CORONERS COURT OF THE AUSTRALIAN CAPITAL TERRITORY

Case Title:	**INQUEST INTO THE DEATH OF RICHARD ROGER JOHN STANTON**
Citation:	**[2016] ACTCD 3**
Date of Findings:	2 November 2016
Before:	Coroner Campbell
Legislation Cited:	*Coroners Act 1997* (ACT) s 52(4)(a)(i)
Texts Cited:	Australian Standard AS/NZS 1927:1998, Pedal bicycles – safety requirements ISO 4210:2014-2015, Cycles – safety requirements for bicycles
Appearances and Representation:	Ms Sarah Baker-Goldsmith as Counsel Assisting the Coroner. Peter McDonald, Michael Shepherd and Stefanie Benson of Allen & Overy representing Trek Bicycles
File Number:	CD 25 of 2015

AUSTRALIAN CAPITAL TERRITORY
CORONERS ACT 1997

ORDER AND CERTIFICATE IN RESPECT OF AN INQUEST AND DISPENSING WITH A HEARING

I, **Lisbeth Ellen Campbell**, a Coroner for the Australian Capital Territory hereby dispense with a hearing into the circumstances surrounding the death of:

Richard Roger John Stanton

as I am of the opinion, after consideration of information given to me by members of the Australian Federal Police, the medical practitioner who performed a post-mortem examination at my direction, and the expert I engaged to review the case and provide opinions for my assistance, that the manner and cause of death is sufficiently disclosed and that a hearing is unnecessary.

I find:

1 That Richard Roger John Stanton died on 31 January 2015 at The Canberra Hospital, 1 Dann Close, Garran, in the Australian Capital Territory;

2 That the cause of death was hypoxic-ischaemic encephalopathy due to or as a consequence of head, facial and neck injuries;

3 That the manner of death was as a direct consequence of Mr Stanton falling from his bicycle when riding along Kent Street, Deakin, when the front Bontrager alloy steering tube carbon fork of Mr Stanton's Trek 2000 racing bicycle unexpectedly and catastrophically failed;

4 That, pursuant to s 52(4)(a)(i) of the *Coroners Act 1997*, a matter of public safety is found to arise in connection with this inquest.

Discussion:

5 The police investigation into the circumstances of Mr Stanton's death has established to my satisfaction that there was no contribution to the fork failure from the road surface in Kent Street or from Mr Stanton's riding of the bicycle immediately before the fork failure. Similarly, these factors did not contribute to the severity of Mr Stanton's injuries.

6 Although I am advised that Mr Stanton's bicycle had previously been involved in one or more accidents, the evidence before me suggests Mr Stanton assiduously attended to the maintenance and roadworthiness of his bicycle since his purchase of it in January 2006. I also find that the components fitted to the bicycle had no causal connection to the fork failure.

7 I engaged Mr Lachlan Thompson FIEAust CPE to examine the bicycle and its components and to prepare a report on possible causes of the structural failure to assist me in this inquest. Mr Thompson's key conclusions were:

i. The failure of the fork was caused by a fatigue fracture occurring in the aluminium alloy steering tube inside the bonded fork assembly;
ii. The cause of the crack initiation was an inclusion flaw from the manufacturing process;
iii. The fatigue crack occurred in a location where it was not visible to persons following the manufacturer-prescribed owner pre-ride inspection and technician service inspection methods; and
iv. The fork has a finite structural life and, upon reaching that finite structural life, can fail catastrophically without warning.

8 A copy of Mr Thompson's report was sent to Trek Bicycles, the manufacturer of Mr Stanton's bicycle, for its consideration. I also permitted Trek to conduct its own examination of Mr Stanton's bicycle, and granted access to evidence from the police investigation. Trek advised me that it concurred with Mr Thompson's conclusion that the fork failure was due to a fatigue crack.

9 Trek engaged Dr Gary Fowler to consider the structural failure of the front fork steering tube of the bicycle. Dr Fowler agreed with Mr Thompson's conclusions that:

i. The failure of the fork was caused by a fatigue fracture occurring in the aluminium alloy steering tube inside the bonded fork assembly;
ii. The fatigue crack occurred in a location where it was not visible to persons following the manufacturer-prescribed owner pre-ride inspection and technician service inspection methods; and
iii. The fork has a finite structural life and, upon reaching that finite structural life, can fail catastrophically without warning.

In Dr Fowler's opinion there was no evidence to conclude that the cause of the fatigue crack initiation was an inclusion from the manufacturing process. Rather, Dr Fowler concluded that the fracture appearance at the fatigue origin was typical for a fatigue crack caused by a cyclic stress of sufficient magnitude and number of cycles.

10 The common ground of the conclusions of Mr Thompson and Dr Fowler quite clearly give rise to a matter of public safety.

11 After receiving these reports, at my direction, and with the assistance of counsel assisting, a series of conversations took place among Dr Sonia Stanton, Mr Stanton's widow, Mr Thompson, and Trek, about possible recommendations I might make to mitigate the risk to public safety of these types of catastrophic structural failures. I was conscious that any recommendation I make should be appropriate and capable of implementation. For example, it was suggested I might recommend Trek should provide owners and service technicians with a method of inspection which would proactively identify the existence of fatigue cracks in the fork prior to failure.

However, Trek have advised me that there is no cost effective or practical method to identify internal fatigue cracks of this type in routine maintenance checks in the consumer setting, as specialist expensive equipment is required. I accept Trek's expertise in this matter and accordingly I do not make this recommendation.

Recommendations and Notes

12 The recommendations I make in this inquest are as follows:

i. Although Trek's owner manuals already warn owners that bicycles are not indestructible and every part of a bicycle has a limited useful life, **I recommend** that Trek update its owner's manuals and consumer information to expand upon this warning and to note the risk of catastrophic failure without warning in some circumstances.

I note that Trek has already committed to amending its owner's manuals in this respect, and to notify consumers of this change by creating a temporary notice on its Australian website to direct Trek owners to the new version of the manuals. Trek will also communicate directly with the owners of Trek bicycles who have registered their purchase with Trek, to direct them to the website and new manual.

ii. **I recommend** that Trek undertake public education activities within Australia, and particularly within the Australian Capital Territory, to bring the issue of bicycle component life to the attention of existing Trek bicycle owners, in addition to purchasers of new bicycles.

I note that Trek has committed to publish material on its Australian social media assets, including Facebook and Twitter, about the importance of rider safety and to encourage consumers to visit their local dealer if they own an older bicycle or a bicycle that has been involved in an accident. Trek will also include a reference and hyperlink to its Australian website, where consumers can access further information on rider safety and the updated owner's manual.

I also note that Trek intends to post a notification to its Australian dealers that will encourage them to educate consumers who pass through their shop about the issue of inspections, bicycle component life and, where appropriate, suggest replacing the component or the bicycle with a new model. Trek will also remind its dealers to inform existing owners about the updated owner's manual available on Trek's website.

I also note that Trek has indicated it is prepared to undertake outreach to bicycle advocacy groups to educate the cycling community on the issues of metal fatigue and bicycle component life. In particular, Trek will contact ACT Pedal Power, which is a local cycling advocacy group, and the Cycling Promotion Fund, which is a national advocacy group, to publicise these issues to cyclists throughout Australia.

iii. **I recommend** that Standards Australia and other relevant international standards bodies investigate fixing an upper "safe life" limit (safe life) for the bicycle front steering fork, depending on the manufacturing process and material construction of the part, after which the owner is encouraged to replace the part irrespective of whether damage is visible.

I note that Trek's bicycles sold in Australia meet or exceed the Australian Standard (AS/NZS 1927:1998 – Pedal Bicycles – Safety Requirements), and also pass ISO 4210, an international standard that specifies the safety and performance requirements for the design, assembly and testing of bicycles and certain sub-assemblies. However, these standards do not address the issue of safe life, and the Australian Standard also has no reference to metal fatigue. Trek has advised me that previous attempts internationally to introduce this type of standardisation have failed due to industry views that individual bicycle usage is subject to such wide variability that assigning a safe life would not be meaningful or of assistance to a consumer. However, Mr Thompson's advice to me is that safe lifes are routinely fixed in respect of aerospace components. Given aerospace materials such as carbon fibre and aluminium alloys are now routinely used in high end racing bicycles such as Mr Stanton's bicycle, it seems to me that similar product safety considerations should apply.

Trek has undertaken to me that it will request international standardisation bodies to reconsider their prior rejections of safe life limits, and it will approach Standards Australia to reconsider the lack of reference in the Australian Standard to safe life or metal fatigue.

Comments

13 I have indicated to Trek that I would appreciate receiving a written response from it within 12 months of the date of these findings formally outlining the steps it has undertaken to meet the commitments it has made to me.

14 I will send a copy of my findings, and Mr Thompson's expert report, to Standards Australia and the Australian Consumer and Competition Commission for their information and any action they consider appropriate.

15 I wish to expressly note and commend the cooperative and collaborative spirit in which Trek engaged with the inquest process. I also express my gratitude to Sarah Baker-Goldsmith, counsel assisting me, for her exceptional work in liaising on my behalf with the various interested parties. Her hard work, insight and understanding of the complex issues which were involved in this matter were of enormous assistance to me.

16 Although nothing I can do here will bring back Mr Stanton, nor completely remove the risk of a similar catastrophic fork failure occurring in future, the actions that Trek has already committed to undertake will publicise the issues with component life and metal fatigue not only to other owners of Trek

bicycles, but throughout the industry and to owners of other bicycle brands. It is to be hoped that increased public awareness and the prospect of international and domestic changes to relevant standards for bicycle safety will create a lasting legacy from Mr Stanton's unfortunate death.

DATED: 2 November 2016

L.E. CAMPBELL
CORONER

AUSTRALIAN CAPITAL TERRITORY

CORONERS ACT 1997

Notification of Findings and Dispensing with a Hearing

To the Registrar-General

I, **Lisbeth Ellen Campbell**, a Coroner for the Australian Capital Territory hereby notify that a hearing into the manner and cause of the death of:

Richard Roger John Stanton

was dispensed with on November 2016.

a) The deceased died at The Canberra Hospital, 1 Dann Close, Garran in the Australian Capital Territory on 31 January 2015.

b) The cause of death was hypoxic-ischaemic encephalopathy due to or as a consequence of head, facial and neck injuries.

c) The cause of the death was established by a post-mortem examination.

DATED 2 November 2016

L.E. CAMPBELL
CORONER

BICYCLE OWNER'S MANUAL

⚠ Even if you have ridden a bicycle for years, it is important for every person to read Chapter 1 before you ride your new bicycle.

ZH 该手册的 PDF 版本载于 CD. 若[illegible]

CS Elektronickou verzi této pĐiruĐky najdete na CD ve formátu PDF. Pokud nemáte k dispozici poĐítaĐ a chcete získat pĐiruĐku v tištĐné podobĐ, odešlete žádost na adresu uvedenou dole na této stránce.

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ES En el CD, encontrará una versión de este manual en formato PDF. Si no tiene acceso a un ordenador y desea adquirir un manual impreso, envíe una solicitud a la dirección que aparece en la parte inferior de esta página.

FR Ce manuel est disponible en version électronique au format PDF sur le CD. Si vous n'avez pas accès à un ordinateur et que vous souhaitez acquérir la version imprimée du manuel, veuillez envoyer votre demande à l'adresse indiquée en bas de cette page.

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SV Bruksanvisningen finns som PDF-fil på CD-skivan. Kontakta adressen längst ned på sidan om du inte har tillgång till en dator och vill ha bruksanvisningen som trycksak.

FI Tämän oppaan versio on saatavana CD-levyllä PDF-muodossa. Jos sinulla ei ole käytössäsi tietokonetta tai haluat painetun oppaan, lähetä pyyntö osoitteeseen, jonka löydät tämän sivun alalaidassa.

DA Denne manual findes også som en PDF-fil på cd'en. Hvis du ikke har adgang til en computer, men ønsker at få en trykt manual, er du velkommen til at bede om den på den adresse, der ses nederst på denne side.

NO Det finnes en versjon av denne håndboken på CD-en i PDF-format. Dersom du ikke har tilgang til datamaskin og vil ha en trykket versjon, kan du sende en forespørsel til adressen nederst på denne siden.

HE גרסה של מדריך זה זמינה על גבי התקליטור כקובץ PDF.
אם אין לך גישה למחשב וברצונך לקבל מדריך מודפס, אנא שלח בקשה אל הכתובת המופיעה בתחתית עמוד זה.

CUSTOMER SERVICE
Ph. +1 920.478.4678 | trekbikes.com | 801 W Madison Street, Waterloo, WI 53594
Bikeurope BV | Ceintuurbaan 2-20C3847 LG Harderwijk, The Netherlands
 | Part No. 556893 | Printed in China

Exhibit A

brake adjustments or other brake options for your bicycle. Also read ***Braking*** on page 8.

Sharp points, moving parts, hot spots, and pinch points

Some parts of your bicycle can injure you if mishandled. Sharp points include the teeth of the chainrings and some pedals. Brakes and their parts get hot. Moving parts can cut skin and even break bones. Clamps and pivoting parts such as brake levers can pinch, as can the chain where it runs on to sprocket teeth.

Aero-bar

An aero-bar is a forward extension of the handlebar, with arm rests. When riding with your forearms or elbows on an aero-bar, your ability steer and stop the bicycle can be reduced. When more control is needed, change your position so that your hands are near the brake levers and you are not leaning on your elbows or forearms. Also, do not use the arm rests as handles; they are only intended to support your forearms when placed in the center of the pad. Leaning on the edges of the arm rests could break them.

Frame or fork problem

Frame problems are not common. As an example of such a problem, some riders could get a "shimmy" or "harmonic oscillation" or "frame wobble" at some speeds.

If you get a shimmy or any other problem, decrease your speed immediately and do not ride the bicycle. If your bicycle behaves in an unusual manner or you hear a noise, immediately stop the bicycle and identify the problem. After any impact, have your retailer inspect the entire bicycle thoroughly. Repair any problem before riding again, or take the bicycle to your retailer for service.

⚠ WARNING: A frame or fork problem could decrease your control and cause you to fall. If your bicycle gets a shimmy or any other problem, decrease your speed immediately. Take your bicycle to your retailer for inspection and service.

Life span of a bicycle and its parts

Bicycles are not indestructible, and their parts will not last forever. Our bicycles are made to withstand the stress of 'normal' riding because those stresses are well known and understood. However, we cannot predict the forces that might occur if you use your bicycle in competition, if you ride in extreme conditions, if it is involved in an accident, if it is used for rentals or for commercial purposes, or if it is used in other ways that apply high stress or fatigue loads. With damage, the life of the frame, fork, or other parts can be drastically reduced and may fail without warning.

The safe life of a part is determined by its construction, materials, use, maintenance, rider weight, speed, terrain, and environment (humidity, salinity, temperature, etc.), so it is not possible to give an accurate timetable for replacement. Any form of crack, scratch, or change of color in a high-stress area indicates that the life of the part (including the frame or fork) has been reached and the part should be replaced. If you are not sure if you should replace a part, consult your retailer.

In some cases, a lighter frame or part has a longer life than a heavier one. However, better maintenance, more frequent inspections, and more frequent replacement are necessary for a light-weight, high performance bicycle and its parts.

⚠ WARNING: A bicycle is subjected to wear and high stress. Different materials and parts may react to wear or stress fatigue in different ways. If the design life of a part has been exceeded, it may suddenly fail, possible causing injuries to the rider.

Before each ride: Checklist

The checklist that follows shows critical areas for you to check. If your bicycle has a carbon fiber composite frame, fork, or parts, also read the special Carbon Composite information on page 12. If a part of your bicycle does not function correctly, use the instructions in this manual to repair your bicycle, or take your bicycle to your retailer for service. Do not ride a bicycle with a part that is damaged; replace the part.

This is not a complete maintenance program.

⚠ WARNING: A bicycle that does not operate correctly can decrease your control and cause you to fall. Fully check all of your bicycle before each ride, and do not ride your bicycle until you correct any problem.

☑ Check the saddle (seat) and Seatpost

Make sure the saddle is correctly attached. Try to turn the saddle and seatpost in the frame, and try to move the front of the saddle up and down. The saddle should not move or be loose.

If you choose to adjust the position of the saddle, also follow the inspection procedures in Chapter 3.

☑ Check the handlebar and stem

Make sure the stem is correctly attached. It should be in alignment with the front wheel and correctly attached to the fork and handlebar. To check the attachment, try to turn the handlebar from side to side while you hold the front wheel between your knees (Figure 1.3). To check the connection of the handlebar, try to twist it in the stem. The handlebar should not move or be loose. Make sure that no cables are pulled or caught when you turn the wheel from side to side.

FIGURE 1.3

Make sure grips are secure and that the ends of the handlebar are covered or that plugs are correctly inserted into the ends of the handlebar.

⚠ WARNING: A handlebar end that is not plugged or covered can cut in a crash. Parents should regularly inspect a child's bicycle. Replace damaged or missing grips.

☑ Check the frame and fork

Closely examine your frame and fork, especially near junctions of the tubing, and clamping or attachment areas. Look for signs of fatigue stress:

- Dents
- Cracks
- Scratches
- Deformation
- Discoloration
- Unusual noises

If your frame or fork is made of carbon composite, also see page 12.

☑ Check the wheels

Check the tire inflation. Inflate the tires to the air pressure recommended on the sidewall of the tire. If a lower recommendation applies to the rim, inflate to the lower value.

⚠ WARNING: Excess air pressure can cause the tire to explode off the rim, causing permanent hearing loss or, if riding, a loss of control. Use a hand pump with a reliable pressure gauge, and do not overinflate.

Make sure the wheels are straight. Turn the wheel and check the rim when it goes through the brake-pads or the frame. The rim should not wobble up and down or from side to side.

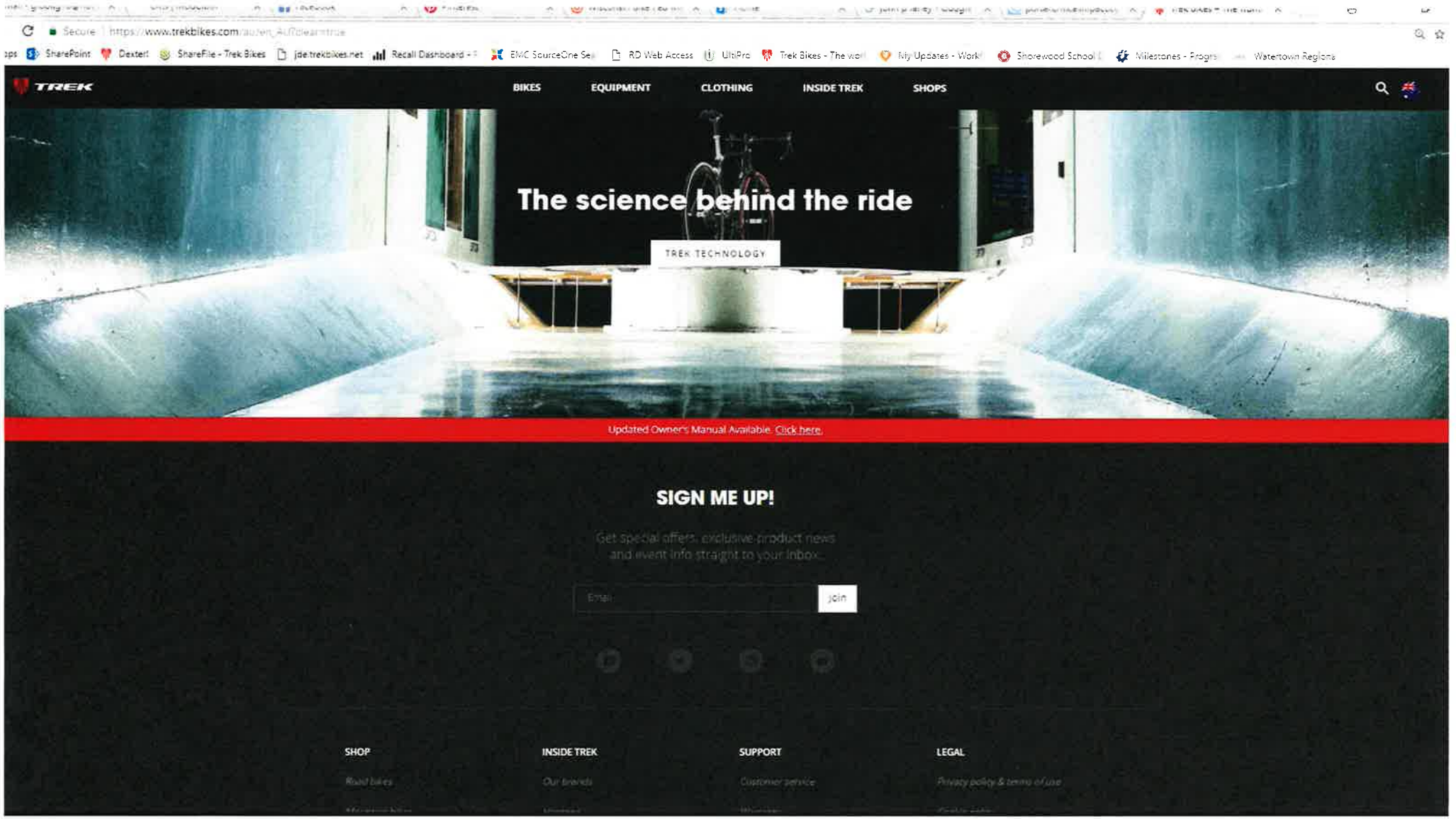

Secure | https://www.trekbikes.com/au/en_AU/?clear=true
SharePoint
Dexter!
ShareFile - Trek Bikes
jde.trekbikes.net
Recall Dashboard
EMC SourceOne Se
RD Web Access
UltiPro
Trek Bikes - The wor
My Updates - Work
Shorewood School
Milestones - Progra
Watertown Regiona
TREK
BIKES
EQUIPMENT
CLOTHING
INSIDE TREK
SHOPS
The science behind the ride
TREK TECHNOLOGY
Updated Owners Manual Available. Click here.
SIGN ME UP!
Get special offers, exclusive product news and event info straight to your inbox.
Email
Join
SHOP
Road bikes
INSIDE TREK
Our brands
SUPPORT
Customer service
LEGAL
Privacy policy & terms of use

Exhibit B

Jennifer Naeger

Subject: Pre-flight inspection

From: newsletters=trekbikes.com@e.trekbikes.com [mailto:newsletters=trekbikes.com@e.trekbikes.com] **On Behalf Of** Trek Bicycle
Sent: Monday, 29 May 2017 3:14 PM
To: Gareth Halverson <Gareth_Halverson@trekbikes.com>
Subject: Pre-flight inspection

TREK View online

KEEPING YOU SAFE

The most important element to enjoying your ride is staying safe. If your bike has been involved in an accident or raced competitively it could fatigue faster. Even if your bike has been loved for a long time, we recommend that you have your local Trek retailer check it over and ask whether it is time to replace the bike or component with a new model.

For more details please check the new Trek Owner's Manual.

See the new Trek Owner's Manual

Exhibit C

Bikes	Equipment	Clothing	Retailers

Update your preferences for Trek emails.

Unsubscribe from future Trek email updates.

This email was sent to: gareth_halverson@trekbikes.com

Trek Bicycle Corporation 801 W Madison ST Waterloo, WI 53594 USA

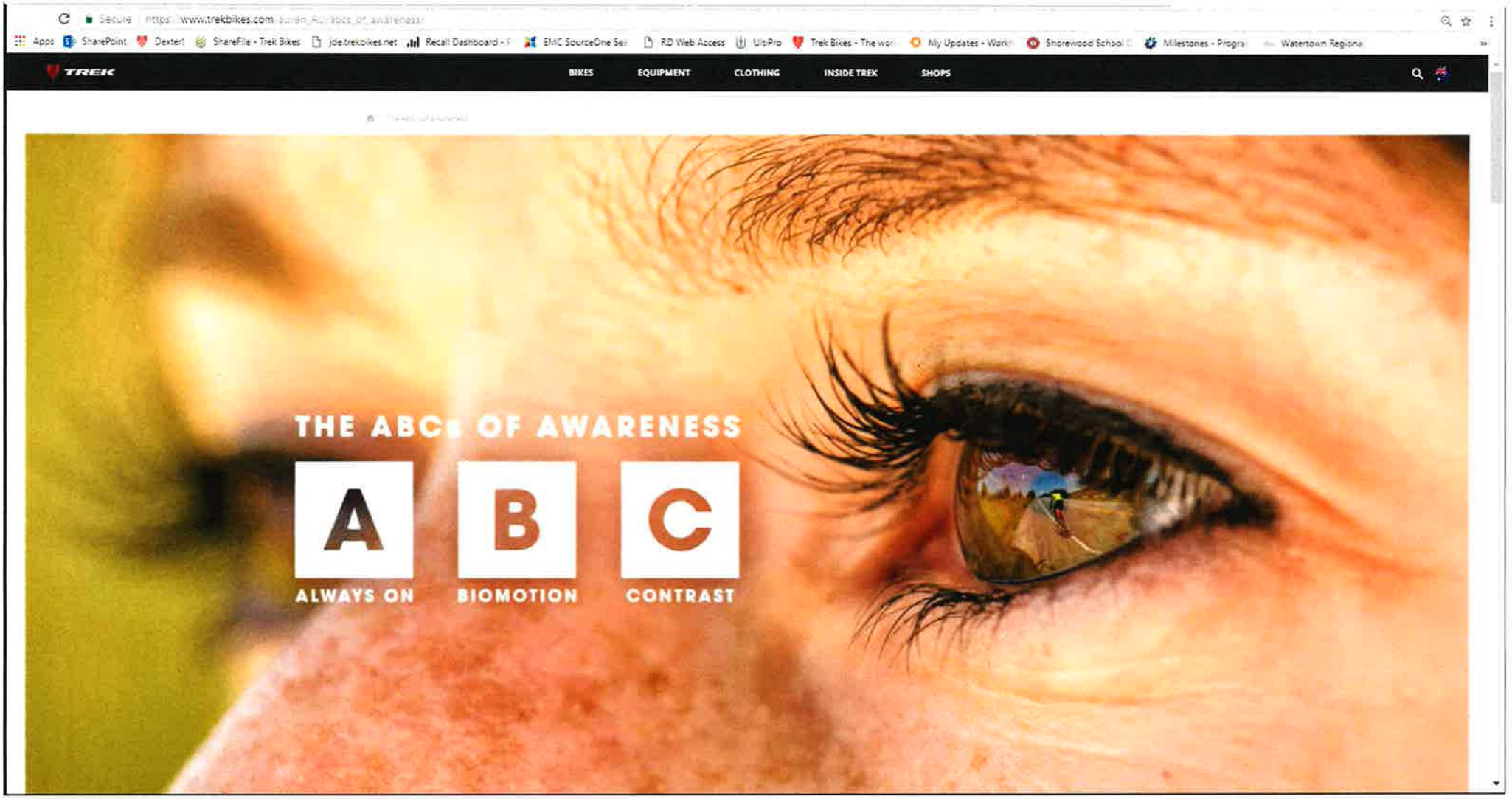

TREK
BIKES
EQUIPMENT
CLOTHING
INSIDE TREK
SHOPS
THE ABCs OF AWARENESS
A
ALWAYS ON
B
BIOMOTION
C
CONTRAST

Exhibit D

Research shows that cyclists chronically overestimate the distance at which they are detectable by motorists unless they're actively doing something to increase their detectability. We may not be seen at all. And that's an alarming reality. But there are simple steps we can all be taking to stand out. The following guidelines were developed using research conducted by students of Clemson University's Perceptual Awareness department. The ABCs of Awareness – Always on, Biomotion and Contrast – are presented here in a good, better, best hierarchy. Using daytime running lights is a good way to be noticed, but a combination of daytime running lights, highlighting your body's moving parts and choosing gear that contrasts with the environment is the best action. The more of the ABCs you follow on every ride, the more you'll stand out.

Always on
Front and Rear lights, day and night

Cycling has taken some of its best cues from the automotive industry. We can thank cars and motorcycles for suspension and disc brakes, for instance. These days, cars come as standard with daytime running lights because cars with DRLs are less likely to be involved in a collision. Applying that logic to bikes is a no-brainer.

But not all lights are created equal. Even lights designed for superior brightness may not be particularly effective during daylight hours. A true DRL has a specific focus, flash and range. Without these three things, you just have a light.

Watch the Always On video
Learn more

Shop all Daytime Running Lights
See more

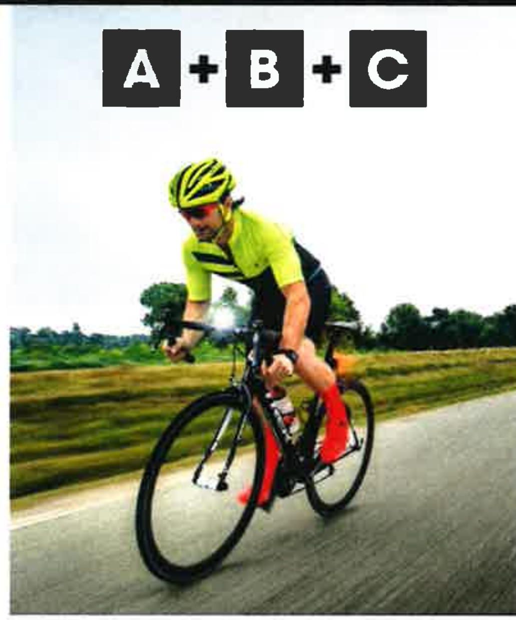
Biomotion
Highlight your body's moving parts

The brain has identified ways of protecting itself beginning with its uncanny ability to recognise a biological form with only a few clues to the form's shape. In other words, we're really good at seeing ourselves. This isn't something that needs to be taught – it is an instinctual perceptual phenomenon called sensitivity to biomotion.

On a bike, the unique up and down pedaling motion is what makes you recognisable as human. At night, highlight your feet, ankles and legs with products that feature reflective materials. During daylight, wear fluorescent socks, shoes, covers or warmers.

Watch the Biomotion video
Learn more

Shop all Biomotion products
See more



Contrast
Choose the right gear for day and night

[illegible]

Watch the Contrast video

Learn more

Shop all Contrast products

See more

Pre-flight inspection

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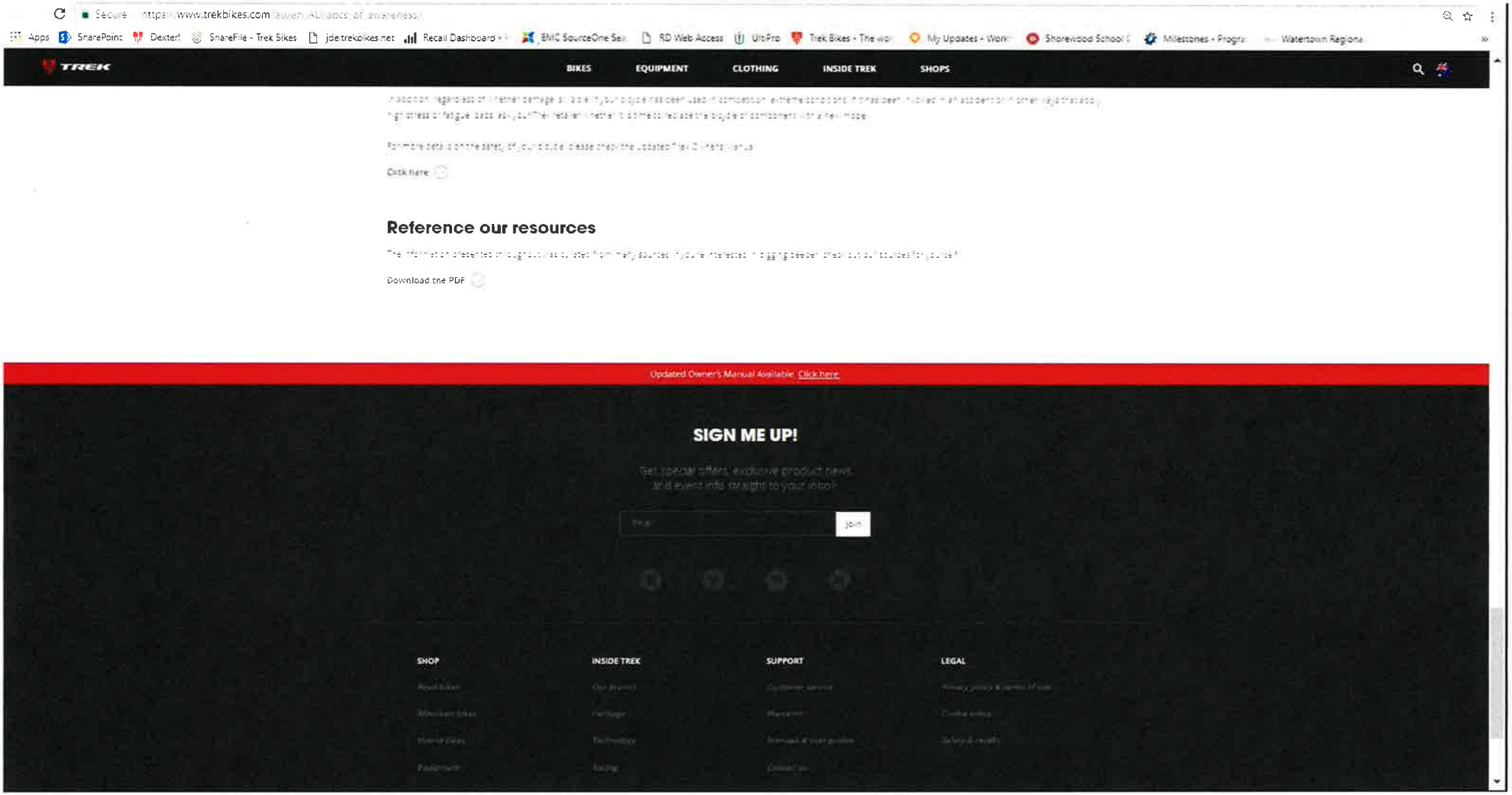
Secure https://www.trekbikes.com/lauren/#/specs_of_awareness/
Apps SharePoint Dexter! ShareFile - Trek Bikes jde.trekbikes.net Recall Dashboard EMC SourceOne Sea RD Web Access UltiPro Trek Bikes - The wor My Updates - Work Shorewood School Milestones - Progra Watertown Regiona
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CLOTHING
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LEGAL

Trek Bicycle (AU)

Published by Lachlan Paton [?] · 1 hr ·

Have you had your bike safety checked lately? Get your bike serviced regularly by an authorised Trek retailer. Learn how to make yourself safer on the roads: https://goo.gl/fVpw0N

1,476 people reached

Boost Post

Exhibit E

Trek Bikes Aust @TrekBikesAust · May 16

Have you had your bike safety checked lately? Learn how to make yourself safer on the roads: goo.gl/fVpw0N

1 6

Exhibit F

Jennifer Naeger

Subject: New Trek Owner's Manual

From: Trek Bicycle <newsletters@trekbikes.com>
Date: 29 May 2017 at 10:59:30 am AEST
To: <gareth_halverson@trekbikes.com>
Subject: New Trek Owner's Manual
Reply-To: Trek Bicycle <newsletters@trekbikes.com>

TREK

Login to **dexdealer.com**

View this email in your browser

New Trek Owner's Manual

Every bicycle has a limited useful life. No matter the kind of bicycle you ride, all bikes are subject to some level of wear and stress through normal usage. We want our customers to be safe while they're riding. See the new safety messaging in the Trek Owner's manual.

TREK

Click here to see the Manual.

More Trek news

Exhibit G

Shortcuts

Claim Creator & Review
Edit Store Profile
Review & Maintain Backorders
Project One
Tech Site for Reps
Tech Site for Reps
Order Inquiry

Intranet Options

System Dashboard
Keyword Search Tag Maintenance
Mimic User

Order

Find Bikes
Find Accessories
Shopping Cart
Copy & Paste
Project One
Quick Order Entry
Personal Products List
Advanced Search

Order History

Review Orders
Review & Maint. Backorders
Review Shipments

Account

Review Invoices & Financial Records
User Preferences

Services

Scorecard Report
Warranty
Trek Marketing Builder

Updated Trek Owner's Manual

15/05/2017

We've updated the Trek Owner's manual to include new verbiage around bikes being safety checked regularly and that high stress riding practices may increase the risk of damage to a bike or cause it to fatigue prematurely without warning. Every bicycle has a limited useful life, and is subject to wear and stress through normal use. In some cases, this wear and stress can result in a crack or scratch. If you see a crack or a scratch on your customer's frame that you are unsure about you can send it in for review through a Dexter service claim.

If a customer's bicycle has been used in competition, extreme conditions, if it is involved in an accident or in other ways that apply high stress or fatigue loads, it may be appropriate to suggest that the customer replace the bicycle or component with a new model (regardless of whether damage is visible). Very soon, you will see consumer-facing communications from Trek highlighting these points.

In addition, we are asking that every new Trek bicycle that leaves your store is accompanied by an owner's manual and that your customers are educated about the ABC's of Awareness.

If you have any questions regarding this new messaging, please contact your Customer Service Manager, Andrew Stapleton (andrew_stapleton@trekbikes.com) for more information.

See the new Owner's Manual (Attached)
Learn more about the ABCs of Awareness (https://www.trekbikes.com/au/en_AU/abcs_of_awareness/)

Article Links:

16TK OM 012417.pdf

Latest Articles

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- Reduced retail prices on key Electra models — 26/01/2017
- /U — Trek U is offering up the Ultimate PHD Prize — 08/06/2017

Exhibit H

Pedal Power ACT

CANBERRA CYCLIST

Published by Pedal Power ACT Inc.
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The *Canberra Cyclist* is a publication of Pedal Power ACT Inc., the not-for-profit organisation associated with major advocacy groups in Australia dedicated to promoting cycling for transport and recreation. It serves the best interests of the community and the environment. Please join our organisation and contribute to its work.

Benefits to members, in addition to advocacy, include insurance, programs of rides and tours, bi-monthly magazine, maintenance courses, discounts at bike shops and advice about aspects of cycling.

Volunteer contributions are welcome from all members on topics related to cycling or that are of interest to cyclists.

Borrowing this copy?
To receive your own copy simply go to ***http/www.pedalpower.org.au*** and join Pedal Power ACT Inc.

Disclaimer: Opinions expressed in this magazine are those of the respective authors and are not necessarily those of Pedal Power ACT Inc.

Deadline for December 2017– January 2018 edition # 259 copy is 1 November2 017
Please provide text copy as a text document. (Do not put the photos in the document).
Photographs should be in large size in separate jpeg files no less than 300 dpi and sent as separate files.

Cover: Spring riding on the southern shores of Lake Burley Griffin
Photo : Julia Widdup

Riding on the bike path at New Acton

Contents

Exhibit I

Peter Bourke
Bicycle Industries Australia
4/7 Bruce Street
Kensington VIC 3031
0438 871 271

16 October 2017

Dear Mr. Bourke,

This letter asks your group, Bicycle Industries Australia, to promote an awareness among cyclists that a bicycle has a life span. In other words, bicycles do not last forever.

Regardless of the material of which a frame or fork is made, eventually it will wear out from fatigue. When that happens, the bike will break suddenly and may cause an accident. It is very difficult (or impossible) to predict when that might happen because wear and tear on a bicycle is dependent on many factors, including rider weight, terrain, maintenance, speed, environment, and impacts.

A cyclist has only one viable method to avoid an accident caused by a safety-critical part that has reached the end of its safe life. That method is to inspect the bicycle frequently, including an occasional inspection by your local retailer. ISO standard 4210 requires bicycle owner's manuals to include a warning statement to this effect. An example of this warning is below:

> WARNING:
>
> — As with all mechanical components, the bicycle is subjected to wear and high stresses. Different materials and components can react to wear or stress fatigue in different ways. If the design life of a component has been exceeded, it can suddenly fail, possibly causing injuries to the rider. Any form of crack, scratches or change of colouring in highly stressed areas indicate that the life of the component has been reached and it should be replaced.

Trek asks that your group promote awareness of the life span of bicycles, especially the regular inspection of safety-critical parts (including frame and fork) to discover any signs of fatigue listed in the above warning. As an example of such an inspection, Trek has attached to this letter the "M-Check" Bicycle Safety Check.

Trek works with its retailers by providing the M-Check in its Trek Certified Service retailer training. Trek also works with consumers by supplying bicycle inspection procedures in the Trek Bicycle Owner's Manual. Your organization, however, can provide an additional channel to educate bicycle riders in Australia.

Please reach out with any questions or concerns. Thank you for your support in this effort to promote cycling safety.

Jason Pye
Australia Country Manager
Trek Bicycle Corporation

Exhibit J

TREK CERTIFIED SERVICE

Bicycle Safety Check

M-CHECK

Utilize the "M" motion starting at the front skewer when performing a bicycle safety check.

NOTE: *Clean the bicycle before completing a bicycle safety check to prevent missing anything.*

1. Front wheel attachment system:

Use gravity to ensure the wheel is properly aligned in the fork drop outs, and tighten the wheel attachment system.

With a rim brake bike (non-disc) ensure the lever is on the non-drive (left) side.

- Check the tension adjustment by opening and closing the lever. If the lever moves easily, tighten the adjustment nut and try again. There should be ample pressure when at the half closed (90 degrees) position. When in the closed position, ensure the lever doesn't touch the fork and is facing toward the rear of the bicycle. To test, lift the front wheel off the ground and hit the wheel with a solid blow using your hand. The wheel should not be loose, move from side to side, or come off.
- On a disc brake bike ensure the lever is on the non-drive side.
- Follow manufacturer's specifications to secure the attachment system.
- Solid threaded axle: tighten axle nuts to the manufacturer's torque specification.

2. Front hub adjustment check:

- With wheel off the ground ensure the hub has no play from side to side.
- Spin the wheel to ensure the hub spins smoothly.

3. Front brake check:

- Caliper or V-brake – ensure the wheel spins freely through the brake, not dragging on the brake pads.
- Ensure the mounting hardware for the brake pads is secure and set to manufacturer's torque specification.
- Ensure the rim sidewalls aren't concave or worn and have ample rim surface for brake pads to purchase.
- Disc brake – ensure the rotor spins freely through the caliper, not dragging on the brake pads.
- Check brake pads for wear and replace if below manufacturer's specifications.
- Brake feel – do the "Oh Shoot" check: squeeze the brake with ample force to ensure the cables don't slip in the brake cable pinch mechanism and that the brake lever doesn't pull all the way to the handlebar.

4. Front tire:

- Ensure the tire bead seat line is uniformly mounted 360 degrees around the rim. The tire molding strip should be visible and have consistent alignment.
- Check the tire to ensure there are no cuts, or tire threads showing, and that there is sufficient tire tread remaining.
- Check the tire PSI to ensure it's within the manufacturer's recommended range.

5. Front inspection:

- Rigid – thoroughly check to ensure there are no hairline cracks or any other damage on the fork legs. Check any weld connection points for imperfections. If imperfections are present this fork is deemed unsafe and non-ridable.
- Suspension – thoroughly check to ensure there are no scratches or gouges in the stanchions, ensure all fork controls are operating to manufacturer's specifications, and no fluid is leaking from the fork.

NOTE: *Move up the fork to the cockpit area of the bicycle.*

6. Headset:

- With the bicycle on the ground, apply the front brake and rock the fork forward and back while checking for play in the headset system. If there is any knocking or play, try to identify it by placing fingers on the connection points while completing the rocking motion. If any play is felt, service the headset.
- Lift the front wheel and slowly rotate the handlebars to feel for any type of binding or resistance. If any imperfections are felt, service the headset.

7. Stem:

- Hold the front wheel between your legs and apply a sufficient amount of force onto the handlebars to ensure the stem will not slip on the steerer tube and the handlebar will not slip in the stem face plate.
- Ensure that all stem bolts have been set to the manufacturer's torque specifications.

8. Contact points:

- Ensure the handlebar tape doesn't twist or become unraveled if twisted. If it does loosen, replace or re-wrap the handlebar tape.
- Ensure the grips are bottomed out on the handlebar ends and ensure they don't twist. Ensure that lock-on grips have been tightened to the manufacturer's torque specification.

9. Handlebar controls:

- Apply ample force to the brake levers, shifters, hoods, or additional controls on the handlebar to ensure they don't slip. Each of these components has a manufacturer's torque specification it must be set to.

NOTE: *Move down the frame from the cockpit area to the bottom bracket area of the bicycle.*

10. Accessories:

- Ensure any water bottle cages or frame pumps are secure and the fasteners are tightened to the manufacturer's torque specification.

11. Suspension linkage:

- Ensure suspension fasteners are set to the manufacturer's torque specification and are holding securely.
- Ensure the rear shock and adjustment controls are operating to manufacturer's specifications.

12. Frame check:

- Thoroughly inspect head tube, top tube, down tube, and bottom bracket shell for hairline cracks or other signs of damage. If any are identified, have the frame evaluated by the frame manufacturer before riding.

13. Cranks:

- Rotate the crank to ensure that there is no grinding or resistance and the crank is rotating smoothly.
- Hold both crank arms and rock them in a side to side motion inspecting if there is any play in the bottom bracket bearing system.
- Inspect the chainrings for any damage or excessively worn teeth. Worn chainring teeth have a very sharp point.

14. Pedals:

- To check the pedals, give them a spin. A well-serviced pedal shouldn't spin too free because grease should give it mild friction.
- Ensure there is no play in the pedal bearing system by rocking the pedal body. If you find play in the pedal system, the pedal should be serviced.
- Ensure all fasteners on the pedal system are at manufacturer's torque specification.
- If a clipless pedal system, check the cleats on the shoes to ensure the cleat edges aren't worn down leading to improper engagement of the pedal/cleat interface.
- Ensure the cleat fasteners are securely torqued into the shoe cleat plate.
- Ensure the cleat tension is at a comfortable adjustment for entry and exit from the pedal system.

NOTE: *Move up the seat tube from the bottom bracket to the saddle area of the bicycle.*

15. Seatpost/Saddle:

- Remove the seatpost from the frame for an inspection and to clean any foreign debris.
- Note: Measure and document the saddle height and position so it can be returned to the rider's geometry.
- If a metal seatpost installed into a metal frame, apply grease or manufacturer's specific lubricant before re-installing the seatpost into the frame.
- If a carbon frame or carbon seatpost, follow the manufacturer's specification for specific carbon lubrication.
- Set the seatpost collar to manufacturer's torque specification.
- Ensure the saddle is mounted to manufacturer's specification in the seatpost head mechanism and the saddle clamp bolts are set to manufacturer's torque specification.

NOTE: *Move down the seatstay to the rear wheel to finish the "M" motion of the safety check.*

16. Rear wheel attachment system:

Use gravity to ensure the wheel is properly aligned in the frame drop outs and tighten the wheel attachment system.

On a rim brake bike (non-disc) ensure the skewer is on the non-drive (left) side.

- Check the tension adjustment by opening and closing the lever. If the lever moves easily, tighten the quick release nut and try again. You need to have ample pressure when at the half closed (90 degrees) position. When closed, ensure the lever doesn't touch the frame and is facing toward the rear of the bicycle. To test, lift the rear wheel off the ground and hit the wheel with a solid blow using your hand. The wheel should not be loose, move from side to side, or come off.
- Solid threaded axle: tighten axle nuts to the manufacturer's torque specification.
- On a disc brake bike, ensure lever is on the non-drive side.
- Follow manufacturer's specifications to secure the attachment system.

17. Rear hub adjustment check:

- With wheel off the ground, ensure the hub has no play from side to side.
- Spin the wheel to ensure the hub spins smoothly

18. Rear brake check:

- Caliper or V-brake – ensure the wheel spins freely through the brake, not dragging on the brake pads.
- Ensure the mounting hardware for the brake pads is secure and set to manufacturer's recommended torque.
- Ensure the rim sidewalls aren't concave or worn and have ample rim surface for brake pads to purchase.
- Disc brake – make sure the rotor spins freely through the caliper, not dragging on the brake pads.
- Check brake pads for wear and replace if below manufacturer's specifications.
- Brake feel – do the "Oh Shoot" check: squeeze the brake with ample force to ensure the cables don't slip in the brake cable pinch mechanism and that the brake lever doesn't pull all the way to the handlebar.

19. Rear tire:

- Ensure the tire bead seat line is uniformly mounted 360 degrees around the rim. The tire molding strip should be visible and have consistent alignment.
- Check the tire to ensure there are no cuts, or tire threads showing, and that there is sufficient tire tread remaining.
- Check the tire PSI to ensure it's within the manufacturer's recommended range.

20. Drivetrain:

- With your hand, pedal through the range of gears to ensure the rear derailleur and front derailleur are moving the chain up one cog or chainring at a time and down one cog or chainring at a time, and operating to manufacturer's specification.
- When at the low and high end of the derailleurs, ensure the chain will not shift into the spokes, into the frame, or off the crank system.
- While shifting through the gears, check that there are no tight links in the chain as it passes through the rear derailleur.
- Check that the rear derailleur pulleys aren't cracked or worn.
- If the drivetrain doesn't operate as intended through the range of gears, or if there are any imperfections, service must be made.

Pre and post ride checks are important and should be done on a consistent basis. Encourage riders to do this. It's important to keep an eye and ear out for any irregular mechanical noises, creaks, or unusual behavior. If a problem is found, the bicycle should be serviced.

Even with the best maintenance, bikes and their components do wear out, or fatigue. In addition to normal wear, a bike involved in an accident or raced competitively could fatigue faster. We recommend that a bike shop occasionally perform an inspection of every bike. Further, if a rider has raced, ridden hard for a number of years, or crashed, the rider should also consider replacing the bike.

TREK

Mr. Genichi Yamada
ISO TC149 SC1 Secretariat
Japan Bicycle Promotion Institute
1-9-3, Akasaka Minato-ku 1070052 Tokyo JAPAN

March 9, 2017

ISO TC 149 SC1 WG13 Discussion and Proposal

Dear Mr. Yamada,

Trek has requested that the ISO TC149 SC1 WG13 Technical Committee on bicycles consider the promulgation of a standard that advises a consumer how to better evaluate when the replacement of a bicycle frame, fork, or other safety-critical component is necessary or advisable (through an upper safe life limit) because it has been suggested that some consumers would benefit from a definite, stated, recommended lifespan.

Specifically, some consumers have a misunderstanding as it relates to the lifespan of their bicycle. For example, one consumer stated in a public, online discussion group, "if you replace the parts that break and maintain it, a bike will last forever." Other consumers believe that a manufacturer's "lifetime warranty" means their bicycle will last forever. These misunderstandings can have serious consequences for the rider. Currently, bicycle manufacturers are required to include the following instruction in their owner's manual pursuant to ISO 4210-2:2015 section 5(y):

> **y) an advisory note to draw the attention of the rider to possible damage due to intensive use and to recommend periodic inspections of the frame, fork, suspensions joints (if any), and composite components (if any). The wording of the advice can be as follows:**
>
> **WARNING:**
>
> **— As with all mechanical components, the bicycle is subjected to wear and high stresses. Different materials and components can react to wear or stress fatigue in different ways. If the design life of a component has been exceeded, it can suddenly fail, possibly causing injuries to the rider. Any form of crack, scratches or change of colouring in highly stressed areas indicate that the life of the component has been reached and it should be replaced.**
>
> **— For composite components impact damage can be invisible to the user, the manufacturer shall explain the consequences of impact damage and that in the event of an impact; composite components should either be returned to the manufacturer for inspection or destroyed and replaced.**

Exhibit K

However, it has been suggested that section 5(y) may be insufficient to adequately instruct some riders of varying experience levels or technical understanding for the following reasons:

- Some consumers may not know the design life of their bicycle.
- Some consumers may not understand fatigue stress and how it affects their bicycle.
- In some cases, a cursory inspection may not show safety-related damage to the bicycle.
    - As noted in section 5(y), damage to composite structures can be invisible.
    - On metal structures, a fatigue crack can be very hard to see, or damage could occur in a part of the bicycle that is hidden, such as the steerer tube of the fork.
- Some consumers mistakenly believe that metal frames and forks will last forever because of the material with which it is made. While other consumers believe that composite frames and forks are light weight, therefore not as robust; both beliefs are obviously incorrect.

We can all agree that a bicycle that has exceeded its estimated design life should not be ridden. As such, Trek asks the ISO TC149 SC1 WG13 Technical Committee to evaluate adding language that more directly explains this to the consumer.

Sincerely,

Stefan J. Berggren
Trek Bicycle Corporation
Sr. Product Compliance Engineer
ISO TC-149 SC1 WG13 Convenor

801 West Madison St.
Waterloo, WI
53594
USA

TREK

31 January 2017

ASTM
Subcommittee F08.10 on Bicycles
Attn: Gilbert Kisamore, Chairperson

Mr. Kisamore,

This letter requests that you add an item to your group's next agenda.

Trek requests that the ASTM Subcommittee F08.10 on bicycles considers promulgation of a standard, which addresses a useful lifespan for bicycle components. It has come to our attention that, despite bicycle owner's manual language commonly in use today, some consumers may not clearly understand that bicycles and their components have a useful safe life, and can therefore wear out.

Trek requests that your group consider modifying the existing standard, or adding a new standard, with language that further explains the importance of retiring a bicycle frame, fork or other critical, safety-related component before it fails. The current standard only instructs the user to inspect.

In particular, Trek requests that the ASTM consider:

- whether it is possible to fix an upper safe life limit for bicycle frames, forks and other critical, safety-related components, depending on the manufacturing process and material construction of the component, after which the owner is encouraged to replace the component irrespective of whether damage is visible; and

- the introduction of a standard that advises a consumer how to evaluate when a component replacement is necessary or advisable (whether through an upper safe life limit or by some other means the ASTM considers appropriate).

Thank you for your consideration,

John Platt
Trek Bicycle Corporation

Trek Bicycle Corporation 801 West Madison Street, Waterloo, Wisconsin 53594 USA

Exhibit L

TREK

23 May 2017

Ms Sherene Daniel
Operations Business Manager
Standards Australia
Level 10, The Exchange Centre
20 Bridge Street, Sydney
GPO Box 476
Sydney NSW 2001

Dear Ms. Daniel,

My name is Jason Pye, and I am the General Manager for Trek Bicycle Corporation ("Trek") in Australia. It has come to Trek's attention that, despite language commonly used in bicycle owner's manuals today, some consumers do not clearly understand that bicycles and components have a safe life, and therefore can wear out. As such, I write on behalf of Trek to request that Standards Australia consider modifying the existing standard (AS/NZS 1927:1998 - Pedal Bicycles - Safety Requirements), or promulgating a new standard, to address metal fatigue and a useful life span for safety-related bicycle components.

Specifically, Trek requests that Standards Australia consider:

- Whether it is possible to fix an upper safe life limit for bicycle frames, forks, and other critical, safety-related components, taking into account the manufacturing process and material construction of the component, after which the owner is encouraged to replace the component irrespective of whether damage is visible to the naked eye; and

- The introduction of a standard that advises a consumer how to evaluate when a component replacement is necessary or advisable (whether through an upper safe life limit or by some other means that Standards Australia considers appropriate).

Exhibit M

Trek has made a similar request to the ISO TC149 SC1 WG13 Technical Committee on bicycles and major sub-assemblies as well as the ASTM Subcommittee F08.10 on bicycles. Thank you for your consideration.

Best Regards,

Jason Pye

cc: Dr. Bronwyn Evans, Chief Executive Officer
Nafis Rahman, Project Manager

Trek Bicycle Corporation | PO Box 1747, Fyshwick, ACT, 2609 | +61 2 6173 2400 | trekbikes.com

Standards Australia Limited ABN 85 087 326 690
Exchange Centre, Level 10, 20 Bridge Street, Sydney NSW 2000
Telephone +61 2 9237 6000, Facsimile +61 2 9237 6010
www.standards.org.au

27 September 2017

Mr. Jason Pye
Trek Bicycle Corporation
PO Box 1747
Fyshwick ACT 2609

Dear Mr Pye

Thank you for your letter to Standards Australia Limited from Trek Bicycle Corporation (Trek) dated 23 May 2017.

Following receipt of the Coronial Findings by Coroner Lisbeth Ellen Campbell in the Inquest into the Death of Richard Roger John Stanton and your letter, Standards Australia sought the views of CS-110 *Bicycles and Bicycle Accessories*, the committee responsible for AS/NZS 1927:2014 *Pedal Bicycles – Safety Requirements* on what steps should be taken in light of the Coroner's findings.

The Committee recently met by teleconference to discuss the Coroner's findings and recommendations. In particular, the committee considered:

- whether an amendment or revision to AS/NZS 1927:2014 *Pedal bicycles - Safety requirements* to add bicycle safe life requirements may be appropriate in light of the Coroner's Findings; and
- whether there are appropriate ISO standards for adoption in Australia.

The Committee confirmed that AS/NZS 1927:2010 and AS/NZS 1927:2010/Amdt 1:2014 do not currently make reference to the safe life of a bicycle. The Committee also discussed the different variables involved with determining the safe life limit of a bicycles and as a result of these many variables, the Committee determined that there are currently no acceptable methods to determine a safe life limit of a bicycle.

The Committee also considered the work undertaken at the ISO with regards to determining such safe life requirements. The Committee noted that ISO 4210 *Safety requirements for bicycles* does not include a safe life limit, again because of the complexity involved with

Exhibit N

determining such a limit. Therefore, the Committee concluded that adopting ISO 4210 would be of limited benefit to the Australian community.

By way of background, and as you may be aware, Standards Australia does not initiate standards development projects without stakeholder support. Rather, a project to prepare a new Standard, revise an existing one or propose participation internationally at the International Organization for Standardization (ISO) or the International Electrotechnical Commission (IEC), can only commence with the support of relevant external stakeholders, such as government, industry or trade association, professional body, consumer organisation or an individual, through Standards Australia's Project Proposal process.

Once a project is approved, Standards Australia's role is to facilitate a stakeholder led, consensus based process. Further information on Standards Australia's standards development processes is available on its website (see): http://www.standards.org.au/StandardsDevelopment/Developing_Standards/Pages/default.aspx).

We therefore invite Trek to consider submitting a project proposal in relation to the matters in your letter for, by way of example the revision of AS/NZS 1927:2014 *Pedal bicycles - Safety requirements* or the adoption or development of an international standard.

In this regard, Brett Lovett, Standards Australia's Stakeholder Engagement Manager for Consumer Products, Services and Safety, will contact you in the near future to discuss this matter and provide further background to Standards Australia's standards development processes. Brett's contact details are Brett.Lovett@standards.org.au or 02 9237 6148.

Yours sincerely

Sherene Daniel

Corporate Services Manager

25/15

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STANDARDS Australia

16 October 2017

The Registrar

Coroner's Court

GPO Box 370

Canberra ACT 2601

BY MAIL AND EMAIL

Dear Registrar,

RE: Inquest into the death of Richard Roger John Stanton

We refer to the findings and recommendations of Judge Lisbeth Ellen Campbell, Coroner for the Australian Capital Territory, delivered 2 November 2016 (Findings).

We note that in the Findings the Coroner made the following recommendation and comments referring to Standards Australia Limited (Standards Australia) and Australian Standard® standards as follows:

> ***I recommend*** *that Standards Australia and other relevant international standards bodies investigate fixing an upper "safe life" limit (safe life) for the bicycle front steering fork, depending on the manufacturing process and material construction of the part, after which the owner is encouraged to replace the part irrespective of whether damage is visible.*
>
> ...
>
> *Trek has undertaken to me that it will request international standardisation bodies to reconsider their prior rejections of safe life limits, and it will approach Standards Australia to reconsider the lack of reference in the Australian Standard to safe life or metal fatigue.*

Standards Australia's Standards Development Process

By way of background, Standards Australia does not initiate standards development projects without stakeholder support. Rather, a project to prepare a new Standard, revise an existing one or propose participation internationally at the International Organization for Standardization (ISO) or the International Electrotechnical Commission (IEC), can only commence with the support of external stakeholders, such as government, industry or trade association, professional body, consumer organisation or an individual, through our Project Proposal process.

Once a project is approved, Standards Australia's role is to facilitate a stakeholder led, consensus based process. Please see enclosed a copy of *Standards Australia's Guide* -

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Project Prioritisation Process and Criteria. Further information on Standards Australia's standards development processes is available on its website (see: http://www.standards.org.au/StandardsDevelopment/Developing_Standards/Pages/default.aspx).

Standards Australia's actions following receipt of the Coroner's findings

Following receipt of the Findings, Standards Australia sought the views of CS-110 *Bicycles and Bicycle Accessories*, the committee responsible for AS/NZS 1927:2014 *Pedal Bicycles – Safety Requirements* on what steps should be taken in light of the Coroner's findings.

The Committee met by teleconference to discuss the Coroner's findings and recommendations. In particular, the committee considered:

- whether an amendment or revision to AS/NZS 1927:2014 *Pedal bicycles - Safety* requirements to add bicycle safe life requirements may be appropriate in light of the Coroner's Findings; and

- whether there are appropriate ISO standards for adoption in Australia.

The Committee confirmed that AS/NZS 1927:2010 and AS/NZS 1927:2010/Amdt 1:2014 do not currently make reference to the safe life of a bicycle. The Committee also discussed the different variables involved with determining the safe life limit of a bicycles. These may include:

- knowing and monitoring the use of a bicycle;
- distanced travelled;
- type of rider;
- surface travelled on;
- type of materials that the bike is made out of;
- transport storage history; and
- crash history.

As a result of these many variables, the Committee determined that there are currently no acceptable methods to determine a safe life limit of a bicycle.

The Committee also considered the work undertaken at the ISO with regards to determining such safe life requirements. The Committee noted that ISO 4210 *Safety requirements for bicycles* does not include a safe life limit, again because of the complexity involved with determining such a limit. Therefore, the Committee concluded that adopting ISO 4210 would be of limited benefit to the Australian community

Letter from Trek Bicycle Corporation

Standards Australia has provided the above information to Trek Bicycle Corporation (Trek) in response to a letter Standards Australia received from Trek suggesting modifications to AS/NZS 1927:2010/Amdt 1:2014.

Standards Australia has also provided Trek with information on our standards development processes and invited Trek to submit a project proposal to address any concerns that it may have with the standard or to adopt or develop an international standard. Standards Australia will assist Trek in the preparation and submission of any such proposal.

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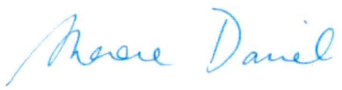
Next steps

To date Standards Australia has not received any project proposals for the revision of AS/NZS 1927:2010 and AS/NZS 1927:2010/Amdt 1:2014 or to adopt an existing or develop a new international standard to include safe life limit of bicycles.

While there does not appear to be broad support from relevant stakeholder groups for such a project at this time, Standards Australia remains ready to engage with relevant stakeholders and work with them should we receive a proposal.

Should you have any additional questions, please feel welcome to contact me on 02 9237 6023 or at sherene.daniel@standards.org.au.

Yours sincerely



Sherene Daniel

Corporate Services Manager

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GPO Box 370

Our ref PPMD/0110844-0000002 AU:8762481.1

26 October 2017

Dear Coroner Campbell,

As previously agreed, we write on behalf of Trek Bicycle Corporation (**Trek**) in regards to the inquest into the death of Richard Stanton, which occurred on 31 January 2015 in Canberra when the aluminum steer tube on his 2005 Trek 2000 bicycle failed due to a fatigue crack inside the bonded fork assembly. The Coroner's Office completed its investigation of the circumstances surrounding Mr. Stanton's death, concluded that a hearing was not necessary, and issued formal findings on 2 November 2016. In those findings, the Coroner's Office made several recommendations to Trek on how to bring the issue of metal fatigue and bicycle component life to the attention of Trek bicycle owners and purchasers of new bicycles so as to mitigate the risk of this type of failure occurring in the future, and requested that Trek provide a written response by 2 November 2017.

Below are the specific recommendations made by the Coroner's Office and the steps Trek has taken to meet these commitments:

1. **"Although Trek's owner manuals already warn owners that bicycles are not indestructible and every part of a bicycle has a limited useful life, I recommend that Trek update its owner's manuals and consumer information to expand upon this warning and to note the risk of catastrophic failure without warning in some circumstances.**

   (a) Update Owner's Manual (print and online)

   Trek updated the language in its bicycle owner's manual (universal to all models) to expand upon the original warning that bicycles are not indestructible, and that all components have a limited useful life. (Exhibit A, 2017 Owner's Manual.) This language appears in Chapter 1 of the manual and now reads as follows:

Life span of a bicycle and its parts

Bicycles are not indestructible, and their parts will not last forever. Our bicycles are made to withstand the stress of 'normal' riding because those stresses are well known and understood. However, we cannot predict the forces that might occur if you use your bicycle in competition, if you ride in extreme conditions, if it is involved in an accident, if it is used for rentals or for commercial purposes, or if it is used in other ways that apply high stress or fatigue loads. With damage, the life of the frame, fork, or other parts can be drastically reduced and may fail without warning.

The safe life of a part is determined by its construction, materials, use, maintenance, rider weight, speed, terrain, and environment (humidity, salinity, temperature, etc.), so it is not possible to give an accurate timetable for replacement. Any form of crack, scratch, or change of color in a high-stress area indicates that the life of the part (including the frame or fork) has been reached and the part should be replaced. If you are not sure if you should replace a part, consult your retailer.

In some cases, a lighter frame or part has a longer life than a heavier one. However, better maintenance, more frequent inspections, and more frequent replacement are necessary for a light-weight, high performance bicycle and its parts.

⚠ WARNING: A bicycle is subjected to wear and high stress. Different materials and parts may react to wear or stress fatigue in different ways. If the design life of a part has been exceeded, it may suddenly fail, possibly causing injuries to the rider.

Trek's manufacturers are including a printed version of the updated owner's manual with the packaging of newly manufactured bikes.

In addition to the print version, the owner's manual can be accessed on the internet through trekbikes.com under the section, "Safety & Recalls." Trek has updated the online version of the manual to include the new language.

(b) Create Temporary Banner on Australian Homepage

Trek created a banner on the homepage of its Australian website that directs consumers to the updated manual.[1] (Exhibit B, Banner.) Trek added the banner on April 28, 2017 and will keep the banner on the homepage for one year. This will provide maximum exposure to the updated owner's manual to a wide variety of bicycle owners.

(c) Direct Contact with Existing Trek Bicycle Owners

In addition to the banner on the Australian homepage, Trek communicated directly via email with existing customers in Australia who registered their bicycles after purchase. The email notification reminds consumers about the dangers of fatigue, encourages them to get their bicycles inspected by a local retailer, and directs consumers to the updated owner's manual. (Exhibit C, Consumer Notification.)

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[1] The banner and link to the updated owner's manual can be found at https://www.trekbikes.com/au/en_AU/.

2. ***"I recommend that Trek undertake public education activities within Australia, and particularly* within *the Australian Capital Territory, to bring the issue of bicycle component life to the attention of existing Trek bicycle owners, in addition to purchasers of new bicycles."***

(a) Create Safety Campaign

Trek launched a safety campaign in Australia – "The ABCs of Awareness" – to highlight aspects of safe riding, including visibility and pre-ride bike inspections. (Exhibit D, ABC Safety Campaign.) Trek featured the campaign on its Australian website,[2] included a link to the updated owner's manual, and focused specifically on bicycle and component fatigue:

> **Pre-flight inspection**
>
> Every bicycle has a limited useful life. No matter the kind of bicycle you ride, all bikes are subject to some level of wear and stress through normal usage. In some cases, depending on how often and in what way the bike is ridden, this wear can result in a scratch and in some cases a crack. We recommend you give your bike a quick visual inspection before each and every ride. If you notice anything amiss, take it to your Trek retailer and have them examine the bicycle. If your bike has been involved in any kind of crash, collision, or impact, have your Trek retailer inspect it before riding again.
>
> In addition, regardless of whether damage is visible, if your bicycle has been used in competition, extreme conditions, if it has been involved in an accident or in other ways that apply high stress or fatigue loads, ask your Trek retailer whether it is time to replace the bicycle or component with a new model.
>
> For more details on the safety of your bicycle, please check the updated Trek Owner's Manual.

(b) Educate Consumers Via Social Media

For the launch of the ABC Safety Campaign, Trek posted material on social media, including Facebook and Twitter, about the importance of rider safety. (Exhibit E, Facebook post; Exhibit F, Twitter post.) In each post, Trek included a link to the campaign so riders can learn more about bicycle and component fatigue and connect to the updated owner's manual.

(c) Encourage Retailers to Educate Consumers

Trek encouraged its retailers to educate consumers about bicycle and component fatigue in two different ways. First, Trek sent an email notification to every authorized Trek retailer in Australia, reminding them about the importance of rider safety and linking them to the updated owner's manual. (Exhibit G, Retailer Communication.) Second, Trek posted an article on Dexter, Trek's primary, global communication tool for retailers. (Exhibit H, Dexter article.) The article encourages retailers to educate consumers who pass through their shop with an older bicycle or a bicycle that has been involved in an accident or ridden hard about metal fatigue and bicycle component life and to suggest, where appropriate, replacing the bicycle or component with a new model. The article also links to the updated owner's manual as well as the ABC Safety Campaign.

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[2] The ABC Campaign can be found at https://www.trekbikes.com/au/en_AU/abcs_of_awareness/.

(d) Conduct Outreach to Bicycle Advocacy Groups

To bring the issue of bicycle component life to the attention of a larger community of cyclists, Trek worked with Pedal Power ACT, a local cycling advocacy group, to publish a safety campaign on metal fatigue and bicycle component life in its bi-monthly magazine, Canberra Cyclist. (Exhibit I, magazine campaign.) Canberra Cyclist ran the campaign in its October/November 2017 edition.

Additionally, Trek has asked Bicycle Industries Australia (BIA), an independent non-profit organization representing bicycle industry importers, manufacturers, retailers, and suppliers throughout Australia, to help promote awareness among cyclists that bicycles have a finite life span, and that frequent inspections for signs of fatigue is the only viable method to avoid an accident caused by a safety-critical part that has reached the end of its safe life. (Exhibit J, Letter to BIA.) Trek included with the letter an "M-Check" Bicycle Safety Check, created by Trek Certified Service and provided in its retailer training classes, and encouraged BIA to act as an additional channel to educate cyclists in Australia.

3. ***"I recommend that Standards Australia and other relevant international standards bodies investigate fixing an upper 'safe life' limit (safe life) for the bicycle front steering fork, depending on the manufacturing process and material construction of the part, after which the owner is encouraged to replace the part irrespective of whether damage is visible."***

(a) Push for Safe Life Limits

As the Coroner's Office is aware, the issue of assigning a safe life to a bicycle or safety-critical components has been taken up with the principle standardization bodies, namely the American Society of the International Association for Testing and Materials (ASTM) and the European Committee for Standardization (former CEN, now ISO), in the past. However, these bodies declined to take it on, because bicycle usage is subject to such wide variability that assigning a safe life would not be meaningful or of assistance to a consumer. Nonetheless, Trek requested these standardization bodies to reconsider their prior rejections of safe life limits.

Specifically, Trek sent a letter to the Secretariat of ISO TC149 SC1 WG13 Technical Committee on Bicycles and Major Subassemblies and requested the Committee to consider the promulgation of a standard that advises a consumer how to better evaluate when the replacement of a bicycle frame, fork, or other safety-critical component is necessary or advisable through a safe life limit. (Exhibit K, letter to ISO.) Trek presented this topic at ISO's annual meeting on June 22, 2017. The Committee decided not to move forward with establishing a safe life at this time, but will add the item to the agenda for future discussion. The Committee's next meeting will be held on June 11, 2018 in Bloomington, Minnesota. Standards Australia, as an observing ISO member, should be aware of the meeting and is welcome to attend.

Trek also sent a letter to the Chairperson of ASTM's Subcommittee F08.10 on Bicycles and requested the same consideration. (Exhibit L, letter to ASTM.) Trek presented this topic at the Subcommittee's meeting on May 10, 2017. However, there was consensus among the members that there were too many variables to accurately define "life span," and therefore declined to move forward.

Lastly, Trek contacted Standards Australia (SA) and requested that it consider modifying the existing standard (AS/NZS 1927:2014 – Pedal Bicycles – Safety Requirements) or promulgate a new standard to address metal fatigue and a useful life span for safety-related bicycle components. (Exhibit M, letter to SA.) SA recently responded to Trek, stating that

CS-110 Bicycles and Bicycles Accessories, the committee responsible for AS/NZS 1927:2014, also determined that there currently are no acceptable methods to determine a safe life of a bicycle. (Exhibit N, SA response letter.)

SA also invited Trek to consider submitting a proposal on revising AS/NZS 1927:2014 or the development of a new standard to address bicycle safe life. After careful consideration, however, Trek will decline SA's offer for two reasons. First, Trek believes the updated language in its owner's manual is adequate to warn consumers of the issue. Second, Trek should have regard to the global standard bodies' determination that there are currently no acceptable methods to determine a safe life limit of a bicycle.

Trek believes that the measures discussed above satisfy the recommendations listed in the 2 November 2016 findings of the Coroner's Office and will work to educate cyclists about metal fatigue and bicycle safe life. Please let us know if the Coroner requires any clarifications in relation to the steps that Trek has taken to comply with the specific recommendations made by the Coroner on 2 November 2016.

Yours sincerely

Allen & Overy

Peter McDonald
Partner