



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
1/29/2019 6:42:00PM

Email To:
ARTHUR, RICK
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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: 01/05/2019 **Date Received:** 01/06/2019

Comments: CHR B: Need owner 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	Barba, Alexis	[REDACTED]	[REDACTED]	South Pasadena	CA	91030

CHR B - Related Information

Horse's Name:	[REDACTED]	Human Injury?	No
Tattoo:	[REDACTED]	Death Related to:	Race
Age:	3.00 Years	Track Surface:	Turf
Gender:	Male	Location on Track:	1/8th Pole
Taxonomy:	Thoroughbred Horse	Insured?	N

Medications: Dormosedan (Detomidine); Pentobarbital;

Laboratory Findings/Diagnosis

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

Catastrophic breakdown of right front fetlock with

RIGHT FRONT

ACUTE CHANGES

- Fracture of the proximal sesamoid bones
 - Open, simple, articular, slightly oblique, displaced, apical/mid-body fracture of the lateral proximal sesamoid bone
 - Open, articular, transverse, simple, displaced, basilar fracture of the medial proximal sesamoid bone with osteopenic focus (pre-existing lesion)
- Complete lateral luxation of the distal MCIII- the lateral displacement of the entire distal articular surface of MCIII resulted in skin laceration

3. Complete transverse rupture and severe fraying of fibers of the lateral and medial collateral ligaments of the fetlock
4. Full thickness, transverse rupture of the intersesamoidean ligament
5. Marked fraying of fibers of the deep digital flexor tendons
6. Severe fraying of fibers of the lateral and medial and cruciate ligaments
7. Severe fraying and transverse rupture of the lateral short sesamoidean ligament
8. Moderate fraying of the medial short sesamoidean ligament
9. Severe fraying of fibers and incomplete transverse rupture of the lateral and medial collateral ligaments of proximal sesamoid bones
10. Severe fraying of fibers and complete transverse of the lateral branch of the suspensory ligament
11. Moderate incomplete longitudinal tear, fraying of fibers and hemorrhage of body of the suspensory ligament
12. Severe scoring and extensive full thickness cartilage loss of the distal articular surface of MCIII
13. Severe erosion of the dorsal and palmar margin of the proximal articular surface of P1

CHRONIC CHANGES:

1. Moderate lipping with pink discoloration of the dorsal periarticular margin of the proximal articular surface of the carpal intermediate bone

LEFT FORELIMB**CHRONIC CHANGES**

1. Blue/grey, subtle subchondral bone discoloration visible through the cartilage of the abaxial aspect of the articular surface of the medial proximal sesamoid bone
2. Moderate thickening with dark red discoloration of the lateral short sesamoidean ligament
3. Mild to moderate lipping with pink discoloration of the dorsal and palmar margin of the proximal articular surface of P1
4. Moderate lipping with pink discoloration of the dorsal periarticular margin of the proximal articular surface of the carpal intermediate bone

Other findings:

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

Case Summary

01/28/19: The most important findings in the right 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 right forelimb. 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 be located in the proximal sesamoid bones in contralateral limb, which is consistent with bilateral, repetitive, overuse injury.

01/06/18 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

Right foreleg: open, complete lateral condylar fracture with biaxial proximal sesamoid bone fractures and suspensory apparatus failure; luxated metacarpophalangeal joint.

Gross Observations

Necropsy of a 3 year old, [REDACTED] Thoroughbred [REDACTED] ([REDACTED] 448kg, with a [REDACTED] tattoo [REDACTED] is commenced at 11:35 am, January 6, 2019. The carcass is in good nutritional condition, with appropriate musculature development, good deposits of adipose tissue, and in moderate post-mortem decomposition. The trachea contains 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 mildly hyperkeratotic with multifocal (app. 0,5 cm- diameter), 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:

RIGHT FRONT

A- PROXIMAL SESAMOID BONES

1. Fracture of the proximal sesamoid bones

a) Open, simple, articular, slightly oblique, displaced, apical/mid-body fracture of the lateral proximal sesamoid bone

b) Open, articular, transverse, simple, displaced, basilar fracture of the medial proximal sesamoid bone with predisposing lesion:

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 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, full thickness cartilage loss along the fracture line on the medial proximal sesamoid bones

B- SOFT TISSUES

1. Full thickness, transverse intersesamoidean ligament- the tear is following the fracture lines of the proximal sesamoid bones

2. Severe fraying of fibers and complete transverse rupture of the lateral branch of the suspensory ligament- the transverse rupture is a continuation of the fracture line propagating through the proximal sesamoid bones. The severe fraying and hemorrhage affects the dorsal surface of the entire branch and the lateral aspect of the mid-body of the suspensory ligament up to its proximal third.

3. Marked fraying of fibers on the dorsal surface of the deep digital flexor tendons at the level of the fetlock

4. Complete lateral luxation of the distal MCIII- the lateral displacement of the entire distal articular surface of MCIII resulted in skin laceration

5. Complete transverse rupture and severe fraying of fibers of the lateral and medial collateral ligaments of the fetlock

6. Full thickness, transverse rupture of the intersesamoidean ligament

7. Severe fraying of fibers of the lateral and medial and cruciate ligaments

8. Severe fraying and transverse rupture of the lateral short sesamoidean ligament

9. Moderate fraying of the medial short sesamoidean ligament

10. Severe fraying of fibers and incomplete transverse rupture of the lateral and medial collateral ligaments of proximal sesamoid bones

C- MCIII

1. Two foci of severe, full thickness ulceration in the middle of the mid-sagittal ridge (app. 1.5 cm x 0.5 cm), adjacent to it, just above the transverse ridge of the medial condyle there is square shaped (app. 1cm x 1cm) cartilage ulceration.

2. Severe, full thickness cartilage loss along the medial and lateral margin of the palmar aspect of the distal articular surface of MCIII (medial condyle is more affected)

3. Severe scoring of the distal articular surface of MCIII

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

5. Severe hemorrhage with soft tissue erosion at the dorsal aspect of the supracondylar region of MCIII

D- P1

1. Severe erosion of the dorsal and palmar margin of the proximal articular surface of P1

E- CARPUS

1. Moderate lipping with pink discoloration of the dorsal periarticular margin of the proximal articular surface of the carpal intermediate bone

LEFT FRONT

A- PROXIMAL SESAMOID BONES

1. Mild, biaxial apical modeling with subtle, irregular bony outgrowth of the proximal sesamoid bones
2. Blue/grey, focal, subtle subchondral bone discoloration visible through the cartilage of the abaxial aspect of the articular surface of the medial proximal sesamoid bone

B- SOFT TISSUE

1. Moderate thickening with dark red discoloration of the lateral short sesamoidean ligament

C- P1

1. Mild to moderate lipping with pink discoloration of the dorsal aspect of the proximal articular surface of P1

D- CARPUS

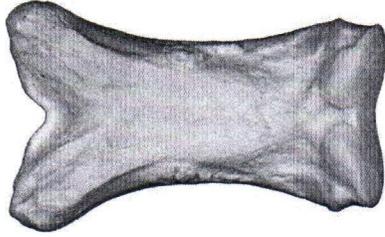
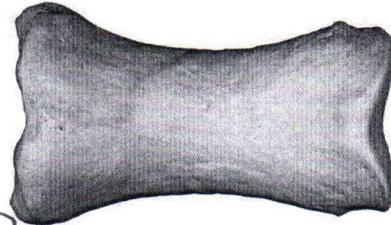
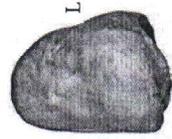
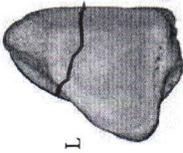
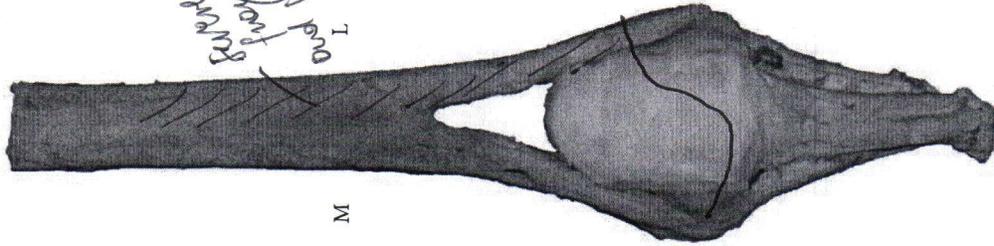
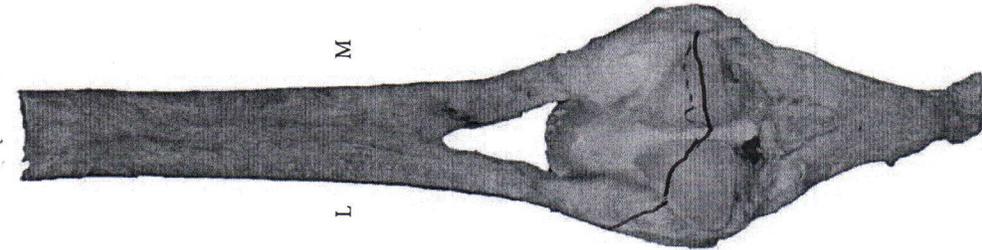
1. Moderate lipping with pink discoloration of the dorsal periarticular margin of the proximal articular surface of the carpal intermediate bone

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

Accession # [redacted]
 CC: MAS
 Date: 01/28/19

Right Fetlock

Please circle affected leg
 foreleg
 hindleg



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

Susp. App. (dorsal) Susp. App. (palmar/plantar)

Open wound? Yes No

Joint capsule intact? Yes No

Joint luxated? Yes No

Distal Sesamoid ligaments (straight and/or oblique) Yes No

Collateral ligaments Yes No

Collateral Sesamoid Ligaments: Yes No

Cruciate and/or Short Sesamoid Ligaments: Yes No

Exercise History Report (Full)



UCDAVIS

VETERINARY MEDICINE

*J.D. Wheat Veterinary Orthopedic
Research Laboratory*

Mar-12-2019

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.

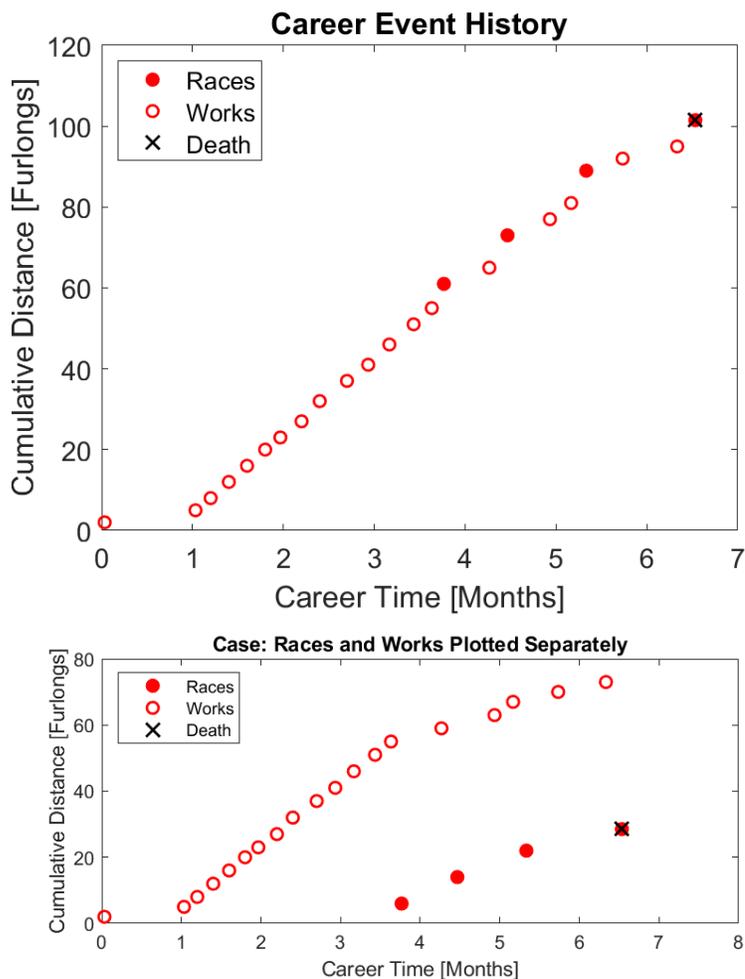
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Part 1: Graphical Representation of Individual High-Speed Exercise Histories

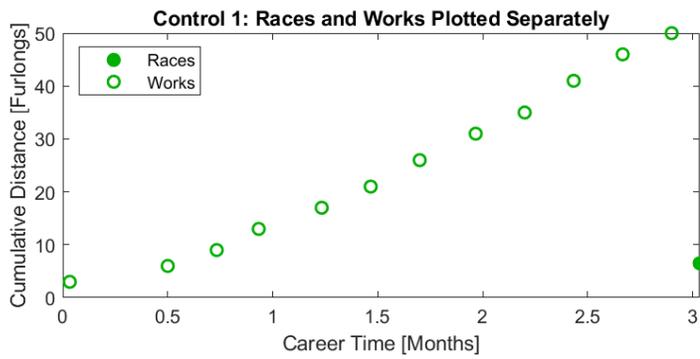
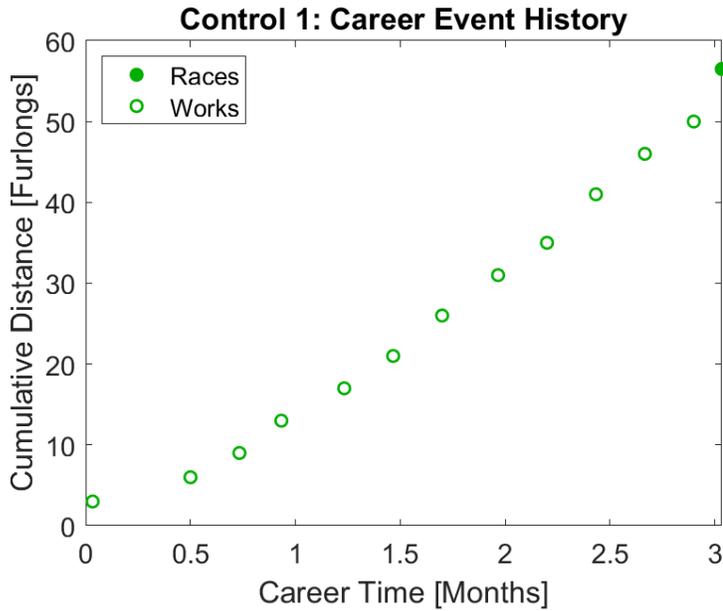
Races (filled circles), officially timed high-speed works (open circles), layups (line with endcaps, periods of time greater than 60 days in length without a race or timed work), and time of death (X) are illustrated over time (Career Time in months). With each event (race or work), the number of furlongs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

Case Horse High Speed Exercise History

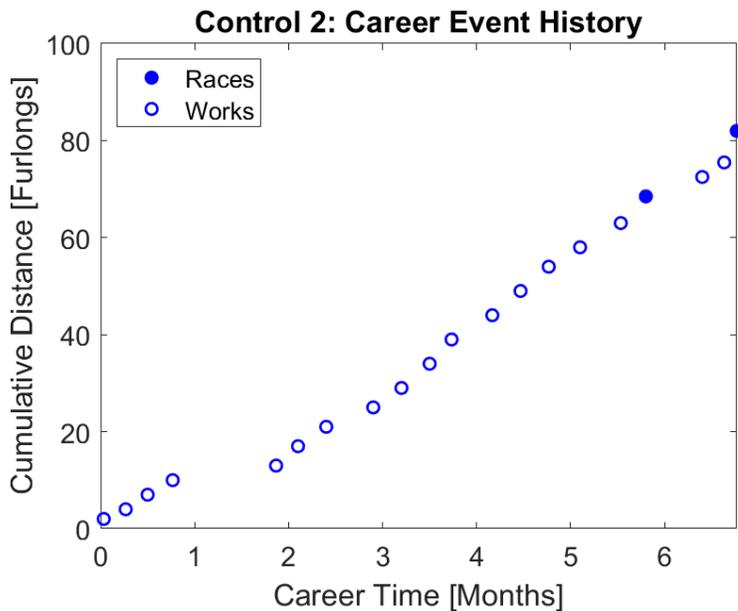


Part 1: Graphical Representation of Individual High-Speed Exercise Histories

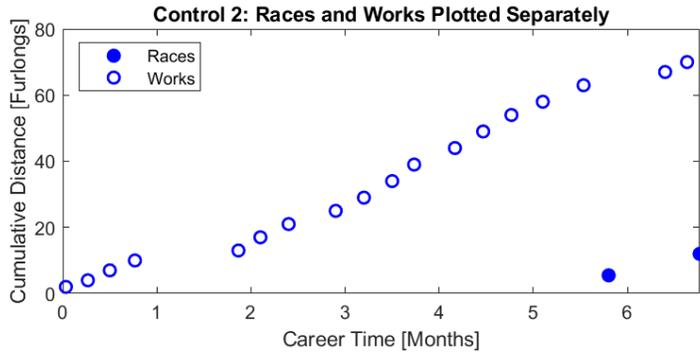
Control 1 High Speed Exercise History



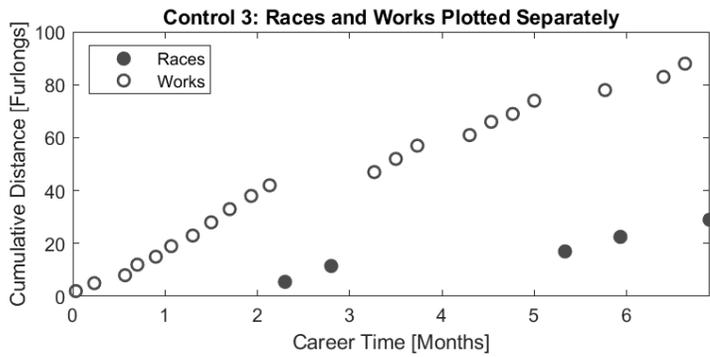
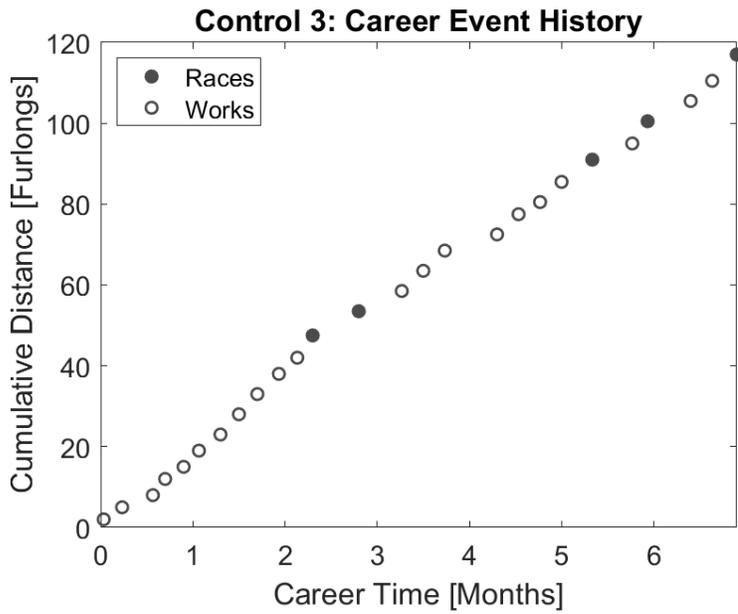
Control 2 High Speed Exercise History



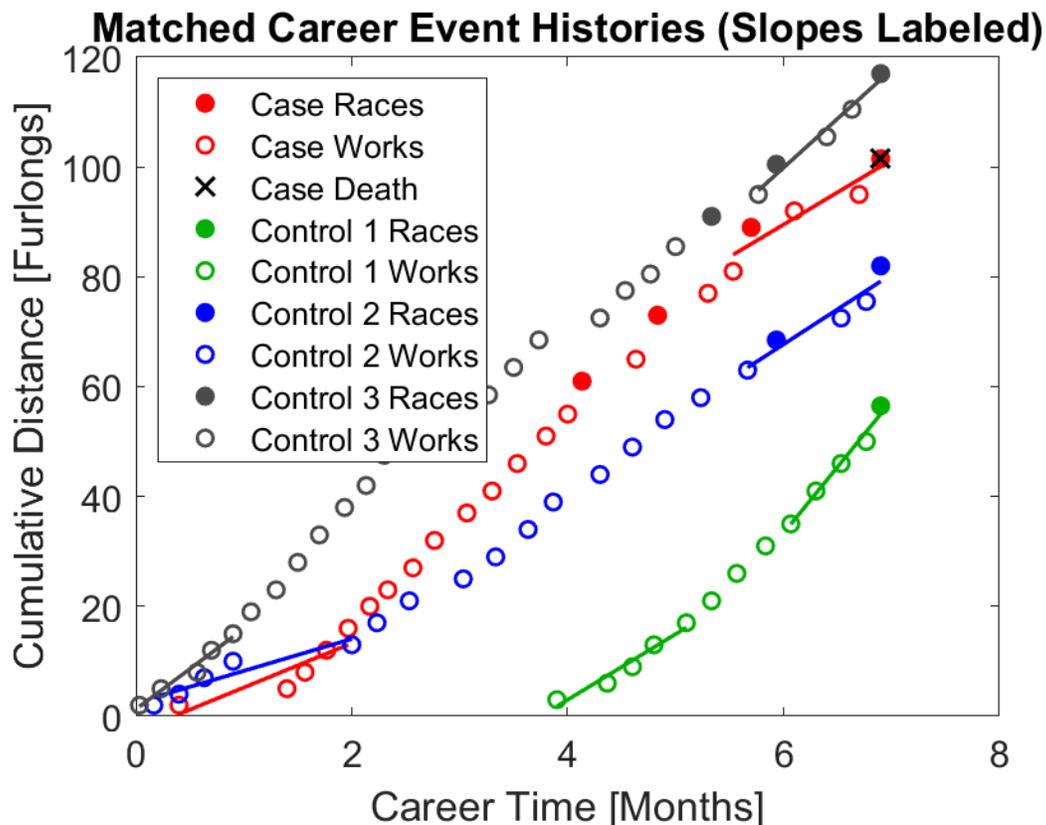
Part 1: Graphical Representation of Individual High-Speed Exercise Histories



Control 3 High Speed Exercise History

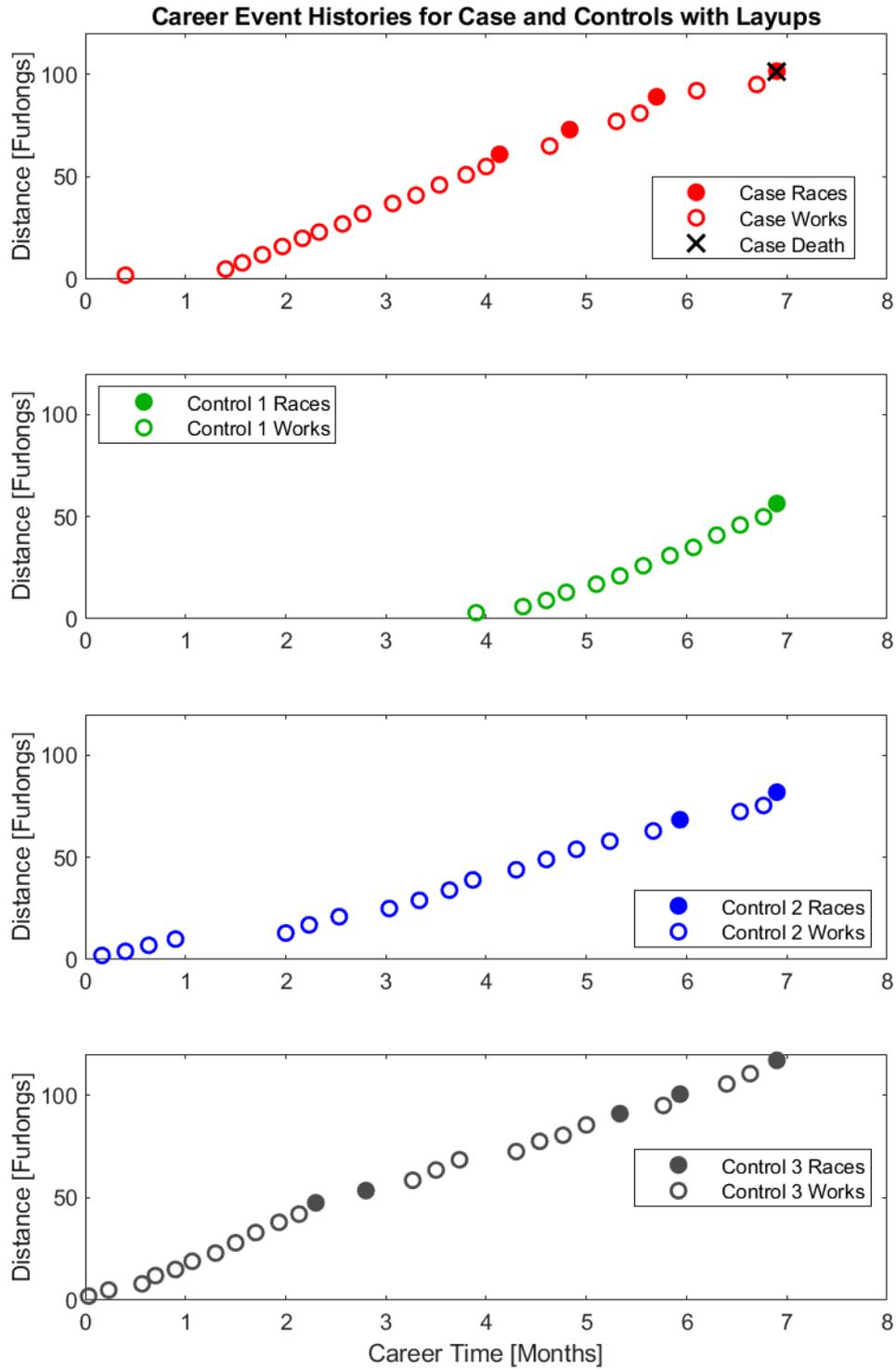


Part 2: Case and Control Horses Plotted Together

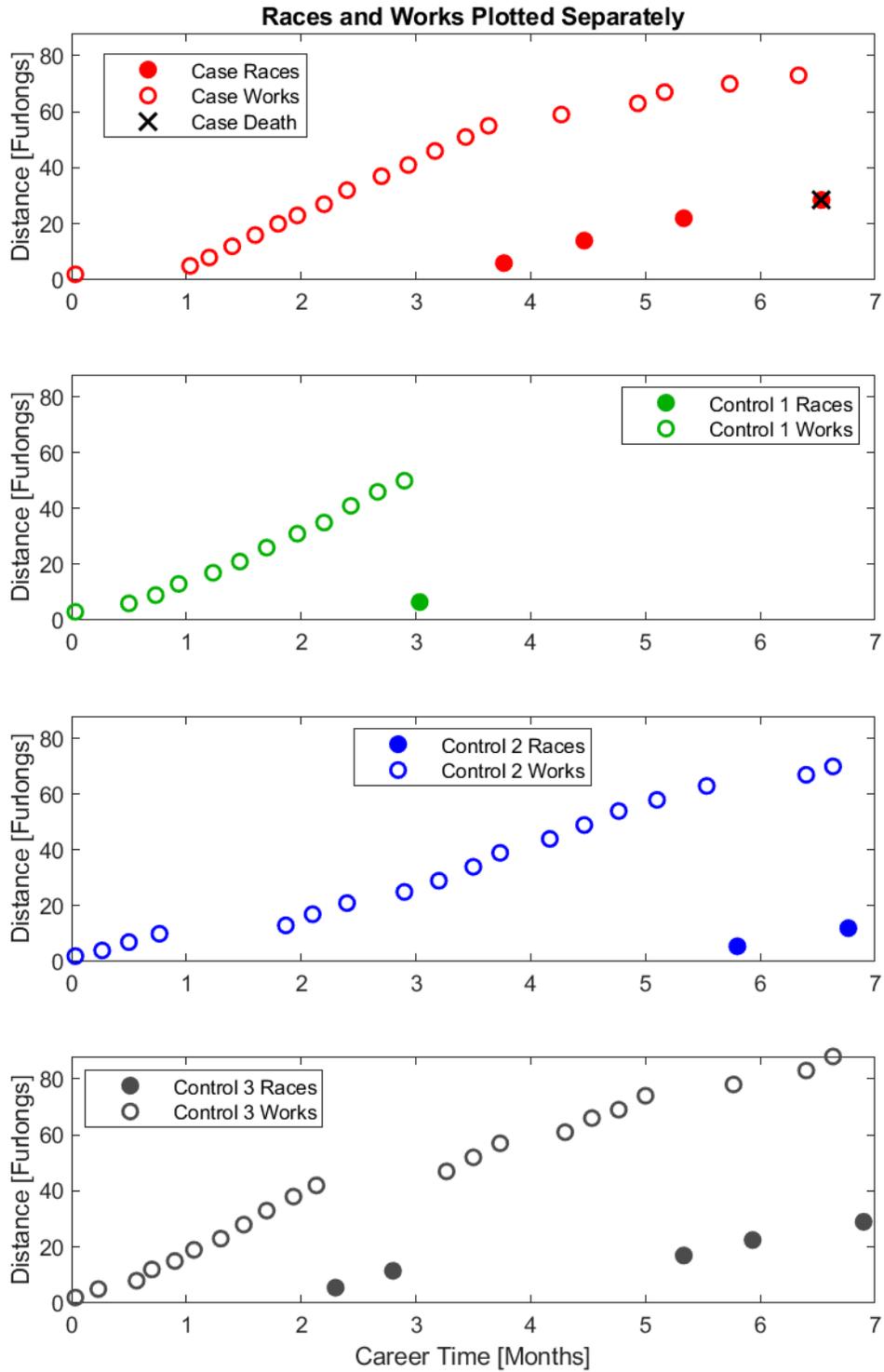


Case and Control Horses' exercise event histories are plotted on the same axes. The plots are aligned by the match date (equal to the date of death of Case Horse). Lines segments indicate specific rates of exercise at the start of career, end of career (for Case Horse), and match date (for Control Horses). 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



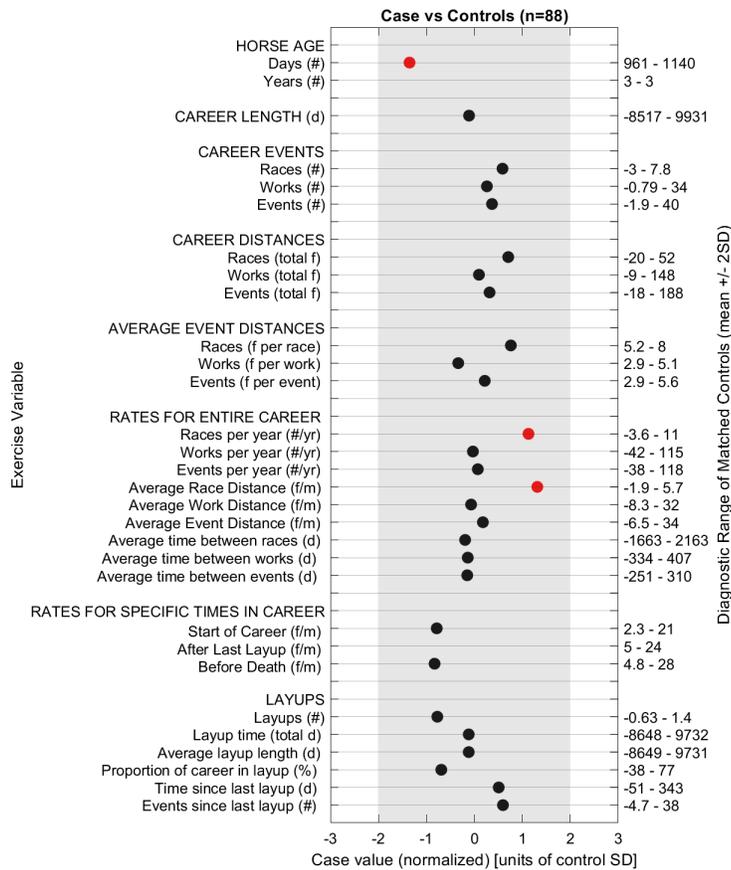
Part 2: Case and Control Horses Plotted Together



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	9
12/29/2018	W	3.0	SA	Dirt training	Fast	:39.80				
12/11/2018	W	3.0	SA	Dirt	Fast	:37.40				
11/29/2018	R	8.0	DMR	Dirt	Wet Fast		2	(S) Msw	6360	3
11/24/2018	W	4.0	SA	Dirt	Fast	:52.00				
11/17/2018	W	4.0	SA	Dirt	Fast	:53.80				
11/3/2018	R	8.0	SA	Turf	Firm		2	(S) Msw	3000	4
10/28/2018	W	4.0	SA	Dirt	Fast	:52.00				
10/13/2018	R	6.0	SA	Dirt	Good		2	(S) Msw	6000	3
10/9/2018	W	4.0	SA	Dirt	Fast	:50.60				
10/3/2018	W	5.0	SA	Dirt	Fast	01:01.0				
9/25/2018	W	5.0	SA	Dirt	Fast	01:04.4				
9/18/2018	W	4.0	SA	Dirt	Fast	:51.20				
9/11/2018	W	5.0	SA	Dirt	Fast	01:04.0				
9/2/2018	W	5.0	DMR	Dirt	Fast	01:03.0				
8/27/2018	W	4.0	DMR	Dirt	Fast	:50.20				
8/20/2018	W	3.0	DMR	Dirt	Fast	:37.40				
8/15/2018	W	4.0	DMR	Dirt	Fast	:51.00				
8/9/2018	W	4.0	DMR	Dirt	Fast	:52.80				
8/3/2018	W	4.0	DMR	Dirt	Fast	:52.40				
7/28/2018	W	3.0	DMR	Dirt	Fast	:38.80				
7/23/2018	W	3.0	DMR	Dirt	Fast	:37.80				
6/23/2018	W	2.0	SA	Dirt	Fast	:25.40				

Part 4: Comparison of Exercise Variables between Case Horse and 88 Control Horses (3 year old, male, Thoroughbred)

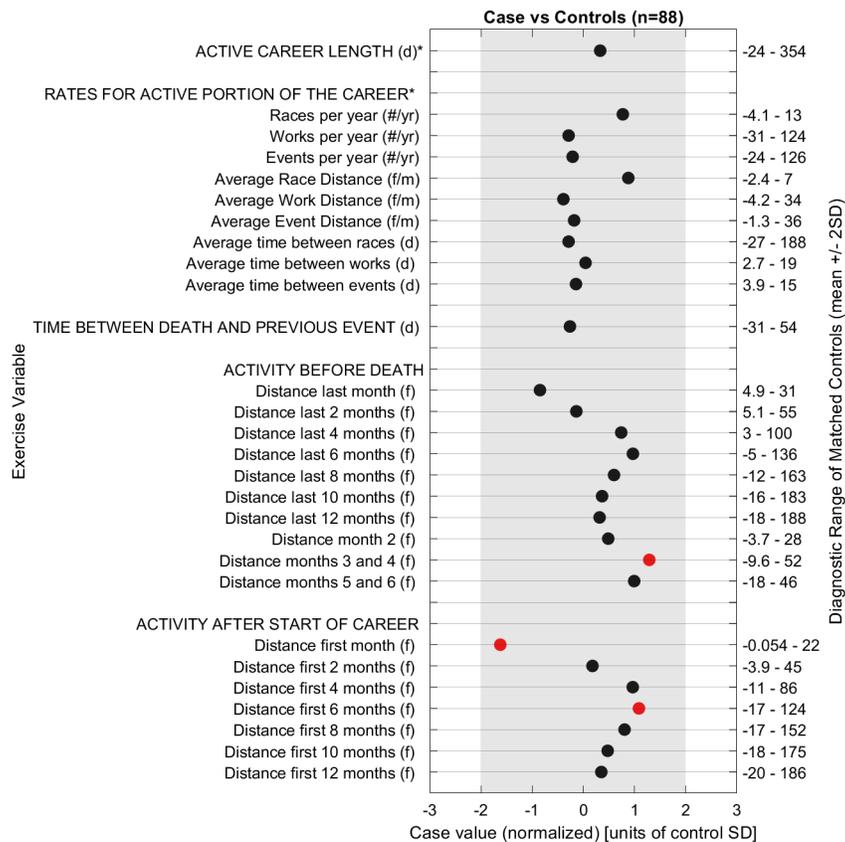


Case Horse values are indicated by black or red symbols: circles indicate values considered normal for 95% of 3 year old, male, Thoroughbreds (n=88) (gray region) (black and red indicate within 1 and 2 SD, respectively, of mean value of controls), X's indicate values outside of the normal range. Two 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 88 Control Horses (3 year old, male, Thoroughbred)



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