ligaments of the proximal sesamoid bones
10. Severe, longitudinal, full-thickness split, fraying of fibers and hemorrhage of the distal straight sesamoidean ligament
11. Severe, biaxial fraying and hemorrhage of the distal oblique sesamoidean ligaments
12. Severe fraying of fibers and complete longitudinal split of the lateral branch of the suspensory ligament
13. Severe fraying of fibers and complete transverse rupture of the medial branch of the suspensory ligament
14. Severe scoring of the distal articular surface of MCIII
15. Mild to moderate scoring of the proximal articular surface of P1
16. Severe erosion of the dorsal margin of the proximal articular surface of P1

**CHRONIC CHANGES:**

1. Mild to moderate dorsal metacarpal disease with periosteum thickening and red discoloration

**RIGHT FORELIMB****CHRONIC CHANGES**

1. Mild thickening of the dorsal periosteum at the level of the mid MCIII
2. Moderate transverse ridge arthrosis with pitting of the cartilage of the distal articular surface of MCIII
3. Moderate, biaxial, apical, irregular bony outgrowth of the proximal sesamoid bones
4. Moderate lipping of the dorsal and palmar aspect of the proximal articular surface of P1
5. Moderate thickening of the body of the suspensory ligament accompanied by dark red discoloration visible on the cross section

**Other findings**

- Moderate, multifocal gastric hyperkeratosis with mild, multifocal to coalescing, non-glandular gastric ulceration along the margo plicatus (incidental)
- Pulmonary congestion and edema (euthanasia artifact)
- Splenomegaly (euthanasia artifact)

**Case Summary**

01/12/19 The gross examination of both front limbs did not confirm the presence of the lateral condylar fracture of the left cannon bone. The most important findings in the left forelimb are biaxial fractures of the proximal sesamoid bones. The injuries of the proximal sesamoid bones resulted in loss of support of the fetlock joint of the left forelimb. The reason of the aforementioned fractures may be related to the focal region of discoloration and bone porosity/osteopenic focus associated with the fracture surfaces in the medial proximal sesamoid bone. Changes of similar nature could not be located in the proximal sesamoid bones in contralateral limb.

01/06/19 No significant findings were identified in visceral organs. At the time of necropsy, both front limbs were removed and saved for detailed examination at a later date. Results of this examination will be included in the next version of this report.

**Clinical History**

Left foreleg: open, complete, displaced lateral condylar fracture with biaxial proximal sesamoid bone fractures (comminuted, displaced) and suspensory apparatus failure.

**Gross Observations**

Necropsy of a 3 year old, [REDACTED] Thoroughbred [REDACTED] ([REDACTED]), 455kg, with a [REDACTED] tattoo [REDACTED] is commenced at 10:35 am, January 6, 2019. The carcass is in good nutritional condition, with appropriate musculature development, good deposits of adipose tissue, and in mild post-mortem decomposition. The trachea abundant stable foam, the lungs are mottled pink to red, spongy and wet (euthanasia artifact). The spleen is markedly enlarged and congested (euthanasia artifact). The stomach contains green, soft roughage and grain particles. Non-glandular gastric mucosa along the margo plicatus is moderately hyperkeratotic with multifocal (app. 0,5 cm- diameter) to coalescing (app. 1-2 cm), shallow ulcers. The intestinal tract is unremarkable, and the small colon contains formed feces.

Both front limbs are removed at the level of the chestnut for further examination.

### CHRB Musculoskeletal

Both front limbs were examined distally from the chestnut. Following changes were seen:

#### LEFT FRONT

##### A- PROXIMAL SESAMOID BONES

###### 1. Fracture of the proximal sesamoid bones (PSB)

a. Open, biaxial, comminuted, articular, transverse, apical with predisposing lesion located within medial proximal sesamoid bone

A region of increased porosity is present at the abaxial aspect of the articular surface on both opposing fracture surfaces of the medial proximal sesamoid bone. The fracture line propagates through subchondral focus of marked dark red/brown discoloration surrounded by highly compacted trabecular bone (sclerosis) and adjacent to the cartilage of the articular surface of medial proximal sesamoid bone. The subchondral bone of the lateral proximal sesamoid bone and the trabecular bone adjacent to the abaxial surface/lateral suspensory branch insertion appear to be highly compacted (sclerotic) on both opposing surfaces of the fracture.

For better visualization of described fractures, please see attached pictures and drawings.

###### 2. Severe scoring of the articular surfaces of the proximal sesamoid bones

3. Severe, focal, crescent shape, full thickness cartilage loss located on the apex of the lateral proximal sesamoid bone

##### B- SOFT TISSUES

###### 1. Full thickness, transverse rupture of the palmar annular ligament

2. Full thickness, transverse and longitudinal rupture of the intersesamoidean ligament- Y-shaped, propagates in a crescent direction at the level of the fracture lines and continues distally in a longitudinal direction between the PSBs, to merge with a tear of the palmar aspect of the distal straight sesamoidean ligament progressing up to its proximal third

###### 3. Complete, open luxation of the fetlock joint with palmar displacement of the distal MCIII

4. Marked, transverse incomplete tearing (short, originating from the medial and lateral edge), incomplete split (roughly at the mid-width, ca. 5cm long), fraying of fibers of the superficial digital flexor tendons at the level of the fetlock

5. Marked, complete split (roughly at the mid-width, ca. 6-7 cm long) and fraying of fibers of the deep digital flexor tendons at the level of the fetlock

###### 6. Severe fraying of fibers of the lateral and medial short and cruciate ligaments

7. Severe fraying of fibers and complete transverse rupture of the lateral and medial collateral ligaments of fetlock

8. Severe fraying of fibers and complete longitudinal rupture of the collateral ligaments of the proximal sesamoid bones

9. Severe, biaxial fraying and hemorrhage of the distal oblique sesamoidean ligaments

10. Severe fraying of fibers and complete longitudinal split of the lateral branch of the suspensory ligament- the longitudinal rupture is a continuation of the fracture line propagating through the proximal sesamoid bones. The complete split propagates all the way up to bifurcation of the suspensory ligament

11. Severe fraying of fibers and complete transverse rupture of the medial branch of the suspensory ligament at the level of the fracture

12. Moderate thickening of the body of the suspensory ligament with dark red discoloration visible on the cross section

##### C- MCIII

1. Severe scoring of the distal articular surface of MCIII- the cartilage overlying the distal MCIII (especially medial condyle) is severely degenerated, thinned with very deep and wide scoring lines

2. Severe hemorrhage accompanied by soft tissue hypertrophy at the palmar aspect of the supracondylar region of MCIII

3. Severe hemorrhage with bone erosion at the dorsal aspect of the supracondylar region of MCIII

4. Mild, ellipsoidal (ca. 0,5 cm x 0,3 cm), cartilage ulceration of the mid-sagittal ridge of distal MCIII

5. Mild to moderate dorsal metacarpal disease with periosteum thickening and two longitudinal foci (ca. 3 cm long) of red discoloration (presumably woven bone formation at the dorsal aspect of mid MCIII)

##### D- P1

1. Mild to moderate scoring of the proximal articular surface of P1

2. Severe erosion of the dorsal margin and axial margins of palmar eminences of the proximal articular surface of P1

#### RIGHT FRONT

**A- PROXIMAL SESAMOID BONES**

1. Moderate, biaxial, apical, irregular bony outgrowth of the proximal sesamoid bones
2. Moderate synovial hyperplasia with red discoloration underneath the bases of the proximal sesamoid bones

**B- MCIII**

1. Mild thickening of the dorsal periosteum at the level of the mid MCIII
2. Moderate transverse ridge arthrosis with pitting of the cartilage of the distal articular surface of MCIII

**C- SOFT TISSUE**

1. Moderate synovial thickening in the fetlock joint
2. Moderate thickening of the body of the suspensory ligament accompanied by dark red discoloration visible on the cross section

**D- P1**

1. Moderate lipping of the dorsal and palmar aspect of the proximal articular surface of P1

No gross lesions/ abnormalities were identified in other bones of both distal front limbs examined from the chestnut to the hoof.

Accession #

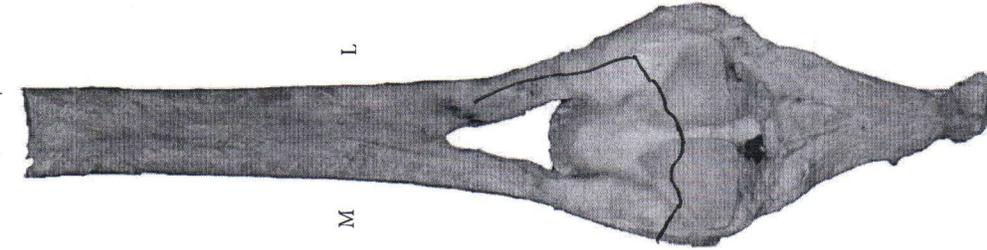
CC: MAS

Date: 01/11/19

Left Fetlock

Please circle affected leg

foreleg  
hindleg

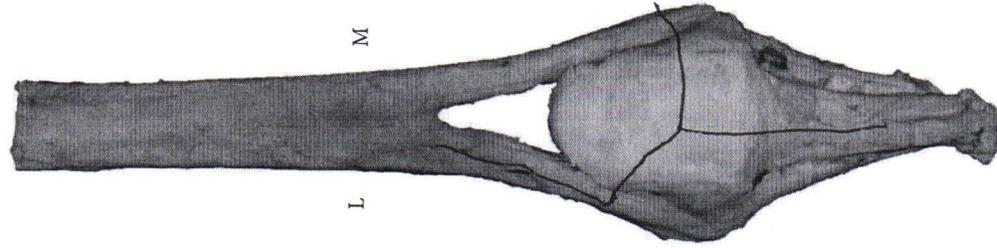


Susp. App. (dorsal)

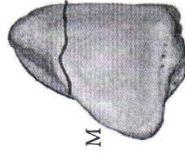
Open wound?  Yes  No

Joint capsule intact? Yes  No

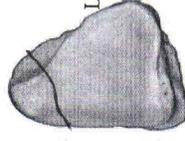
Joint luxated?  Yes  No



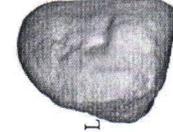
Susp. App. (palmar/plantar)



M



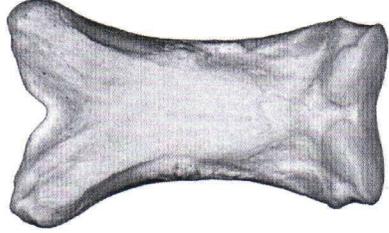
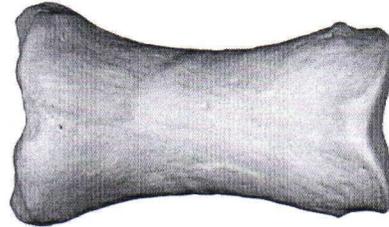
L



L



M



**Involved Structures**

SDF tendon:  Yes  No DDF tendon:  Yes  No

Suspensory ligament:  Yes  No

SL Medial branch

SL Lateral branch

SL Body

Intersesamoid ligament:  Yes  No

Longitudinal

Transverse

Distal Sesamoid ligaments:  Yes  No

straight and/or oblique

Collateral ligaments:  Yes  No

Collateral Sesamoid Ligaments:  Yes  No

Cruciate and/or Short Sesamoid Ligaments  Yes  No

# Exercise History Report (Full)



**UC DAVIS**

**VETERINARY MEDICINE**

*J.D. Wheat Veterinary Orthopedic  
Research Laboratory*

**Mar-11-2019**

## **Exercise History Report (Full)**

### **J.D. Wheat Veterinary Orthopedic Research Laboratory**

This report summarizes the high speed exercise history for Case Horse. There are four parts to this report:

Part 1 is a graph that depicts the races and officially recorded high speed workouts for Case Horse over the horse's career. The graph is useful for visually assessing features of a horse's career like: career length, periods of layup, and exercise consistency. If Case Horse had zero recorded high-speed exercise events, this graph is not produced. Event histories for three breed, sex, age, and event-matched control horses are also plotted.

Part 2 includes graphs which illustrate Case Horse's exercise history alongside that of Control Horses. These graphs are useful for visually comparing periods of layup and specific rates of exercise in the horses' exercise histories.

Part 3 is a chronological listing of races and officially timed works beginning with the most recent event (race or work).

Part 4 is a chart that allows comparison of exercise variables between Case Horse and other racehorses of similar age, sex, and breed that did not die at the same time from an injury. Similar to comparing the results of a blood test to a range of normal values, the values for Case Horse can be assessed in the context of a normal range for 95% of a sample of similar racehorses that did not die during the same time as Case Horse.

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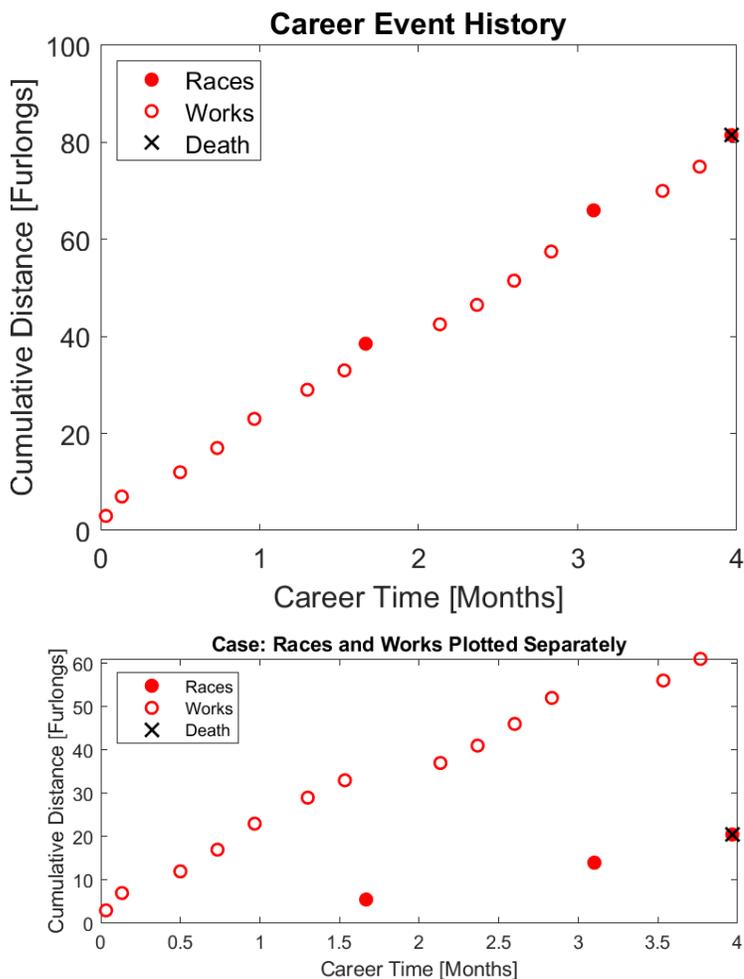
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## Part 1: Graphical Representation of Individual High-Speed Exercise Histories

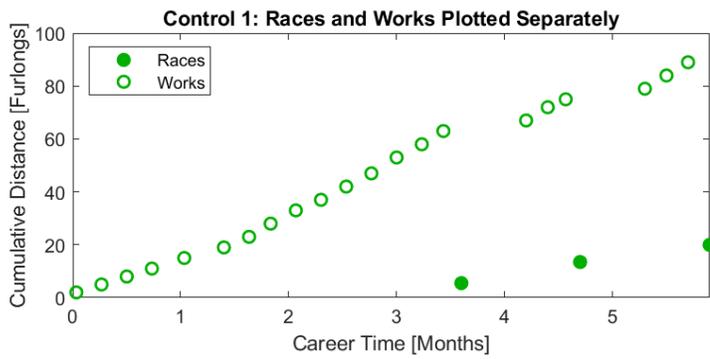
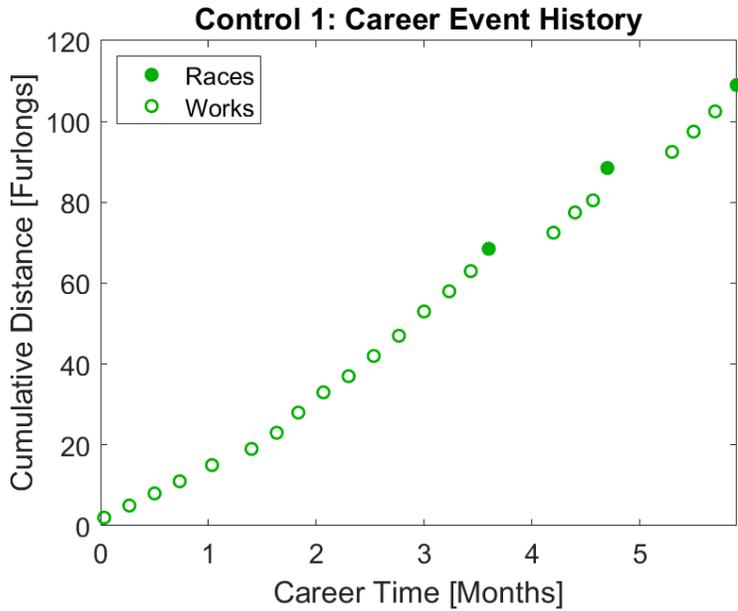
Races (filled circles), officially timed high-speed works (open circles), layups (line with endcaps, periods of time greater than 60 days in length without a race or timed work), and time of death (X) are illustrated over time (Career Time in months). With each event (race or work), the number of furlongs the horse exercised in that event is added to the number of furlongs exercised in all previous events.

### Case Horse High Speed Exercise History

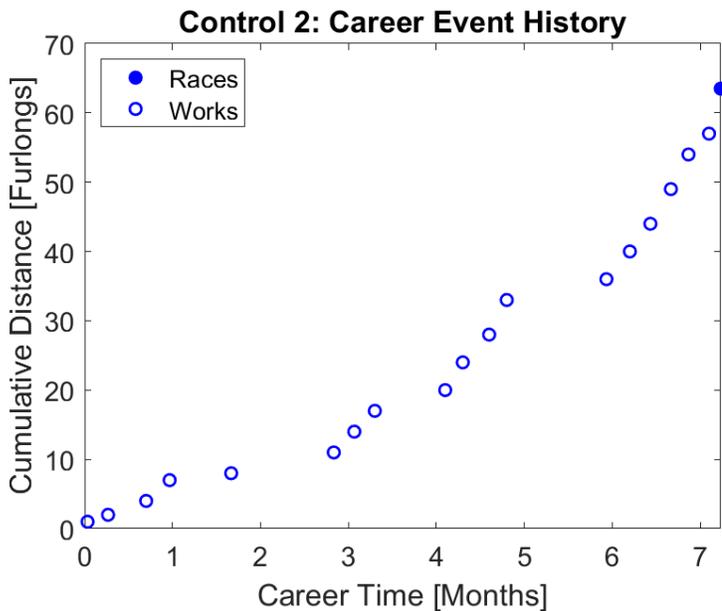


Part 1: Graphical Representation of Individual High-Speed Exercise Histories

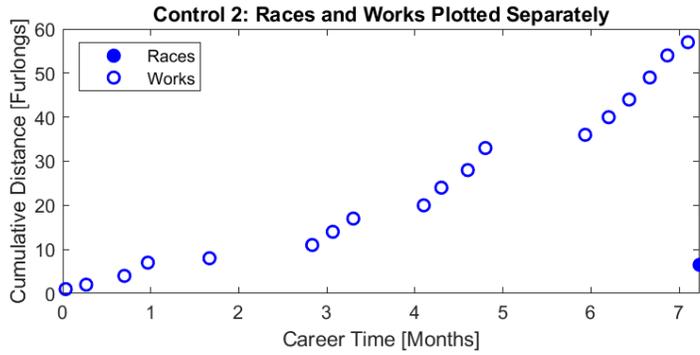
Control 1 High Speed Exercise History



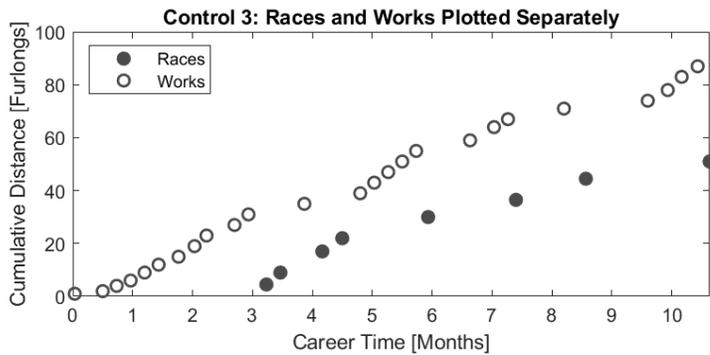
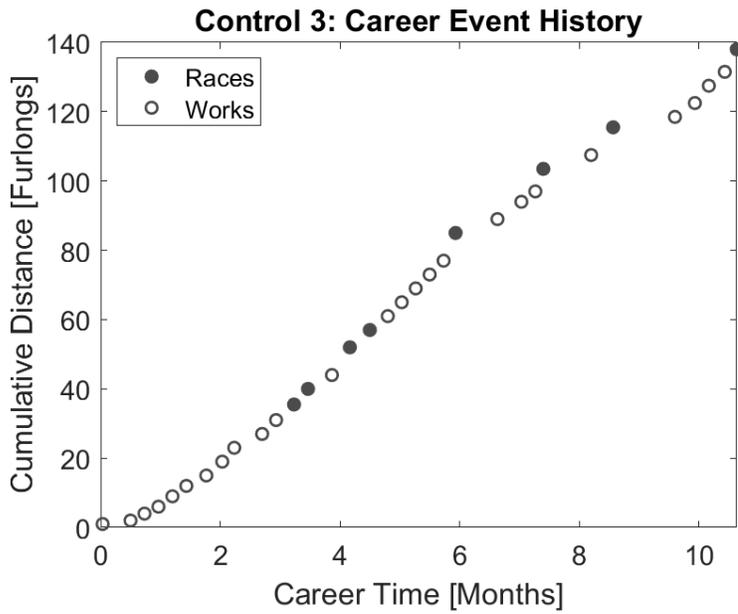
Control 2 High Speed Exercise History



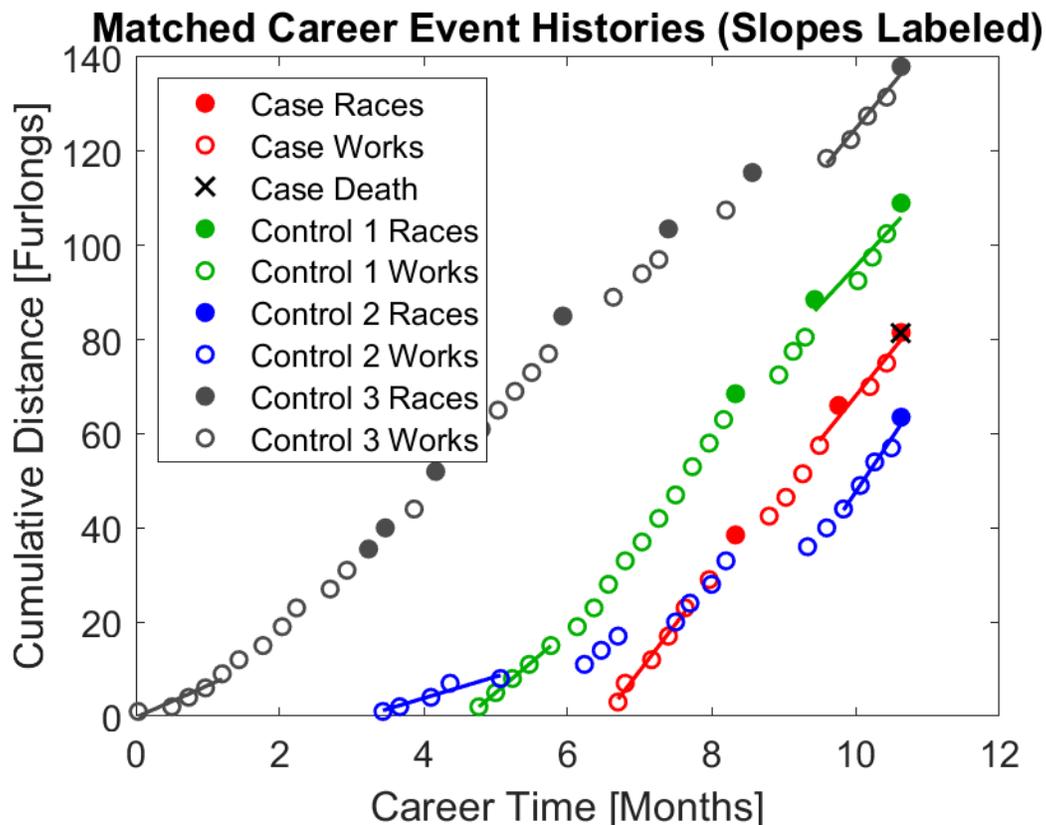
# Part 1: Graphical Representation of Individual High-Speed Exercise Histories



## Control 3 High Speed Exercise History

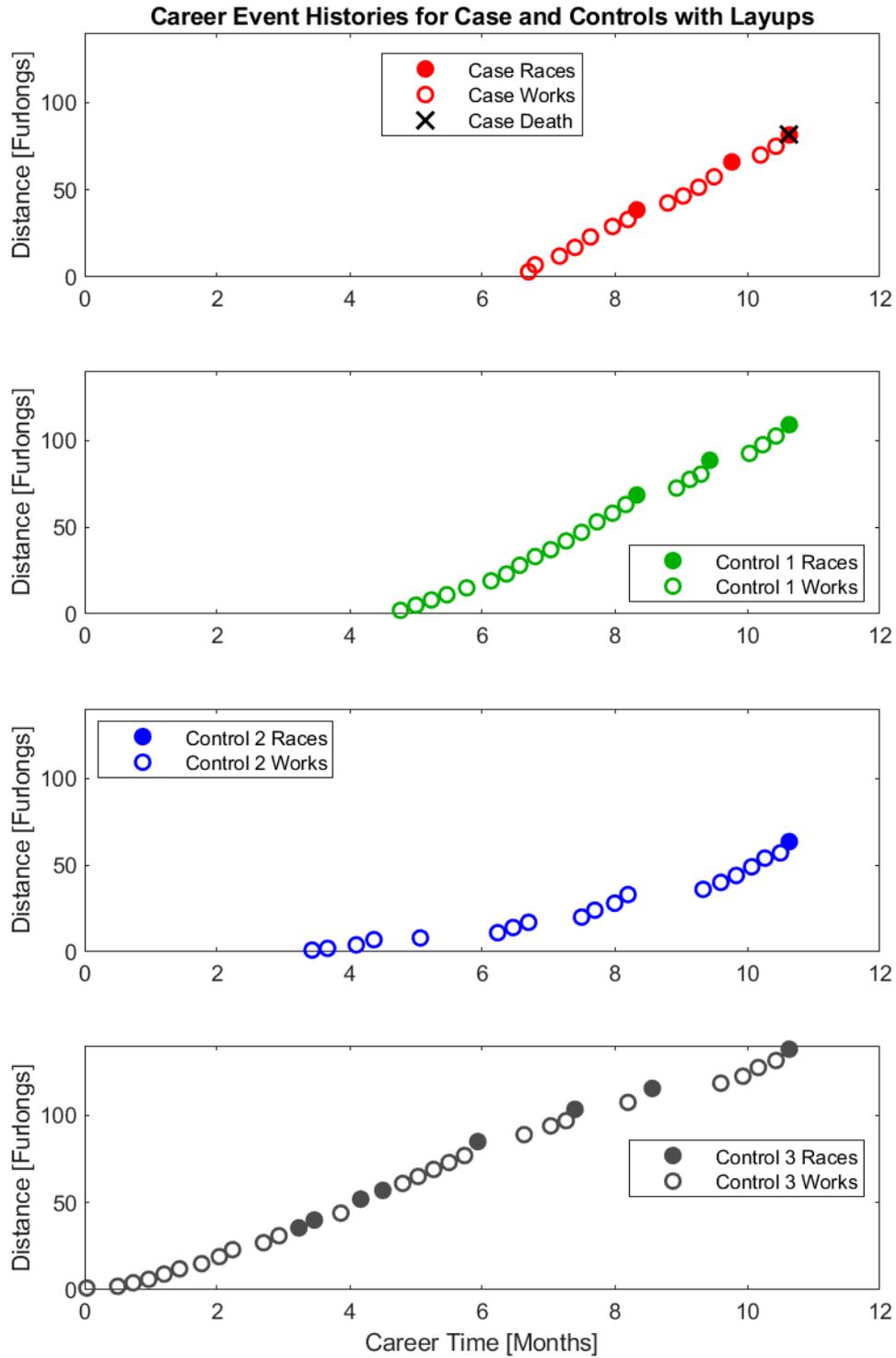


## Part 2: Case and Control Horses Plotted Together

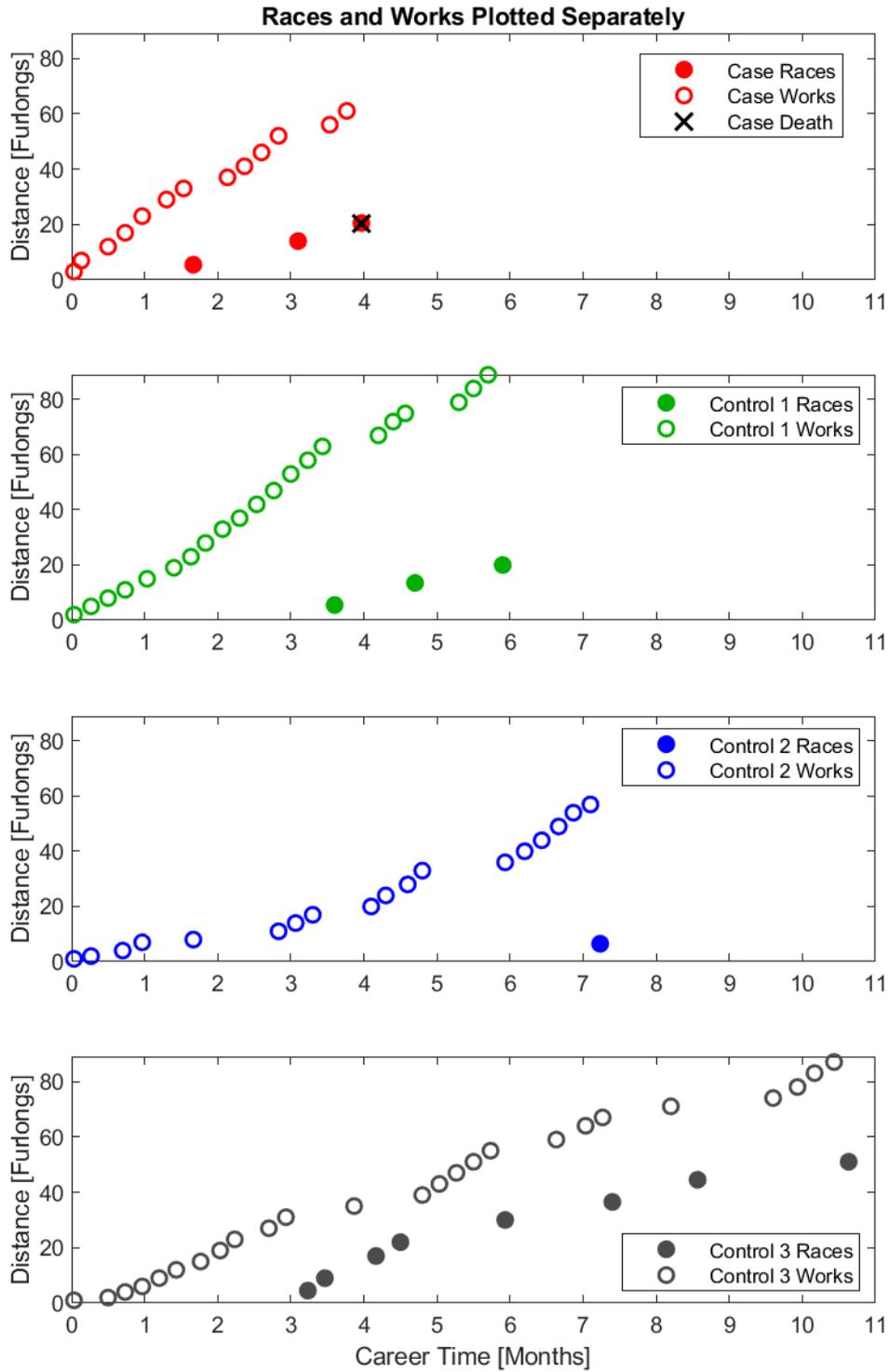


Case and Control Horses' exercise event histories are plotted on the same axes. The plots are aligned by the match date (equal to the date of death of Case Horse). Lines segments indicate specific rates of exercise at the start of career, end of career (for Case Horse), and match date (for Control Horses). Event rates are calculated as the slopes of the plots over 2 to 5 events not spanning a layup period, in units of furlongs per month.

## Part 2: Case and Control Horses Plotted Together



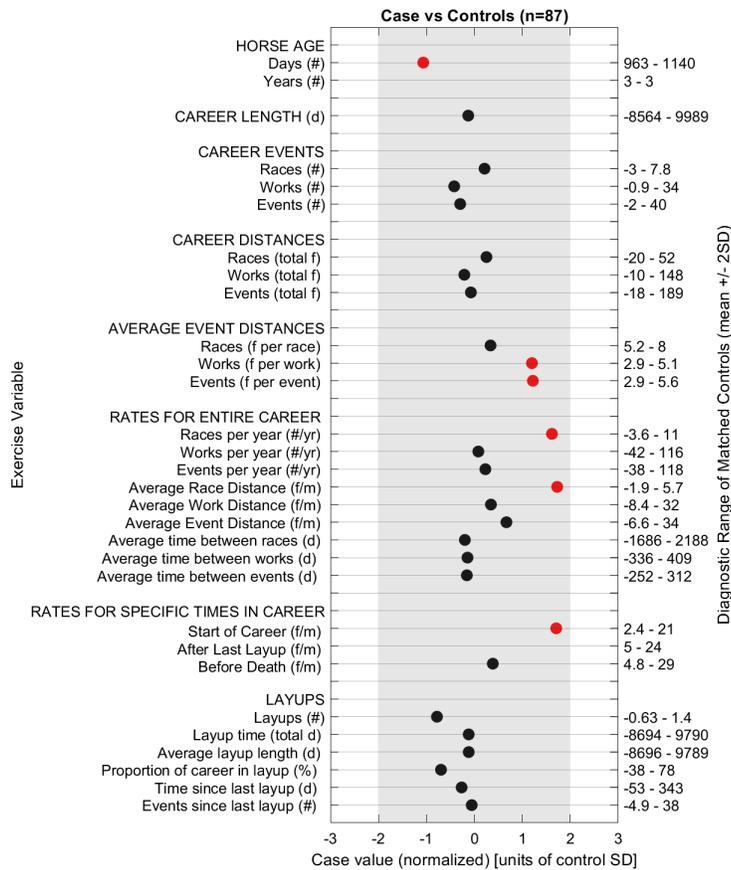
## Part 2: Case and Control Horses Plotted Together



### Part 3: Case Horse's Event History

Date	Race/Work	Furlongs	Track	Surface	Track Cond.	Time	Age/Sex	Race Class	Earnings	Finish
1/4/2019	R	6.5	SA	Turf	Firm		3	(S) Msw	351	10
12/29/2018	W	5.0	SA	Dirt	Fast	01:02.4				
12/22/2018	W	4.0	SA	Dirt	Fast	:48.80				
12/9/2018	R	8.5	GG	AllWthr	Fast		2	Msw	225	6
12/1/2018	W	6.0	SA	Dirt	Fast	01:14.8				
11/24/2018	W	5.0	SA	Dirt	Fast	01:01.8				
11/17/2018	W	4.0	SA	Dirt	Fast	:48.80				
11/10/2018	W	4.0	SA	Dirt	Fast	:49.40				
10/27/2018	R	5.5	SA	Dirt	Fast		2	(S) Mcl50000 (50-40)	1800	4
10/23/2018	W	4.0	SA	Dirt	Fast	:49.60				
10/16/2018	W	6.0	SLR	Dirt	Fast	01:15.4				
10/6/2018	W	6.0	SLR	Dirt	Fast	01:14.6				
9/29/2018	W	5.0	SLR	Dirt	Fast	01:00.6				
9/22/2018	W	5.0	SLR	Dirt	Fast	01:03.0				
9/11/2018	W	4.0	SLR	Dirt	Fast	:52.00				
9/8/2018	W	3.0	SLR	Dirt	Fast	:38.80				

## Part 4: Comparison of Exercise Variables between Case Horse and 87 Control Horses (3 year old, male, Thoroughbred)

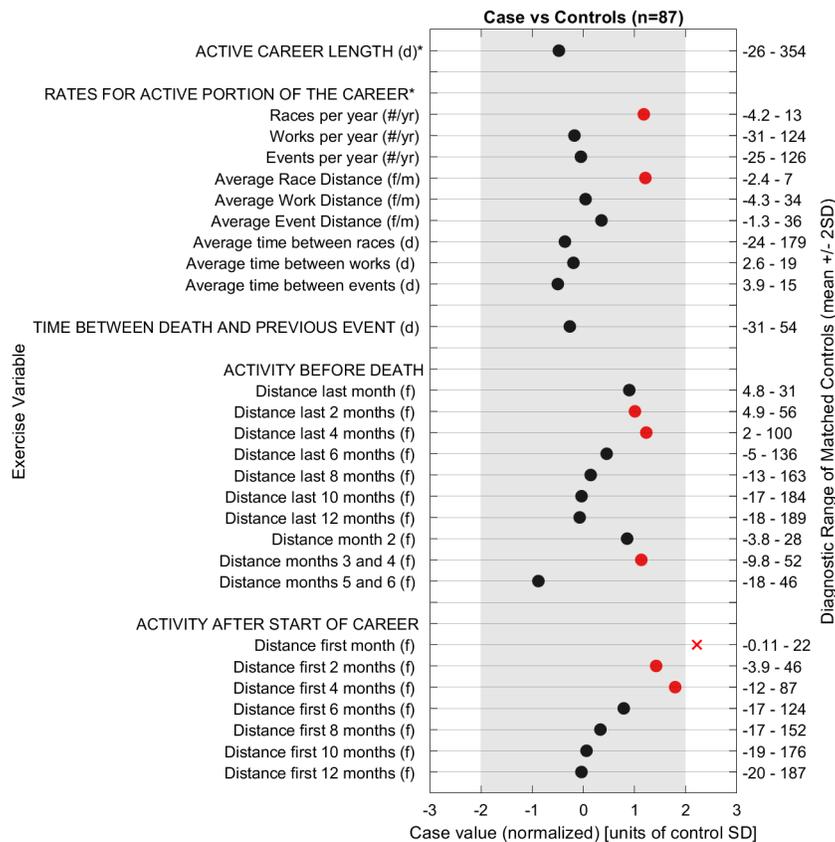


Case Horse values are indicated by black or red symbols: circles indicate values considered normal for 95% of 3 year old, male, Thoroughbreds (n=87) (gray region) (black and red indicate within 1 and 2 SD, respectively, of mean value of controls), X's indicate values outside of the normal range. Two and 3 year old case horses are also matched to control horses by the quarter in which the case horse died (Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec). Variables that are not calculable are not plotted (e.g. time between races for a horse with zero events). f=furlongs; yr=year; m=month; d=days.

^Rates are calculated over 2 to 5 events.

\*Active Career Length is the career length excluding the time during layups.

## Part 4: Comparison of Exercise Variables between Case Horse and 87 Control Horses (3 year old, male, Thoroughbred)



Case Horse values are indicated by black or red symbols: circles indicate values considered normal for 95% of 3 year old, male, Thoroughbreds (n=87) (gray region) (black and red indicate within 1 and 2 SD, respectively, of mean value of controls), X's indicate values outside of the normal range. Two and 3 year old case horses are also matched to control horses by the quarter in which the case horse died (Jan-Mar, Apr-Jun, Jul-Sep, Oct-Dec). Variables that are not calculable are not plotted (e.g. time between races for a horse with zero events). f=furlongs; yr=year; m=month; d=days.

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