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Premier Issue

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The yearly fee to become an Iron Butt Association Premier Member is $40. To sign up via Paypal, send the $40 payment to premier@ironbutt.com. Please put your IBA number in the Note column.

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Front: Participating in his first long distance rally, respected motojournalist Alan Rider is en route to "bagging" another bonus during the Utah 1088. The details of his adventure can be found starting on page 22.

Back: Photographed by Dinah Schupp, Bob (BJ) Drasner is pictured here on the Dalton Highway, otherwise known as the Haul Road, during his Ultimate Coast to Coast ride.

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Change of Address notification and ***Membership*** inquiries should be made to the IBA office. IBA Premier Membership is $40/year and includes the *Iron Butt Magazine,* which is only available to IBA Premier Members. Other benefits of Premier Membership include private areas in the IBA forum (www.ironbutt.com) where only Premier members can participate, emails with frequent "insider information" about the IBA, and advance notice about and early registration for IBA events including the Iron Butt Rally. Interested members can register through Paypal. Send $40 to premier@ironbutt.com and please include your IBA number in the Note column.

By Bill Shaw, Editor-in-Chief

Time Management

History teaches us to manage ourselves in order to better manage our time.

OUR DESIRE TO manage time can be traced back to 3500 BC Sumer. While "length of time" was an unfamiliar concept to many ancient civilizations, it wasn't for the Sumerians. They were acutely aware of seasonal changes and noticed that there was a relationship between movements of celestial bodies, like the sun and moon, and the change of seasons. Sumerians also observed that twice a year, night and day were the same length and that this phenomenon always signaled the advent of either summer or winter. Historians believe they were the first society to measure the passage of time in order to better manage their lives and anticipate a change of season.

Later, sundials, hourglasses, water clocks and mechanical devices driven by weights were developed to measure time. But they weren't accurate, reliable or, most importantly, portable. The hardest part of developing a transportable timekeeping instrument was finding a dependable power mechanism. It wasn't until the spiral spring was created around 1675 that timepieces like pocket watches and wristwatches could be developed. But as anyone with a self-winding watch knows, they aren't always reliable or accurate.

Over the next several centuries, our desire to manage time more precisely eventually led to the discovery of quartz crystal timepieces that were *only* accurate to within 5 seconds a year. However, development of radar and extremely high frequency radio communications finally made it possible to create a timepiece that would satisfy even the most ardent perfectionist – the atomic clock. Accurate to one second in 1,400,000 years, atomic clocks are used as the primary standard for international time distribution services as well as controlling Global Positioning System (GPS) satellite signals.

The lesson behind this brief horological history is, of course, that time is just as important today as it was 5600 years ago. Because it helped them better organize their days, months and years and, therefore, work more economically, it can even be argued that the Sumerians laid the foundation for time management as we know it today. And managing time within the framework of a long distance challenge is what we do – we've just replaced the sundial with a GPS receiver.

Have an opinion?
editor@ironbutt.com
We want to hear from you.

There are a number of devices on the market that can track our progress while simultaneously helping us manage our time more efficiently. But regardless of how many of these farkles we install on a bike, knowing our personal limits remains *the* single most important part of managing time. Stated another way: How can we use our time effectively if we don't know our own limitations?

> "In the end, we cannot hope to reach our full potential until we realize that managing ourselves and our ambitions is just as important as managing our time — and it all begins by planning a ride that doesn't exceed our limitations."

It's been repeatedly demonstrated over the years that the two safest ways to cover more ground in less time are to refrain from speeding – riders who pace themselves travel farther because they are less fatigued – and to know when to stop. Riders who don't know their limits are usually less efficient, expend more effort than is required, and are more likely to make mistakes. In short, they are poor time managers.

Generally speaking, time management is more than simply managing time. It is about time utilization. It is about managing ourselves relative to tasks and setting realistic goals. It is about recognizing and then changing any activity that causes us to waste time or do something unsafe. And, it is about making maximum use of the time we are allotted. As this relates to long distance riding, finding these boundaries comes only after hundreds of hours and thousands of miles have been spent in the saddle.

In the end, we cannot hope to reach our full potential until we realize that managing ourselves and our ambitions is just as important as managing our time – and it all begins by planning a ride that doesn't exceed our limitations.

In this regard, we hope that this issue helps you better prepare for and then ultimately achieve your long distance riding goals.

Bill

Plan your ride. Ride your plan.

IBA Staff Contact Information

The Iron Butt Association is primarily a volunteer organization. Hundreds of members work on IBA events, maintain records, design products, and of course, the ride certification program. The IBA would not exist if it weren't for a group of very dedicated people who make sacrifices beyond measure. Each provides an invaluable service by working quietly behind the scenes without any fanfare or the expectation of special recognition.

The following members are the face of the organization and serve as primary contacts in each of these areas.

Ira Agins, *agins@ironbutt.com*
IBA RELATIONS COORDINATOR
Ira answers questions on such diverse topics as routes and documentation, status of certifications and membership qualification. Ira has ridden many IBA rides and competitive rallies including finishing the Iron Butt Rally in 1999. He is also the Routemaster for the Land of Enchantment long distance rally.

Donna Fousek, *donna@ironbutt.com*
ASSOCIATION MANAGEMENT
Long time rider Donna Fousek (her first SaddleSore 1000 was in 1997) has been part of the IBA staff since 1991. A jack of all trades, Donna works on ride certifications, witness interviews and most importantly, has designed many of the IBA products used the world over.

Lisa Landry, *lisa@ironbutt.com*
IRON BUTT RALLYMASTER AND EVENTS COORDINATOR
Lisa's responsibilities include the management of the Iron Butt Rally, IBA International Meet, the annual IBA Daytona Bike Week party and other events. She is an accomplished LD rider having completed several Bun Burner GOLDs, the Cognoscente Group's "BLISTER" where she rode her Gold Wing a staggering 3,146 miles in less than 48 hours, a 50CC, 48 States Plus and the 2001 Iron Butt Rally.

Bill Shaw, *shaw@ironbutt.com*
COMMUNICATIONS DIRECTOR AND EDITOR, *IRON BUTT MAGAZINE*
Bill is responsible for creating the first magazine dedicated to long distance riding – the *Iron Butt Magazine*. Bill is a regular contributor to *Motorcycle Consumer News* and writes for motorcycle periodicals like *Rider, Backroads,* and *BMW Owners News.* He rode in the 2003 IBR, finished in a Gold Medal position in the 2005 IBR, and has completed numerous other rallies and long distance challenges. Bill is also responsible for distributing press releases, maintaining media contacts, and communicating with businesses, clubs and organizations about the IBA.

Jeanne Bauhart, *storemanager@ironbutt.com*
IBA ESTORE
Jeanne brings professional management to the IBA estore (www.ibaestore.com) and despite long hours at her day-job, she manages to manage the status on over 145 different products.

Tom Austin, *austin@ironbutt.com*
TECHNICAL ADVISOR
Tom has served as the IBA's Technical Advisor since 1998 and is solely responsible for the development of several technical standards used throughout the long distance riding community. He is the author of the Exhaust Noise standard and measurement procedure, the Fuel Capacity measurement procedure, and the Minimum Performance standard that applies to all IBR entrants beginning with the 2003 rally. Tom's LD experience includes finishing the 1999 IBR in the Gold Medal standings as well as numerous other rallies and IBA-recognized individual rides.

Dale "Warchild" Wilson, *webmaster@ironbutt.com*
WEBMASTER AND CHIEF TECHNICAL INSPECTOR
In mid-1998, Dale assumed IBA web developer duties in addition to his IBR Chief Technical Inspector responsibilities. He is well known throughout the long distance riding community for his mechanical and technical expertise, Dale finished an impressive 5th Place finish in the 1997 Iron Butt Rally and although he has retired from active competition, in 2008 Dale successfully completed 10 consecutive Bun Burner Gold rides in 10 days.

Bob Higdon, *higdon@ironbutt.com*
IRON BUTT ASSOCIATION LEGAL ADVISOR
Bob, a "recovering" Washington, DC trial attorney, is a widely recognized and published motojournalist whose articles have appeared in *Motorcyclist, Rider, Motorcycle Consumer News* and other national motorcycle magazines. Although Bob has over 1 million miles on BMW motorcycles, traveled to every county courthouse in the contiguous U.S., ridden around the world in 2004 and finished the 2001 Iron Butt Rally, ironically he does not consider himself to be long distance rider in the truest definition of the term.

Michael Kneebone, *kneebone@ironbutt.com*
PRESIDENT, IRON BUTT ASSOCIATION
Mike founded the IBA in 1986 and has worked endlessly to spread the word to anyone who will listen about how special the long distance community is and how unique these riders really are. He oversees all areas of the Association. Mike has finished two IBRs, set three Guinness World Records, and is an accomplished journalist in his own right having written long distance articles for *Motorcycle Consumer News* and *Motorcyclist* magazine.

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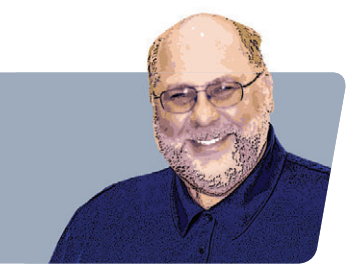


MileMarker

By Michael Kneebone

Welcome to the Insanity

As we scratch the surface on what long-distance riding is all about.

I AM OFTEN at a loss for words when trying to explain the insanity of what we do. A single article cannot begin to scratch the surface of long distance riding. Even the hundreds of articles like those found on our web site (www.ironbutt.com) are really only snapshots in time from one rider's perspective. This is such an individual sport that you could spend a month reading every available article and never fully understand why many of us pursue this sport or are so passionate about it.

With that said and for our first issue of the *Iron Butt Magazine*, we compiled a series of articles in an attempt to answer the question: "What is the Iron Butt Association about?" The stories range from the basic concepts in *Long Distance Riding 101* to advanced tips in *Managing the Risks* to the mistakes made on a failed ride in *Lessons Learned: Attempting My First Long Distance Ride*. This collection of articles will, at least, help tie the pieces together to explain the why and how and what is needed to succeed.

Every successful long distance (LD) ride takes preparation, hard work and determination to achieve a milestone that few others have reached. By finishing a SaddleSore 1000, Bun Burner 1500, 50CC, National Parks Tour or one of 100 other IBA challenges, you have joined an elite group. And if you're like most of us, your first foray into long distance riding won't be your last.

Read more about the IBA: www.ironbutt.com

Contrary to all the free advice you probably received from a number of "experts" before embarking on your first LD challenge, it really does take more than simply sitting in the saddle and twisting the throttle for hours on end to successfully earn an IBA certification. Not everyone has the ability and fortitude to plan and embark on a ride of this scale – knowing how to use Mapquest and having a credit card simply aren't enough.

In this respect if I were asked to identify one quality that separates us from our other motorcyclists, it would be self-discipline. Whether competing against the clock, one another, or ourselves, this quality is often the deciding factor. Although self-discipline can be taught, not everyone has the desire, capacity and commitment to finish an LD challenge. It has been repeatedly demonstrated in rallies, for instance, that less experienced riders are able to overcome their shortcomings and obstacles to best more experienced riders who are less disciplined.

This is not to say, however, that riders should push themselves beyond their comfort levels. Self-discipline includes knowing your limits and when to back off, which is essential for a long and safe LD riding career. Safety has always been paramount within the long distance motorcycling community, which is why the IBA has the safest riders on the planet – we know our limits and when to pack it in to ride another day.

"This is not to say, however, that riders should push themselves beyond their comfort levels. Self-discipline includes knowing your limits and when to back off, which is essential for a long and safe LD riding career. Safety has always been paramount within the long distance motorcycling community, which is why the IBA has the safest riders on the planet – we know our limits and when to pack it in to ride another day."

Your confidence will grow as you successfully advance to more challenging rides. This is inevitable. All that I ask is that you guard against letting your ambitions outpace your abilities. Stated another way, egotism and overconfidence have no place in long distance riding. Just remember that by coupling hard work and safety with self-discipline and *realistic* goals, you'll eventually be able to push yourself beyond any of your previous expectations.

Welcome to the Iron Butt Association.

Welcome to the insanity.

By Ron Ayres

Managing the Risks

Failure to prepare can have serious consequences.

Ron Ayres

HAVE YOU HEARD the one about the Iron Butt Rally contender who rode to Springfield, Illinois to collect a huge bonus, only to learn that he should have gone to Springfield, Missouri? Or the one about the rider who missed a critical Iron Butt checkpoint because he thought the checkpoint closed at 9:00pm rather than 9:00am? How about the rider who invested thousands of miles collecting photos, receipts and other bonus documentation only to have it blown away in the middle of the night?

If you've spent much time in long-distance riding circles you've probably heard about these or similar blunders pulled off by experienced motorcyclists during long rides. I've heard so many humorous anecdotes that I've considered collecting them for a future publication.

The truth is that riding very long distances subjects a rider to more stress than is experienced with shorter, casual days. The result is sometimes another humorous anecdote, but sometimes the result can be more serious and not at all funny.

If you're reading this article, I presume you're one of us: a long-distance enthusiast who, at the very minimum, successfully finished a SaddleSore, the 1,000 mile in 24-hour (or less) ride that qualifies a rider for membership in the Iron Butt Association. Yet for many of you, the SaddleSore merely whetted your appetite; you crave more. Some of you have moved on to longer rides, perhaps a 1,500 mile/36-hour Bunburner. Many of you want to go further, so you eye some of the 10 or so rides that the IBA categorizes as "Xtreme!" beginning with the 1,500 mile/24-hour Bunburner Gold. Or perhaps you're going to take the plunge and enter an endurance rally or two.

You've probably already learned how to overcome some of the obstacles that prevent most riders from safely enjoying long days in the saddle. While there is some degree of risk inherent in motorcycling, you've mitigated it by wearing comfortable, weatherproof protective riding gear; by figuring out how to make your motorcycle more comfortable; by learning something about basic nutrition and hydration; and by understanding one of the most important rules of all: the importance of consistency rather than speed.

So how do you prepare to safely tackle additional mileage as you contemplate the more challenging rides?

We recommend that you concentrate on four things: (1) more riding, (2) additional learning, (3) physical conditioning and (4) meticulous planning.

More Riding

Experience reduces risk. More experienced riders are generally safer than less experienced ones. Continue to build mileage within your competency and comfort zone. Build additional mileage gradually. This will take some patience, but the gradual addition of mileage will enable you to progress much more safely.

While you're building up those additional miles, concentrate on the efficiency of your ride. How much time are you taking for fuel stops, meals, and rest stops? How closely are you able to stick to the plan that you laid out before you started the ride?

Additional Learning

As you spend additional hours in the saddle and subject your body to more stress and fatigue, be observant of your own physiology. What's going on with your body and mind? Focus on what is known about the impact of sleep deprivation and resulting fatigue. Be sure you understand the importance of recognizing danger signs and reducing the effects with good nutrition, proper hydration and healthy eating habits.

"We recommend that you concentrate on four things: (1) more riding, (2) additional learning, (3) physical conditioning and (4) meticulous planning."

Fortunately, there's a lot of valuable information available, beginning with Don Arthur's excellent article in this issue: *Fatigue and Motorcycle Touring*. In addition to Don's explanation of sleep deprivation and fatigue, he discusses the proper role of caffeine as well as the toxic effects of alcohol and the importance of avoiding it for the week before an important ride. The Iron Butt Association's Archive of Wisdom, found on its web site, is another excellent source of information.

Physical Conditioning

You don't have to be a world-class athlete to enjoy long rides, but few would argue with the premise that you'll be much better prepared to deal with the rigors of extreme riding if you improve your physical condition. One of the biggest challenges that will accompany increased mileage is fatigue. Studies have shown that physical fitness delays the onset of fatigue, making for a safer ride.

Before undertaking my 49-state ride several years ago (seven consecutive days with a daily average of 1,250 miles), I lost weight, jogged nearly every day, and abstained from alcohol and caffeinated beverages for several months prior to the ride. I don't believe I could have made the ride without having first improved my physical condition.

In 1999, George Barnes set a new mileage record for the Iron Butt Rally when he rode 13,346 miles in the 11-day event. George not only gave up caffeine for the two months prior to the rally, but he shed 30 pounds and swam for an hour each day.

Planning

Riders who are fatigued tend to make dumb decisions. Do as much planning as possible ahead of time so you won't have to make very many decisions on the fly, thus reducing the amount of information you'll have to process and deal with while tired.

To the degree possible, select routes that will have less traffic and wildlife to deal with during the end of your ride – the period when you'll be most tired. Plan fuel stops well in advance so that you don't have to worry about running out of fuel.

It's certainly possible to increase the enjoyment and satisfaction that you get from long-distance riding. Taking time to prepare yourself properly will help you do it safely and effectively.

Ron Ayres (IBA Member #87) finished sixth in the 1995 Iron Butt Rally and in 1998 he established a new Iron Butt Association record by completing a 49-state ride in seven days. Ron has written three books on the subject of endurance riding and long-distance touring: Against the Wind, Against the Clock, *and* Going the Extra Mile. *As founder of Ayres Adventures, he now spends his days managing a global motorcycle travel company, an official BMW Motorrad Travel Partner.*

Its History, Appeal and Mystique

By Paul Yeager

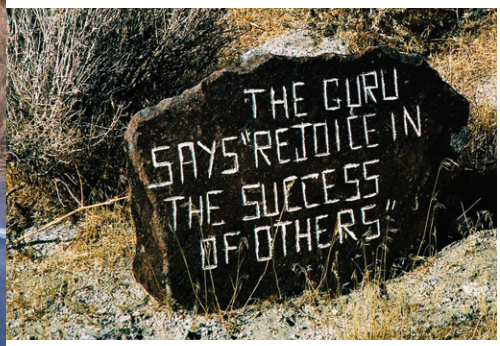
THE EARLY YEARS

For a small, self-selecting subset of the world's motorcyclists, long-distance motorcycle riding is satisfying beyond reason. With no quarter given for mechanical, physical or emotional meltdowns, it is at once simple, grinding, cathartic and brutal. This principle is at play in a number of challenges that lead to Iron Butt Association membership and the coveted "World's Toughest Rider" license-plate frame.

The principle's ultimate expression is the Iron Butt Rally (IBR), an 11-day monster so devastating to body, mind, machine — and even its organizers — that mercifully it is held only once every two years.

Inspired by *Car & Driver's* One Lap of America, and brought to life by Mike Rose, the idea behind the IBR was relatively simple — to discover if a motorcyclist could circumnavigate the contiguous 48 states in eleven days. The first rally was launched over the Labor Day weekend in 1984 with a field of ten capable riders. By today's standards, the format was relatively easy. The Montgomeryville Cycle Center in Philadelphia served as the rally start/finish point and

STEVE HOBART



Key Dates in IBA History

1982 Mike Rose dreams up the **Iron Butt Rally** concept.

1984 The first **Iron Butt Rally** was held in Philadelphia where four riders tied for first place.

pre-announced checkpoints, usually at motorcycle dealerships in Florida, California, Washington state and Maine, required entrants to appear within a narrow time window or face insurmountable penalties. At the end, four contestants tied for first place: Kim Davis, George Egloff, Alan Pease and Ed Thompson.

In 1985, George Egloff came back to win the rally outright and in 1986, Canadian Ross Copas took the top honors. This was also the year in which the Iron Butt Association was founded by Mike Kneebone and Richard and Faye Hoffman (Mike would later became the sole head of the IBA as well as the IBR because of his newsletter and day-to-day management responsibilities). A year later, Barry Norman, riding a Yamaha Venture, won the rally. But only four years after the first rider left Philadelphia, the event was cancelled in 1988 due to waning interest.

In 1990, at the urging of Jan Cutler of Nevada 1100 fame, Kneebone set out to revive the rally. He started by securing the rights to the name and taming the high-speed issues of the early rallies. Working with other long-distance riders, a renewed Iron Butt Rally was held in 1991 with 27 entrants. Teetering on the brink of extinction in 1988, the IBR has been held on odd years ever since and now attracts hundreds of wait-listed applicants from around the world hoping for a cancellation.

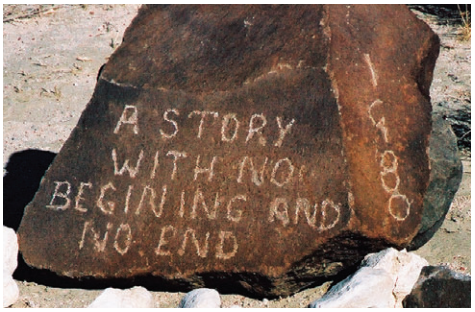
After 15 years of sending (mostly) lucid people to every imaginable remote location in the lower 48 states and Canada, the "Evil Lord Kneebone" as he is affectionately called, deferred the entirety of this event to Lisa Landry in 2003. A veteran of the 2001 IBR, Landry now runs the show flawlessly from start to finish as Kneebone watches his protégé put on events that are as brilliantly executed as they are imaginative and rigorous.

Landry's mark on the IBR is noteworthy as she completely altered the format of the rally, particularly as it relates to checkpoints. Earlier in its history, for instance, the rally route followed a four-corner model with required checkpoints in Florida, Maine, Washington and California. Later, the checkpoints were moved to locations other than these corner states but the basic premise remained the same: If you didn't make the key checkpoints within a small time window, the penalties were stiff. Points were awarded for reaching those checkpoints, but the real points — the ones needed to win — were awarded for riding to more far-reaching bonus locations. Generally, point values were based on the deviation from a straight shot between the corners. However, the four-checkpoint scenario is no longer the standard. To provide exciting new riding opportunities, the four fixed checkpoint requirement was replaced with a minimum points-based system needed to become a finisher.

In the past, riders who racked up big miles by chasing the biggest bonuses also rode the winning route. Landry forever changed this expectation too. In the 2005 IBR and in a departure from past events, she not only limited many of the bonuses to daylight hours but also strategically planned it so the winning route incorporated a lot of locations with smaller point values. This meant having to plan and decipher well in advance where you want to be, at what hour, and on what day, in order claim the bonus. For those who cracked the time-distance code, they not only captured more points, but rode fewer miles.

But the 2003 IBR has to go down as being one of the most creative. In a variant on a theme from

BILL SHAW



Above (and facing page): ***These are just two of many engraved stones at the Iron Butt Association memorial near Gerlach, Nevada. Each has a story to tell.*** *Left:* ***Riders gather at the start of the 2005 Iron Butt Rally in Denver, Colorado.***

1986 The **Iron Butt Association** was officially founded by Mike Kneebone and Richard and Faye Hoffman.

1989 The Iron Butt Association obtained the trademark and ownership of the "Iron Butt Rally," as well as "**World's Toughest Motorcycle Riders**," "World's Toughest Motorcycle Competition," and "World's Toughest Motorcycle Rally."

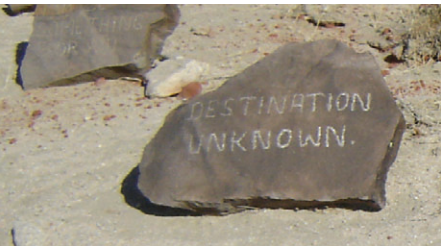
the *Matrix* film, Kneebone had riders pick a red pill or blue pill before the start of the second leg. Riders choosing a red pill would be riding a more aggressive and challenging route that would also be the winning route. The blue pill was for everyone else who just wanted to survive. Kneebone warned riders that if they chose the red pill, "(your) life will immediately become hard, dirty, tiring, nasty and brutish."

A hand was raised. "Is there any way the blue-pill route can win?"

"Yes," Kneebone answered. "If every single rider on the red-pill route crashes, breaks down, goes home, is time-barred at the next checkpoint, or is abducted by aliens, it is theoretically possible that a rider on the blue-pill route could win. Still, I view it as unlikely."

Just 25 hours into the rally, riders faced this choice: run with the lead dogs or run with the pack. About a third of riders accepted the challenge by taking the more aggressive route and just as Kneebone had predicted, riders who took the red pill held the top finishing positions.

As each rally leg becomes longer, complexity grows exponentially. More hours to plan per leg demand that more choices must be weighed and made. Extraordinary in every sense of the word, the Iron Butt Rally really is a seemingly insurmountable set of long distance challenges for mind and body. Beyond surviving what amounts to 11-consecutive SaddleSore 1000s, the real challenge is picking the most efficient routes to collect the most bonus points. Think a two- or even three-day rally leg presents a daunting, continental puzzle? Try unraveling it with a mile-mushed rally brain.



In recent years, rallies have become even more complex. This evolution sharpens the distinction between the rider who can win with the brute willpower to crank out massive miles versus the more cerebral rider with the brain and computer power to unravel the most-points-per-mile equation. Bob Higdon, IBA legal-affairs guru, once said, "A rider who is efficient is smart; a rider who bags big points is an animal; a rider who does both is the guy to beat in the Iron Butt." Students following the rally's evolution can only believe that the future trophies will be awarded to riders who possess the best of both camps, in other words, *The Unstoppable Thinker*.

LONG DISTANCE CHALLENGES AND MOTORCYCLENE

While the majority of Iron Butt Association members won't have the opportunity to compete in the world's premier long-distance rally, everyone is welcome to attempt other certified rides that range from difficult to extreme. Interestingly, the two rides that most members tackle first, the SaddleSore and the Bun Burner, were developed in the early 1980s not by the Iron Butt Association, but rather by the California Motorcycle Touring Association (CMTA).

Prior to 1993, the Iron Butt Association did not certify 1000-in-1 rides. Before that time and when asked, riders were referred to the sanctioning organization(s). However, the number of letters the IBA received asking to certify documented rides became so staggering that it acquiesced and agreed to verify a variety of long distance rides. At that same time, the IBA was working closely with Les Martin of the CMTA on certifications in California, Nevada and Oregon. So when Martin announced he was retiring in 1993, he graciously donated the SaddleSore and Bun

Above: ***A lonely strech of highway outside Gerlach, Nevada.*** *Left:* ***The totem stands guard over the Iron Butt Association memorial while telling of previous events.***

1991 After a three-year hiatus, the **Iron Butt Rally** was revived and started in Reno, NV. Ron Major was the eventual winner of what is heralded as the start of the modern day endurance rally.

1993 Les Martin of the California Motorcycle Touring Association graciously donates the **SaddleSore** and **Bun-Burner** ride programs to the Iron Butt Association.

0 1991 1992 1993 1994 19

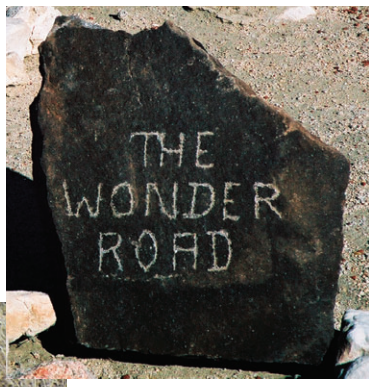
Burner names to the Iron Butt Association.

Over time, the bar by which these challenges were being measured was raised. Distances once considered heroic were becoming commonplace and the growing list of long distance rides was limited only by the imagination of riders. The SaddleSore 1000, for instance, begat the SaddleSore 2000, 3000 and even 5000, ridden in two, three or five days. Then it was the In-State SaddleSore 1000 rides, which, as the name implies, required riders to log 1000 miles in 24 hours within state lines. And more recently, the Iron Butt Association has even certified thousand-mile adventures within the borders of selected cities including Washington, D.C., Los Angeles, New York and others. Even Dave McQueeney's 50CC challenge (Coast to Coast in 50 hours or less), once thought to be a lofty goal, has since morphed into an even more extreme ride: a 100CC challenge (Coast to Coast to Coast in less then 100 hours).

The fact that most *normal* motorcyclists don't find anything fun or rewarding about Iron Butt rides is part of what holds the LD community together. The more daunting the challenge, the more delight Iron Butt riders take in it. Most riders have friends and family who think they are borderline lunatics, or maybe not so borderline, and happy only when they are sitting in a saddle and twisting a throttle. Rally veteran and long-distance legend Ardys Kellerman once said that Iron Butt riders are "another plateau of individual." Noted long distance rider Brian Roberts' wife, Jan, may have been a little more candid when she said long distance riders are so independent-minded and politically incorrect that many would call them renegades, past the line of the civilized, and beyond the fringe-dwellers.

For some LD riders, the appeal of extreme riding is about finding the solution to the time, speed, and distance equation or riding that perfect errant route. For others, it is nothing more complicated than the joy they receive by simply riding their motorcycle for hours, days and weeks on end. In this respect, 2001 Iron Butt Rally scribe Warren Harhay even has a word for it — motorcyclene. Every finisher of an endurance ride or rally has either tasted, or in some cases, feasted upon it. It is also said that motorcyclene oozes from the raw, wind-chapped pores of every long distance rider. "The communion of man and machine in pursuit of 'The Ride' is the Holy Grail of motorcycling," Harhay writes. "The Ride is the dispenser of motorcyclene, that most elusive and addictive narcotic of the motorcyclist, who is at one with his machine in pursuit of the fulfillment and joy of The Ride." Stated another way, long distance riding really is more about the ride than the destination.

Because this sport is inherently more dangerous than conventional motorcycle riding, safety has been at the forefront of long distance riding from the very beginning. A large part of the Iron Butt Association Web site is even devoted to reinforcing the message that LD riding is "dedicated to safe, long-distance motorcycle riding." Nearly all 29 points in the association's



Above and left: ***The essence of "motorcyclene" can be found in the messages left on the rocks.***
Far left: ***With members from over 44 countries and long distance challenges taking place all over the world, the Iron Butt Association is a true global community.***

1997 The Iron Butt Association memorial in **Gerlach, NV** was established to honor fallen long distance riders.

Key Dates in IBA History

1995 | 1996 | 1997 | 1998 | 1999 | 2

popular "Archive of Wisdom" are related to safety. "Know your limits" is No. 1 and "forget about high speeds" is No. 2. Even the most anti-social, knee-dragging, bug-eyed rat-bike LD rider knows the IBA's "safety first" mantra. This culture of safety is also what makes the LD community among the safest in all of motorcycledom.

CHANGING OF THE GUARD

Motorcyclists are aging in the United States. Every study says the same thing. But the IBA appears to be deviating from this trend as the number of younger riders entering LD events — and finishing in steadily higher positions — is increasing. These new riders are also bringing in new energies and new ideas. It appears that a generational turning point is taking place within the Iron Butt Association, which bodes well for the future of the IBA and for long distance riding since things that evolve have a better chance of surviving.

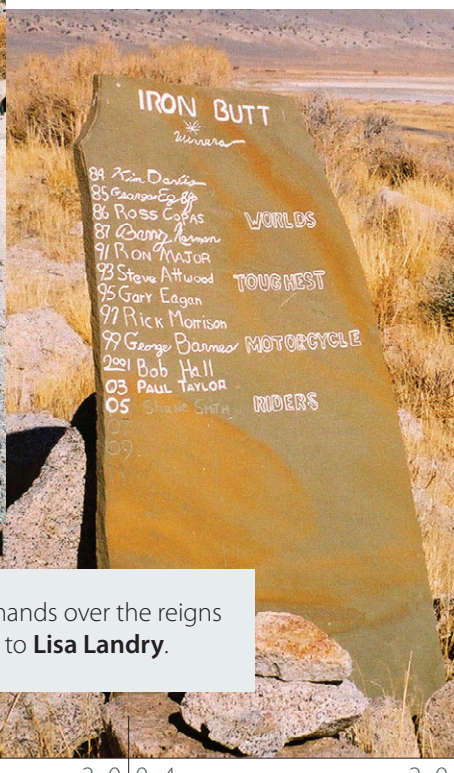
In this respect, the Iron Butt Association — with its rallies, certified rides, web sites, social gatherings, seminars and Internet discussion sites — plays a crucial role in furthering the art and science of long-distance riding. New techniques and technologies are pioneered and happily shared with other riders. In addition to identifying better ways to equip motorcycles, enthusiasts also pass along the latest research on hydration, fitness, nutrition, heat exhaustion, hypothermia and even circadian rhythms.

New ideas are also being used to further improve motorcycles for long distance riding as well. The bikes ridden in the first Iron Butt Rally, for example, were sparsely equipped when compared to today's heavily adorned motorcycles. Paper maps and the rider's familiarity with a region were all that pre-GPS long distance riders had at their disposal. Today, saddlebags, topcases, tankbags, mounts, and shelves are jammed with GPS units, radar detectors, satellite radios, cell phones, antennas, audio amps and mixers, MP3s, CBs, electric-clothing regulators, tubes for drinking (and in some cases peeing), pouches for food, gooseneck lamps for midnight map reading, thermometers, countdown clocks, alarm clocks, laptops, first-aid parts for bike and body, 12-volt tire pumps, puncture kits and riding gear that has to work from 20 degrees to 120 degrees. Therefore, when rally riders select their mount of choice these days, they consider a bike's electrical power capacity as much as horsepower — a problem not even imagined in 1984.

Most of these accessories, it should be pointed out, are not designed for motorcycles. Fortunately, many LD riders are tinkerers or engineers who delight in custom, personality-skewed installations. A very conspicuous example of modifying something that is not designed for use on a bike is a custom-fitted auxiliary gas tank. Since a minute spent sitting idle at a gas station is a minute lost to their competition, a minute thrown away or, worst of all, a minute lost to precious sleep, they are a virtual necessity for every serious endurance rider. Collectively, though, the aim of these accessories is to help with navigation, keep the rider moving, and to reduce physical and mental stress. Less stress equals less fatigue equals a higher average speed equals more miles.

THE ROAD TO GERLACH

This wind-swept spot became a Mecca to the long-distance world thanks to Jan Cutler and Steve Losofsky, former owners of Reno BMW. They created some of the zaniest long-distance



Key Dates in IBA History

2003 Kneebone officially hands over the reigns of the Iron Butt Rally to **Lisa Landry**.

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rallies ever held and most of them began, ended or went through Gerlach at one time or another, as did the Iron Butt and other rallies.

Once a year, long-distance pilgrims from across the continent gather at an event known as Gerlachfest. Under the extraordinary Nevada night sky, they build a bonfire and pay homage to and honor fallen LD riders. All are remembered for their achievements in and contributions to the LD community as Iron Butt Association Chief Technical Inspector Dale "Warchild" Wilson reads the Names of the Dead; toasts are made, memories are shared, and tears are shed.

From the memorial, one can also take in an engulfing view of featureless, flat emptiness that flows beyond the curve of the earth. The memorial is located at the base of a low mountain range that overlooks a mud-flat playa and the Black Rock Desert. It is here that you will find a collection of stones engraved with the names of fallen riders — the Circle of Honor. Some died riding, some died naturally, and some died by other means, but all are memorialized here forever. The emptiness reminds you that this special place is in the middle of nowhere; a place that will not visibly change during the lifetimes of many generations. It is a fitting location for a memorial.

And on a slope just above the memorial's Circle of Honor is a familiar tool of the LD trade: a picnic table labeled "Iron Butt Motel." It is a good place to lower the sidestand, relax and ponder "koyyanisqatsi," the Hopi word for "life *out* of balance." But "life *in* balance" is really what long distance riding is all about — going to the edge and keeping a balance. And for LD riders, their quest to maintain a balance, called "Taiowa's Way" by the Hopi, is what this sport is all about.

I would like to thank the following people who made it possible for me to write this article: Michael Kneebone, Bill Shaw, Bob Higdon, Lisa Landry, Brian Roberts, Dean Tanji, Dale Wilson, and Jim Winterer.

Above and facing page: ***The Iron Butt Association memorial outside Gerlach, Nevada.***

2007 IBA membership hits the **30,000** milestone with members from 44 countries.

Pursuing the Passion

By Lisa Landry

Every activity, avocation or sport has a group of enthusiasts committed to pushing their obsession to the highest level possible. For those of us who worship at the exalted altar of motorcycling, some of the most grueling events are the Baja 1000, Dakar Rally, and the 8-hour events at Suzuka where just finishing is a testament to one's stamina, determination and conditioning. The riders who enter these competitions are truly superhuman.

But what contests exist for the average person? The answer, of course, is found in long distance (LD) riding. Thankfully, these amateur events can be entered with a minimum of special equipment and costs. The following challenges are open to all riders and represent some of the most popular long-distance rides held in the United States.

Long Distance Challenges

The overwhelming number of people who become members of the Iron Butt Association (IBA) usually do so after successfully completing a sanctioned long distance ride or challenge. Typically these are individual measured time/distance achievements like a SaddleSore 1000 (1,000 miles in 24 hours), Bun Burner 1500 (1,500 miles in 36 hours), or 50CC (Coast to Coast in 50 hours). The importance of accurately documenting the ride is crucial to successfully completing this, or any other long distance event. The verification process is intentionally tough and was developed by a member involved in record keeping for various sporting events to objectively corroborate the rider's efforts.

While preparing for one of these rides might appear rather simple in the clear light of day; (e.g., plan a safe route, identify a witness at the start, collect and log receipts and obtain a witness at the end), fatigue has a funny way of complicating even the most simple tasks, particularly at 3:00 a.m. But the skills learned while successfully accomplishing these challenges lay a solid foundation for attempting and documenting other more difficult events.

While the most prominent long distance challenge is the SaddleSore 1000, the Iron Butt Association recognizes a host of other types of rides. For instance, in North America alone there is the National Parks Tour (visit at least 50 National Parks, Monuments, etc in at least 25 states within one year), the 48-10 (ride to each of the lower 48 states in 10 days), and the Great Lakes Ride (ride around the Great Lakes in under 100 hours) to name a few. And for those riders who are looking for even more challenging rides, the Iron Butt Association also recognizes a number of Xtreme rides like the 10-10ths (10 consecutive SaddleSores in 10 days) and a 100CCC (coast to coast and back to the starting coast in under 100 hours). A complete list can be found on our website.

Other countries also offer a wealth of certification opportunities. The most popular is the metric version of the SaddleSore 1000 – the SaddleSore 1600K. Or you can ride from the northern most point to the southern most point of Europe (Gibraltar

PHOTOS BY STEVE HOBART


FJR1300

Pursuing the Passion

to Nordkapp) in 3 days! Live in the UK? Ride from the Lands End to John O'Groats in 24 hours to earn the End to End certification. If those rides are too short, the IBA also certifies the Euro-Asia Coast to Coast GOLD (30 days from the Atlantic to the Pacific across Europe and Asia) or those with unlimited time and money can join the Around the World Club GOLD by riding one continuous trip around the world!

A complete list of over 100 long distance challenges can be found on our website.

Motorcycle Rallies

Riding in a rally is arguably the most fun you can have on a motorcycle. The stated goal of these challenges is rather simple: Find the most efficient route and collect as many bonus points as possible within the allotted time period. Think of a scavenger hunt where any part or all of North America is your playground. A course is laid out by a Rallymaster with instructions for each bonus location. The twist, however, is that there are always more bonus locations than time will allow so finding the elusive perfect route is an individual effort based on each rider's ability and navigational skills.

There are a number of rallies held throughout North America every year. Most are usually 24-, 36- or 48-hour events but some are even longer. Points can be earned in any way the Rallymaster deems fit. Generally, the more difficult the bonus, the more valuable it is. Rallymasters, however, will oftentimes include a sucker bonus with an outrageously high point value in an effort to tempt riders to reach a nearly impossible goal. Riders have to decide if taking a picture of a hard-to-reach place like the Cape Hatteras lighthouse, for instance, is worth the effort and a prudent use of their time. Under normal circumstances, this decision isn't too difficult. But if the rally is being held over the Memorial Day weekend when traffic on the two lane roads leading in and out of Cape Hatteras is packed, the time and effort used to bag the bonus could have been better spent elsewhere. Additionally, while looking for an off the wall place is fun, the stress level rises with each passing minute spent searching. But every bonus found is a challenge conquered — the thrill of competition is enough to keep the adrenalin pumping long after reaching the finish line.

In the end, the points are tallied and a winner is declared — usually it's the person who collected the most bonus points. The Top Dogs will take home a trophy while the rest might receive

The following **suggestions** are offered for anyone considering riding in a rally or long distance challenge.

1. Be adaptive and flexible. If weather or other circumstances on your planned route change, be willing to change along with them. Safety is paramount on any ride, especially if you're on a multi-day, solo trip.
2. While it can't always be avoided, plan your route so you're not riding through any major metropolitan areas during rush hour. Some of the cities riders should be concerned about for any long-distance ride are Miami, Houston, San Diego, Los Angeles, Seattle, Chicago, Detroit, Boston, New York, Toronto and Washington, DC, all of which are infamous for gridlock.
3. If you don't have enough gas to make it all the way through one of the aforementioned cities, fuel up beforehand so your progress isn't slowed searching for gas in a metropolitan area.
4. Plan ahead for maintenance-related stops in advance (e.g., oil and tire changes), and make an appointment whenever possible to minimize down time.
5. Eat only at established or familiar restaurants and food chains and eat light snacks throughout the day as opposed to heavy meals.
6. If your bike is equipped with a radio or intercom, think about installing a Sirius or an XM radio. You can never have too much information about road and weather conditions, even if they're rarely accurate.
7. Become intimately familiar with the 29 long distance riding tips on page 59 and posted on the Iron Butt Association website: www.ironbutt.com.
8. Keep family and friends informed of your progress.
9. Establish good habits before embarking so they become routine (e.g., keeping hydrated, staying alert, aware and informed, and knowing what your limits are and when to stop).
10. Lastly, always carry a cell phone in case of an emergency.

For more information on the events listed here:

Iron Butt Association
PO Box 4223 Lisle, IL 60532
www.ironbutt.com

U.S.A Four Corners Tour
11171 Oakwood Drive E209 Loma Linda, CA 92354
www.usa4corners.org

Three Flags Classic
P.O. Box 2265 North Hills, CA 91393-2265
www.3flagsclassic.org

a certificate of completion to hang on their wall, a pin, and the satisfaction that new bonds were formed in an event few riders could ever hope to accomplish or even comprehend.

The Three Flags Classic

More relaxed than a rally, but a significant challenge nonetheless, is the Southern California Motorcycling Association's (SCMA) Three Flags Classic. This event began in 1975 and is typically a four-day ride from Mexico to Canada covering 2,000-2,200 miles. It is limited to 250 riders and is held annually every Labor Day. The annual September ride usually starts around 3:00 a.m. on Friday and ends about 9:00 p.m. on Monday. Every five years the SCMA stretches the event out to five days where the mileage increases to about 2500 miles.

The SCMA moves the start and finish every year to provide a variety of routes. Usually a city near the Mexican/Californian border like Tijuana, Juarez, Mexicali or Nogales hosts the start, while in Canada, the event has gone as far north as Edmonton. At the start, a photo of each rider is taken for a 3 Flags Passport — a small booklet similar to a United States passport with room for cancellations at the three (or four) manned checkpoints. The passport also contains a map showing the official route. There are no secret checkpoints in the Three Flags Classic and since this is not a competitive event, riders start at the same time. A liberal checkpoint schedule provides even the slowest riders a chance to finish the rally. A formal banquet is thrown at the finish for riders and their family. Finishers receive a belt buckle, an embroidered patch, a pin, a decal and a nice plaque with the route engraved on it.

The USA Four Corners Tour

For those looking for a longer ride, the SCMA is also the sanctioning body for the USA Four Corners Motorcycle Tour. Started in 1984, the rules are simple: Riders have 21 days to travel to the farthest four corner cities in the 48 contiguous states. The SCMA corners are Blaine, Washington, Madawaska, Maine, Key West, Florida and San Ysidro, California. The clock starts when the first envelope is postmarked from the first corner and ends when the last envelope is postmarked from the fourth corner — a minimum distance of about 6,400 miles. Riders may start in any one of the corners, any time of year that they want, and take any route they wish. Planning a ride of this magnitude is important since there are many factors to consider, not the least of which is the weather. In this regard, common sense and good judgment should prevail. That is to say, be especially weary of leaving in the winter months and if at all possible, avoid riding through the desert in August or in the oppressively humid wrap that grips the eastern and southern states each summer.

Besides obtaining a gas receipt in each of the corner cities, riders will need to take a picture of their motorcycle in front of a local landmark. The instructions provided by the SCMA give specific names and addresses of places you'll need to visit so no guesswork is required. Additionally, the rider's package contains local maps for each city and four self-addressed envelopes in which to mail proof of your visit.

Successful finishers receive a nicely finished binder replete with a certificate, the photos submitted to the SCMA of your bike in front of each corner landmark, receipts, the postmarked envelopes, as well as an SCMA patch and pin. This is truly a class event.

The Iron Butt Rally

Although the Iron Butt Rally is by definition a rally, in reality it is much more than that and deserves to be separately recognized. It is unquestionably the largest, longest and the most celebrated event of its kind. Held on alternating odd years in August and spanning 11 days, it is the toughest amateur motorcycle rally in the world. Since entry into the IBR is secured through a drawing and limited to about 100 riders, there are literally thousands of wait-listed applicants from around the world hoping for a cancellation. With around 20% of the starters not finishing, the IBR is always a war of attrition and winning is equal parts skill and luck.

Like other rallies, the Iron Butt rider chooses his/her route. However, because of the duration of this event, there might be up to four mandatory checkpoints where riders are required to appear within a narrow time window or risk being disqualified from the rally. Since the rally changes its format every time, it is difficult for riders to prepare for it in advance. Riders are also required to have a minimum number of bonus points or risk being disqualified. Therefore, it's not unusual to see the names atop the leader board change at every checkpoint. It's also not surprising that no one has led the rally from start to finish or has won it twice. The Iron Butt Rally, more than anything else, is about organization and mental, physical and bike preparation. While everyone who finishes is a winner, the podium finishers receive beautiful trophies. The rest get a finisher's plaque, special license plate frame, finishers pin and enough great memories and new friendships to last a lifetime.

Playing the GAME

IT'S 2:00 A.M. Sunday morning and my buddy Mike Forster and I are sitting in a brightly-lit casino parking lot in the tiny border town of Wendover, Nevada. After riding 800-plus miles together over the past 18 hours my normally energetic friend has clearly hit the wall, staring at me through bleary eyes and repeating the two-word mantra "I'm done" over and over.

By contrast, I feel surprisingly good after we finish stuffing a couple of cheeseburgers in our pie-holes at the McDonald's across the street. But because we'd agreed that our goals for our first 24-hour motorcycle endurance rally were to A) stay safe, B) to finish, and C) to not finish last—in that order—I follow Mike back to the Salt Lake City hotel that serves as the Utah 1088 rally's headquarters, say goodnight, and head off alone into the darkness.

Long Distance rallies offer IBA members new challenges and greater rewards.

By Alan Rider

Over the next five hours I managed to rack up 1130 miles and 21,997 bonus points, a score that was good enough for 52nd place out of the 65 riders who finished the Utah 1088. But, while I'm proud of those numbers, what they can't begin to describe is the fun I had in the process.

The Next Big Thing

If you're reading this, chances are I don't need to tell you that riding a motorcycle 1,000-plus miles in 24 hours is a significant accomplishment. If you're like most new Iron Butt Association members, however, you may find yourself wondering where you go from here.

Which, just coincidently, is the reason motorcycle endurance rallies were created in the first place. Based on our experiences in the Utah 1088, I can tell you that these contests take the challenges of your first IBA-certified ride—and the rewards that come with completing it—to a whole 'nother level.

While it's true that an endurance rally will test your physical stamina and mental sharpness in ways no solo Saddle Sore or Bun Burner ride can, that's only part of the attraction. Figure in the chance to hang out with a bunch of like-minded riders, the lure of a little friendly competition, and the opportunity to ride some of the country's best motorcycling roads and you'll begin to get an idea of why many long-time IBA members continue to find these two-wheeled games so downright addictive.

In short, riding in an endurance rally is the next logical step for all freshly-minted IBA members. Which makes the only question "what are you waiting for?"

Come Out and Play

Unlike the IBA awards you're already familiar with, there's more to competing in an endurance rally than just riding a given number of miles in a specified amount of time.

To get a clearer picture of how these events work, it helps to think of them as wide-ranging scavenger hunts, with bonus point locations scattered across hundreds and sometimes even thousands of miles. While it's true that all rallies have a minimum number of miles you'll have to ride to be considered a "finisher," scoring is based entirely on the number of bonus points each competitor manages to tally up by the time they cross the finish line.

The tasks you'll be asked to complete to earn those bonus points range from simple and straightforward (answering a question about or shooting a Polaroid photo of a given landmark) to physically-demanding (leaping into ice-cold water or doing push-ups after a long day in the saddle). Generally speaking, the more difficult the task, the more points you'll earn for completing it.

Just as with individual Saddle Sore or Bun Burner rides, you'll also be required to do a little record-keeping along the way. Typical paperwork might include logging your bike's odometer reading at a given bonus location or bringing back a time-stamped receipt from a specified gas station or roadside attraction.

Most endurance rallies start with a brief tech inspection where you'll have to prove you've brought the required safety equipment and that your bike is in sound operating condition. Because motorcycle odometers are notoriously inaccurate, you'll also need to ride a predetermined odometer-check route that will help the rally staff to determine your actual "corrected" mileage at the close of the event.

While you may be curious about what the rallymaster has in store for you and your fellow competitors, don't expect much more than a hint in the days leading up to the event. Rally route-books listing the available bonuses, checkpoint locations and hours, and other details are considered closely-guarded secrets until just before the start.

Fringe Benefits

Ask any experienced rally vet what keeps them coming back and they're likely to tell you that it's the instant camaraderie between riders that surrounds these events. »

"Best of all, signing up for an endurance rally gives you an excuse to explore a new part of the country. And, since most rallies are held in the rallymaster's own backyard, you can bet that you'll be riding the best motorcycling roads their corner of the world has to offer."

When you consider the fact that the average motorcycle owner rides fewer miles in an entire year than many IBA members do in a weekend, it's easy to feel like a bit of an oddball among your regular riding buddies. Rallies, on the other hand, let you rub elbows with a group of men and women who share the same passion for covering long distances on two wheels—something their co-workers, friends, and spouses probably also consider a little wacky.

There are other benefits as well. Rather than staring at a map trying to decide where you'd like to ride this weekend, endurance rallies offer a you a clearly-defined destination, or rather, a series of sequential destinations. Within this existing framework, however, you're free to pick-and-choose from a long list of available bonus locations and to bag them in whatever order makes the most sense to you.

As it turns out, chasing these bonuses is also a great way to keep your mind engaged over long hours on the bike. Rather than the "sit here and twist this for the next 14 hours" experience that defines many solo Saddle Sore rides, participating in a rally requires regular input from your gray matter including doing time-speed-distance calculations to make sure you grab all the bonus points you can while still making it back before the checkpoint or finish line closes.

Best of all, signing up for an endurance rally—especially one held a good distance from home—gives you an excuse to explore a new part of the country. And, since most rallies are held in the rallymaster's own backyard, you can bet that you'll be riding the best motorcycling roads their corner of the world has to offer.

At The Finish

Looking back, I'm proud to say that I was able to achieve the modest goals I'd set for my first rally experience. But, curiously enough, my friend Mike had just as much fun despite the fact that he wasn't able to complete enough miles to earn a coveted Utah 1088 finisher's plaque.

And, when it comes right down to it, that's what endurance rallies are all about. Small details like sleep deprivation and sore muscles will fade away over time, leaving you with nothing but memories of what a great time you had.

Which, frankly, is why both of us can hardly wait to go back and do it all over again next year.

Rally Resources

» To find a list of upcoming endurance rallies and other long-distance riding events, log on to the IBA website at www.ironbutt.com or www.rallymasters.org.

» For a first-hand account of the ultimate endurance rally, read *Against The Wind: A Rider's Account of the Incredible Iron Butt Rally* by Ron Ayres. (237 pages, $20, www.whitehorsepress.com)

» Learn more about how to set yourself and your bike up for endurance rallies with the book *Going the Extra Mile: Insider Tips for Long-Distance Motorcycling and Endurance Rallies* by Ron Ayres. (144 pages, $20, www.whitehorsepress.com)

12 Long Distance Rally Tips

Utah 1088 rallymaster **Steve Chalmers** has introduced thousands of new riders to the joys and heartaches of endurance rallies over the past 16 years. With that in mind, we asked him to share his "dirty dozen" tips for first-time rally entrants:

1. Start Small: Endurance rallies come in a variety of shapes and sizes, so you're certain to find one to fit your schedule and level of experience. Start off by entering a 12- or 24-hour rally to learn the ropes before moving on to a multi-day events.

2. Arrive Early: If your schedule allows, show up a little early when everyone involved is likely to be more relaxed and friendly. Participating in pre-rally events like barbecues and golf tournaments is also a good way to meet folks who may just become life-long friends.

3. Be Prepared: Don't assume you need a fully-farkled bike fitted with a GPS unit, radar detector, or auxiliary fuel cell to come out and play. Make sure your bike is mechanically sound, pick up a set of maps from AAA, pack all the required safety equipment, and you're good to go.

4. Self-Maintenance: While prepping your bike is important, your mind and body need an equal amount of attention. Get yourself in the best physical condition you can in the weeks leading up to the event, including getting plenty of rest, eating light, healthy meals, and weaning yourself off caffeine.

5. Ask Questions: Don't be afraid to ask questions of rally staff and more experienced riders before, during, or after the event. You'll find most are more than happy to share their hard-won knowledge with newbies.

6. Set Goals: Like all Iron Butt-sanctioned rides, the first item on every rally entrant's list of goals should be to stay safe. Everything after that—shooting for a Top 10 finish or completing a Bun Burner Gold-qualifying ride, for example—is up to you.

7. Slow Down: Remember that these events are rallies not races. In fact, the key to rally success is not excessive speed but wise bonus selection, smart route planning, and making the most efficient use of the time you have available.

8. Ride Your Own Ride: Remember that virtually all bonuses are optional, so don't feel pressured into doing something that makes you uncomfortable. If the mere idea of riding your Goldwing down 30 miles of rough gravel road makes you break out in a cold sweat, feel free to pass on that bonus and choose another.

9. Heed The Warnings: Know and recognize the warning signs of fatigue (to learn more, check out: www.ride4ever.org/news/fatigue.php) and don't hesitate to pull off to grab a quick nap as soon as you notice them.

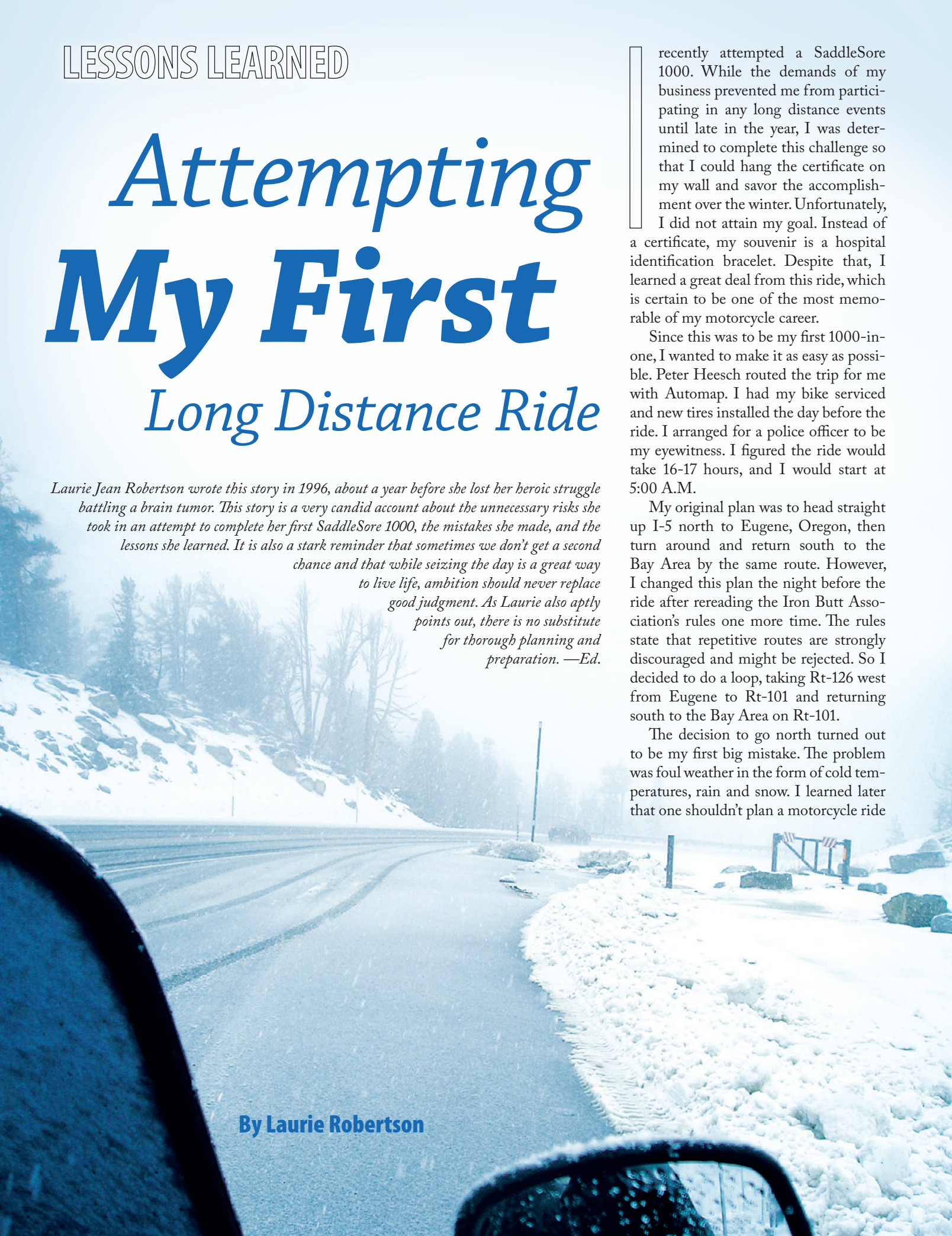
10. "Close Enough" Isn't: Don't expect the rallymaster to let it slide if you show up a minute after the checkpoint or finish line closes or to be granted credit for a bonus if you forgot some small detail clearly spelled out in the instructions.

11. Best Behavior: Nothing will make you unpopular with a rallymaster faster than whining, sniveling, arguing, or hassling the rally or hotel staff. Same goes for wild behavior like trashing hotel rooms or anything else that casts them and their event in a negative light.

12. Have Fun: *'Nuff said!*

Attempting My First Long Distance Ride

Laurie Jean Robertson wrote this story in 1996, about a year before she lost her heroic struggle battling a brain tumor. This story is a very candid account about the unnecessary risks she took in an attempt to complete her first SaddleSore 1000, the mistakes she made, and the lessons she learned. It is also a stark reminder that sometimes we don't get a second chance and that while seizing the day is a great way to live life, ambition should never replace good judgment. As Laurie also aptly points out, there is no substitute for thorough planning and preparation. —Ed.



By Laurie Robertson

I recently attempted a SaddleSore 1000. While the demands of my business prevented me from participating in any long distance events until late in the year, I was determined to complete this challenge so that I could hang the certificate on my wall and savor the accomplishment over the winter. Unfortunately, I did not attain my goal. Instead of a certificate, my souvenir is a hospital identification bracelet. Despite that, I learned a great deal from this ride, which is certain to be one of the most memorable of my motorcycle career.

Since this was to be my first 1000-in-one, I wanted to make it as easy as possible. Peter Heesch routed the trip for me with Automap. I had my bike serviced and new tires installed the day before the ride. I arranged for a police officer to be my eyewitness. I figured the ride would take 16-17 hours, and I would start at 5:00 A.M.

My original plan was to head straight up I-5 north to Eugene, Oregon, then turn around and return south to the Bay Area by the same route. However, I changed this plan the night before the ride after rereading the Iron Butt Association's rules one more time. The rules state that repetitive routes are strongly discouraged and might be rejected. So I decided to do a loop, taking Rt-126 west from Eugene to Rt-101 and returning south to the Bay Area on Rt-101.

The decision to go north turned out to be my first big mistake. The problem was foul weather in the form of cold temperatures, rain and snow. I learned later that one shouldn't plan a motorcycle ride

north into Oregon after mid-September because Oregon storms have a history of coming on very fast and fierce. I did not know this. I had done a few longer rides in foul weather and even managed to get through rain and snow returning from Death Valley in January with Joe Denton, Tom Childers, and others. But that was only a 500 mile ride. I realize now that 1000 miles in harsh, winter weather is another situation entirely.

I was only about 100 miles into the ride when it started to pour rain. The voice of reason in my brain said, "Stop now. Go back. You don't have to do this today." But determination prevailed. This was the day I picked to do my ride, and, darn it, I was going to do it. Besides, I had ridden in rain countless times before. "What's the big deal?" I thought.

Another problem was that I wasn't prepared for winter conditions. I always carry a rain suit and extra clothing, but I did not have as much clothing as I ordinarily wear for cold weather riding. And the weather worsened the farther I rode north. I had forgotten that there is a mountain between Yreka and Ashland, Oregon. It was snowing at that altitude and I could not see any part of the road. Not the side. Not the center line. Not the reflectors. Nothing. There was truly zero visibility. I could see only an occasional flare, signaling the aftermath of an accident. I assumed there was ice on the road. I, therefore, elected not to use my remaining traction reserve by braking on the descent. I was afraid to steer the bike to the side of the road because I could not see it.

The only thing I could do was reduce my engine speed. I was probably only doing 15mph in a 65mph zone. I prayed the vehicles behind me had also slowed down because without my brake light on, I didn't think they would see me. This was not fun. There I was, shrouded in fog, totally disoriented, and sitting like a duck waiting to be rear-ended by a big rig. But perseverance paid off and I managed to navigate this treacherous pass.

Even though I somehow made it over the mountan, I still did not want to abort my SaddleSore attempt. After all, I told myself, since I've made it this far, I'm committed. The bad weather had really slowed me down, so I didn't arrive in Eugene until 4 P.M. A gas station attendant counseled that my planned return route via routes 126 and 101 would be too slow and that I better just scurry home on I-5. But I did not want to risk a SaddleSore 1000 certificate by doing a repetitive route so I opted instead to double back on I-5 only to Grant's Pass, then take Rt.197 east to Crescent City, and then Rt. 101 south.

By this time, nausea had set in. I realized then that I hadn't had anything to eat or drink except for a glass of apple juice and a muffin at breakfast – 12 hours earlier. This was not by design. I had packed food in my tank bag. I simply was so focused on surviving the weather that I hadn't thought about eating. Ironically, calories were the very thing my body needed to defend me from the cold. As I was now nauseated, food was the last thing I wanted. But I still did not eat. That was dumb.

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The temperature was somewhere in the 40's and it was really wet. On the way to Grant's Pass, my legs began to cramp. I know what that means. Every safety article I read on the subject of hypothermia says that when cramping starts, you're supposed to get off the bike. Period. But I kept going.

By the time I got to Grant's Pass, I was really in bad shape. I realized that I better return home on I-5. If I was denied a SaddleSore certificate because of repetitive route, so be it. But I had to get home in one piece. The gas station attendant said, "You look like you are sick, it's probably snowing on the pass and you are on a motorcycle. Don't risk it." There was a motel and a restaurant right next to the gas station. I thought about stopping, knew I should stop, but decided not to. The station attendant just shook his head. I don't know what had gotten into me. I was determined.

I had an extra pair of long johns which I decided to put on before traversing the pass. They were in a saddlebag, which I could have removed from the bike and carried into the restroom. But instead I opened the saddlebag, removed the long johns and carried them inside. Of course, they were soaking wet by the time I got to the restroom, so I ended riding up the mountain without them. I can't believe how stupid that was.

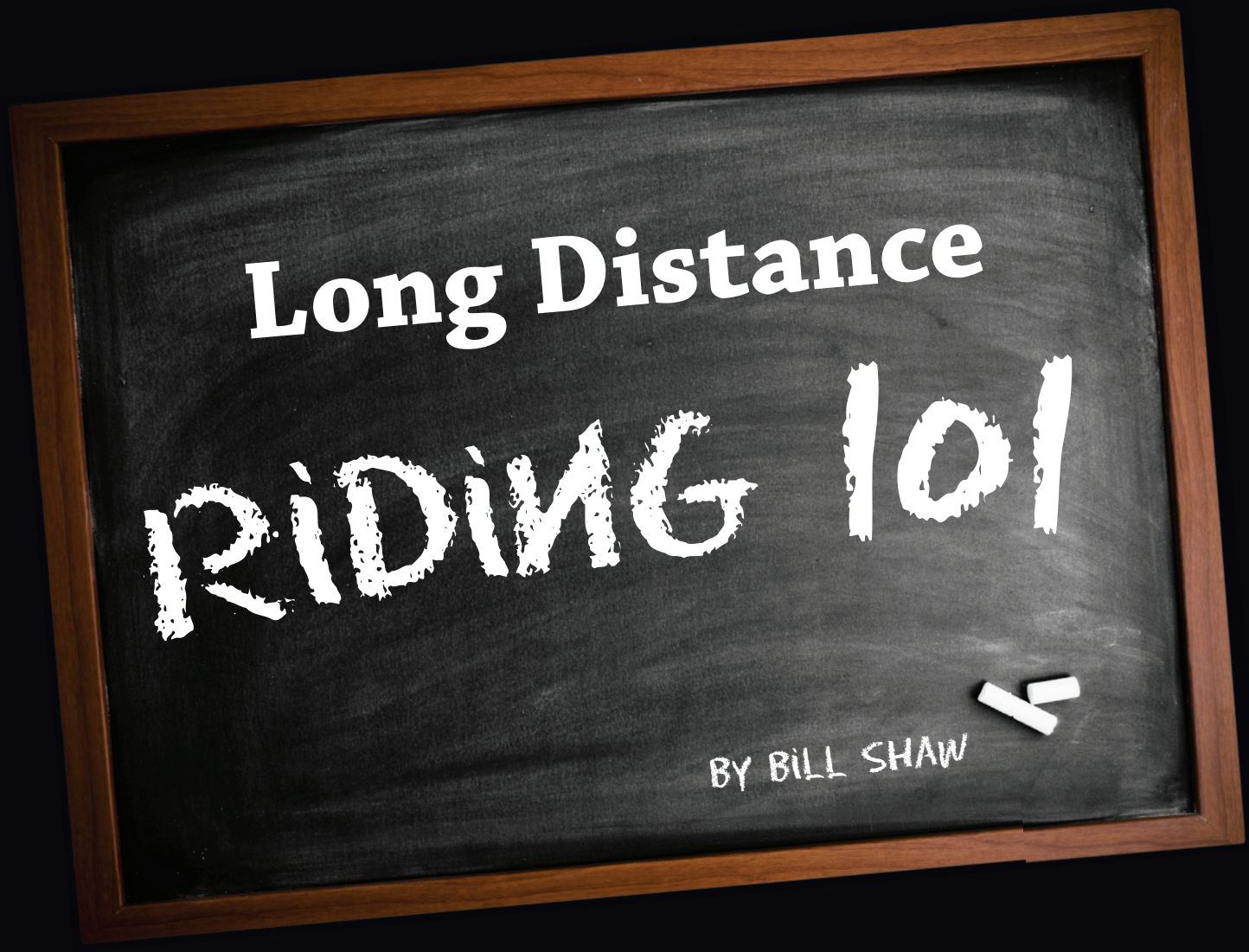
The farthest I got was Shasta Lake City, just north of Redding on I-5. At that point, I was unable to keep the bike in my lane of traffic. It was a 70 mile per hour zone, and I could only open the throttle enough to maintain 45. Finally, the voice in my head said, "Laurie, you are no longer able to operate your vehicle, you must get off the road immediately." I looked for the first neon motel sign. I was able to walk into the lobby but during registration, I collapsed on the floor. I never experienced this before, but my body simply shut down. The fire department personnel responded and the paramedics put an I.V. in my arm before I was taken in an ambulance to Redding Medical Center. The diagnosis was dehydration, malnourishment – I had not consumed any food in 17 hours – and hypothermia.

The bike's odometer reading at Shasta Lake City reflected that I had gone 855 miles, 145 short of the "1000-in-one."

I often reflect on this ride – judgment is something that is best evaluated in objective hindsight. This was the first time I reached the limits of my physical stamina. I usually stop when I get too cold, wet, or hungry. That is what the Motorcycle Safety Foundation and every other safety course teaches and it's what I intend to do going forward. But I was clouded by my desire to finish what I started and foolishly persisted until I dropped. I don't know at what point fortitude becomes careless behavior, but I reached it and know my reasons for not stopping sooner were wrong.

I love the appeal of long, challenging rides and plan to ride on many SaddleSores, Bun-Burners, etc. in the future. I realize that these challenges are best undertaken during the fair weather months, when daylight hours are longer. I also plan to never repeat the mistake of being so distracted that I don't keep myself fed and hydrated. On short rides one might be able to get away with that, but not on a 1000-in-one or longer ride.

Ride and learn.



There are as many reasons for long distance (LD) riding as there are riders. For some, it is a wanderlust that can be satisfied only by riding far or participating in an LD event, or contest. For others, it's the challenge of testing their physical and/or mental limits. And for those with a competitive edge, it's often about the thrill of the hunt and riding that elusive perfect route. And it all begins with...

KNOWING YOUR LIMITS

Seemingly ordinary people who persevere or excel in activities outside "normal" limits fascinate us all. It gives us hope that we can achieve the same goals. Motorcyclists who participate in extreme long distance events, for instance, are a good example. As interested enthusiasts, we are at once in awe of their accomplishments and energized, while also appreciating the many hardships they endure.

In addition to the financial, mental and physical challenges that every LD rider experiences at one time or another, we must also confront the risks inherent in this sport. Few would disagree that endurance riding is fundamentally more dangerous than "conventional" motorcycling if only because of the long hours spent in the saddle and the concomitant effects of fatigue.

Therefore, and in order to be successful, it's imperative that we know our own limitations and carefully choose an event that best matches our level of fitness and years of experience. It

usually takes years and tens of thousands of miles before even an experienced motorcyclist knows his or her boundaries. Patience is indeed a virtue and one of the more important requirements for a successful and safe LD career.

The importance of properly preparing for an upcoming LD ride or event cannot be overstated. As a matter of fact, the disciplined way most serious long distance riders approach this sport isn't that different from marathon runner's preparing for a race. Marathoners will methodically "pound out the miles" in order to prepare their bodies for a contest. Long distance riders, on the other hand, "rack up the miles" to get their bodies accustomed to being on the bike for hours, days or weeks on end. A motorcyclist who logs 10,000 miles a year is about as prepared to enter the Iron Butt Rally, for example, as a 10-mile-a-week jogger is to enter the Boston Marathon.

Few sports adherents are as safety-conscious as the LD riding community. Their principal mantra – "Never, Ever Ride Beyond Your Ability" – is continually reinforced on the IBA forum and web site, on Joe Denton's LDRider email list, and when talking to veteran riders who are also an invaluable resource. These experienced men and women are always happy to impart their expertise, tips and strategies to novice long distance riders. They know all too well the importance of safety as it relates to having a long and successful LD career. Even if you don't have the desire to join their elite ranks, it doesn't mean you can't emulate the work ethic of veteran riders in order to achieve your own goals.

THAT WHICH WE CALL A ROSE

All motorcyclists are a little unconventional and long distance riders are the most eccentric of all. This can be seen in how we prepare our bikes. Accessories, or "farkles" in LD parlance, are installed and selected for one purpose only: to make a trip as efficient, safe and comfortable as possible, with as few stops as possible. By most standards a fully adorned LD motorcycle doesn't have a refined appearance; it is a purpose-built and functional machine.

One of the most intriguing things about these bikes is how they've become the unique creations of their owners. This is most evident in how they are farkled. Some of the more popular accessories for long distance riders are GPS receivers, auxiliary lights, CB radio, intercom system, cell phone, satellite radio, MP3 player, calculator, clock/stop watch and radar detector, to name just a few. Which begs the question: Are they tools or toys? While opinions may vary, it can be reasoned that any device that reduces fatigue and keeps the rider alert, informed and moving, is a tool.

And the tool that seems always to garner the most attention is the one for carrying extra fuel. Taking advantage of an IBA rule that allows motorcyclists to carry up to 11.5 gallons of gas, many riders equip their bikes with an auxiliary fuel cell in order to extend their riding time between gas stops. The reason is clear – most LD riders don't like to stop for anything unless it's to bag a bonus. They especially dislike gas stops. So in an effort to minimize this necessary inconvenience, all the Big Dogs install either a larger gas tank or an auxiliary fuel cell. Being able to put your foot down only every 500 miles has many advantages, not the least of which is that it allows you to maintain a higher average speed – consistency is, after all, the key to performing well in long distance riding events.

While no one make, model or motorcycle manufacturer dominates the long distance motorcycle scene, BMW, Honda, Yamaha and Kawasaki seem to field the greatest number of participants. These bikes are selected as much for reliability as flexibility where consecutive 1,000-mile days may be anticipated. Most usually have an array of sophisticated electronics like those mentioned above, some form of wind protection, saddlebags and a topcase. It should also be noted that virtually every kind and size of motorcycle has finished an LD rally at one time or another, including a Honda Helix (250cc single cylinder) scooter that Ed Otto rode in the 1995 Iron Butt Rally.

Even after buying and farkling the bike to meet your needs, there are still entry fees, gas and toll expenses, maintenance costs, and associated living expenses when traveling. There's no denying that this is an expensive pastime – not everyone has the finances, flexibility or fortitude for long distance riding. In other words, it takes more than a Vespa, an understanding spouse, a couple weeks of vacation time, and access to a platinum credit card in order to successfully complete most LD challenges.

THE TIME - DISTANCE EQUATION

Another thing that separates LD riders from other motorcyclists is our self-imposed isolation. Because of our tendency to ride almost non-stop for hours and even days on end, long distance riding is a self-paced and solitary activity. In this respect, we tend to develop idiosyncrasies that can make it difficult for other motorcyclists to ride with us. Some of these peculiarities are sleeping at odd times and places (affectionately referred to as registering in the "Iron Butt Motel"), refueling every four or five hundred miles, and eating meals at 65mph.

There are many different kinds of LD events and activities to choose from; e.g., riding in a sanctioned "tour," or participating in an organized event such as a long distance rally. Some LD challenges are designed around time and distance, and some have goal-oriented objectives. Rides like the SaddleSore 1000 (riding 1000 miles in 24 hours or less), the Bun Burner (riding 1500 in 36 hours or less), and the 50CC (riding Coast to Coast in under

While BMW's Paralever-equipped motorcycles are very popular within the LD community, bikes with a more conventional chain final drive, like this fully farkled F650GS, also make exceptional long distance mounts.

Long Distance RIDING 101

50 hours) fall into the time-distance category.

Goal-oriented rides involve completing an objective that's usually, but not always, measured in days, not hours. The IBA's National Parks Tour (visiting at least 50 national parks, monuments, etc in at least 25 states within one year) and the Southern California Motorcycle Association's Four Corners Tour (riding to the farthest four corners of the lower 48 states in 21 days) are two of the more popular "touring" events. Long distance rallies also fall into this category even though most are 24-, 36- or 48-hours long.

It should be noted that LD riding is not about covering the most miles in the least amount of time, as some critics suggest. The record simply does not support this criticism. Iron Butt Rally (IBR) winners Bob Hall, Paul Taylor and Marty Leir, for example, did not finish with the highest mileage. This fact notwithstanding, there will always be an element of danger in an activity where time limits and stamina are inexorably linked. Consequently, uninformed skeptics should not exaggerate the risks, just as overeager supporters should not minimize them.

FINIS FINALLY

There's no denying that long distance riding – like caviar or Spam – is an acquired taste. This might explain why the appeal of these challenges is lost on most motorcyclists, if they are even aware of LD riding at all. But for the enlightened few, overcoming familial, time and financial constraints is worth the effort. Regardless if it's a 50CC, 21-day challenge, or yearlong quest, there's no denying that this is the most fun you can have on a motorcycle.

What was once an obscure organization, the IBA now boasts over 45,000 members and supports LD rallies, events and challenges all over the world every year. And like many "fringe" activities, LD events are becoming more acceptable and are slowly gaining respect. The Four Corners Tour, for example, is now one of the rides specifically listed in the American Motorcyclist Association's Dunlop Elite Touring Series.

So, will long distance riding ever become as mainstream and popular as other more conventional endurance sports like running, triathlons, or mountain climbing? Probably not. But as unconventional nonconformists who enjoy riding around the country and participating in long distance challenges without any fanfare, most of us think that's a good thing.

LD*Aphorisms*...

"Weather is what happens outside the fairing."
—Jon Diaz, April 1996, Branson, MO.

"It's all life-time miles."
Bob Higdon's response in August 2006 when asked what he thought about riding on I-95 10-12 times a year.

"Iron Butt Rally: 11,000 miles, $11,000."
—Suggested by John Ryan following his successful IBR finish in 2005.

"The more lights you have on your bike, the more deer you see."
—Jim Winterer, February 2007

"Risk analysis 101 — the closer you get to your goal the more conservative you should ride in order to maximize the odds of obtaining your goal."
—Jim Puckett, June 2009

Pre-Ride Equipment CHECKLIST

PRESENTED BY

Iron Butt Association®

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1.0 Mandatory Rally Items
- ❑ Tire Repair Kit
- ❑ Tool Kit
- ❑ First Aid Kit
- ❑ Map Case
- ❑ Timer (Dual or Countdown)
- ❑ Zip Lock Waterproof Document Bags
- ❑ Notebook for Rally Instructions
- ❑ Paper Maps (AAA, State, ect)
- ❑ Alarm Clock - Screaming Meanie
- ❑ Mini-Bungie Cords (for Rally Towel)
- ❑ Administrative Supplies
- ❑ Flashlight #1
- ❑ Digital Camera (with Memory for 100 Images at 640 x 480 Resolution)

2.0 Administrative Supplies
- ❑ Stapler & Extra Staples
- ❑ Clear Document Protector Sheets
- ❑ 3X5 Index Cards
- ❑ Tape Measurer
- ❑ Zip Lock Receipt Bag
- ❑ Zip Lock Map Case (Small, Med, Large)
- ❑ Green/Orange 3M Stickers
- ❑ Scotch Tape
- ❑ Markers (Yellow/Orange Highlighters)
- ❑ Indelible Marker
- ❑ Pencil Eraser
- ❑ Pencils
- ❑ Pens
- ❑ Grease Pencil
- ❑ Spring Clips (Medium & Small)
- ❑ Clipboard
- ❑ Calculator
- ❑ Notebook/Binder (for Rally Instructions)

3.0 Vital Documents
- ❑ Drivers License
- ❑ Insurance Card & Policy with VIN #
- ❑ Canadian Insurance Paper
- ❑ Vehicle Registration Card
- ❑ Military ID Card
- ❑ AAA Card
- ❑ MC Club Card
- ❑ Gas Credit Card
- ❑ Bank Credit Card
- ❑ ATM Card
- ❑ Telephone Calling
- ❑ Medical Insurance Card
- ❑ Cash
- ❑ Owner's Manual
- ❑ Emergency Information Card #1
- ❑ Emergency Contact (*Anonymous* Book)
- ❑ Dealer Location Reference
- ❑ Passport
- ❑ Towing & Service Information

4.0 Motorcycle Apparel
- ❑ Helmet
- ❑ Ear Plugs
- ❑ Gloves
- ❑ Reflective Vest
- ❑ Electric Vest
- ❑ Motorcycle Boots
- ❑ Emergency Data Card (Jacket Pocket)
- ❑ Riding Suit (Jacket/Pants)
- ❑ Helmet Liner Cap/Sliks
- ❑ Underwear/garments (Synthetic)
- ❑ Socks (Synthetic)

4.1 Street Clothing
- ❑ Sandals/Sneakers
- ❑ Jacket
- ❑ Pants/Jeans
- ❑ Shorts
- ❑ Socks
- ❑ Shirts
- ❑ Scarf/Bandana
- ❑ Cap (Baseball)
- ❑ Watch
- ❑ Underwear
- ❑ Belt

4.2 Cold Weather Gear
- ❑ Belacava
- ❑ Winter (Insulated) MC Jacket
- ❑ Winter Overpants
- ❑ Electric Vest/Jacket Liner
- ❑ Electric Pants/Socks
- ❑ Gloves (Insulated/Electric)
- ❑ Helmet Breathguard
- ❑ Polar Fleece Jacket/Liner
- ❑ Synthetic Undergarments/Socks
- ❑ Synthetic Glove Liners
- ❑ Anti-Fog Faceshield

4.3 Hot Weather Gear
- ❑ Hydration H2O System
- ❑ Spare Drinking Tube & Mouthpiece
- ❑ Tinted Faceshield
- ❑ Gloves (Vented/Summer)
- ❑ Vest (Kool/Marsee)
- ❑ Scarf (Kool, Hot Weather)
- ❑ Helmet Liner (Sliks)

4.4 Rain Gear
- ❑ Rain Suit (Jacket & Pants)
- ❑ Rain Boots (Rubber Overshoe)
- ❑ Rain Gloves (Nylon/Rubber Over Mitts)
- ❑ Vest (Black/Yellow Safety Reflective)

5.0 Tank Bag
- ❑ Cleaner for Helmet Shield
- ❑ Windshield Cleaner in Pump Bottle
- ❑ Micro Fiber Towel
- ❑ Map Flap for Tank Bag
- ❑ Tank Bag Lock
- ❑ Extra Ear Plugs
- ❑ Zip-Lock Bags
- ❑ Coin Holder (Zip Lock Bag for Bills)
- ❑ SpeedPass
- ❑ Emergency Contact Info Card
- ❑ Eye Drops
- ❑ Lip Balm/Chap Stick
- ❑ Sunglasses
- ❑ Mini-Mag Light
- ❑ Swiss Army Knife w/Case
- ❑ Sunscreen
- ❑ Tire Air Pressure Guage
- ❑ Cell Phone
- ❑ Pen and Paper (or 3X5 Cards)
- ❑ Spare Reading Glasses
- ❑ Multipurpose Tool (Leatherman)

6.0 Safety Items
- ❑ First Aid Kit
- ❑ Flares (Electronic or Road)
- ❑ Fire Extinguisher
- ❑ Space Blanket
- ❑ Tool Kit
- ❑ Ear Plugs
- ❑ 2 Qts of H2O
- ❑ Tire Repair Kit
- ❑ Personal Locator Beacon
- ❑ Cell Phone/Satellite Phone
- ❑ Jumper Cables

6.1 Security Items
- ❑ Disc Lock (w/ Red Warning Flag)
- ❑ Helmet Cable Lock
- ❑ Kryptonite Cable
- ❑ Pad Locks
- ❑ Helmet Bag
- ❑ Sidestand Plate/Foot

7.0 Miscellaneous Items
- ❑ Motorcycle Rain Cover
- ❑ Handlebar Tie Down Straps
- ❑ MC Tie Down Straps
- ❑ Maintenance Manual (Haynes,Clymer)
- ❑ Saddle Cover (for Leather Seats)

8.0 Cleaning Supplies
- ❑ Windshield Cleaner (Plexus)
- ❑ Hand Cleaner
- ❑ Eye Glass Lens Cleaner
- ❑ Bug Remover Cleaner Fluid
- ❑ MC Spray Polish (Honda, S100, etc)
- ❑ Rag Towel
- ❑ Micro Fiber Towel

9.0 Camping Items
- ❑ Alarm Clock - Screaming Meanie
- ❑ Portable Stove (and fuel)
- ❑ Camping Chair

Pre-Ride Equipment CHECKLIST ✓

- ❑ Thermarest Mattress
- ❑ Ground Cloth
- ❑ Tent
- ❑ Sleeping Bag
- ❑ Sleeping Bag Liner
- ❑ Tarp
- ❑ Nylon Rope
- ❑ Towel/Wash Cloth
- ❑ Parachute Cord
- ❑ Lantern
- ❑ Toilet Paper
- ❑ Garden Trash Bags

◯ 10.0 Tool Bag

- ❑ Tool Kit (OEM)
- ❑ 3/8" Sockets (8,10,11,12,14,17,19 mm)
- ❑ Wrenches (8,10,12,13, 14,15,17,19 mm)
- ❑ Adjustable Wrench
- ❑ Special Allen Tools (for helmet, CB, etc)
- ❑ 3/8" Ratchet Drive w/Extension & Tips
- ❑ Needle Nose Pliers
- ❑ Vice Grips
- ❑ Mini Magnetic Pick-up
- ❑ Electrical Wire
- ❑ Crimp Connectors
- ❑ BIC Butane Lighter
- ❑ 3/8 Torx (T20, 25, 27, 30, 40, 45, 50, 55)
- ❑ Wire Cutters
- ❑ Digital Volt Meter
- ❑ Surgical (Latex) Gloves
- ❑ Tire Irons (3)
- ❑ Chain Break
- ❑ Feeler Guage
- ❑ Spark Plug Tool
- ❑ Oil Filter Wrench
- ❑ Shock Adjustment Tool
- ❑ Knife (4" Locking & Folding)
- ❑ Allen Wrenches (4, 5, 6, 7, 8, 10 mm)
- ❑ Screwdrivers (Philips, Flat, Reversible)
- ❑ Flashlight #2
- ❑ Small Hammer

◯ 10.1 Spare Parts

- ❑ Spare Keys for MC,Top Case, Bags, etc
- ❑ Headlight Bulb
- ❑ Tail Light Bulbs
- ❑ PIAA/Motolight/Hella Bulbs
- ❑ Assorted Fasteners
- ❑ Aux Cell Fuel Filter
- ❑ Gas Tank Fuel Filter
- ❑ Clutch & Brake Cables
- ❑ Brake Handle
- ❑ Clutch Handle
- ❑ Lens for Aux Lights
- ❑ Velcro
- ❑ Fuses
- ❑ Valve Caps for Tires
- ❑ Wide Duct Tape
- ❑ Narrow Duct
- ❑ Black Electrical Tape
- ❑ Oil - 1 qt
- ❑ Hose (Fuel Line Siphon)
- ❑ Tire Sealant (Ride-On, Slime, etc)
- ❑ 12-Volt Air Compressor
- ❑ Tire Repair Plugs & CO2 Cartridges
- ❑ Spare Parts for Aux Fuel Cell
- ❑ Zip Tie Wraps (Long & Short)
- ❑ Grease (Dielectric)
- ❑ Lock Nut Sealer (Loctite)
- ❑ Batteries (AA, AAA, 9 Volts, etc)
- ❑ Superglue
- ❑ J-B Weld or Devcon Epoxy
- ❑ Chain & Master Link
- ❑ Spark Plugs
- ❑ Inner Tube & Patches
- ❑ Alternator Belt
- ❑ WD-40
- ❑ Fuel Hose Clamps
- ❑ Safety Wire
- ❑ RTV Clear Silicone Sealer

◯ 12.0 Toiletry Kit

- ❑ Q-Tips
- ❑ Razor
- ❑ Soap
- ❑ Wash Cloth
- ❑ Shaving Cream
- ❑ Toothbrush
- ❑ Toothpaste
- ❑ Mouth Wash
- ❑ Q-Tips
- ❑ Deodorant
- ❑ Shampoo
- ❑ Tweezers
- ❑ Fingernail Clippers
- ❑ Jock Spray
- ❑ Jock Cream
- ❑ Baby Powder
- ❑ Nose Breather Tape
- ❑ Dental Pick
- ❑ Dental Floss
- ❑ Compress Bandage
- ❑ Band Aids
- ❑ Eye Drops
- ❑ Hand Lotion
- ❑ Brush/Comb
- ❑ Contact Lens Solution
- ❑ Mirror
- ❑ Eye Glass Repair Kit
- ❑ Feminine Products, Makeup, Etc

◯ 12.1 Medicine

- ❑ Vitamins
- ❑ Asperin
- ❑ Prescription Meds
- ❑ Throat Lozenges
- ❑ Antihistamine or Allergy Medicine
- ❑ Sinus Medication
- ❑ Immodium AD
- ❑ Pepto-Bismol
- ❑ Antacids (Tums, Rolaids)
- ❑ Antibiotic Cream (Neosporin)
- ❑ Ibuprofin (Motrin/Alieve)
- ❑ Cold Tabs

◯ 13.0 Electronic Equipment

- ❑ GPS(s)
- ❑ CB Radio
- ❑ PC Laptop
- ❑ Cell Phone
- ❑ Satellite Radio
- ❑ MP3 Player
- ❑ Radar Detector
- ❑ Digital Camera
- ❑ Mini-Tape Recorder
- ❑ PDA
- ❑ Tracking System (Star Tracker)
- ❑ FRS Radio

◯ 13.1 Elect Supplies

- ❑ PC Padded Case & AC Power Cables
- ❑ USB Interface Cable for GPS
- ❑ PC 12-Volt Power Adapter
- ❑ Mapping Software for PC
- ❑ 110V Charger for Phone/PDA
- ❑ 12V Converter/Adapter for Phone/PDA
- ❑ Memory Stick
- ❑ Camera AC Power Cable
- ❑ USB Interface Cable for Digital Camera
- ❑ Memory Card for Digital Camera
- ❑ Cig Plug Adapter (110V Converter)
- ❑ CD Player w/ CDs
- ❑ MP3 Player & Power Cord
- ❑ Cig Plug Converter to Regular Plug

◯ 14.0 Other/Misc Equipment

- ❑ _____
- ❑ _____
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◯ 15.0 Reminders

- ❑ Notify Credit Card Company(s)
- ❑ Pay Bills In Advance (Insurance Co)
- ❑ Make Arrangements for Pet(s)
- ❑ Turn Off Water/Gas
- ❑ Get Cash For Trip
- ❑ Notify Security Company
- ❑ Notify Relatives
- ❑ Notify (Trusted) Neighbor
- ❑ Stop Newspaper
- ❑ Stop Mail
- ❑ Check Bike's Tire Pressure
- ❑ Check Critical Fluids (Oils, Coolant, etc)
- ❑ Charge Battery
- ❑ Lube Chain
- ❑ Check Overall Condition

29 Tips & Techniques

from IBR veterans

1. Know your limits and plan your trip around them.
2. Forget about high speeds.
3. Leave your drugs and coffee supply at home.
4. Prepare your motorcycle before the trip.
5. Avoid adding accessories or doing maintenance immediately before a trip.
6. Use an electric vest.
7. Pack wisely; keep personal supplies handy.
8. Be ready before you leave, don't waste time shopping on the road.
9. Learn how to avoid boredom.
10. Join a towing service!
11. Learn to Stop to go Faster.
12. Know when to stop!
13. Maintain a good mental attitude.
14. Eat healthful foods.
15. Eat at the right times of the day.
16. Separate gas stops from food stops.
17. Get gas before you need it.
18. Put on your rain suit before it rains!
19. Carry a flat repair kit and know how to use it!
20. Carry a Cellular phone.
21. Upgrade your tool kit.
22. Carry at least one-half gallon of water.
23. Carry aspirin for aches and pains.
24. Pack a variety of vitamins.
25. If you own a computer, consider purchasing a mapping program.
26. When riding back roads, be extra cautious when crossing county lines!
27. Never ride faster than you can stop!
28. Do you want to live? Stay away from trucks!
29. Eliminate all distractions/irritants.

BILL SHAW

Many newcomers to long distance riding believe an auxiliary fuel cell is the most essential LD farkle, but that's not necessarily the case. We can argue that lighting enhancement is more important. The overriding reason behind this premise is safety. After all, if you cannot see that deer in the road early enough to avoid it, it really doesn't matter how much fuel you carry on your bike.

Long distance motorcycle riders spend a lot of time riding at night. Therefore, improving our night vision is important and this is best accomplished by increasing light output. We will examine three strategies for enhancing the light output of your motorcycle: upgrading factory headlights, adding auxiliary lights, and installing HID light systems.

Auxiliary LIGHT Systems

By Dale "Warchild" Wilson, *IBA Chief Technical Inspector*

Upgrading Factory (Stock) Headlights

Until recently, motorcycle headlight design and output has proven to be sub-optimal for serious nighttime riding. However, modern-day motorcycle light systems have come a very long way in recent years. The highly developed reflector housings of machines such as the Suzuki DL1000, Honda ST1300 and Yamaha FJR1300 are amazing. Another bike, the Honda Gold Wing GL1800, has even set the de facto standard for exceptional factory lighting: four 55w H7 bulbs that put a tremendous amount of lumens on the road.

Older machines don't have these advanced light housings. So the first and most economical option is to replace the standard H4 bulb with a high-quality equivalent. The PIAA Xtreme White series, the Sylvania (Osram) Silver Star series, and Philips Vision Plus series, are all outstanding bulbs. However, one bulb has proven to be exceptional – the Philips X-Treme Power H4. This is about as good as it gets for halogen technology in a standard 60w/55w configuration.

An alternate upgrade option is to install a bulb of higher wattage. Special care must be used here to ensure that the bike's electrical system can handle sustained use of these bulbs, and perhaps just as important, to ensure that the lamp housing can handle the increased amount of heat generated by the higher wattage. Current generation sport-touring/touring motorcycles can generally handle these bulbs if all connections are free from corrosion.

If the bulb wattage you are considering is significantly higher than stock, experience dictates that the entire wiring harness should be upgraded as well and the circuit appropriately fused and relayed. An example of a bulb fitting this category would be the Philips Rally H4 90/100W bulb. Again, you must be careful to prevent heat damage to late-model plastic lenses. Older motorcycles with glass lenses are a better application for the higher-wattage bulb.

Auxiliary Light Systems

Adding auxiliary lights is another step to improving night riding. There are several issues to consider: the type of the lights to use, where they should be mounted, and how best to route the wires.

Which Lamp to Use? The vast majority of long distance riding veterans favors a high intensity discharge (HID) auxiliary lamp. There are many designs and brands on the market, so it pays to shop around. There are a few adequate quality HID auxiliary lamps of Chinese design, but problems with inconsistency in qual-

ity control have been reported in a few of these kits. Also, significant anecdotal evidence suggests that Chinese-made ballasts are not as energy efficient as true HID systems from Hella, PIAA, and other more familiar companies. Typically, a Hella HID lamp kit will consume ~35 watts for the HID bulb and ~7 watts for the ballast once it is up to normal operating temperature. A two-lamp HID auxiliary light setup that offers hugely superior light output and saves 26 watts over a typical twin 55w halogen equivalent setup is a major boon for motorcycles with modest electrical systems such as the Suzuki DL1000 or older Honda ST1100s.

For those who want additional lighting in the smallest package possible, the Hella Micro DE HID auxiliary lamps are unequaled. These are the best you can find when it comes to serious lighting in a very small package. These lamps are an unobtrusive 2-5/8" high x 2-7/8" wide x 5-1/2" deep. The principle of the DE (triple-axle ellipsoid) light technology is similar to that used in a slide projector. An ellipsoid as a reflector directs the light to a focusing lens that bundles it and projects it onto the road. A shield positioned between the reflector and the lens provides the prescribed cutoff. Also, the body of the Hella Micro DE lamp is fabricated from cast magnesium, making it durable and extremely light.

A world about FF (free-form or free-surface) light technology is in order. FF is the result of the reflector surface and bulb position being optimized by high-performance computers with a correspondingly high light output. FF light technology allows the reflector's surface to be calculated point by point to illuminate certain areas of the road. The two finest HID auxiliary lamp systems on the market today that utilize FF reflector technology are the Hella FF200 kit, and the PIAA 600 HID Driving Lamp. The only drawbacks to these two systems are the relatively large six-inch diameter of the lenses, which may cause mounting difficulties, greater wind drag and greater exposure to impact damage.

Mounting the Lights. The best position for driving lights is as high as possible to the eye level of the rider and as far forward as practical. This position provides the best use of light and increases discernible contrast. For many motorcycles, the mirror bracket area offers the most useful mounting position. This location will often place the lights to the inside of the mirrors, slightly higher than the mirrors themselves and out of harm's way. On some bikes, this location means hanging the lamps below the mirror stalks, roughly equal to or slightly above the stock headlamps. Placing the lights forward eliminates reflections caused by the light striking reflective motorcycle parts.

For Gold Wings, there is a bracket designed to mount the auxiliary lights just above the mirrors, thereby allowing a light to cast its beam far down the road. Light brackets for the BMW K1200LT, Yamaha FJR1300 and many other bikes are commercially available.

We have seen many creative mounts that are home-fabricated, some from steel, but the majority from aluminum. Aluminum is easily formed and when powder coated looks good, too. Some excellent aluminum castings are also available. The main reason for using stout bracketing materials is, of course, to provide a rigid platform in order to eliminate flexing while underway.

Above: ***Popular among adventure touring riders, these PIAA 510 Super White driving lights help the rather anemic stock BMW R1200GS headlight, but still aren't nearly as powerful as most HID systems.***

Left: ***These Hella Micro DE HID Driving Lamps are mounted on a 2008 Suzuki Hayabusa and put out an extraordinary amount of light for their size.***

Wiring and Looming. This is a priority item. Regardless of the expense and labor of installing and mounting the lights, wiring and looming will determine how effectively everything else works. As a general rule, all connections should be soldered. However, modern "environmental" crimp connectors, when used with a proper, *professional* crimping tool can provide a reliable and solid connection. Soldering is still considered to be the preferred method by most perfectionists.

Routing wires out of harm's way may take extra time, but it pays significant dividends. Avoid any area that may pinch wiring between two points such as the frame and the fuel tank. All wires should be loomed; nothing betrays an amateurish job quicker than exposed wires. Also, heat shrink tubing provides a sanitary method of looming wires. When properly routed and tie wrapped, the loom should not be obvious or exposed to the exterior of the motorcycle.

HID Light Systems

HID light systems have become increasingly popular among the long distance riding community within the last few years for good reason. The ability of HID lighting to cast light far down the road and to the sides is unequalled by any modern halogen lamp system. The HID bulb uses an arc of light similar to high intensity stadium lighting. Unlike stadium lights, however, this new lighting system uses extremely high voltage (18-25 thousand volts) to initiate the arc so that minimal warm up time is required. Obviously, this power comes at a price. Until recently, HID light systems were very expensive. While they are still not cheap, HID technology has advanced significantly, which has helped reduce its price considerably.

HID Facts and Benefits: HID bulbs do not use a filament like a halogen bulb, but rather they create light by zapping an arc between two electrodes. This arc excites xenon gases, igniting metallic salts. The product of this reaction is intense white light. True HID technology has power consumption of approximately two-thirds the electrical draw of a standard halogen light bulb. HID bulb life is, on average, 3000 hours compared to the halogen's 750-hour life and is not affected by vibrations or rough road conditions.

The Kelvin "color temperature" has a huge impact on the lamp's overall effectiveness too. "Kelvin" is a unit of measurement used to describe the hue of a specific light source. This is not necessarily related to the heat output of the light source but rather the color of the light output.

The very best color temperature for the human eye (and one that most closely mimics natural sunlight) is 4300K. 5000K is also an acceptable color temperature. 6000K bulbs tend to display a noticeable blue hue and actually put out a lower amount of useful lumens on the road surface. Many Pacific Rim knock-off HID systems push the 6000K color temperature and should be avoided by riders who are serious about obtaining the best night vision possible.

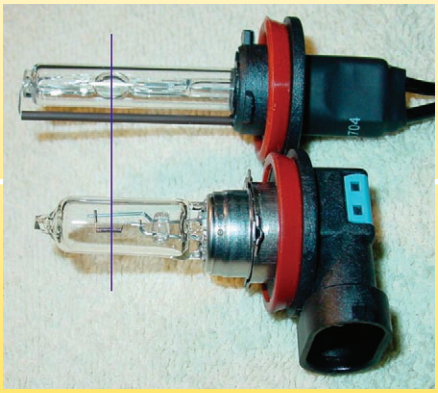
Bulb temperature ratings above 6000K are not serious HID systems for the long distance rider, and often attract uninvited attention from local Gendarmes and subsequent roadside discussions. It's best to search for an HID system less than 5000K, and ideally, one with the 4300K color temperature rating.

There are two factors that are critical to proper HID utilization: focal point and aiming.

Focal Point: When we say focal point we are referring to the exact horizontal/vertical positioning of the bulb filament (part of the bulb where the arcing occurs) as it resides in the reflector housing. It is *critical* that the HID bulb filament be in the same *exact* position as that of the stock factory bulb filament. Failure to achieve the proper focal point results in a significant decrease in light output performance. Most of the better HID aftermarket kits either have adapter rings to achieve proper focal point position or else the base of the HID bulb has been modified to replicate the base of the stock motorcycle bulb (H4, H7, H3, etc).

Aiming: HID lighting is extremely strong. Proper headlight aiming takes on a whole new meaning when you're talking about HID lighting. It is absolutely essential that your headlights be aimed correctly. On small, two-lane country roads improperly aimed HID headlights can be extremely hazardous to oncoming vehicles. Motorcycles, such at the Honda ST1100/ST1300 series, that enable on-the-fly headlight adjustment from the cockpit, can mitigate this problem by allowing fine-tuning of the headlight aim as conditions and bike loading dictate.

Experience has shown that in the case of HID lighting, you can *lower* the aim of



This photo illustrates where the focal point of the H9-based HID capsule (top) is with respect to the focal point of a halogen H0 bulb (bottom). The (vertical) navy blue line shows that the two focal points are identical.

FJR1300 Low-Beam Comparison: Stock halogen on top, 4300K HID on bottom — identical beamcast, but the HID offers far superior lighting.

Left: ***For most motorcycles, the best mounting position for HID lights is the mirror bracket. Note how the wire harness is cleanly routed through the Yamaha FJR1300's dash panel via a rubber grommet.***

a headlamp slightly from factory settings and still realize massive improvements over halogen systems while at the same time eliminating potential problems for oncoming traffic.

The New Standard: 4GHID Driving Lamps. Throughout the 90's and the early part of this decade, the PIAA 910 halogen lamp was the main aux lighting used within the Long Distance Riding community. In late 2003, a set of lamps universally known as "PHIDs" (Philips HID) lamps was introduced. These lamps are a quantum leap in improvement over the PIAA 910s and they quickly became the dominant standard for LD riders, even replacing some other established systems like the Hella FF200 HIDs lamps and the Hella Micro DE lamps.

But there is a new HID system emerging that is quickly taking off which we believe will soon become the standard within the long distance riding community – the 4GHID Driving Lamps marketed by Futurevisionhid.com.

What makes the 4GHID lamp so outstanding for long distance riding is its size and performance. It has a larger reflector housing than the PHIDs (~ 4"), but not the massive dinner-plate-size housing and associated wind-drag of the Hella and PIAAs. The igniter is built into the rear of the lamp and has a separate ballast to keep the lamp weight down.

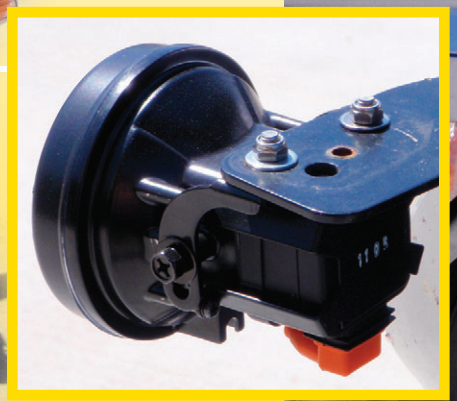
This lamp has a serious downrange punch simply because of its superior reflector housing design. The 4GHID lamp throws out a perfect cone-shaped pencil beam, yet also has a second outer cone of light that affords excellent peripheral coverage. The color temperature of these HID capsules is rated at an ideal 4300K.

The other significant advantage of the 4GHID lamps over the competition is the exquisitely small fourth-generation slim ballasts from Philips – less than ½" tall, and approximately 3 ½" wide.

These new small ballasts make installation easier when compared to the bulky older ballasts. This is a especially a benefit to those motorcyclists who don't have a lot of room on the front of their bike.

Social Responsibility:

We need to emphasize that it is the responsibility of every motorcycle rider who uses these powerful light systems to do so in a reasonable and prudent manner. Irresponsible use of any auxiliary light can be dangerous and illegal. Lighting laws vary from state to state. Please be aware of your responsibility when you use these powerful lighting systems.



"4GHID" Driving Lamps marketed by Futurevisionhid.com.

FATIGUE *and* Motorcycle Touring

By Don Arthur, M.D.

You cannot overcome fatigue. You must learn to recognize it and take effective action — *Rest!*
No ride is worth your life!

As the sun sets and the miles pass, fatigue becomes our shadow but never our friend. The pleasures of a riding vacation can melt into frustration if a rider pushes the day's miles beyond his or her abilities. This article discusses the elements of fatigue, how to recognize its subtle signs, and how to ride more safely.

Sleep

Our brains are complex organs that fatigue during waking hours, accumulating a physiologic debt that is repaid only by sleeping. During sleep, the chemical balance is restored in those areas of the brain which are required for conscious activity. This cycle is normal and immutable. The exact mechanism has been extensively studied and is so complex that, for all practical purposes, it could be called 'magic.'

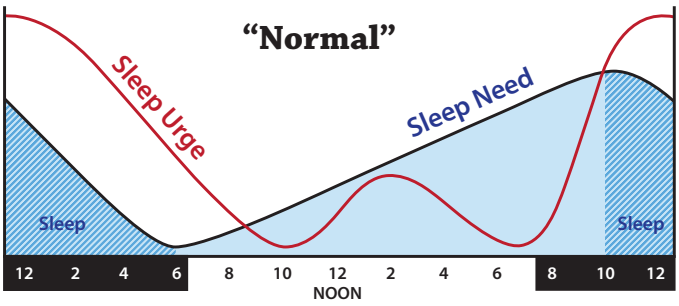
Each individual requires a specific, genetically set, amount of sleep. Most people require about 8 hours of sleep but the 'normal' range is somewhere between 6 and 10 hours. Einstein required 10 hours of sleep each night. Sleeping 2 hours less than required significantly decreases one's performance and alertness. These affects are cumulative – sleeping less each night eventually results in a sleep 'debt' which must be repaid to return the brain to baseline function. The good news is that the debt does not have to be paid in full hour-for-hour but it must eventually be paid by obtaining deep sleep, not multiple short naps. Unfortunately, one cannot 'bank' sleep – accumulate sleep in anticipation of the need.

Circadian Rhythm

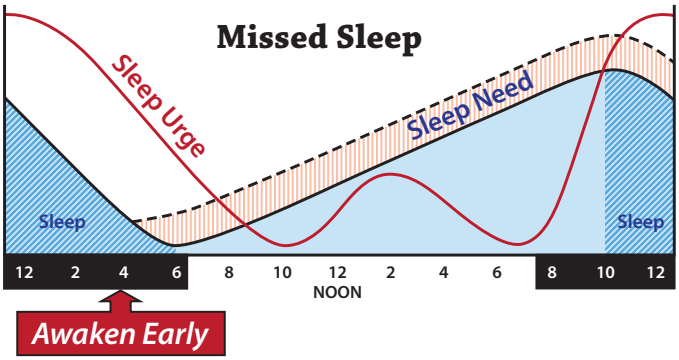
Our internal physiologic clocks regulate all of our body's automatic functions – including the sleep-wakefulness cycle. Each person is programmed with his or her own requirements and cycle times. This internal clock tries to keep us on a 'normal' 24 hour sleep rhythm and is synchronized to light (day) and dark (night) cycles.

Traveling through different time zones shifts the clock forward or backward, temporarily disrupting the normal circadian

FATIGUE *and* Motorcycle Touring



Normal circadian sleep rhythm. Sleep urge is greatest at night with a small increase at mid day. Sleep need increases throughout the waking hours and is replenished during sleep.



Missing sleep by awakening earlier than normal will result in an increased sleep burden above normal levels, requiring increased sleep to eventually repay the additional sleep debt.

rhythm. In general, accommodation takes one day for every time zone traversed.

Light deprivation at night has two effects. Our body's sleep center interprets darkness as a signal to initiate sleep. Compounding this circadian signal, the lack of stimulation and visual cues at night deprive the brain of the activity which would help maintain alertness. Without the higher level of stimulation offered during daylight hours, our brains more easily slip into the sleeping mode. Increasing external stimulation may help extend wakefulness by temporarily overcoming the circadian preference to induce sleep. Studies have shown that physical fitness also seems to allow individuals to tolerate circadian rhythm shifts better.

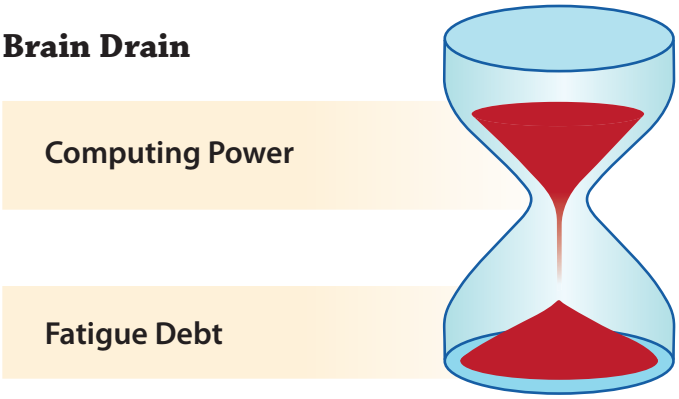
Researchers have also documented a Drone Effect which describes individuals who become momentarily functionally incapacitated, also known as "microsleeps." These periods manifest as a few seconds of open-eyed sleep, paralysis, blurred vision, or other effects of which the victim might be unaware except for a vague feeling of having missed something – parts of a conversation or a section of highway. Traveling at 70mph (113kph), a rider covers 103 feet (31 meters) per second – that's the length of a soccer (football) field in just 3 seconds.

Microsleeps may occur during periods of otherwise normal and highly functional activity, causing unexplained variable and unpredictable performance.

Fatigue Effects

Our brains are marvelous computers but they grow weary of constant activity and must be refreshed. Much like an hourglass, our mental processing power slowly ebbs as the fatigue debt increases. The transition affects all performance functions and occurs in such an insidious, gradual manner that we are not usually aware of the decrement. This is especially true if we are engaged in a high skill or high tempo activity where the activity distracts attention from the growing fatigue debt.

Brain Drain



Although responses to fatigue are individual, there are three common factors that seem to predicate one's functional decrement: (1) task skill level, (2) level of training, and (3) inherent biological factors. The more practiced and proficient one becomes in a given task and the more complex the task, the greater is the resistance to fatigue. Likewise, greater levels of training and experience seem to have protective effects. We cannot control genetically imprinted biological functions but we can certainly affect skill and training levels. In general, less experienced riders are at greater risk than those who have built up their experience level, giving more credence to the wisdom of slowly building one's riding limits.

Sleepiness. While it might seem obvious that sleepiness would result from fatigue, we must keep in mind that our brains interpret fatigue as a signal to sleep. The greater the fatigue, the stronger will be the sleep center's inducement to sleep. This may trigger sleep even when unintended – and unanticipated. Microsleeps are one manifestation of the body's drive to obtain the rest needed to reverse the effects of fatigue. Microsleeps may occur during periods of otherwise normal and highly functional activity, causing unexplained variable and unpredictable performance. Concentration failures can occur during periods of activity which appear otherwise normal.

Microsleeps can manifest as failure to recognize hazards, failure to take appropriate action in the face of an emergency, inability to make decisions, inability to concentrate, loss of time, failure to negotiate a turn, forgetfulness, and many other symptoms which can be disastrous to a motorcyclist.

The greater the fatigue, the greater is our tendency to underestimate the fatigue burden and magnitude of the drive to sleep. This adds to the danger of unrecognized fatigue effects.

Mental changes. As our 'computing' power and speed decrease when fatigued, our ability to gain and process new information becomes impaired. The slower we receive and appreciate information, the more delayed our responses become. This is manifest in slower decision-making and longer reac-

tion times. Overall, this reduces our vigilance and increases our risks.

A common symptom of profound fatigue is traveling at a much slower than normal speed. This happens because the brain is processing riding information (apparent speed over the road, scenery passing, motorcycle vibration, wind pressure, etc.) more slowly. Thus, a slower speed may take up the same amount of available brain computing power as normal speed does when the brain is rested. The speeds feel the same to our fatigued brain.

These and other effects are exacerbated at night. As our darkened surroundings provide fewer clues to reality, our mind has less data with which to make proper decisions. As fatigue increases and cues decrease, judgment becomes increasingly faulty. Our minds may 'fill in' our perception gaps, causing us to perceive things which are not real. Mistaken perceptions – even hallucinations – are possible as our minds fill in the picture or our surroundings when real data are unavailable or are missed.

A dangerous and insidious affect of **SLEEP deprivation** is refusal to recognize the need for sleep and inability to take effective action.

Symptoms of Fatigue **While Riding**

Slow reaction time
- Braking hard to avoid a hazard
- Spilling drinks

Reduced awareness/vigilance
- Driving slower than normal
- Being surprised by a passing car
- Tailgating
- Not seeing deer or other road hazards

Impaired memory
- Passing a gas stop when low on fuel
- Forgetting your wallet after fueling
- Forgetting your spouse's birthday call

Impaired decision-making
- Not stopping to rest when tired
- Taking an inappropriate route
- Inability to choose from a diner menu

Loss of situational awareness
- Failing to recognize a stop sign or signal
- Not putting the kickstand down
- Failing to put feet down when stopping
- Stopping in a high gear
- Failing to 'go' when light changes
- Inserting eye drops while wearing glasses

Performance decrement
- Inability to calculate purchase amounts
- Inability to formulate routing plans
- Failing to communicate with riding buddies
- Fixating on a task

Fatigue impairs memory – our ability to store new information and retrieve old information. Stories abound about riders who are critically low on fuel but ride past an open filling station, 'forgetting' to stop. Unfortunately, these lessons wait to be learned again and again, even by experienced riders.

As information processing becomes more difficult, our tendency is to choose options which require the least efforts or have the least risk even if the choice has a lower probability of success than one which is more complex and requires greater thought. We can become fixated on a task and be unable to resolve conflicting thoughts or decision criteria. This could result in effective immobilization, loss of situational awareness, or skipping critical safety actions.

Psychological changes. As fatigue increases, sleep becomes an increasingly prominent focus, both consciously and subconsciously. Mood slowly degrades, interfering with socialization functions. This further adds to one's stress and compounds the difficulty in communicating with others.

Fatigue also affects one's motivation as the brain increasingly focuses on satisfying the fatigue debt. This decreased motivation may result in a change in other habits such as eating and drinking less. This can be disastrous if dehydration is added to fatigue.

As we become increasingly unable to perform tasks normally and inhibitions wane, we can become impatient, frustrated, and angry.

A dangerous and insidious effect of fatigue is refusal to recognize the need for sleep and inability to take effective action.

Preparation

There are several things you can do to prepare for a period when you expect less sleep than normal:

Begin rested. Don't start a fatiguing activity in a sleep deficit. Obtain your normal rest for several days prior to the activity. If you're going to start an activity early in the morning, try to phase your sleep so you get your normal rest time before awaking. In other words, if you require 8 hours of sleep but will start an activity at 6 am, try to be asleep at 9 pm the prior evening and give yourself time to awaken and prepare for the day's activities.

Proper nourishment. Proper nourishment and hydration are important elements of preparation. Eating three small meals each day is preferable to having one or two larger meals. Your brain needs the energy sources food supplies – so breakfast is important. Because the body's circadian rhythm produces a natural drowsiness in mid-afternoon, a protein and carbohydrate snack can help stave off this effect.

Do not overeat. Large meals are hard to digest and shunt blood and energy away from the brain. Many small meals are better than a few large feasts.

Put your mind at rest. Have all your pre-ride preparations done before retiring the night before a long ride. Tie up the loose ends which might interfere with your ability to rest. »

FATIGUE *and* Motorcycle Touring

Physical fitness. Many studies have shown that people who are physically fit are more able to tolerate the effects of fatigue. A long-standing daily routine should maintain tone and endurance. Carrying less weight will also reduce riding fatigue.

Prepare your ride. Your motorcycle should be configured to maximize your comfort and decrease the work of riding. Make sure you have a routine and all your equipment is thoroughly road tested. Your bike should fit you, not vice versa.

Here are some important aspects of ride preparation:

Preparing your ride

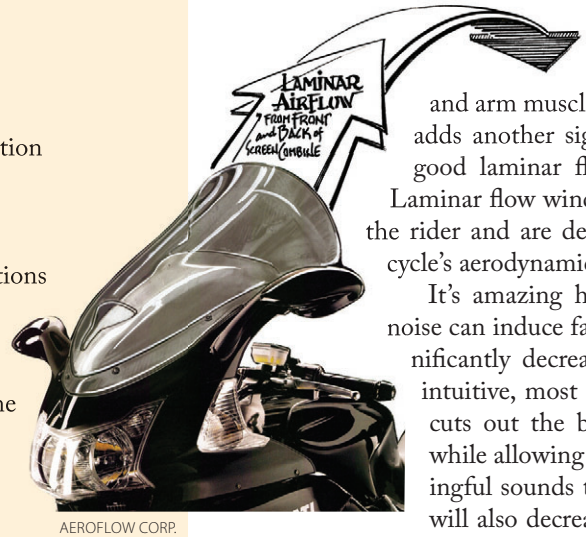
Personal gear
- Comfortable riding suit, boots, gloves
- Properly fitting helmet
- Waterproofing
- Heating and cooling aids
- Skin and lip hydration and sun protection

Ergonomics – your bike must fit you
- Properly fitted and comfortable seat
- Comfortable riding position
- Convenient foot peg and control locations
- Mirrors correctly located
- Windshield

Packing
- Put things in the same place every time
- Put frequently used things on top
- Take only what's necessary
- Be able to find everything in the dark

Repair kits
- Take the tools you'll need
- Pack a tire repair kit and means of inflation
- Know how to use them!
- Towing service

Communication – your link with others
- CB or FRS radios
- Cell phones – for when you're stopped
- Phone card for emergencies



AEROFLOW CORP.

Avoid caffeine. Caffeine can be useful in helping extend fatigue tolerance. But, its effectiveness is greatly enhanced if used sporadically. If you rely on caffeine every day, your body will expect its normal supply. If you don't consume your 'normal' amount of caffeine, you will likely experience fatigue sooner than someone who seldom drinks caffeine. This is one stressor you don't need while riding.

If you are unaccustomed to caffeine, consuming some can help stave off some of the effects of fatigue.

Alcohol. Alcohol and riding don't mix and should be avoided for several days prior to a ride. The toxic products of alcohol metabolism adversely affect brain activity long after the noticeable effects have disappeared. Alcohol also interferes with the body's ability to properly process other nutrient sources.

Alcohol and caffeine are also diuretics – they cause increased urination. This has two negative effects for riders. Most important, it causes dehydration which can adversely affect performance and increase susceptibility to fatigue. Also, increased urination means more frequent unscheduled stops.

Countermeasures

Motorcycle and equipment. As just described, your bike should be configured to produce the least fatigue. Put another way, you should eliminate those things which increase the 'work' of riding or contribute to developing fatigue. Your motorcycle and all its equipment should be second nature to you – as familiar in the dark and rain as in your garage.

A windshield sufficient to significantly reduce wind pressure and deflect rain will considerably increase fatigue tolerance. Fatigue ensues much more rapidly when a rider is continually bracing against wind pressure, using torso and leg muscles to remain upright and arm muscles to grip the handlebars. Rain adds another significant level of stress that a good laminar flow windshield will alleviate. Laminar flow windshields direct air up and over the rider and are designed to minimize a motorcycle's aerodynamic drag.

It's amazing how the constant din of road noise can induce fatigue. Hearing protection significantly decreases this stress. Although not intuitive, most disposable hearing protection cuts out the background noise of the road while allowing conversation and other meaningful sounds to be heard more clearly. They will also decrease the long term hearing loss associated with exposure to constant environmental noise.

The ride. There are many aspects of the actual ride which can affect the accumulation of fatigue debt. The more challenging the ride, the more fatiguing it will be. Some riding factors which most quickly produce fatigue are:
- Severe time constraints
- Bad weather
- Excessive heat or cold
- Unfamiliar roads
- Monotonous scenery
- Extended night riding
- Increased threats – wildlife and traffic
- Riding conditions beyond the rider's ability
- Complex tasks required while riding
- Distractions – mechanical or family problems

Although many of these factors cannot be totally avoided, their impact can be somewhat controlled. Severe time constraints can be minimized by properly planning one's route. Don't bite off more route than you and your bike can swallow. Leave a time and distance cushion toward the end of your route. Know your limits ahead of time and stick to them. Make a promise to yourself and others… write it down. Plan your ride, then ride your plan. Don't try to extend the ride on the fly, when fatigued.

Effective resting. *There is no substitute for sleep* in paying the fatigue debt. Once fatigued, functional ability must be refreshed by replenishing the brain's nutrients and restoring its very deli-

cate chemical balance.

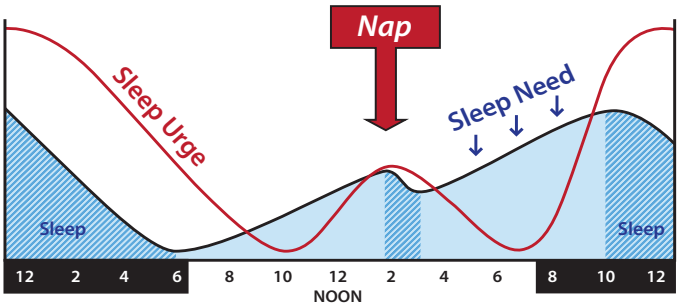
Fortunately, an hour-for-hour sleep payback isn't required. But prolonged, solid sleep is necessary to bring the brain back to a pre-fatigue level of function. Repetitive sleep deprivation has a cumulative effect; the longer you wait to repay the debt, the more sleep will be necessary.

Some sleep is better than no sleep but merely resting is no substitute for sleep. Performance tests have shown improved mental and physical function even after very short naps regardless of whether a person notices the difference. Research has shown that any amount of sleep over 5 minutes is helpful and will have a cumulative effect. The more naps taken, the better. Waking from a nap longer than 45 minutes but less than 2 hours can cause "sleep inertia", a state of groggy disorientation which lasts 15-20 minutes. Thus, the most effective 'nap' is one which lasts at least 5 minutes but not longer than 45 minutes.

The most effective **NAP** is one which lasts at least **5** minutes but no longer than **45** minutes

Two hours of continuous sleep ensures a complete sleep cycle. Therefore, one should sleep for at least 2 hours if choosing to nap for more than 45 minutes.

The body's normal circadian sleep rhythms tend to favor sleep between 2 am and 8 am as well as between 2 pm and 5 pm. Therefore, timing naps to coincide with the internal circadian clock will allow you to fall asleep more quickly and will enhance the nap's effectiveness.



Napping takes advantage of the circadian mid-day sleep urge and repays part of the daily sleep debt, prolonging wakefulness.

Whenever naps are taken, you should seek a comfortable location which will allow uninterrupted sleep with minimal external stimulation.

There is perennial debate about whether to combine gas, meal, and rest stops. Many experienced riders advocate taking gas and meal stops separately from rest stops to decrease fatigue by breaking riding time into manageable segments. A converse argument can be made that, since meaningful rest cannot be accomplished without sleeping longer than 5 minutes, separating rest stops from gas/food stops doesn't truly decrease one's fatigue debt. It's your ride; you decide.

Socialization. Maintaining interactive contact with others is a way of increasing wakefulness in the short term. Since language is a very high intellectual function, talking with someone (even on the CB radio) is often helpful in maintaining wakefulness. However, if profoundly fatigued, one will be even more prone to falling asleep immediately after the conversation ends.

Exercise and other external stimulation. Walking or performing exercises will help temporarily increase alertness because the physical activity requires concentration and increases blood flow. However, vigorous activity may actually increase fatigue by rapidly depleting nutrient stores and adding muscle fatigue to existing body stress. Standing on the motorcycle's foot pegs, letting the wind hit your face, eating hot candy, and the many other 'tricks' only serve to temporarily increase wakefulness. Their effects are very short-lived and do not remove any of the fatigue debt. Rest is still the only true remedial answer!

Nutrition and hydration. Maintaining proper hydration is essential in staving off the effects of fatigue. Dehydration can be deadly when combined with the summer heat and insensitive (non-sweating) water loss which occurs while riding. Dehydration significantly decreases mental and physical functioning and can accelerate fatigue and dramatically magnify its effects.

Symptoms of dehydration include headache, nausea, dry lips and mouth, muscle weakness, and decreased concentration. Many of the symptoms of dehydration are the same as those of fatigue.

Solution: Stay ahead of hydration needs. Drink beverages which will add to body water reserves. Plain or flavored water drinks as well as 'electrolyte' drinks (such as Gatorade®) will suffice. Don't get behind. If you have a headache, you're already behind and will need to drink at least a quart (liter) immediately. Many riders carry a convenient water delivery system which includes a hose from which the rider can drink while riding.

Caffeine. Caffeine can be helpful in improving wakefulness. However, people who drink caffeine regularly are less sensitive to its effects. To gain maximal effect from caffeine, a rider should stop ingesting caffeine for several days prior to the time when it's to be 'needed.'

Caffeine use can be strategically timed for maximum benefit. Caffeine is most effective in improving mental awareness in the 100-200 mg (4-8 ounces of coffee) range. It takes approximately 30 minutes to have a peak effect and the effects last 3-4 hours (although significant amounts of caffeine remain in the blood for many more hours). Remember: caffeine is also a diuretic!

Avoid caffeine within 8 hours of sleep since it will make falling asleep more difficult, shorten the duration of sleep, and disrupt restful sleep.

Drugs. Although the military has experimented with a variety of stimulant drugs, none has reduced the body's fatigue debt or its need for rest. They may improve performance and wakefulness for very short periods but do not enhance long-term (days) performance and can significantly decrease performance after the first dose has worn off. There is no place in any sport for stimulant drugs, period.

Opinions expressed herein are those of the author and, although based on scientific facts, should not be construed as guidance and do not substitute for an individual rider's judgment. All rides are different and all riders are unique. You should ride your own ride, well within the limits of your training and experience.

M. MICHAEL COHEN

picture perfect

by

melissa holbrook pierson

When you are young, as I am no longer to my very great astonishment, almost everything is filled with excitement and promise — this is what the future can hold! You think at every turn — and in fact your senses are telling you the truth. Food tastes better, because you have a lot more taste buds, on the hard and soft palate, on the upper tongue. (Or does it taste so fabulous because you've just ridden a hundred twenty miles in fifty-degree weather?) *I'd like to keep going like this, on this road, forever* — because "forever" seems infinitely far into the infinite years ahead. Your vision is whole, and what you see has the clarity of those Kodachrome panoramas from the sixties. But later you will look largely with your peripheral receptors and have difficulty with the violet end of the spectrum, making you wonder why what you see doesn't look quite as filled with ineffable beauty. Although a quarter of a century into our rapacious national building spree, maybe it really isn't.

I found motorcycles, or they found me, at a young age. They were to my twenties what horses were to my childhood: a smell, a physical sensation that consumed the whole world. When I wasn't riding them, I was thinking about them — trying to understand everything about them, what role they filled for the individual and for the society that viewed them — and often I was both riding *and* cogitating. Here is a piece of my youth, of my exuberant love for motorcycles, of the constant stream of thought.

Perhaps it's that you can see right through them. A motorcycle stands there, managing to look both fierce and poignant, and you stare at it and realize you are seeing, through its wheels, past the cylinders and between the frame to the other side of the garage at the same time. On the road, underway, air is sliced in two — "Out of my way!" — but here that fearsome thing sits, prisoner of the air taking its time wafting through its open places. To all who would consider it, this is a minor mystery, and you love mysteries.

It gets you down, seeing one parked on a winter street, under an interrupted feather bed of snow, a couple of thin icicles like a history of tears from the battery. This was hardly meant to be, this abandonment in a strange and useless universe. You want to rescue it as if a shivering dog, except that it doesn't care. You realize you've projected something else — it's always about

picture perfect

projection, isn't it, the feeling of aching affection associated with love, nothing that really has anything to do with anyone else, but rather only to do with you, you who have grown so large you can see nothing else, grown so large the bale wires are about to break and send what's in your soul skyward to obscure the sun. No, you have probably just imagined yourself having to sit on that crunchy seat and hold those Popsicle bars in your hands, and you're sorry, so sorry, for yourself. Because a motorcycle can't feel. No matter what you have come to believe, no matter how that one night late in Pennsylvania it seemed to know you didn't want to part ways just yet, and refused to start in the gas station after dinner, keeping him there to separate and tape wires, talking to you as he went. This is not even to mention the time you entered that turn way too fast and all you could do was look down as the world whizzed past but left a standing imprint of how miraculously close the edge of the road was to the front wheel, just a small, thoughtful reminder.

John calls them "charismatic objects," and he should know, because you can barely wedge your body into his garage between all the bikes; "Bikes are to buy, not sell," he points out. Charismatic objects — I think of heavy magnets, hot pies set out to cool in early cartoons, runway models, disaster flares. Charismatic, because no one can not respond: fear, hatred, annoyance, worship, motolust.

After you have owned one, there is no place you go without thinking, "How would this look from my bike?" How would this sudden view be if I had just straightened up from a deep lean into that curve back there, lungs socked full of air? Most of all, bikes make you into a listener. For that curtain-parting fanfare, the drum roll, the teaser. For one of the best parts of a motorcycle precedes itself. You stop whatever you are doing. Your interlocutor falls silent. You wait. You wait. When it finally blasts by and is gone in the same moment, anticipation turns to crumbs. You were, after all, standing with both feet on concrete. You feel yourself on the way to becoming one of those far-gone cases who cocks an ear then nods. Yeah, Gold Star! R90!! Gamma!!!

With choice, though, you'll take an Italian opera anytime, sung by a twin. On the back of one, you leave yourself out of the audience, while the vibration travels your bones, playing you like a steel drum. The exhaust note is thrown back behind, for others to enjoy. Down a narrow city street, it leaves a trail of weeping car alarms. In a tunnel, if you find the right gear at the right number of revs, it will consume the space in a massive hum.

In the end, you like to ride because you have already ridden. The hours, the miles, the scenes have bound you tight, like war buddies, like dancing partners. This is why we all ride, to wake up one morning and remember we saw something in our sleep uncannily like something we once saw while cutting through the air on a bike. Georgia at night, the high corn straight against the edge of twenty miles of dark, lonely border road and suddenly a cop's car hunched silent among the stalks. Leaving Louisiana in hellacious rain, so close on the helmet it invades your thoughts. There is only storm and the curve of the wide open earth with you small on it, then just as quick the sun before you and pink in the sky. But the bike still holds the memory on itself, its rear-view mirror a picture of the dark disorder as it reflects what it has, with something very much like care, brought you safely through.

In my youth, I wrote poetry. (Thankfully few have read it.) I also read philosophy. These are two things that seem beyond my capacities now. I do not know the physiology of this change. I maybe don't want to. Or maybe I should look deeper into the nature of this sense that life is a progression into and out of passions, like rooms in a museum.

I know that motorcycling itself has some of the deepest you're-either-inside-or-you're-out of any human pursuit. I felt the cold blast of being an outsider when, on a car trip, I happened onto a small upstate New York town that for a weekend was the site of a BMW rally. Into the restaurant where I sat, invisible, they tumbled from the exhilaration that always is riding together. The air was filled with the insect-like hum of a hundred stories being told simultaneously: "Did you see when he…" "And then I turned so fast I thought I was…" "That bike is so…" "I couldn't believe she was planning to ride that…" and I wanted to cry out: "But don't you see? I'm one of you!" And then I just wanted to cry. For what could make me one of you?

You can't go back. I can't recapture — not exactly — what I've lost. But if I know I can feel it still, then I am, truly, one of you, or could be. I just have to ask the guard how to get back to the place where they have all those beautiful pictures, the ones I know by heart.

Melissa Holbrook Pierson is the author of the widely-acclaimed "The Perfect Vehicle," considered by many to be the finest book ever written on the essence of motorcycling. When not out riding her recently acquired K75, she lives with her daughter in upstate New York. —Ed.

After you have owned one, there is no place you go without thinking, "How would this look from my bike?" How would this sudden view be if I had just straightened up from a deep lean into that curve back there, lungs socked full of air?

117 IBA Certifications

» FROM THE WORLD OVER! «

(In descending order by ride count) *Compiled by Charles Wilt*

NAME OF RIDE	Count
SaddleSore 1000	27060
Bun Burner 1500	4857
Bun Burner 1500 GOLD	2249
SaddleSore 2000	918
SaddleSore 1600K	713
50cc Quest	647
National Parks Tour Master Traveler Awards	310
Lake Michigan 1000	234
CCC GOLD	194
SaddleSore 5000 (5,000 miles in 5 Days)	177
10/10ths Awards	170
Border to Border	154
SaddleSore 3000	142
Lower Great Lakes 1000	138
Great Lakes Challenge	134
Border to Border Insanity	126
Ultimate Coast to Coast Challenge	83
Bun Burner 3000 GOLD	81
Lake Huron 1000	80
48 Plus!	76
50cc Quest GOLD	75
SaddleSore 2000K	75
Bun Burner 2500K	68
Great Lakes GOLD	65
Lake Superior 1000	65
National Parks Tour Master Traveler SILVER	59
48 States in under 10 days	54
National Parks Tour Master Traveler GOLD	44
SaddleSore 2000 FINLAND	41
Ride Around Texas Insanity GOLD	36
Dusty Butt 1000	35
Trans Canadian GOLD	25
BB1500 Finland	24
USA Sunrise to Sunset Insanity	19
48 States - 3 Countries Mexico to Alaska	18
Trans Canadian Quest	18
Ride Around Texas Insanity	17
Bun Burner 2500K GOLD	15
Ultimate Coast to Coast to Coast Insanity	15
100K Club	14
Hyder to Hyder 2.4	14
UK End to End GOLD	14
Top Down GOLD	13
UK End to End	13
Border to Border to Border Insanity	11
Trans Siberia Express GOLD	10
Circumnavigation of the Black Sea	10
Latin America 50cc GOLD	10
Bun Burner GOLD Trifecta	9
Border to Border to Border Insanity GOLD	9
Euro-Asia Coast to Coast	7
Gibraltar to Nordkapp in 3 days!	7
SaddleSore 3000 Baltic	7
Latin America 30cc 1,500 mile - 2,500 kilometer	6
SaddleSore 4000	6
National Parks Tour Master Traveler PLATINUM	6
Around the World Club GOLD	5
Border to Border to Border from Hell	5
The Longest Month.	4
Ultimate North America Insanity	4
SaddleSore 7000 (7,000 miles in 7 days)	4
Australia 50cc Finishers	4
UK Four Corners Ride	4
Circuit of Ireland Finishers (lap of Ireland in less than 24 Hrs)	4
Trans Americas	3
Transanatolia - West to East Turkey in less than 24 hrs	3
Latin America 50cc	3
Million Mile Riders	2
Around the World Club Multi-trip	2
Mississippi Gold - Headwaters of the Mississippi	2
Ultimate USA Insanity	2
Ultimate USA Challenge -	2
Far North Insanity - 14 days.	2
200 CCCC GOLD	2
CCC GOLD INSANITY	2
Australia CCC GOLD	2
Trans Canadian Insanity	2
Pines to Palms to Pines GOLD	2
Alaska Insanity GOLD	2
National Parks Insanity	2
Four Seasons SaddleSore 1000	2
Life Time Achievement Award	1
20/20 Insanity	1
Trans Americas Challenge	1
Ultimate Canadian Insanity	1
The Ultimate County Bounty	1
Mighty Mississippi - Headwaters of the Mississippi	1
Coast to Coast Insanity	1
IBA North America Challenge Gold - 10 days	1
Bay to Bay GOLD	1
Trans Canadian GOLD Insanity	1
Canada North to South Challenge	1
Cape to Cape 80	1
Australia 50cc GOLD Finishers	1
Bottoms Up Tour GOLD	1
Lap of Florida Insanity Gold	1
Black Sea to the White Sea in 36 hours!	1
UK Four Corners Ride GOLD	1
SaddleSore 3000K Finishers	1
Haul Road 1000	1
Why? Whynot! Insanity (Arizona to Mississippi - 24 hrs)	1
Why? Whynot! (Arizona to Mississippi – 36 hrs)	1
Trans Americas Challenge Insanity	0
Euro-Asia Coast to Coast GOLD	0
North America Insanity - 14 days	0
Bay to Bay	0
SaddleSore 9000 (9,000 miles in 9 days)	0
SaddleSore 8000 (8,000 miles in 8 days)	0
SaddleSore 6000 (6,000 miles in 6 days)	0
Outermost South Africa Challenge GOLD	0
USA East-West Insanity	0
North America Sunrise to Sunset Insanity	0
Top Down Tour	0
Lap of Florida	0
South Africa Four Corners Ride GOLD	0
Hell and Back	0
Why? Whynot! (Arizona to North Carolina – 50 hrs)	0

BE THE FIRST!

By Tom Austin, IBA Chief Technical Advisor

Modifying a Motorcycle

What you can and can't do to prepare your motorcycle for long distance riding.

A STROLL THROUGH the parking lot at the start of the Iron Butt Rally will show that the vast majority of the participants recognize the value of certain modifications when attempting to ride 11,000 miles in 11 days. Over 90% of the motorcycles in the Iron Butt Rally will be equipped with auxiliary fuel tanks, upgraded lighting, GPS, and custom seats. Many will have aftermarket windscreens, handlebar risers, throttle locks, aftermarket luggage, radar detectors, custom hydration systems with drinking tubes, 12-volt receptacles for heated clothing, tank bags with waterproof holders for maps and bonus listings, CB radios, and other communications gear. Tire pressure monitoring systems are also growing in popularity.

The extent of the modifications necessary to optimize a motorcycle for long distance riding depend on what you are starting with. It also depends on how you define "long distance." For hardened riders, the most comfortable bike in the world isn't necessary for a 24 hour rally, even though you might be covering more than 1,500 miles. But for most riders, comfort is important for multi-day rallies or extended touring.

Some motorcycles are clearly more suitable than others for long distance riding in stock form. The Honda Gold Wing and the BMW K1200LT are two examples of motorcycles that can be comfortably ridden 1,000 miles per day right off of the showroom floor. Combined with comfortable ergonomics, excellent wind protection, wide saddles, and electronic cruise control, available dealer-installed options like GPS and CB radio make these motorcycles popular choices for long distance riders. An additional advantage offered by these two models is that they have very high output alternators, sufficient to power electrically heated liners for a rider *and* a passenger. Both the Gold Wing and the LT are also designed to sustain little or no damage in the event of a tip-over.

Most lighter weight, higher performance motorcycles are not as well-suited for long distance riding as they sit on the showroom floor, but many can be modified to make them even better than a stock Gold Wing or LT for long distance riding. In future editions of this magazine, I will provide detailed information regarding modifications that have worked well for me and other riders. There is a wealth of good information on modifying a motorcycle to improve fuel capacity, ergonomics, seat comfort, wind protection, lighting, luggage, navigation, and communications systems. But to begin with, let's focus on the important features of a motorcycle for long distance riding that need to be incorporated in the motorcycle you start with.

Features important in a long distance bike that are difficult to achieve with modifications include reliability and durability, long service intervals, peg location, the availability of ABS brakes and electronic cruise control, adequate power, good ride and handling, high load carrying capacity, high alternator output, and the availability of tip-over protection. In 2001, Paul Pelland did an excellent job of demonstrating that having a motorcycle with most of these features is not necessary to finish the Iron Butt Rally. Paul finished in 87th place riding a Ural. However, the fact that he finished was more a testament to Paul's mechanical skills than to the suitability of the motorcycle he rode.

What a difference it was two years later when Paul switched to a BMW R1100RT and finished in the top ten. That year, six out of the top ten finishers rode BMW boxer twins ("R-bikes"). Although they were the choice of 60% of the top ten finishers, BMW boxer twins account for only about 1% of new motor-

Some features important in a long distance motorcycle are difficult to achieve with modifications.

- Electronic Cruise Control
- Upright Seating
- High-Output Alternator
- High Load Capacity
- ABS Brakes
- Pegs You Can Stand On
- Tip-Over Protection

cycle sales. Other models ridden by the top 25 finishers in recent rallies include BMW "K-bikes" (e.g., K1100 and K1200LT); the Yamaha FJR1300; and, from Honda, the Gold Wing, ST1100, ST1300, and VFR800. In 2005, *none* of the top 25 finishers rode any other brand or model. There was a bit more variety among the top 25 in 2007. Shaft drive models from BMW, Yamaha, and Honda still made up 21 of the top 25, but there was also a well-prepared Harley Sportster, a BMW F650GS, a Victory Vision, and a Suzuki DL1000.

Some features desirable in a rally bike, reliability and durability, long service intervals, and adequate power, are available in a broad range of models. Other desirable features are available in a more limited range of models.

Reliability and Durability: Most of the motorcycles ridden by the top 25 riders were chosen because they have desirable features that are difficult to obtain through modifications. Foremost among these features is overall reliability and durability. Fortunately, the reliability and durability of motorcycles in general has improved enormously since George Wyman made the first cross country trip by motorcycle in 1903 (http://www.motorcyclemuseum.org/halloffame/hofbiopage.asp?id=296). Reliability and durability have continued to improve in the forty years that I have been riding.

Historically, BMWs have enjoyed a reputation for phenomenal reliability. That reputation has been tarnished among long distance riders in recent years by final drive failures, a problem that is seldom seen in other shaft drive motorcycles. Bearing changes to models still using the old style drive (the K1200LT) appear to have reduced the problem. Unfortunately, the new design final drive, first introduced on the R1200 models beginning in model year 2005, is proving to be even less reliable. During the 2007 Iron Butt Rally, four out of the 14 R1200 models entered (29%) experienced final drive failures. As I write this, BMW has yet to acknowledge the problem or announce a fix, but there are obvious design changes to the final drive on the new K1300GT that are undoubtedly intended to improve reliability. Given the lack of candor and data from BMW, we will have to wait and see whether this latest generation final drive is reliable.

With rare exceptions, excellent reliability can be expected from any motorcycle produced by Honda, Yamaha, Suzuki, or Kawasaki. However, chain drive models need special attention to chain lubrication to be reliable for 11 straight days of hard riding while carry lots of luggage.

Service Intervals: Although manufacturer recommended service intervals are relatively short, they can usually be stretched, especially when it comes to oil changes.

Even though some BMW R-bikes have 6,000 mile recommended valve adjustment intervals, experience has shown that they can run twice that distance with little change in adjustment. Most of the other bikes ridden by top finishers have valve maintenance intervals of 12,000 miles or longer. Except for the VFR800, all of the others have shaft drives that can run without maintenance for 12,000 miles or more.

With the exception of the 8,000 mile oil change interval for the Gold Wing, all other motorcycles have oil change intervals specified at 6,000 miles or less. However, consecutive 1,000 mile days are relatively easy on oil and many riders, myself included, have successfully ridden 11,000+

Shaft Drive BMWs, Yamahas, and Hondas are Popular Rally Bikes

miles during the Iron Butt Rally without changing oil and without any signs of accelerated wear. A pure synthetic oil is recommended for extended change intervals. A testament to the capabilities of such oils is that factory recommended change intervals for such oils used in high performance automobiles (BMW, Mercedes, and Porsche) are 15,000 miles or more.

Power: As demonstrated by Keith Keating, who rode a Suzuki GN125 to 81st place in the 2001 Iron Butt Rally, it is possible to finish the rally on a motorcycle that won't keep up with the flow of traffic. Keith will forever hold the record for the lowest powered bike to ever finish the Iron Butt Rally because safety concerns have caused us to raise the minimum performance requirement. But you certainly don't need 100+ horsepower; you just need to be able to stay up with the flow of traffic while running up long grades in the mountains. All of the bikes ridden by the top 25 riders in 2005 and 2007 have more than enough power to overcome the increased aerodynamic drag of side cases and larger, aftermarket windscreens. All of them have enough load carrying capacity to handle lots of luggage and auxiliary fuel, even for two-up riding in most cases.

The combination of optimum peg location, ABS brakes, electronic cruise control, good ride and handling, high load carrying capacity, and high alternator output are available in a limited range of models.

Peg Location: Most long distance riders prefer a motorcycle with an upright riding position that doesn't place pressure on the rider's wrists. Others prefer a motorcycle with a slight forward lean with some of the rider's weight on the bars rather than the seat. Most prefer relatively low pegs that minimize the bend in the knees. Most top riders recognize the advantage of pegs located so that you can stand on them and take all of the weight off of the seat periodically.

With aftermarket equipment, the height of handlebars and pegs can be adjusted, but the basic location of the pegs is difficult to change. Cruiser style motorcycles with forward mounted pegs are not an ideal starting point. They rarely show up among the top 25 finishers, or the top 50 finishers either.

ABS Brakes: Almost all of the models ridden by the top 25 riders are available with ABS brakes. ABS isn't absolutely necessary, but it substantially increases safety in emergency braking on low traction surfaces, increasing the chances that a rider will safely finish a long ride during poor weather.

Electronic Cruise Control: Electronic cruise control is another feature that isn't absolutely necessary, especially if the bike is retrofitted with an aftermarket throttle locking device. It is, however, a feature that can significantly improve rider comfort over long stretches of the Interstate. Historically, electronic cruise control has only been available for the largest touring bikes, but BMW has recently made its excellent system an option on the relatively lightweight R1200RT. Retrofit cruise control systems have thus far received spotty reviews from long distance riders. Hopefully, there will be reliable systems available for more bikes in the future.

Ride and Handling: It is possible to improve the ride and handling of some stock motorcycles through the use of a variety of aftermarket products, including shocks, springs, fork modifications and braces, steering dampers, and other miscellaneous modifications. Most of the models ridden by the top 25 riders in recent Iron Butt Rallys are noted for their outstanding ride and handling.

In contrast to the excellent ride and handling of the motorcycles used by the top riders, other popular models, most notably the pre-2009 big Harley twins, are notorious for instability on long, high speed sweeping turns. Fundamental changes to the 2009 touring Harleys appear to have dramatically improved handling. Maintaining the alignment of front and rear wheels is apparently critical to minimizing this problem on older models. In addition, there are numerous aftermarket products that can substantially improve the ride and handling of Harleys.

Load Carrying Capacity: Load carrying capacity is an important consideration for two-up riding. With luggage and auxiliary fuel, many motorcycles do not have sufficient load carrying capacity for an average weight rider and passenger. BMWs are noted for relatively high load carrying capacity, typically in excess of 400 pounds. Be sure to look into this specification if you intend to ride two-up with luggage.

Alternator Output: Alternator output is the Achilles Heel of many otherwise good choices for long distance motorcycles. All of the models ridden by the top 25 riders have adequate alternator output to run auxiliary lights. However, alternator capacity can be a significant limitation on many bikes.

A typical fuel injected motorcycles requires about 300 watts just to run the lights, ignition, fuel pump, and computer. The peak load can increase to over 300 watts on water cooled models equipped with cooling fans. A motorcycle with an alternator capacity of less than 500 watts provides some significant constraints for

Start With

Desirable features to start with that are lacking in many models.

- Upright seating position
- Pegs you can stand on
- ABS brakes
- Electronic cruise control
- High output alternator
- Tip-over protection

Add Later

Changes You Can Make Later

- Auxiliary fuel
- Auxiliary lighting
- Improved windscreen
- Bar risers
- Lower pegs
- 12-volt outlets
- Comfortable saddle
- GPS
- CB Radio
- Hydration system
- Additional luggage
- Tire pressure monitoring

long distance riding.

Electric clothing and auxiliary lights are important for motorcycles ridden through the dead of night, especially at high altitude. A full Gerbing's outfit (jacket, pants, gloves, and socks) draws 175 watts. A pair of PIAA 910 driving lights draws 220 watts. If you want to stay warm riding 2-up and use PIAA 910s, you are going to need a bike with 570 watts of *spare* alternator capacity. You are pretty much limited to a Gold Wing or a BMW K-bike.

You can save a lot of power by opting for true, high-intensity discharge (HID) auxiliary lights, which draw only about 40 watts each. Some riders add to their spare capacity by replacing their stock low beam and high beam with HIDs, but this is not a legal conversion and you have to be very careful to avoid using an HID low beam that blinds oncoming traffic.

By running HID auxiliary lights, a solo rider can get by with an alternator output of about 500 watts and still use some heated gear. To eliminate the constraints on heated gear for a solo rider, you are going to want about 600 watts minimum alternator output. The models that provide that are all of the 1100 cc and larger BMWs, the Gold Wing, the ST1300, the Victory Vision, and the new 2009 Kawasaki Vulcan 1700. 2006 and later model Yamaha FJR1300s have 590 watt alternators. It's a short list.

Tip-Over Protection: The availability of tip-over protection, at least on a retrofit basis, is worth looking into when selecting a motorcycle. Obviously, long distance riders like to think of themselves as better than average riders who seldom if ever drop their motorcycles. However, let's face it, many of the top riders have either dropped their bikes or had them fall over when left unattended. Ride enough miles, in enough bad weather, over enough poor road surfaces, and it will happen.

> "It is possible to improve the ride and handling of some stock motorcycles through the use of a variety of aftermarket products, including shocks, springs, fork modifications and braces, steering dampers, and other miscellaneous modifications. Most of the models ridden by the top 25 riders in recent Iron Butt Rallys are noted for their outstanding ride and handling."

When your motorcycle falls over, will it sustain substantial damage? Will your auxiliary lights be destroyed? Will your fairing break? Will your handlebars bend? Will your clutch or brake lever snap off? Will your shift lever be bent or broken off? If you can't answer "no" to all of these questions, you don't have the optimum rally bike.

The difference between a great trip and a disastrous trip can be whether your bike can be dropped without sustaining significant damage. Few motorcycles are designed to have minimum damage when dropped, but many of the models chosen by the top 25 finishers in the Iron Butt Rally do incorporate such design features. The Honda ST1100, ST1300, and Gold Wing, the BMW K1200LT and GS Adventure all have engine protection bars or tip-over wings. All of the other BMW R-bikes are available with tip-over guards that attach to the valve covers and allow zero damage tip-overs. Other models, such as the FJR1300, can be equipped with aftermarket accessories to minimize damage in a tip-over. The availability of tip-over protection, either in stock form or with the addition of aftermarket parts, is worth considering when choosing a motorcycle for long distance riding.

In Conclusion: Obviously, there are other makes and models than those ridden by the top 25 riders in the last Iron Butt Rally that can make excellent long distance motorcycles, but in picking the right bike to start with it is important to pay attention to the features that are difficult to improve on with aftermarket parts.

By Dale "Warchild" Wilson, IBA Chief Technical Inspector

Auxiliary Fuel Cells

Good, better, best are personal requirements when choosing an auxiliary fuel cell.

THE SUBJECT OF auxiliary fuel cells is near and dear to the hearts of many long distance riders due to the nature of our passion. When riding long distances, fuel capacity and fuel availability become important. Indeed, in competitive long distance rallies, they can be critical factors affecting winning or placing well—or even finishing the event itself!

Noncompetitive riders may merely wish to extend their fuel range so that they can enjoy touring off the beaten trail without worrying about running out of fuel. The possibility of being stranded in in some parts of the Western U.S., and especially in Canada or Alaska represents not just inconvenience; it can be seriously dangerous.

In this article, we examine several auxiliary fuel cell concepts.

- Custom-made versus off-the-shelf cells
- Design and fabrication techniques
- Fuel cell placement and

mounting considerations
- Advantages and disadvantages between gravity-fed versus electrically-pumped cells
- Cell venting and grounding and fuel transfer issues
- Iron Butt Rally technical inspection requirements

Which Cell Is Best?

The rider first needs to think about the rationale for adding an aux fuel cell to the bike. For instance, do you intend to enter the Iron Butt Rally? Are you planning to set records in one or more of the IBA's extreme rides? Or are you simply looking to extend the bike's existing fuel range as you tour the country? These are different reasons for having a fuel cell and each has its own unique set of requirements.

If you intend to enter the Iron Butt Rally some day, you have mounting and capacity issues that may be more restrictive than if you just want to extend your touring range. If you sometimes carry a passenger on these trips, you will have eliminated a common mounting location, the pillion, which, in turn, can affect the type of cell you eventually choose. Therefore, if you have fuel capacity requirements or unique cell placement requirements to consider, you may need to consider a custom-made fuel cell. There is a lot to be said for a fuel cell that is specifically custom-built to your exact specifications.

Your budget will have a major impact on fuel cell selection. If you are operating on a financial shoestring you should probably consider one of the many pre-made fuels cells that are available. As with most commodities, a "one-off" custom-made cell is more expensive than a mass-produced, off-the-shelf model. As you can see, your fuel cell requirements play a key role in an auxiliary fuel cell project.

Pre-Made Fuel Cells

There are many attractive aspects of pre-made fuel cells. In addition to their relatively low price, they come in many sizes and have features that make them ideal for motorcycle use. Fuel cells from recognized manufacturers such as JAZ, RCI cells (Summit Racing), JEGs, Fuel Safe, and others typically come pre-filled with anti-slosh foam (an important safety consideration). They often include a flush-mount aircraft-type fuel filler lid and are equipped with one or two AN8 male fittings at the bottom of the cell for fuel transfer as well as fittings at the top of the cell for venting. The plastic (cross-linked polyethylene) fuel cells such as those from Summit Racing even have built-in "trenches" molded along the top and sides of the cell where you can place metal or strong nylon strapping to retain the cell on its mounting rack.

Pre-made fuel cells constructed of aluminum (top) or cross-linked polyethylene (above) are attractive because of cost and features.

Pre-made aluminum cells usually feature built-in tabs for mounting, and have either a natural aluminum or an oil and fuel resistant powder-coat finish.

Pre-made cells are at a disadvantage over custom-made units when it problem of mounting. Cells with mounting tabs already welded into place essentially force you to use them as is even if their placement is not optimal for your particular needs. Typically, these cells can be bolted directly to a steel or aluminum rack, which is then bolted to the bike's stock rear rack. Alternatively, many riders opt to bolt their cell to a rack and place it on the pillion. It is then strapped down to the sub-frame or another structural member using strong nylon strapping. Mounting aux cells on the pillion is perhaps the best place for solo riders because it keeps the weight closer to the bike's center-of-gravity.

Mounting a cell behind the rear fender as shown in the photos above is an option when other locations are not available.

Mounting a pre-made cell onto the passenger seat is not an option for two-up riders who cannot give up their pillion seat or top case cargo area. For these folks, a "tail-dragger" style of auxiliary fuel cell may be the best option. Tail dragger units hang low on the bike essentially replacing the rear fender. These units usually have minimal impact on the bike's handling characteristics if they are not too large. The classic Ron Major fuel cell for the ST1100 was the pioneering example for this design and unlike most tail-draggers was gravity-fed. Most tail-dragger cells must transfer fuel via electric pump.

Custom-Made Fuel Cells

For many long distance riders, particularly those entering competitive rallies, the advantages of a custom made aux cell outweigh the high cost. Custom-made cells are often considerably more expen-

sive than pre-made cells, which oftentimes preclude riders from obtaining one. A well-designed, well-engineered custom cell, built to exacting standards specifically for your bike will offer dividends in performance and convenience for many years. The initial cost of $800 or more (sometimes much more) might at first seem outrageous. If you plan to use the bike for many years the cost becomes more reasonable. And if you have a popular LD bike, you stand a good chance of reselling the unit to recover some of your investment.

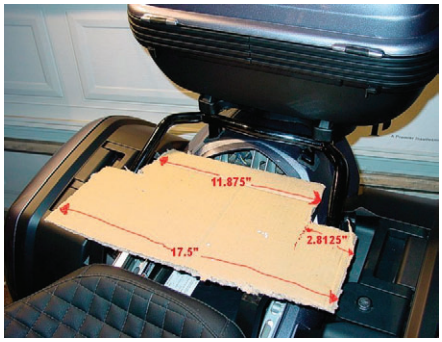
Design and Fabrication

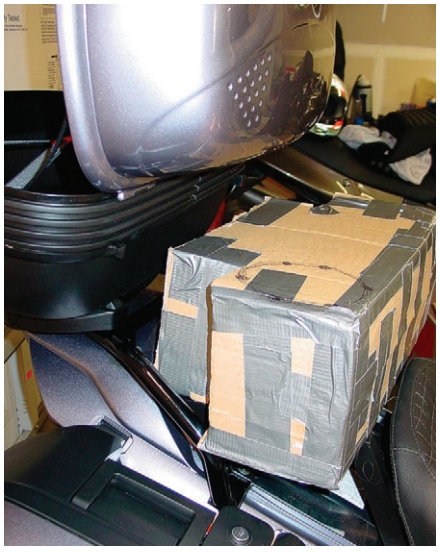
If you determine that the advantages of having a custom-made aux fuel cell outweigh the high cost, there are some important design and fabrication issues you consider. Among these are

- 3-D Modeling
- Structural design
- Construction material
- Fuel and vent fitting placement

Building a 3-D mockup of your fuel cell is an extremely important part of the design and fabrication process. 3-D modeling entails building an exact replica of the fuel cell (typically made from stiff cardboard, fiberboard, or thin plywood) and using this model to ensure proper fitment of the cell on the bike. The 3-D model will enable you to measure clearances and determine that hard luggage and other components do not interfere with fuel cell and that once installed the cell does not rub against any bodywork. It would be extremely frustrating to fabricate and install a cell only to determine that the top box cannot be fully opened because it strikes the top of the cell, or to find that you can't use the side luggage handles because the cell rack is too close. 3-D modeling helps you avoid these frustrating and expensive mistakes.

The aux fuel cell itself can be fabricated from most metals, but aluminum is primarily used for several reasons. Aluminum is light, strong, durable, and generally much easier to weld and work with than steel and other metals. Its baffled walls can also be easily constructed and "tack-welded" into place, giving strength and rigidity to the external cell walls while also providing an important anti-sloshing effect.





There are no strict rules with regard to how thick the external walls must be, but there is a practical aspect for welding purposes that should be considered. A small "tail-dragger" cell with no internal bracing may need 0.125" thick aluminum walls for welding and overall strength considerations. However, if a skilled fabricator welds internal baffles that serve as structural bracing members, the external cell walls can be made from material considerably thinner than 0.125" thereby saving overall weight.

The location of fuel and vent fittings is extremely important. Whether the bike's gas tank receives fuel from the aux fuel cell by means of an electric pump or gravity, the cell's main fuel outlet should be at the lowest part of the aux fuel cell—ideally from the cell floor. Vent fittings are typically placed on the upper right side of the cell so that when the bike is on its side-stand they are in the highest position. Generally, it's best to avoid placing the cell filler opening in the center of the cell, even if you intend to always have the bike on the center-stand when re-fueling. It, too, should be placed toward the right-hand side of the cell.

Fuel Cell Placement

Several other factors should be considered with regard to locating your fuel cell on your motorcycle. Two critical factors are the fuel transfer method you select and your bike's ability to handle changes from its normal center-of-gravity.

If you intend to use an electric fuel pump to transfer fuel from your cell into your stock tank, you are free to place a fuel cell most anywhere on the bike that is convenient. A tail-dragger type cell—almost always electrically pumped—will be placed on the rear fender area, thus keeping the pillion area and rear rack area free for additional gear.

A gravity-fed aux fuel system, on the other hand, has several key advantages over a pump system and is a popular choice for many riders. If you decide to go this route, the motorcycle design will determine where a cell is located, usually on the pillion area or on a rear rack. This placement is necessary to obtain an acceptable fuel transfer rate by creating enough "head pressure" to transfer the fuel efficiently.

If you need to keep the pillion clear and you intend to use a gravity-fed system, then you are pretty much relegated to using the rear rack for the aux fuel cell. While this cell placement is actually quite common in the long distance community, it has several disadvantages.

- A typical 5-gallon rectangular cell placed high can induce considerable wind drag at highway speeds. Obviously, this doesn't help your fuel mileage. Even worse, you can develop a disconcerting high-speed weave.
- A full 5-gallon fuel cell placed aft of your bike's rear axle can adversely impact handling by significantly changing your bike's center of gravity. Older bikes with modest or poorly maintained suspension systems may be particularly susceptible to handling issues.
- If the cell happens to be half empty when you hit a 20-mile stretch of brutal hairpin twisties the weight transfer of fuel sloshing back and forth can upset the stability of the bike. Fortunately, baffled walls or anti-slosh foam can mitigate this problem substantially, which explains this requirement for passing tech Inspection for the Iron Butt Rally.

Electric Pump Fuel Cell Systems

In the early days of long distance riding, electric pumps for auxiliary fuel cells were the norm. They are just as common today since some motorcycles simply cannot be accommodated to gravity-fed systems due to poor mounting options or cargo requirements. There is nothing inherently wrong with using an electric pump to transfer the fuel, but there are a few potential issues that you should be aware of.

- An electric fuel pump is more complex than a gravity-fed system and as a result, you have more issues to contend with regard to design and fabrication.
- Unlike a gravity-fed system, an electric pump can fail for a number of reasons including a blown fuse, an internal pump failure, chaffed wires that short out, or a failed relay.
- Unless you employ a sophisticated pumping system complete with automated shutoff timers, you need to devise a way to know how long to run the electric fuel pump so the pump doesn't run dry for long.
- Electricity and fuel can be a hazardous combination. Electric fuel pumps must be wired, loomed, fused and relayed with the utmost care following sound engineering practices at all times.

Though these concerns can be avoided by using a gravity-fed system, there are situations or platforms that make a gravity-fed system simply impractical. You may not have a choice in the matter and conclude that an electrically-pumped fuel cell is necessary for your particular needs and application. Just be aware of the potential engineering pitfalls and take them into consideration during the design and fabrication of your fuel cell system.

Gravity-fed Fuel Systems

The many advantages of a gravity-fed aux fuel cell have made them extremely popular within the long distance riding community. Gravity is always "on" and cannot fail, thus you always have a method of transferring fuel.

Gravity-fed cells are simple and robust. Typically, they have one manually operated isolation valve to start the flow of fuel into the main tank. This valve is generally the extent of the moving parts for this system. Gravity-fed cells never suffer from wires shorting out, relay or fuel pump failure, or a blown fuse. Given an appropriate amount of head pressure, and a generously sized fuel and vent line diameter, the fuel transfer rate can be reasonably quick. An added benefit is that you do not have to be concerned about running a fuel pump dry and burning out the fuel pump motor.

Most riders understand that the weight of a fluid in a container exerts pressure on the containing vessel's sides and bottom. This is called static head pressure, and is caused by gravity. Understanding the general concepts of fluid dynamics is critical when designing an aux fuel system will perform well under real-world conditions.

For purposes of our discussion, head pressure is the amount of static fluid pressure that is created when the level of one fluid vessel (aux fuel cell) is located above the level of a second fluid vessel (the bike's fuel tank) when the two vessels are connected together by a common fuel line. The greater the difference between these two levels, the greater the head pressure. All other things being equal, the greater the head pressure, the faster the fuel flow rate. When these two vessels are connected together via a common fuel line and both vessels are equally exposed to atmospheric pressure (vent lines), fuel from the container with greater head pressure will flow into the other container. As the height difference between these two levels decreases, the flow rate also decreases eventually becoming zero when the fluid levels in the two vessels are precisely equal.

A second, equally important (and often neglected) characteristic of gravity-fed fuel transfer rates is the inside diameter (I.D.) of both the fuel line fitting and the vent line fitting. In a gravity-fed system, head pressure alone is not the sole determining factor in how fast the auxiliary fuel will transfer into the main fuel tank. When fluid flows out from the aux cell, air is drawn into the cell to replace the fuel. If the cell's vent line is small or otherwise restricted, the flow rate will be decreased even if the head pressure is great. Fuel will flow out only as fast as air (under normal atmospheric pressure) is allowed in to replace it. Similarly, the inside diameter of fuel line itself contributes to overall transfer time.

There are two "take away" concepts:

1) the outgoing fuel line, the incoming vent line and all fittings should have equal inside diameters;

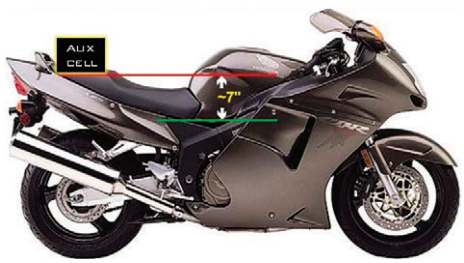
2) both lines should be as large as practical.

It makes no sense to have a large 3/4" fuel line connecting the vessels, but only have a 1/4" vent line on the aux cell. The small vent line, in this example, is the limiting factor in the *total* time it takes to empty the contents of the aux cell into the main fuel tank. There are no hard and fast rules on what size I.D. to use for your vent and fuel lines and fittings. Indeed, some bikes will simply not have sufficient room under the stock fuel tank to allow for a sizable fuel line I.D. Generally speaking, fuel line fitting I.D. sizes smaller than 5/16" usually result in interminably long transfer times, particularly when the starting head pressure is modest to begin with. The worst case scenario would be a system where your fuel consumption rate "out runs" your fuel transfer rate, forcing you to slow down and possibly miss a critical timed checkpoint/bonus location!

Complete Fuel Transfer

It's demoralizing to design and fabricate an expensive custom-made 4.7-gallon gravity-fed system only to learn that only 4.2 gallons actually transfer. To avoid this design flaw, you need to understand the concept behind what is necessary to completely transfer all the available fuel from the auxiliary cell into the main tank. This concept can be summed up in this sentence: "Fuel will always find its lowest level." To illustrate what this means, consider the drawing in Figure 10:

Note how the lower level of the auxiliary cell (red line) resides approximately 7 inches higher than the lower level of the Blackbird's stock tank (green line). Since fluid always "finds its lowest level," as long as the bottom of the aux cell reside above the bottom of the main fuel tank (in other words, where the bulkhead fitting for the aux fuel line is installed), then in accordance with the principal of fluid dynamics, in a gravity-feed setup the aux cell must drain completely into the main tank before the fuel in the main tank is completely used.



IBR Technical Requirements

If you intend to enter in the Iron Butt Rally some day, you must pass the IBR's technical inspection. The specific aux fuel technical requirements are subject to change from time to time, so carefully and methodically review the most current IBR auxiliary fuel rules to ensure your setup will pass muster. In my capacity as IBA Chief Technical Inspector since 1999, the two areas that seem to give entrants to most trouble are the mounting and venting of their fuel cells.

To describe every possible aspect of IBR tech inspection for every bike on the market is obviously not practical. However, the following list of "Do's and Don'ts" should help.

Do have a cell with adequate wall thickness (no flexing under thumb pressure) and one that is leak free around all fittings, welds, and seams.

Do have some method of fuel "anti-sloshing" in place. Typically, this can take the form of baffled internal walls, or the use of anti-slosh foam.

Do ensure the cell has a static ground wire connected to the frame of the bike.

Do have a robust aux cell mounting system. If the inspector can grasp your cell and shake it, the entire bike should move with it. Some amount of flexing may be acceptable for pillion-seat-mounted cells.

Do have your electric fuel pump fused and relayed with all wiring loomed and zip-tied out of harm's way.

Do Do have sufficient head space (air below the filler opening) to allow for gas expansion.

Do have a vent line fitting plumbed directly into your cell and located near the very top of your container.

Do have a vent line connected to the vent line fitting and have this line routed down and around your cell and lower part of your motorcycle, exiting at a point where potential overflow CANNOT spill onto any part of the bike, the rear tire, or in the path of the rear tire. (One exception is when the vent line is connected directly to the bike's OEM *vent* system.)

Do not use a cell that allows you to fill the container to the absolute top of the filler opening. You must have sufficient "head space" to allow for gas expansion!

Do not route fuel lines near hot components, or near parts that might result in abrasion.

Do not use a vented cap as your exclusive venting system. This will cause your setup to fail tech inspection.

Do not mount an aux cell system in a trailer. Cells must be securely mounted to the motorcycle itself (side-cars are the exception).

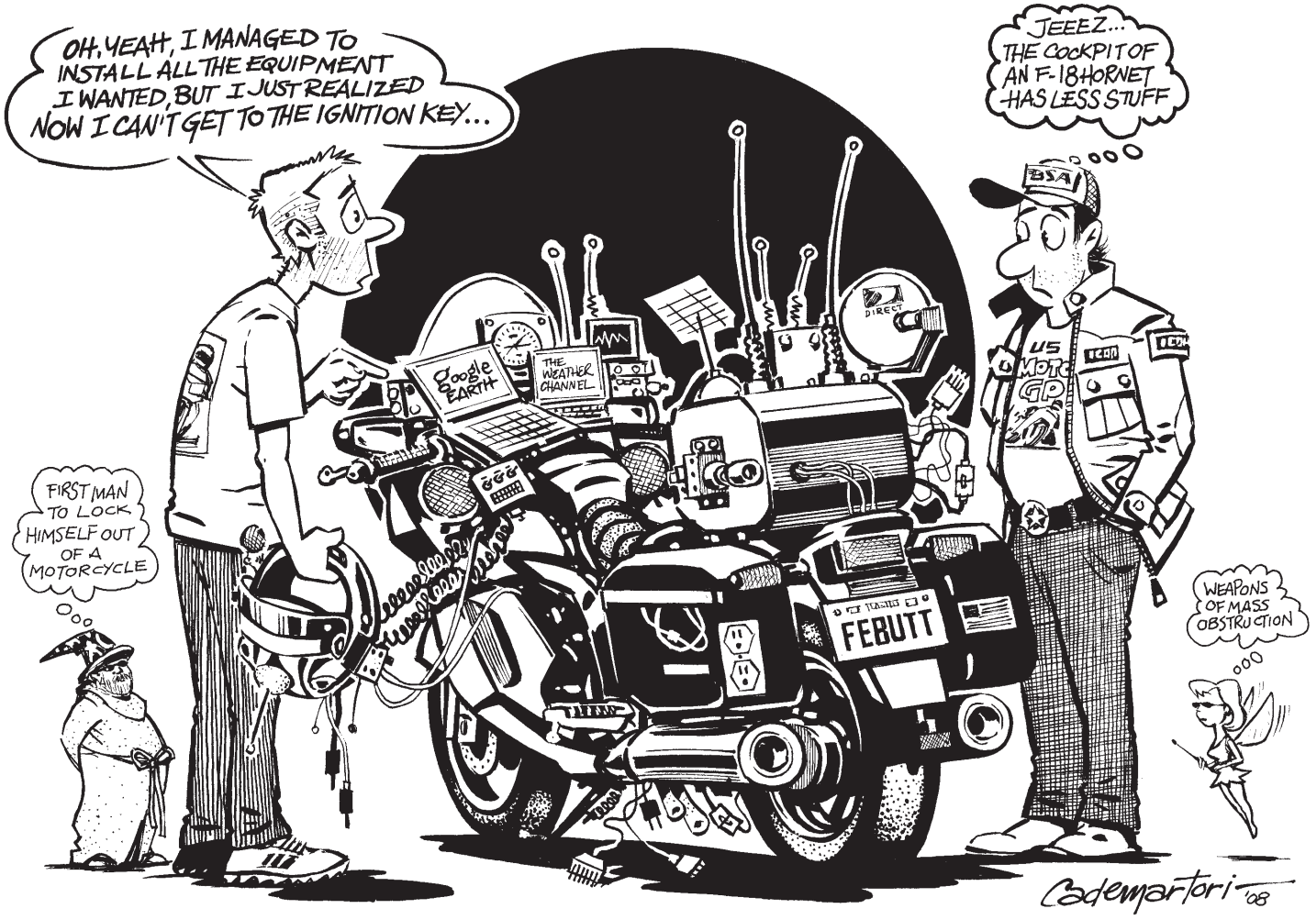
Conclusion

There is a great deal to consider when it comes to the planning, fabrication, and implementation of an auxiliary fuel cell system. The ultimate goal is to have a fuel system that is safe, reliable, robust, and provides consistent performance under a wide variety of conditions. This article has described briefly what is entailed in the design and installation of a fuel cell. As a long distance rider who is looking to extend cruising range you now have more information on which to base intelligent decisions regarding an auxiliary fuel cell system. Obviously, if you lack the technical background and skills to tackle this project yourself, you should seek the help of those who do.

You have to live with the final product out on the road, whether touring casually or immersed in a tough, multi-day competitive rally. The time and effort you put forth understanding your fuel cell needs will pay big dividends in a system that performs as you intended when you need it most.

CounterSteering

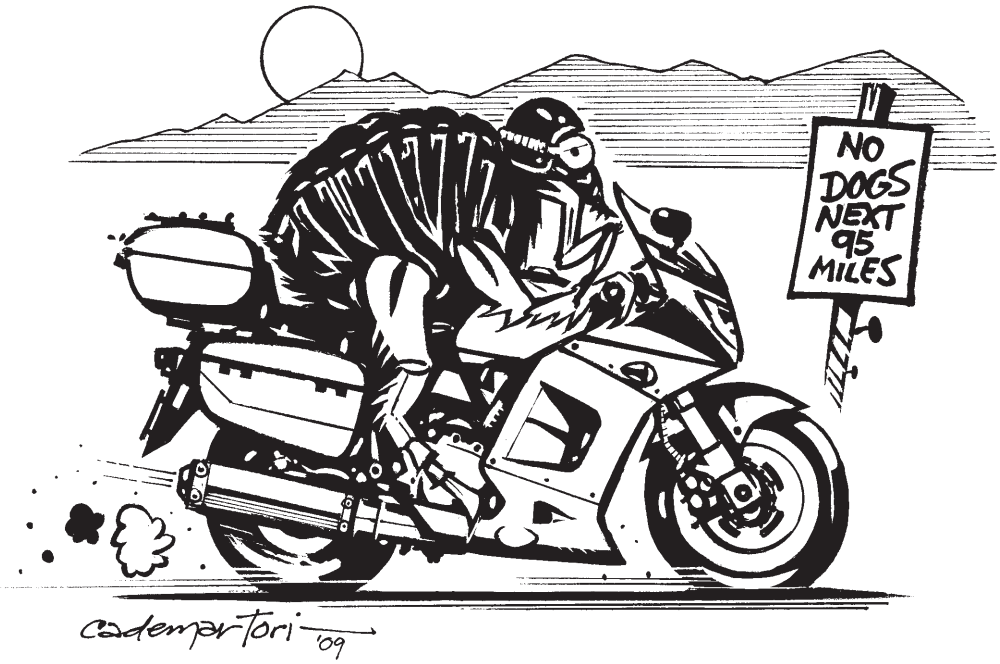
By Hector Cademartori



By Bob Higdon

Fleas on Fleas

We are such a small part of a small community of a small…



IN THE EARLY years of the 18th century three famous men were considering degrees of smallness: Isaac Newton, Gottfried Leibnitz, and Jonathan Swift. True, Newton and Leibnitz independently figured out the principles of differential calculus. And yes, their supporters argue still about which of them really was the first to get the idea into general circulation. But it took Swift, a dean of the Anglican church, to put the idea forever into a context that even non-mathematicians could appreciate:

So, naturalists observe, a flea
Hath smaller fleas that on him prey;
And these have smaller fleas to bite 'em,
And so proceed ad infinitum.

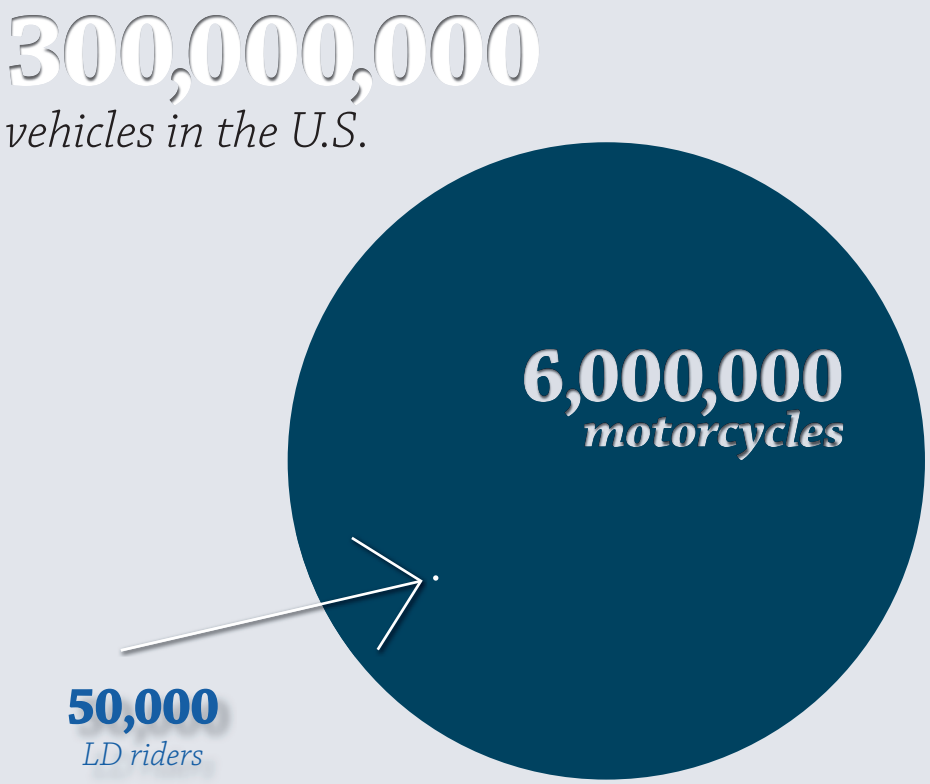
And there you have it, why you who are reading this magazine are different from those who aren't. It's called an order of magnitude, generally understood to be a power of ten, but in our case to be much, *much* worse. Truth be told, when you're talking about high-mileage riders as opposed to the general public, it's more like an order of magnitude's order of magnitude, or the flea's flea. Are you still with me? I'll try to explain.

The Federal Highway Administration, whose job it is to count such things, tells us that motorcycles represent a mere 2% of the vehicles on the road (http://safety.fhwa.dot.gov/motorcycle.htm). That's the puny impact we were having as of 2003, but I doubt that the statistic has changed appreciably since Harley and Davidson teamed up a century ago. Maybe when gasoline hits $9/gallon, as it has recently in London, our numbers will grow, but I'm not holding my breath. Riding a motorcycle has always been, and always will be, either an economic necessity or a flight of fancy. Most Americans are neither needy nor flighty.

That's the positive part. For years I've said — I've never been able to prove the point with the certainty of Euclidian geometry, but it felt better than a wild-assed guess — that long riders represented not more than 1% of the bikers in the total mix. This is the flea's flea concept. Bikes are two percent of the road traffic; Iron Butt riders, I contend, are one percent of the bikes; and it goes without saying that 1% of 2% is a tiny, tiny number indeed: If you stood on a corner and counted the next ten thousand vehicles coming down the road, just two of them would be piloted by marginalized guys like us. When people talk about "minorities," they don't have a clue. We're so minor we barely exist.

But is my estimate even remotely accurate? The National Highway Transportation Safety Administration — these guys count things too — claims that there are about six million motorcycles on the country's highway. Figure that every rider owns 1.2 bikes, giving us five million total motorcyclists. One percent of that total would amount to 50,000 long-distance riders. Does that number strike you as being somewhat optimistic? I thought so too at first blush, but further reflection suggests that it's probably in the ballpark.

In the last 15 years the Iron Butt Association has handed out a more than 39,000 certificates that document a rider's having knocked down minimum 1,000 miles in 24 consecutive hours, the basic SaddleSore ride. A couple of thousand of those rides occurred outside the U.S., so we'll toss them. We can pitch another 2,000 on the grounds that



they're duplicate (or longer) rides by the same motorcyclist. That leaves us with approximately 35,000 documented Iron Butts, some 15,000 bikers short of my predicted 50,000 big guns.

But that's easily explained. Not every heavyweight rider has a SaddleSore certificate hanging on a wall in the den. My brother and his girlfriend, camping nine nights out of ten, did an 8,000-mile ride from Richmond, Virginia to Jasper, Alberta and back on a two-stroke RD400 during the summer of 1976. He never documented that ride, but if that isn't the essence of pure Iron Butt, I don't know what is. Morris Kreumcke has a history of more than 200 1,000-mile days but not a single SaddleSore certificate. Even Mike Kneebone, who years ago resurrected the concept of SaddleSore rides from the ashes and who has his name on a Guinness record for long-distance motorcycling, is likewise an undocumented alien: no SaddleSore paper. So while we may not be able to count them all, they are still out there, those flea's fleas. We can be sure of it.

You might be one of them, whether you're flea-certified or not. If you are, then perhaps those feelings of loneliness and alienation that have forever dogged you make a little more sense now. You really *are* lonely and alienated. You're in that dim netherworld of 1% of 2% where access to full-time psychiatric care should be a matter of human right. You ride all day and all night to have breakfast with riders half a continent away from your home town simply to connect with a few of a very, v-e-r-y small number of people who truly understand why you do what you do. You can't help it; neither can they. Maybe the therapist who rides with you can sort all this out, but I doubt it.

Starting with an original population of 300 million vehicles in the U.S., we've cut away all but the seriously red-eyed motorcyclists. Now take the final step. How many of those 50,000 true butts who are still standing have ever had any realistic chance of doing something so over-the-top that the rest of us can only shake our heads in awe? Something on the order of a 100,000-mile year or a gold medal finish on an Iron Butt Rally, maybe? Two hundred fifty, do you think? This would be the final cut, the Hall of Fame selection, where we wind up with just one-half of one percent of the one percent of the two percent. We're talking about, in essence, the flea on the flea on the flea.

I could discuss this further, but I need a break. Something is biting me.

LD**Aphorisms**...

"Ride like fury. If you run out of gas, get ethyl. If Ethyl runs out, get Mabel!"
—Groucho Marx in Duck Soup (1933)

"Never ride faster than your guardian angel can fly." *—Unknown*

"On the open range the road, the landscape, and the machine all provide an experience that is for me soul centering. The rhythm of the ride is at once calming, reassuring. It is rarely achieved until more than a hundred miles have been traveled. This period of lonely introspection and intense observation yields a sense of appreciation and perspective of life that I've never experienced in any other endeavor. It is like meditation, but perhaps a little more like worship. The intensity of concentration is at once enormous and yet completely liberating."
—Warren C. Harhay, June 1, 1999

"Well-trained reflexes are quicker than luck."
—Unknown

"Never be ashamed to unlearn a bad habit."
—Unknown

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