



UC DAVIS VETERINARY MEDICINE

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Addendum Version 2

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Coordinator: Monika Samol, DVM, Resident
E-Signed and Authorized by: Samol, Monika on
3/19/2019 9:17:26AM

Email To:
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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: 01/08/2019 **Date Received:** 01/08/2019

Comments: CHRB

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
Owner	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Report To	UZAL, FRANCISCO	[REDACTED]	[REDACTED]	San Bernardino	CA	92408
Report To	ARTHUR, RICK	[REDACTED]	[REDACTED]	Sierra Madre	CA	91024
Attending Vet	CARPENTER, RYAN	[REDACTED]	[REDACTED]	Monrovia	CA	91016
Trainer	HEADLEY, BRUCE	[REDACTED]	[REDACTED]	Arcadia	CA	91007

CHRB - Related Information

Horse's Name:	[REDACTED]	Human Injury?	
Tattoo:	[REDACTED]	Death Related to:	Training
Age:	3.00 Years	Track Surface:	Dirt
Gender:	Male	Location on Track:	
Taxonomy:	Thoroughbred Horse	Insured?	N

Medications: None Listed In The History;

Laboratory Findings/Diagnosis

A 3 year old [REDACTED] Thoroughbred [REDACTED] ([REDACTED]) submitted with a history of left front biaxial sesamoid bone fracture with complete disruption of the suspensory apparatus

Catastrophic breakdown of left front fetlock with:

LEFT FRONT

ACUTE CHANGES

1. Fracture of the proximal sesamoid bones
 - a) Closed, simple, articular, transverse, displaced, mid-body fracture of the medial proximal sesamoid bone with brown focus of discoloration/porosity (pre-existing lesion)
 - b) Closed, articular, transverse, comminuted, displaced, mid-body fracture of the lateral proximal sesamoid bone
2. Suspensory apparatus failure with severe fraying of both branches of the suspensory ligament; complete, transverse rupture

- of the medial branch and incomplete, transverse rupture of the lateral branch
3. Full thickness, transverse rupture of the palmar annular ligament
 4. Full thickness, transverse rupture of the intersesamoidean ligament
 5. Marked fraying of fibers and incomplete transverse tears of the deep digital flexor tendon
 6. Marked fraying of fibers and incomplete transverse tears of the superficial digital flexor tendon
 7. Severe fraying of fibers and hemorrhage of the lateral and medial short and cruciate ligaments
 8. Moderate fraying of fibers of lateral and medial collateral ligaments of proximal sesamoid bones
 9. Mild to moderate fraying of fibers and hemorrhage of the medial and lateral oblique distal sesamoidean ligament
 10. Moderate scoring of the distal articular surface of MCIII
 11. Severe, focal, full thickness cartilage loss of the palmar aspect of the lateral condyle of the distal MCIII
 12. Moderate, rounded, focal ulceration of the cartilage overlying medial condyle of the distal MCIII
 13. Severe erosion of the dorsomedial margin of the proximal articular surface of P1

CHRONIC CHANGES:

1. Moderate lipping of the dorsal and palmar margin of the proximal articular surface of P1
2. Mild to moderate, biaxial, grey, focal subchondral bone discoloration visible through the cartilage, adjacent to the mid-sagittal ridge of the distal articular surface of MCIII

RIGHT FORELIMB**CHRONIC CHANGES****Fetlock****Moderate osteoarthritic changes**

1. Moderate to severe lipping of the dorsal and palmar margin of the proximal articular surface of P1
2. Moderate, biaxial ulceration of the dorsal margin of the proximal articular surface of P1
3. Moderate scoring of the distal articular surface of MCIII
4. Moderate, biaxial apical modeling with irregular bony outgrowth of the proximal sesamoid bones
5. Moderate scoring lines of the articular surface of the proximal sesamoid bones

Other findings:

- Mild to moderate, 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

03/19/19: Case was re-open due to minor corrections in 'CHRB Musculoskeletal' field (typographical errors). Further testing is concluded.

01/30/19: The most important finding in the left forelimb is biaxial fracture 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 brown discoloration and bone porosity/osteopenic focus associated with the fracture surfaces in the medial proximal sesamoid bone. However, besides moderate osteoarthritis in the right front fetlock, changes of similar nature could not be located in the proximal sesamoid bones in contralateral limb.

01/08/18 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

Left front biaxial sesamoid bone fracture with complete disruption of the suspensory apparatus - working (non-starter) works started in late October.

Gross Observations

Necropsy of a 2 year old, [REDACTED] Thoroughbred [REDACTED] ([REDACTED]), 488 kg, with [REDACTED], tattoo [REDACTED] is commenced at 2:40 pm, January 8, 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 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). On the left and right kidneys, there are two focal irregular areas (app. 2 cm x 3 cm) of capsular thickening (presumably capsular fibrosis). The stomach contains green, soft roughage and grain particles. Non-glandular gastric mucosa along the margo plicatus is mildly to moderately hyperkeratotic with multifocal (app. 0,5-1 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:

LEFT FRONT

A- PROXIMAL SESAMOID BONES

1. Fracture of the proximal sesamoid bones

a) Closed, articular, transverse, comminuted, displaced, mid-body fracture of the lateral proximal sesamoid bone- the proximal fracture segment is divided into 3 fragments. The axial fragment is the largest one, wedge-shaped. The other two abaxial fragments are triangular and avulsed with lateral branch of the suspensory ligament.

b) Closed, simple, articular, transverse, displaced, mid-body fracture of the medial proximal sesamoid bone with brown focus of discoloration/porosity (pre-existing 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 very subtle 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. Moderate 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. Suspensory apparatus failure with severe fraying of both branches of the suspensory ligament up to bifurcation (dorsal and palmar surfaces are equally affected); complete, transverse rupture of the medial branch and incomplete, transverse rupture of the lateral branch as the continuation of the fracture lines of the proximal sesamoid bones.

3. Full thickness, transverse rupture of the palmar annular ligament

4. Marked fraying of fibers and incomplete transverse tears of the lateral and medial edge (app. 1 cm long) of the deep digital flexor tendon

5. Marked fraying of fibers and incomplete transverse tears of the lateral (app. 1 cm long) and medial (app. 2 cm long) edge of the superficial digital flexor tendon

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

7. Moderate fraying of fibers of lateral and medial collateral ligaments of proximal sesamoid bones

8. Mild to moderate fraying of fibers and hemorrhage of the medial and lateral oblique distal sesamoidean ligament

C- MCIII

1. Severe, focal, longitudinal (app. 1cm x 0.2 cm) full thickness cartilage loss of the palmar aspect of the lateral condyle of the distal MCIII

2. Moderate, rounded (app. 0.5cm in diameter), focal ulceration of the cartilage overlying medial condyle of the distal MCIII, adjacent to the transverse ridge

3. Moderate scoring of the medial condyle of the distal articular surface of MCIII

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

5. Moderate to severe hemorrhage with soft tissue erosion at the dorsal aspect of the supracondylar region of MCIII

6. Mild to moderate, biaxial, grey, focal, rounded (app. 0.7 cm in diameter) subchondral bone discoloration visible through the cartilage, adjacent to the mid-sagittal ridge of the distal articular surface of MCIII

D- P1

1. Severe erosion of the dorsomedial margin of the proximal articular surface of P1
2. Moderate lipping of the dorsal and palmar margin of the proximal articular surface of P1
3. Mild scoring of the proximal articular surface of P1

RIGHT FRONT

A- MCIII

1. Moderate scoring of the distal articular surface of MCIII

B- P1

1. Moderate to severe lipping of the dorsal and palmar margin of the proximal articular surface of P1
2. Moderate, biaxial ulceration of the dorsal margin of the proximal articular surface of P1

C- PROXIMAL SESAMOID BONES

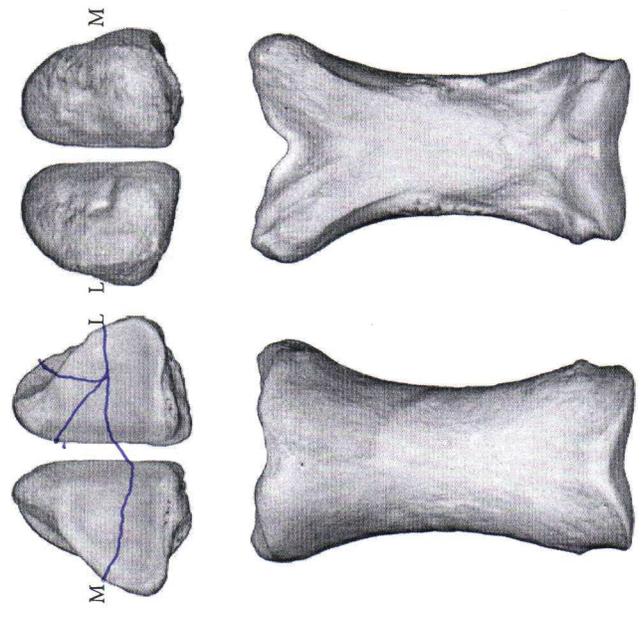
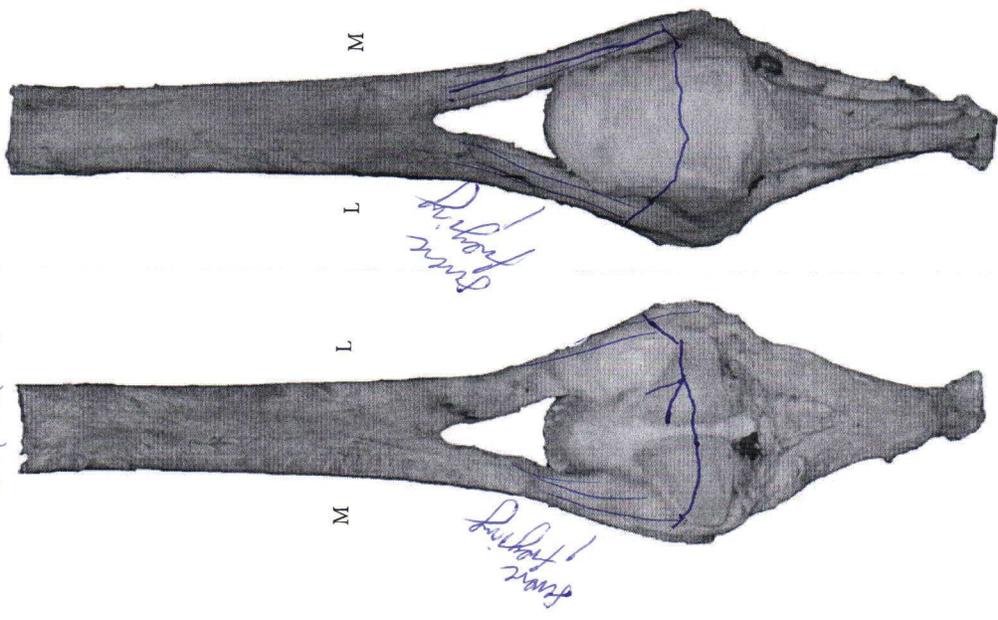
1. Moderate, biaxial apical modeling with irregular bony outgrowth of the proximal sesamoid bones
2. Moderate scoring lines of the articular surface of the proximal sesamoid bones

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

Accession #
 CC: MAS
 Date: 01/30/19

Left 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

Intersesamoidean ligament: Yes No
 Longitudinal Transverse

Distal Sesamoidean ligaments: Yes No (straight and/or oblique)

Collateral ligaments: Yes No

Collateral Sesamoidean Ligaments: Yes No

Cruciate and/or Short Sesamoidean Ligaments: Yes No

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

Open wound? Yes No

Joint capsule intact? Yes No

Joint luxated? Yes No

Exercise History Report (Full)



UCDAVIS

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.

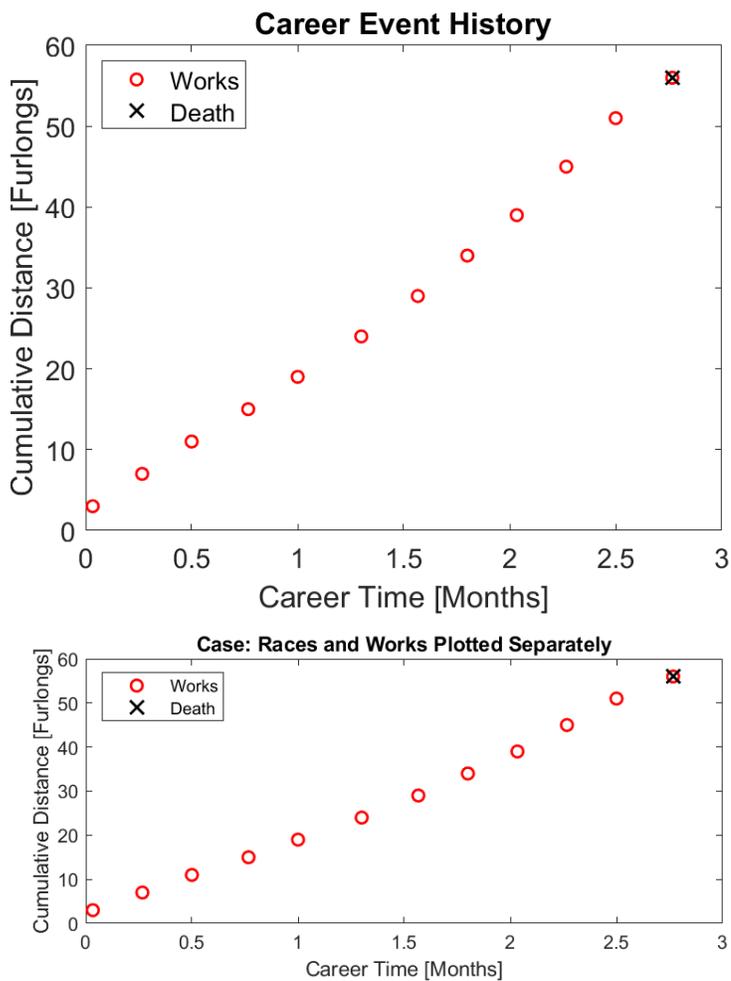
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Part 1: Graphical Representation of Individual High-Speed Exercise Histories

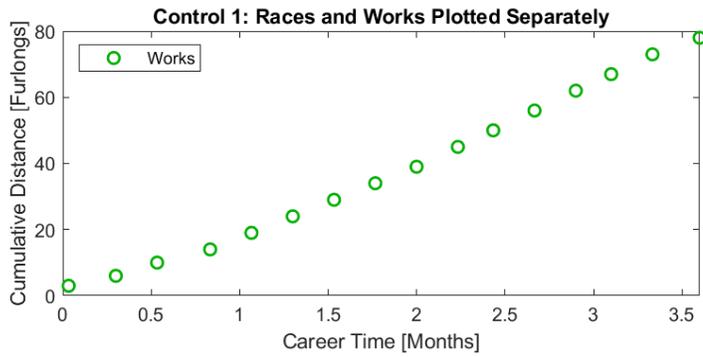
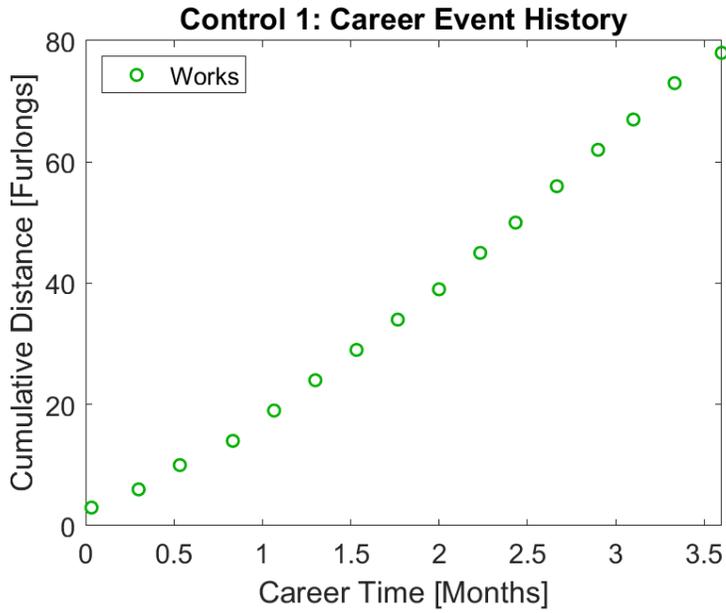
Races (filled circles), officially timed high-speed works (open circles), layups (line with endcaps, periods of time greater than 60 days in length without a race or timed work), and time of death (X) are illustrated over time (Career Time in months). With each event (race or work), the number of furlongs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

Case Horse High Speed Exercise History

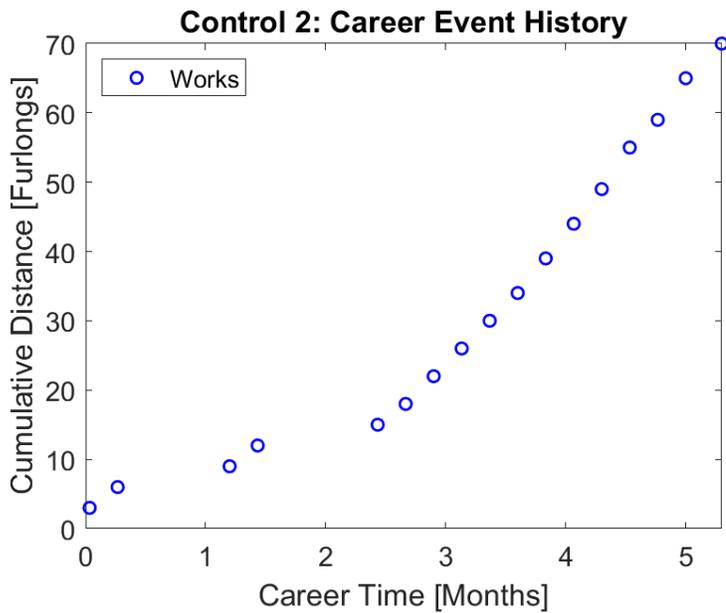


Part 1: Graphical Representation of Individual High-Speed Exercise Histories

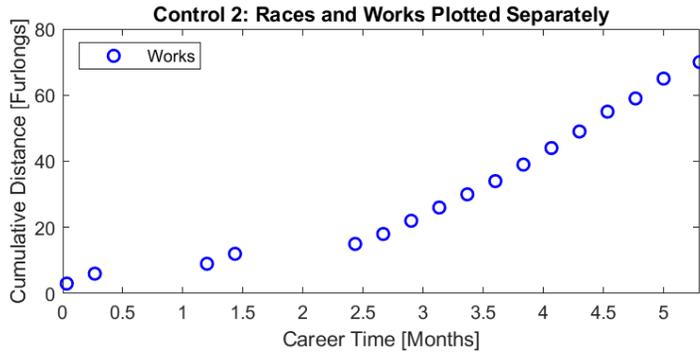
Control 1 High Speed Exercise History



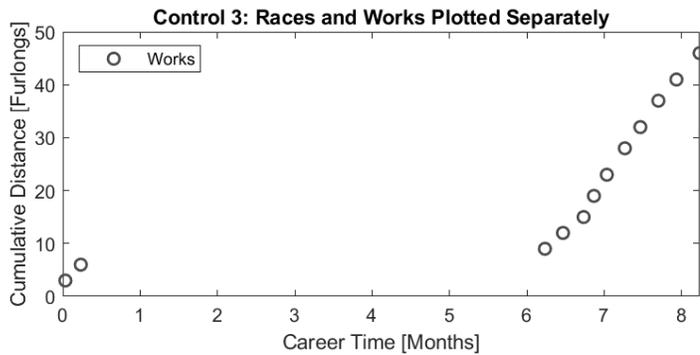
Control 2 High Speed Exercise History



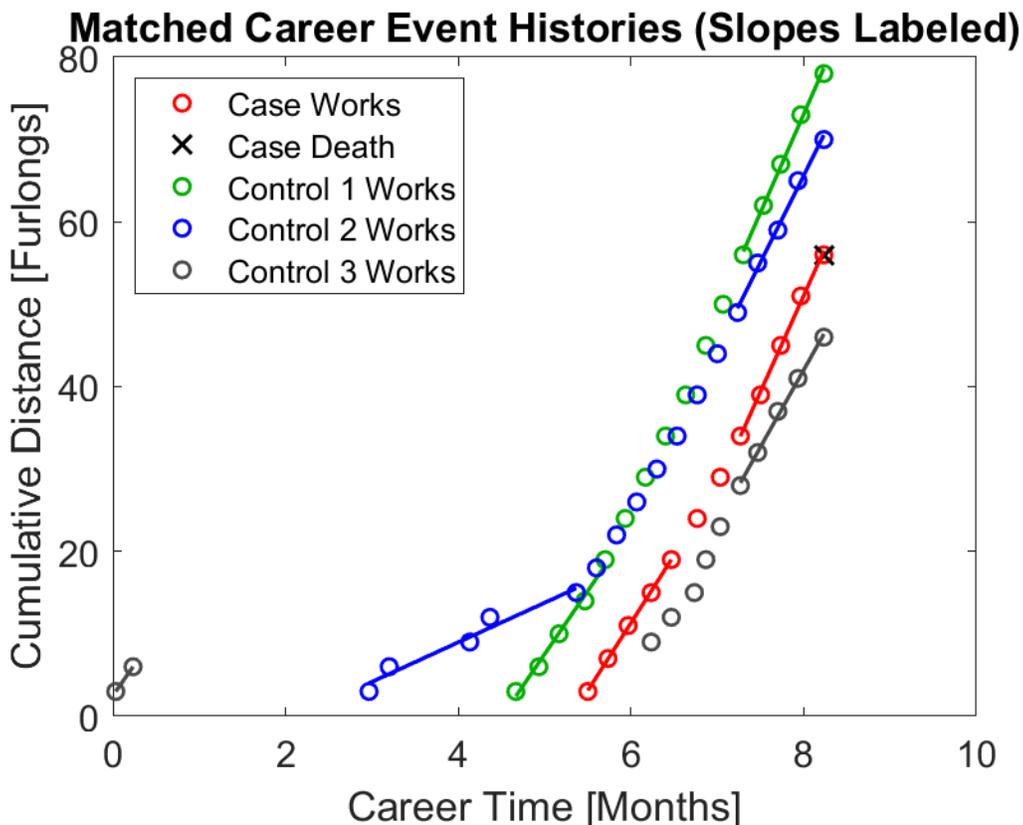
Part 1: Graphical Representation of Individual High-Speed Exercise Histories



Control 3 High Speed Exercise History

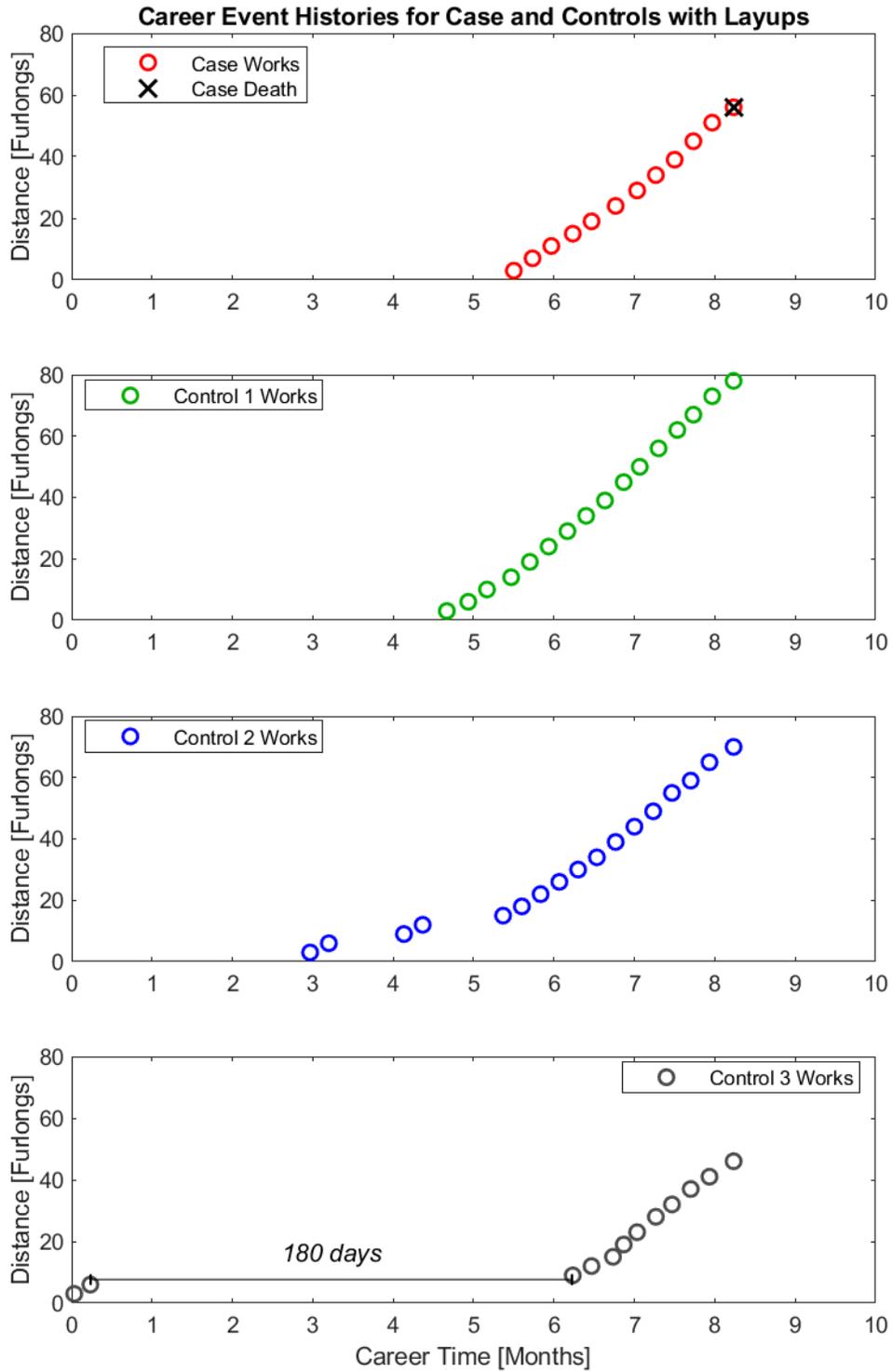


Part 2: Case and Control Horses Plotted Together

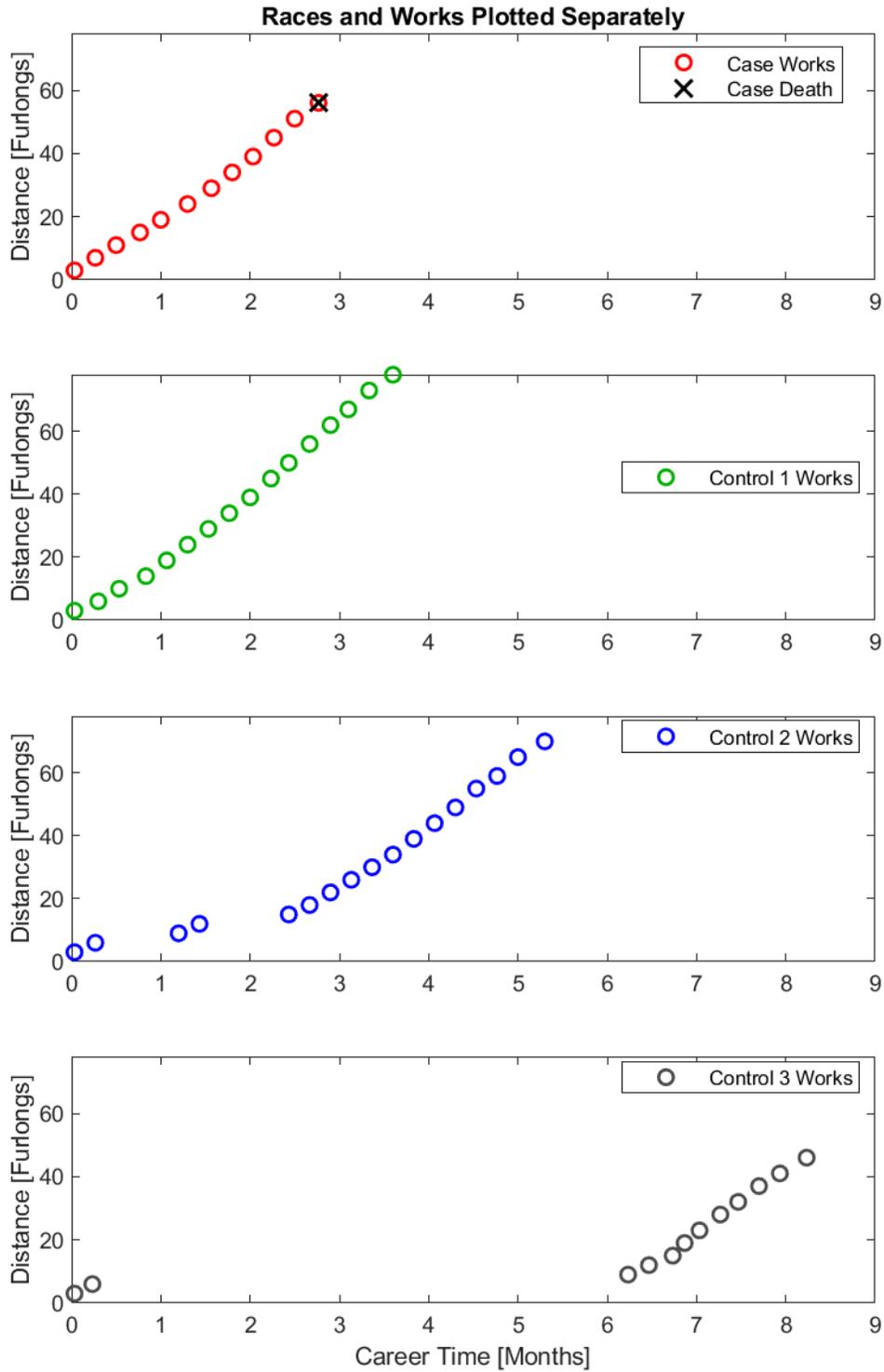


Case and Control Horses' exercise event histories are plotted on the same axes. The plots are aligned by the match date (equal to the date of death of Case Horse). Lines segments indicate specific rates of exercise at the start of career, end of career (for Case Horse), and match date (for Control Horses).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



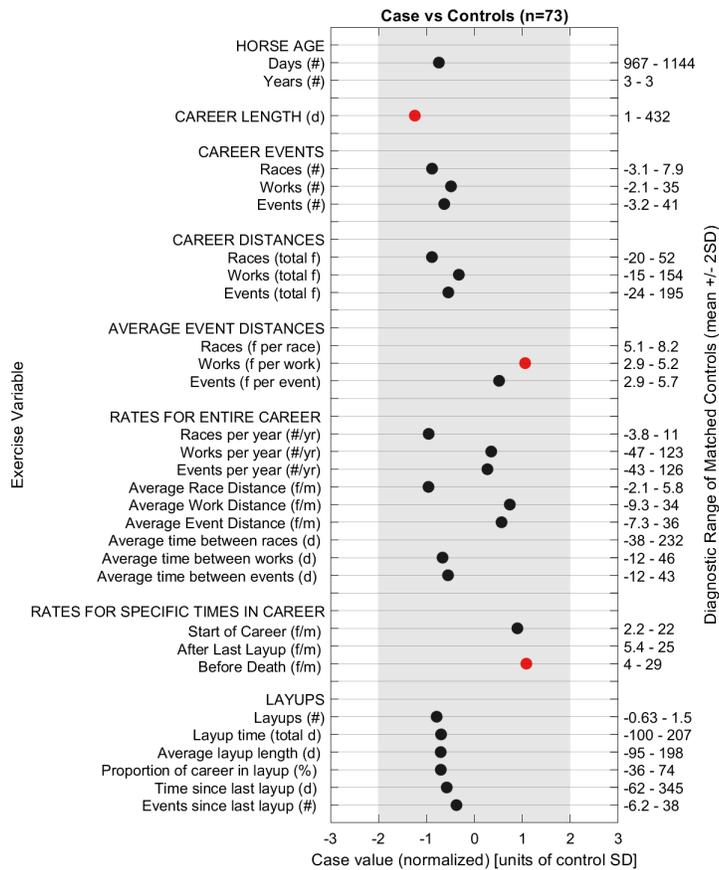
Part 2: Case and Control Horses Plotted Together



Part 3: Case Horse's Event History

Date	Race/ Work	Fur- longs	Track	Surface	Track Cond.	Time	Age/ Sex	Race Class	Earn- ings	Finish
1/8/2019	W	5.0	SA	Dirt	Fast	01:02.2				
12/31/2018	W	6.0	SA	Dirt	Fast	01:15.8				
12/24/2018	W	6.0	SA	Dirt	Fast	01:16.4				
12/17/2018	W	5.0	SA	Dirt	Fast	01:02.8				
12/10/2018	W	5.0	SA	Dirt	Fast	01:02.0				
12/3/2018	W	5.0	SA	Dirt	Fast	01:01.6				
11/25/2018	W	5.0	SA	Dirt	Fast	01:02.2				
11/16/2018	W	4.0	SA	Dirt	Fast	:48.20				
11/9/2018	W	4.0	SA	Dirt	Fast	:49.60				
11/1/2018	W	4.0	SA	Dirt	Fast	:49.80				
10/25/2018	W	4.0	SA	Dirt	Fast	:52.20				
10/18/2018	W	3.0	SA	Dirt	Fast	:37.60				

Part 4: Comparison of Exercise Variables between Case Horse and 73 Control Horses (3 year old, male, Thoroughbred)

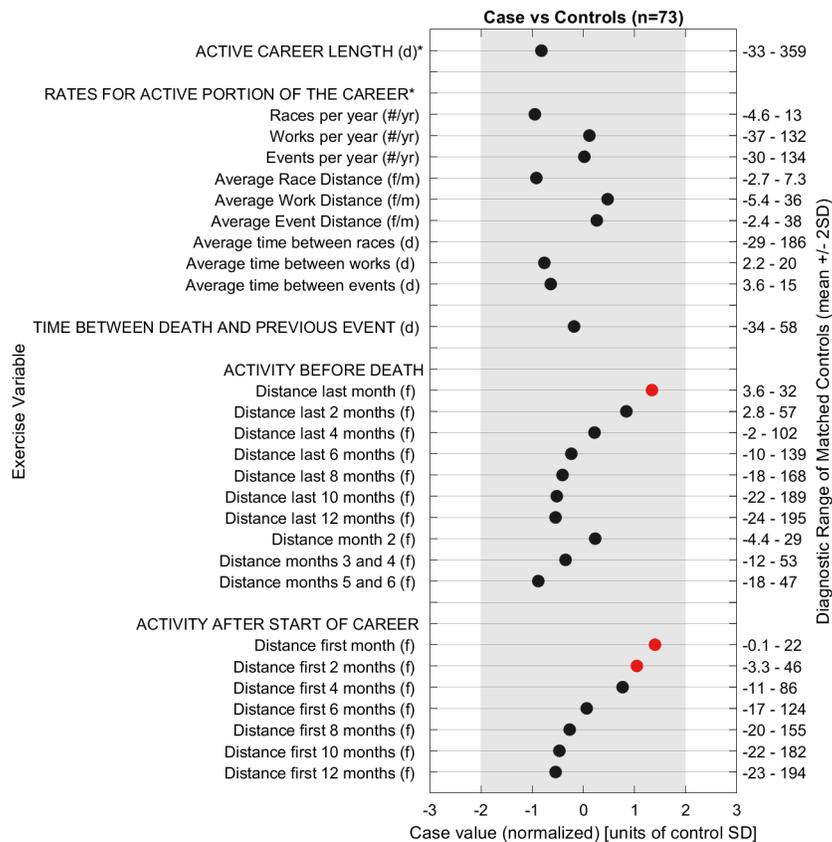


Case Horse values are indicated by black or red symbols: circles indicate values considered normal for 95% of 3 year old, male, Thoroughbreds (n=73) (gray region) (black and red indicate within 1 and 2 SD, respectively, of mean value of controls), X's indicate values outside of the normal range. Two 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 73 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=73) (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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