Motor Officers and Rider Fatigue

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Tiredness can kill
Take a break

FATIGUE

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The purpose of this study paper:

Earlier this year the Training Cadre of the Toronto Police Motor Squad was asked to produce a study paper regarding rider fatigue and how it relates to Police Motor Officers.

During the initial research for this paper, I discovered that articles relating to motorcycle rider fatigue have only recently started to appear. This is mostly due to the recent increase in long distance motorcycle touring. Many of the articles written on the subject are geared toward the touring rider and most are written by riders from that perspective.

There are two articles that stand out amongst the others. The first is written by Doctor Don Arthur M.D. “Fatigue and Motorcycle touring” and deals with fatigue in general terms, as well as identifying specific symptoms experienced by motorcycle riders. Dr. Arthur’s study also includes strategies for combatting rider fatigue. The second stand out article is published by NSW Injury Risk Management Research Centre in Australia “A pilot study of fatigue on motorcycle day trips” and deals specifically with shorter motorcycle trips.

The purpose of this study paper is to give the Police Motorcycle Operator; the tools they will need to recognize the signs and symptoms of rider fatigue in themselves and their fellow officers and will also provide strategies to prevent and combat fatigue.

Definition:

fatigue

noun

1. weariness from bodily or mental exertion.

2. a cause of weariness; slow ordeal; exertion: the fatigue of driving for many hours.

3. Physiology . temporary diminution of the irritability or functioning of organs, tissues, or cells after excessive exertion or stimulation.
What causes rider fatigue?

Rider Fatigue tends to be cumulative in nature. Long shifts, arduous or monotonous tasks, a sleep deficit and challenging environmental conditions can conspire to cause fatigue in even the very fittest of people.

For the purposes of the Motor Officer, the causes of rider fatigue can be broken down into the following factors;

1. **Work conditions**; as we work throughout our shift, there is always some degree of fatigue which will begin to affect our performance. Long shifts, working at a high level of skill or at a very high tempo can accelerate the effects of fatigue. Operating a motorcycle is a highly skilled activity performed on a heavy and often times quite hot machine. Combine all this with a constant need for hyper attentiveness to the task at hand as well as surrounding traffic and it’s not hard to see how one can become fatigued.

2. **Sleep debt**; sleep debt is one of the most common fatigue factors facing police officers everywhere. Take shift work, court appearances, paid duties, overtime, commuting time, family commitments not to mention very early wake up times on dayshift and it’s not hard to imagine how each of us can build up a sleep debt. Individual differences in each person’s Circadian rhythm can also cause a sleep debt (some need more sleep than others), as can time shifts (daylight savings time and jet lag). A sleep deficit is probably the most difficult to detect in ourselves, as it’s incremental, which makes it very dangerous. 1“The biggest difficulty with sleep debt is that it must be repaid for the brain to return to baseline function”.

3. **Environmental issues**; as motor officers, we are often working in challenging environmental conditions. Extreme heat or cold, rain, wind, high humidity, poor visibility and even darkness can conspire to fatigue us while we work on our motorcycles. In addition, other environmental conditions can affect us, such as, heavy traffic, poor road conditions, a lot of ambient noise and wind turbulence from other vehicles on the road.

4. **Dehydration**; this factor gets special mention, mainly because it’s the most dangerous factor leading to rider fatigue, particularly for Motor Officers who work in urban areas. What makes dehydration so dangerous is the speed with which it can occur and the serious effects it can have on our performance as a rider.

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1 “Fatigue and Motorcycle Touring” Dr. Don Arthur
How does rider fatigue affect my ability to ride safely?

Before we discuss the symptoms that we need to look for in order to recognize fatigue within ourselves, it’s important to know the inherent dangers of riding while fatigued.

Most of us have experienced fatigue while we have been driving or riding and we have all seen the effects of fatigued driving in collisions as well as poor driving exhibited on the road by fatigued drivers.

The University of New South Wales in Australia, as a part of its study, surveyed a group of motorcycle riders with varying experience. These riders were asked to describe any effects they had experienced while riding which they felt occurred due to fatigue. Below is a list of the most common effects described by the riders who were surveyed.

1. Slower to react to hazards and other road issues. (72.2%)
2. Poorer steering. (55.6%)
3. Poorer braking. (44.4%)
4. Poorer control on curves. (44.4%)
5. Poorer gear changes. (38.9%)
6. Poorer attention to traffic signs. (38.9%)

The study highlights how several of the above effects resulted in late braking, greatly increasing the risk of collision. Combine several of these effects in a single event and you can rapidly have a recipe for disaster.

Think back on your own riding experience. Can you recall being particularly tired while on your police motor and experiencing one or more of these effects?

Looking at the above list and relating it to our job, it’s not hard to imagine that a number of our police specific skills could be adversely affected. Our ability to scan for offences, operate police equipment such as radar, radio and emergency equipment could suffer. Even more importantly, a decrease in our general level of situational awareness will increase the level of risk in all of our police activities.

The effects listed above should be no surprise for any experienced rider. What is important is to have the ability to recognize the signs and symptoms of fatigue, before any of these effects start to present themselves in our riding.

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"A pilot study of fatigue on motorcycle day trips“ NSW Injury Risk Management Research Centre.
What are the signs and symptoms of rider fatigue?

There are many different signs and symptoms of rider fatigue and often times a rider will experience several at one time depending on the level of tiredness. Let's look at some of these. One of best lists I have found is from Liz Jansen’s blog “26 signs of Rider Fatigue”. Starting with Liz’s list, below are common signs and symptoms of rider fatigue.

1. Losing concentration.
2. Repeatedly leaving your turn-indicator on. (Doesn’t apply if you have self-cancelling signals.)
3. Drifting out of your lane.
4. Hitting rumble strips.
5. Swerving.
6. Drowsiness.
7. Forgetting to put your foot down at a stop.
8. Losing your balance at a stop.
10. Missing exits.
11. Misjudging stopping distance.
12. Misjudging speed approaching a curve.
15. Nodding off.
17. Dismounting and forgetting to put the side stand down.
18. Difficulty maintaining a consistent speed (excepting cruise control)
19. Experiencing sore or tired eyes
20. Blinking frequently.
21. Feeling irritable. (If you’re irritable when riding a bike, something is really wrong.)
23. Forgetting where you are.
24. Forgetting the last twenty miles.
25. Experiencing difficulty focusing.
26. Daydreaming persistently.

If you experience any of these while riding a motorcycle “STOP RIDING” and take a rest break immediately.

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3 “26 signs of rider fatigue” LizJansen.com
As fatigue gradually worsens a new set of even more dangerous signs and symptoms begin to occur. One effect of more severe fatigue is commonly referred to as “MICRO SLEEPS”.

**Micro sleeps:**

This phenomenon is sometimes referred to as “Zoning Out” or the “1000 yard stare”. It can occur during normal and highly functional activities and can cause concentration failures during periods of activity that appear otherwise normal. These are a clue to you that your level of fatigue is becoming critical, and can take the form of:

1. A failure to recognize hazards.
2. Failure to take appropriate action in the face of an emergency.
3. Inability to make decisions
4. Inability to concentrate
5. Loss of time
6. Forgetfulness

One additional symptom is sensing that you are riding at a normal speed, when in fact you’re moving slower than normal. There is also the reverse of this sensation, where you feel you’re going so slow that you could walk faster, when in reality you’re travelling at road speed.

This level of fatigue can also impair our memory; cause us to lose situational awareness and to skip critical safety actions. *Ever miss a shoulder check, leading to a close call?*

The bigger problem with this level of fatigue is our tendency to underestimate the magnitude of our fatigue and being less likely to take note of the symptoms within ourselves. This is where paying attention to your fellow officers is so important during a long detail especially details that run over several consecutive days.

Psychological changes can also occur when greatly fatigued. Mood can start to get worse and motivation can be decreased to the point of eating or drinking less which can be a huge problem if there is a level of dehydration occurring. These individuals can become impatient, frustrated and angry. Watch your fellow officers as well as monitoring yourselves for the key signs.

Darkness is also an additional consideration. When under great fatigue and operating in darkness the human mind has fewer clues to reality, so judgement becomes faulty to a point where the mind tries to fill in the blanks in information giving us incorrect perceptions and even hallucinations. In addition, our bodies sleep centre takes darkness as a signal to initiate sleep.

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4 “Fatigue and Motorcycle Touring” Dr. Don Arthur
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There are also physical symptoms that can help us realize we need a rest. These include joint and muscle pain as well as pain or weakness in hands and feet. Some begin to get back or shoulder pain or issues with the sciatic nerve causing very painful pinches and cramps in your legs and hips.

Some of the signs you can watch for in your fellow officers are red bloodshot eyes, heavy eyelids and especially irritability.

Here’s the good news

Unlike driving a car, riding a motorcycle is much more involved both physically and mentally. Driving a car can be very mundane and boring even in heavy city traffic especially if the driver is tired or has been behind the wheel too long. An already tired car driver can rapidly reach a point where driver ability is adversely affected.

Both studies and surveys of riders indicate that in most short ride situations, especially those that involve riding in an urban area the motorcycle rider doesn’t seem to become fatigued nearly as quickly as a car driver would. There is so much happening to stimulate our senses when conducting our duties on a motorcycle that fatigue doesn’t set in as quickly as it would in a car or on a long destination ride.

This means that for the motorcycle rider, it will most likely be factors other than the riding itself which cause the biggest problems with fatigue. As police motor officers, the easiest way to avoid rider fatigue is to stay fed, watered and rested.

However, many times shifts or special details can be long, weather can be extreme with heat or cold, and details alternating from extremely physically and mentally taxing, to long periods of boredom.

But there are things we can do.
Beating Fatigue:

1. **Get your Z’s;** probably the most effective thing you can do for yourself toward combatting fatigue, is to get proper daily sleep. Most adults require six to nine hours of sleep each night (studies on this can vary an hour each way). One night of poor sleep may not have a noticeable impact on our riding performance, however chronic sleep deficit over the course of a several days or more, can become a problem.

2. **Set your motorcycle up for your comfort;** although the range of adjustment on the controls of our police motorcycles are limited, just a small adjustment can sometimes make a world of difference in how long we can ride before getting uncomfortable and eventually fatigued. Things such as handlebar height, angle of floorboards, levers, seat firmness and height as well as suspension air pressure can be adjusted to help. Trial and error is really the only way to find the adjustments that are most comfortable.

3. **Dress for comfort;** being too hot or too cold for any length of time can make you tired and just plain miserable. Sometimes this means carrying a few more items of clothing than you’d like to. Better to have that jacket if you think you’ll need it than be distracted and fatigued by the evening cold when you don’t. Sun exposure is another factor to think about on a motorcycle. Do you wear the long sleeve options to keep the sun off and stay hydrated or short sleeves for greater comfort? The decision is really individual. There is a lot of compromise that goes along with motorcycle clothing and most of it boils down to common sense and experience.

4. **Eat properly;** this really goes without saying for any job within policing but can really help us to stay energized and alert. Bringing along a light lunch and healthy snacks is a lesson most motor officers learn early on and will go a long way to keeping you alert and happy.

5. **Take regular breaks;** depending on what your detail is for the day, you may be on you motorcycle for a large part of your shift. If that’s the case remember to take regular breaks, get off, walk around a bit (maybe switch to some stationary enforcement), and have a snack and something to drink. Well you get the idea. On a long destination ride a general rule is to get off the motorcycle and take a break every 2 to 2 1/2 hours or at each fuel stop.

6. **Work with a partner;** this isn’t always possible or practical but it’s a great way to stay engaged and pass the day. It’s also a good way to monitor each other on those hot humid days when dehydration and heat exhaustion can set in.

7. **Carry water and drink it!** ; drinking water regularly is the best way to stay alert on the many hot and humid days we have during our Toronto riding season. If you’ve ever suffered a nasty bout of heat exhaustion you’ll definitely remember it.

8. **Cool off!** ; Just an added note for hot days. Don’t wait until you start feeling poorly to get into a cool place. A short visit into an air conditioned building can get you through the day in a lot better shape.

9. **Keep up with your skills;** “The more practiced and proficient you are at a given task, the greater the resistance to fatigue”.

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6 “Fatigue and Motorcycle Touring” Dr. Don Arthur
10. Exercise; regular exercise will make you more resistant to Fatigue.

I’m already tired! Now what?:

Depending on the level of fatigue you are feeling, the time of day involved and the length of time you’ve been on duty, there are still some actions that can be taken to counter your fatigue and stay safe.

Fatigue Countermeasures:

1. Increase the number of short breaks you are taking. Use these breaks to walk around, stretch and talk to your co-workers.
2. Increase your water intake.
3. If you’re working at night get into an area with lots of bright lighting.
4. Avoid sugar. (Step away from the donut officer).
5. Caffeine from coffee or tea can be a good short term counter-measure, however it has less effect for those of us who are already regular coffee drinkers. There is conflicting opinions in some studies when it comes to caffeine but we are talking about a person who is already feeling the effects of fatigue.
6. Take a nap. If there is a down room or time is allowed between details at the station, a short nap can be very effective. Some studies suggest that a nap between 20 min and 1 hour are the most effective. Longer periods can get into deeper sleep which is harder to fully wake from.

The bottom line is your safety:

Sometimes fatigue levels are simply too high to recover from. This is where we need to be mature and sensible about what we are doing. First of all we need to be honest with ourselves when we feel too fatigued to continue our duties safely. We can’t always keep up the pace every time and sometimes we need to admit it’s time to book off.

We also need to be honest with our partners and other co-workers and not hesitate to suggest it’s time to go home when we see that they are obviously suffering severe fatigue. It is particularly important that supervisors take reports of fatigue seriously and act on those reports with every ones safety in mind.

Stay safe, ride well and enjoy your work.
References:

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3. “Fatigue and Motorcycle Touring” by Dr. Don Arthur, M.D.
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5. “Riding Fatigue” Spokes-motorcycle safety information.
6. “Fatigue in Motorcycle Crashes: Is there an issue?” Centre for accident research and road safety-Queensland University if Technology.

Additional material is available for reading within the master copy of this report, located on the training desk in the Motor Squad Sergeants office.