

RICHARD'S

MOUNTAIN BIKE

BOOK

The complete guide to all-terrain bikes—
selection, repair, maintenance—and the excitement
of off-road riding and cross-country touring!

CHARLES KELLY
and NICK CRANE





Charlie Kelly

Introduction

There are two broad schools of history. Some think that history is shaped by decisions and actions on the part of individuals. Others believe that the tide of human behavior is controlled by larger forces, such as population, economic pressures, and the availability of resources.

As a participant in one of the more far-reaching developments in the field of bicycling, a development that is in its own way as significant as the introduction of the chain drive and the "safety bicycle" to replace the high-wheeled boneshaker, I still speculate on whether a few of my friends and myself really did influence the world, or whether we were just the people who were standing there when the appropriate forces came together. All of us who participated in the seminal mountain bike period of the middle seventies are daily confronted with reminders of our vision and dreams in the form of the mass-produced mountain bike, and still we wonder whether we did anything or whether it just happened to us.

Actually, it was a little bit of both. While the influence of previous pioneers of "off-road" bicycling cannot be ignored, the development of the technology, but more importantly the marketing of the concept, sprang from a relatively small group of Northern Californians, most (but not all) from Marin County. The forces were all there: a good place to ride such bikes, a climate that permitted all-year cycling, a ready supply of bicycle components, and a large contingent of cyclists. At some point in the late seventies the group of at first a few dozen and then a couple of hundred "clunker" enthusiasts reached a critical mass, and the movement took on a life of its own, independent of any single person's influence or control.

This book is my attempt to set down some of the color and excitement of those days when we thought in our naivete that Joe Breeze's ten prototype mountain

bikes were surely enough to satisfy worldwide demand. After all, we thought, who would pay \$1,000 for a bike with balloon tires? To this end I have used some material dating back to the time when no one knew how mountain bikes were going to explode onto the market; the viewpoint of these pieces varies between visionary and naive. I can remember conversations with friends before the first custom mountain bike appeared, where one or another of us would suggest that, "These clunkers are going to be worth a lot of money someday..."

"Sure," came the response. "But how are we going to get any of it?"

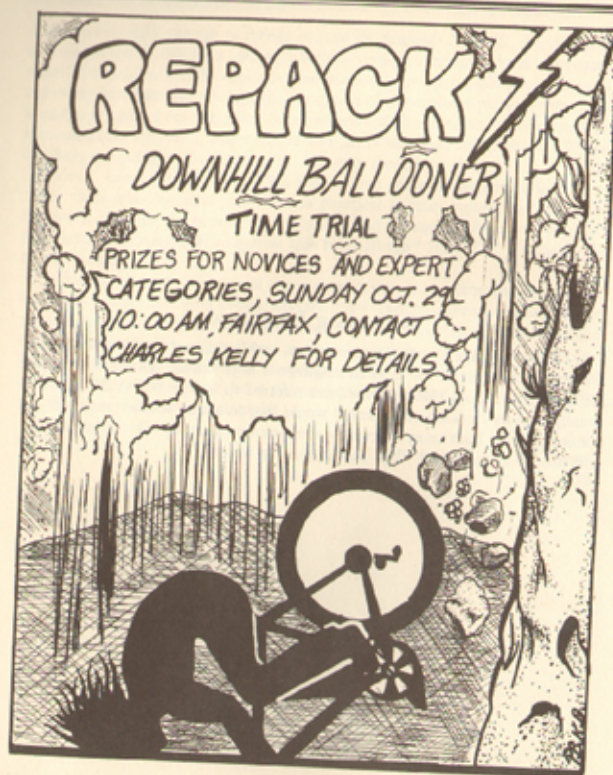
For those who are more interested in practical realities rather than romance, this work gives me the opportunity to collect and arrange all the bits of lore and experience that I hope will separate this from all the "How-To" bicycle books on the stands.

I believe some of the pioneers of the movement deserve a salute that isn't tainted by distance; any number of people who were not there have written accounts purporting to tell the origins of the mountain bike, and they all sound like fiction to me. Some have been given more credit than they deserve, and some have had their accomplishments ignored, depending on who got interviewed in the course of the research. I am not without personal prejudices, but at least this is being written from a first-hand viewpoint.

Charles Kelly
Fairfax, California
1988

Regarding Language

I try to use language as it was taught to me, and in this respect I am a victim of the sexism inherent in the English language. I hope female readers will forgive me if the anonymous rider is sometimes referred to as "he." The alternative is usually a clumsy construction, and I would like to assure female readers that I understand that both sexes are represented among mountain bikers and that any reference to an unnamed "he" also applies to women.



Repack

1976

It has been an unseasonably dry winter in Northern California, and the three young men are sweating profusely as they push strangely modified bikes up the steep dirt road in the cool air. The subject of their breathless conversation is a detailed analysis of the condition of the road surface, which resembles an excavation site more than it does a road. On occasion one or another will stop and look searchingly back down the hill, perhaps kicking dirt into a small depression or rolling a rock to the side of the road.

These young men belong to the same adrenaline-driven breed that will always be found exploring the limits of human performance; in other circumstances they might be skiing off cliffs, jumping out of airplanes, or discovering America. In this instance they have developed their own unique athletic challenge, a race whose participation is limited to a few dozen local residents who know about it and have the unusual cycling equipment necessary to take part. The road they are on is the racecourse.

After more than half an hour of hard work, scrambling and pushing but hardly ever riding their bikes, the trio reaches the crest of the hill, where the road they are on intersects another equally rough dirt road. A small crowd of about fifteen other cyclists, similarly equipped and including a couple of high-energy women, is gathered at the intersection. These people have come up by a slightly easier route that follows a paved road up part of the hill, but they have also had to ride a couple of miles of steep and rough road to arrive here. The three recent arrivals casually



Repack start line

drop their bikes on the road, which has become a jumble of modified machinery.

Most of the crowd is in their twenties, but there are a few teenagers and one grizzled individual who claims to be fifty. All are wearing heavy shirts and jeans, and most are also wearing leather gloves and heavy boots. None is wearing a helmet.

Although the scene seems to be chaos, order begins to appear. One of the group takes out of his backpack a well-thumbed notebook and a pair of electronic stop-watches. Moving slowly through the crowd, he begins compiling a list of names. The notebook is the combined scoring system, archives, and publicity for the race, since it contains in addition to today's scoring all the previous race results and the telephone numbers of all the participants. Apparently races are not scheduled, they are spontaneously called together when the sun and moon have assumed appropriate aspects.

As names are taken the notetaker assigns a starting order based on the rider's previous performance and experience. Those racing for the first time are first on the list, followed by those with the slowest previous times. The current course record-holder is accorded the honor of starting last. Now starting times are assigned to the names on the list and a copy of the list is made. The watches are started simultaneously and the notetaker hands one copy of the list and one of the watches to an "official timer" whose appearance is undistinguished from the rest of the crowd. The timer takes a moment to tape a bottle cap over the reset switch on his watch, then he jumps on his bike and disappears down the hill.

For the next ten minutes the adrenaline content of the air builds while riders attend to their pre-race rituals. Some sit quietly eating oranges, some joke nervously or talk excitedly. Others make minute adjustments to their bikes, adjusting brakes, perhaps letting a little air out of the tires, or repeatedly shifting the gears, still undecided about which ratio to use for the start.

After an interval that is too short for some and too long for others the first name is called. Up to the line steps a nervous young man who has by now tried every one of his gears without making a decision. He tries a few more last-second shifts as he rolls his bike to the line, which is a rough scratch inscribed in the road surface by the heel of the starter's boot. This is his first race, and he spends his last few seconds at the top of the hill asking questions about the course faster than anyone can answer, although answers are immaterial because he isn't listening anyway.

The starter props the young man up by holding his rear wheel, and as the rider stands on his pedals his legs are quivering. The starter intones, "Ten seconds . . . five . . ." Anticipating the start, the rider tries to explode off the line a second before the starter says, "Go!" But the starter is used to this and he has a firm grip on the wheel, which he releases as he gives the signal. Thrown completely off-balance and draped over the handlebars by his premature jump, the novice wobbles off the line for a few yards before finding the throttle and accelerating to the top of a small rise 100 yards off and then disappearing from sight.

The sport going on here is so unusual and possibly even dangerous that it is unlikely to catch on with the public as a Sunday recreation, but the participants couldn't care less. They are here to thrill themselves, not a distant crowd, and in that respect this is a pure form of athletic endeavor untainted by any commercial connection.

The bicycles in use are as unique as the sport. They are all old balloon-tire frames dating from the thirties to the fifties; most of them were built by the Schwinn Company but a few other rugged and otherwise extinct species are represented. The standard set of modifications includes the addition of derailleur gearing systems (either 5-speed or 10-speed), front and rear drum brakes, motorcycle brake levers, wide motocross handlebars, handlebar-mounted shift levers, and the biggest knobby bicycle tires available mounted on heavy Schwinn S-2 steel rims. A few reactionaries cling to their 1- or 2-speed coaster brake models, but the majority have drum brakes and gears, and this looks to be the wave of the future.

The riders affectionately refer to their machines as "Clunkers," "Bombers," or "Cruisers," depending on the owner's local affiliation, and there are not more than 200 of the advanced models in Northern California.

Certainly people have been riding old bikes on dirt roads in all parts of the world as long as there have been old bikes. These Northern California riders have successfully crossed old newsboy-type bikes with the modern "10-speed," and the result is a hybrid that is perfectly adapted to the fire roads and trails of the Northern California hills. In the process of field testing their modifications the researchers have shattered every part to be found on a bicycle. Rims, hubs, handlebars, cranksets, seat posts, saddles, gears, chains, derailleurs, stems, pedals, and frames have all been ground to fragments along with some exterior portions of a number of clunking enthusiasts, who apparently will make any sacrifice in the name of science.

During the early experimental stage some riders recognized the steep dirt road now known as Repack as an ultimate field test for both bike and rider. This rarely used fire road loses 1,300 feet of elevation in less than 2 miles. In addition to its steepness, it features off-camber blind corners, deep erosion ruts, and a liberal sprinkling of fist-sized rocks. The name "Repack" stems from the coaster-brake era; after a fast trip down the hill the rider would heat the brakes to the point where all the grease in the hub turned to smoke, and it was time to repack the hub.

To the uneducated eye, clunkers might resemble lightweight dirt motorcycles, with their wide handlebars bristling with levers and control cables. The similarity is only visual, however, and cornering on a clunker at high speed is a unique form of body art. A motorcycle has larger tires, and more important, it has shock absorbers; a clunker is not so equipped, and it tends to become airborne when it hits even slight irregularities in the road surface. In a hard corner a clunker does not have the instant acceleration that a motorcycle rider uses to bring the rear end around, and without shock absorbers the bike skitters. Still, an expert rider can take a clunker around curves much faster than seems possible. Interestingly, photographs taken during Repack races show that the fastest riders raise the least dust.

The absence of shock absorbers on a bicycle can sometimes make hanging onto the clunker handlebars difficult at high speed on a rough surface. Most of the road shock is transmitted directly to the hands, making delicate braking operations difficult. Perhaps the most noticeable feeling (other than relief) at the end of a fast run down Repack is the cramp in the hands caused by this abuse. Here the coaster brake reactionaries claim superiority, since their brakes are foot-operated.

The styles developed and displayed by the expert riders vary with the personalities involved. Joe is known as the "Mad Scientist." He has drawn detailed maps of the course which he uses for home study. On race day he walks slowly up the course to inspect it for new hazards, then he rides with a controlled fury that belies his otherwise quiet personality.

A rider named George occupies the other end of the stylistic spectrum, and he

has earned the nickname the "Mad Bomber" because of his Kamikaze approach. George rides an old 1-speed coaster brake machine with no front brake. His style is characterized by 75-foot sideways slides coming into corners, accompanied by miraculous recoveries from certain doom. On one of his favorite roads, George crouches behind his handlebars and rides under a single pipe gate at 35-40 mph, and he claims jumps for distances of 40 feet.

Returning to the starting line we find that riders have been sent off at two-minute intervals. The spacing is to keep riders from catching and having to pass one another. The race evolved out of the downhill dueling that inevitably took place when groups of riders descended. A mass-start format was out of the question, because the narrow roads and blind corners inhibit passing, and any group larger than three was certain to invite mayhem. The time-trial format gives each rider the same chance, undistracted by other riders. By grouping the riders by ability the organizers prevent a slow rider from being followed by an extremely fast one.

The fastest riders are started last so the other finishers can observe their styles, and this starting order leads to an interesting psychological effect. As the number of riders at the line dwindles, those who remain are increasingly the most expert and dedicated riders. They all know each other, and while this is a friendly contest, it is still a contest and these riders are all trying to win it. After the first-time riders leave the line, the chatter dies down, and the air nearly turns blue with the fierce concentration now evident. The only sounds are soft noises of bike adjustments being made, broken now and then by the voice of the starter as he calls the next rider and counts down the start.

What is it like to ride this course? As the rider before you leaves, you have two minutes to prepare yourself, and for a surprising number this means a fast trip to the bushes for an emergency urination. Wheeling up to the line you find that your breathing is already a little strained, fast, and loud in your ears. "Thirty seconds." Squeeze brake levers for the hundredth time to make sure they are adjusted for maximum grab. "Fifteen." You check for the eighth time to make sure you are in the right gear. "Ten." Stand on the pedals as the starter holds your rear wheel. "Five." The world shrinks and becomes 12 feet wide, stretched out in front of you. It takes a conscious effort to hold back from an early start. "GO!" The wheel is released and the bike shoots forward as if propelled by a tightly wound spring.

The first 150 yards are level with a soft surface and a light rise. It is imperative to ride this section as quickly as possible because the fast riders gain two or three seconds on the slower ones here.

Over the rise and into the downhill, and you are already gasping with the effort of the start. No time to let up though, because this section is straight and even though it is steep you are standing on your pedals and stomping your highest gear.

Blind left turn onto the steepest part of the course, covered with ruts and loose rocks. Watch the bump on the corner because at this speed it will launch you into the air and put you out of position for the next corner.



The Repack Test (failed)

Now the road becomes a series of blind corners which all seem to look alike as you approach. This section favors the experienced Repack rider who can remember which corners to brake for and which can be taken wide open. Since Repack is in more or less a straight line at the top, most of these corners can be taken at full speed, a thrilling prospect in light of the fact that it will take you some distance to stop, unless you hit a tree. At no time should you stop pedaling unless you are jamming on the brakes. As you approach some of the more wicked curves you are conscious of a few 50-foot, side-to-side skid marks laid down by rookie riders. A definite "groove" is visible on most corners, worn into the road surface by the passage of many knobby tires.

A roller-coaster section gives you a new thrill as the bike becomes weightless just when you want the tires on the ground. Into a dip and the bike slides, then corrects itself with no apparent help from the rider, and points in exactly the right direction. Cutting corners as closely as possible, you receive a whack or two from overhanging branches.

Your adrenaline pump goes into overdrive, and your reflexes and vision improve immeasurably. You are aware of every pebble on the road even though they are whipping past. You are completely alone; the only spectators are near the bottom. You dare not lose concentration for an instant, but there is little danger of that.

Sliding into an off-camber, eroded turn you make a slight miscalculation. Out of control, you must make a rapid decision, off the edge or lay the bike down. You lay it down . . . damn . . . torn shirt, bloody elbow. No time to check for further damage, since the arm still works; the shirt was old and the elbow was older. How's the bike? It's okay, and a little less paint won't affect the handling . . . jump back on and feed the chain back on as you coast the first few yards. Back in gear, and now you need to make up time.

Near the bottom of the course you reach the switchbacks, and now you are vaguely aware that you are being photographed as you try to maintain maximum speed through the hairpins. Out of the switchbacks in a cloud of dust and into the final straightaway. Jam on brakes to keep a bump from launching you off the edge. Now several dozen people line the edge of the roadway, earlier riders, girlfriends, and a few locals out to watch the action. Last corner . . . and speeding past the boulder that marks the finish, you skid to the flashiest possible stop, then throw down the bike and run over to the timer, who immediately gives you your elapsed time. It is the best recorded so far on the day, but your elation is reduced by the arrival of the next rider somewhat less than two minutes later. As the last half dozen riders finish, the times continue to go down, and the last finisher records the fastest time of the day, some twenty seconds better than yours. Any time under five minutes is respectable, but the record stands at 4:22.

Now the event is over and the winners are announced, but no prizes are handed out. There are no entry fees, very few rules, and usually no prizes other than a round of beers, but no one seems to care. The finish line is a hubbub as adrenalized riders bounce around, reliving and describing at length their rides and various

crashes. "I would have done better, but I crashed" "I crashed twice and still did better than you did" "You should have seen it" But no one did.

While the Repack race seems to define the essence of clunking, it is unique and is only one facet of the sport. Most clunker riders are interested primarily in riding, rather than racing. In Northern California there is ample hill country, laced with fire roads and trails which are as good as freeways for clunker riders. This is where the clunker comes into its own, for these are not just downhill bikes. Super-low gears enable a strong rider to climb most hills, and the true enthusiast sees nothing wrong with spending an hour pushing his bike up a steep hill in order to come flying down. The clunker allows the rider to penetrate deep into the hills, away from cars and even from most hikers. The ability to travel at 10-15 mph in total silence in rough country makes the clunker the most efficient backwoods transportation yet invented. It can be ridden on the narrowest trails or carried if necessary over any obstacle.

As a means of transportation the clunker has a few drawbacks; weight (about 45 pounds) and high rolling resistance due to the balloon tires keeps the cruising speed down to a mellow but comfortable velocity. For short distances the clunker is a perfect vehicle, as its lack of speed is offset by incredible braking, cornering, and maneuverability. To the experienced rider there are no obstacles, and ditches, curbs, fallen trees, and so on become part of the enjoyment of riding. One need not worry excessively about tire damage since there is probably no more rugged bicycle tire than the 2.125-inch knobbies in general clunker use.

Clunker technology, a field limited to a small number of mad cyclo-scientists, is still in its infancy. Plans are being developed for frames to be made of the same lightweight tubing used in racing bicycles. If the weight can be brought down and the frame redesigned for better handling the machines in use will become as obsolete as the bikes they were made from. In underdeveloped countries, such as this one, the clunker has promise as low-cost, non-polluting transportation over any terrain.

Repack Revisited

The Repack Downhill is gone, the victim of its own success. Originally an underground event, with the increasing numbers of mountain bikers it surfaced on a nationally syndicated television program in 1979. Instead of a couple of dozen friends the field grew to upwards of 100 riders, and the growth attracted the attention of the governmental agencies who owned the property the road runs across. Attempts to work within the system by acquiring all necessary permits failed in the harsh light of the liability and insurance situation. The last Repack race was run in 1984.

In some respects, despite the fact that it was the point of origin for much of the mountain bike movement, the Repack event cast mountain biking in a bad light. Because it was a spectacular event, it drew attention from the main focus of mountain biking, simply riding on rough roads. And because it also exemplified the riding style that has come to be described as "gonzo," i.e., all-out with no

regard for personal safety (and by implication for the safety of others), those elements of society who consider bicycles a dangerous intrusion in wilderness areas have seized upon this race as an embodiment of everyone's worst fears.

In its history from 1976 to 1984, Repack saw no more than 200 individuals take part. In spite of this, the name has assumed legendary status among mountain bikers. This status may or may not be deserved, but it is certain that this unlikely event was the meeting place and testing site for the people who brought mountain biking to the world. Among the participants were course record-holder Gary Fisher, who helped put gears on Marin's "clunkers," and who is also responsible for some of the standard refinements by adding "thumb-shifters" and the quick-release seatclamp. Joe Breeze holds the second-fastest time, and his designs and frame building were the breakthrough that created the modern mountain bike. Tom Ritchey raced at Repack on a borrowed Schwinn Excelsior before he ever built a mountain bike; Tom's influence can still be seen in the designs of most mass-produced mountain bikes. Another early builder, Erik Koski, raced his designs there. For my part, I was the race organizer, scorer, and Keeper of the Records; in 1976 I had a frame built specifically for the purpose of racing there, the first custom mountain bike I know of. (This frame did not live up to my expectations, so I persuaded Joe Breeze to build me another one. Two, his and mine, turned into ten, the prototypes of the modern machine.)

As it turned out, the Northern California riders were not the only people experimenting with off-road bicycles. A noted cycling enthusiast named John Finley Scott had built in 1953 a bike which in nearly all respects resembled the generation of off-road bikes that followed the first modified newsboy bikes of the sort first raced at Repack. Scott's bike had a Schwinn World diamond frame, knobby tires, derailleur gears, and upright handlebars. Just before the beginning of the mountain bike revolution, during the early 1970s ranchers in Arizona were using knobby-tire bikes with 5-speed gearing to inspect their vast acreages.

But these examples and no doubt others like them seemed to be isolated, and they failed to influence the rest of the cycling world. By 1979 several Northern California builders were making major strides in off-road design, inspired by the feedback from each other's efforts. In addition to Joe Breeze, these included Erik Koski, Jeffrey Richman, Jeff Lindsay, and of course Tom Ritchey.

In 1979 Ritchey's frames became the first offered on the market commercially. Even at the staggering price of about \$1,300 a copy, he could not keep up with the orders. About the same time Marin County brothers Don and Erik Koski designed the "Trailmaster," and shortly afterward Jeff Lindsay introduced his "Mountain Goat." In 1980 Specialized Bicycle Imports of San Jose, California, bought four of Ritchey's bikes and used them as the starting point for the design of the first mass-produced mountain bike, the Japanese-made Stumpjumper, which appeared in 1981. With the appearance of this and other mass-market bikes shortly afterward, the movement took off.

who had a pile of rusting bikes behind his house. I bought about five excellent frames, and more importantly acquired a pile of unbent forks. After I gloated about my good fortune at home, several of my friends went back and cleaned the farmer out of everything else of any use, including a couple of frames I hadn't noticed.

One of the facts of life among clunker riders was bent forks. To begin with, nearly any bike forty years old had already been through a few dozen head-on collisions, and the cheesy flat-bladed non-tubular forks almost never survived as well as the rest of the frame. Even if they did, the new owner would generally finish them off in short order, and the average clunker rider expected to use up a couple of pairs of forks a year. Old girls' bike frames were unsuitable for riding, but for some reason girls didn't use up nearly as many forks as the owners of boys' frames, so old girls' frames were discarded after being stripped of everything useful, primarily the fork and coaster brake hub.

The "knee-action" sprung fork that appeared on some of the fancier Schwinn in the forties and fifties was the subject of a never-to-be-repeated experiment. For one thing, the fork was too heavy even for a clunker rider who wasn't adverse to hanging all kinds of other heavy objects from his frame. Also, while the knee action might smooth out some of the ruts while the bike traveled in a straight line, it gave the bike a continuously changing wheelbase and head angle through a corner and absorbed the rider's energy whenever he stood up to pedal. This component has inspired the phrase, "It doesn't work, but at least it's ugly."

Although their value in preserving the integrity of the fork may be questioned, every Marin clunker rider who could find them sported on his bike a pair of "fork braces," steel rods running from the headset to the dropout. Whatever their value, they gave the Marin bikes another of their distinctive features.

In my travels during that period I was careful to look for the oldest bike shop in every town I visited, and I made a point to ask there if they had any old stuff lying around that I could poke through. Most of the time it was nothing but junk, but the times I struck gold were worth any number of disappointments. I can remember finding a fruit crate full of Morrow coaster brakes in a small town in Northern California, buying rare Schwinn cantilever brakes for a couple of dollars in Stockton, and the time in Denver I stumbled on literally dozens of Bendix coaster brake 2-speed hubs, complete with shifters and cables. Keep in mind that these parts were as good as money in the small sphere of clunker riders.

After obtaining the parts, the prospective clunker builder did not just sit down and throw them together over a period of a few hours. Usually the process took from several days to a week, and included half a dozen trips to the bike shop and a couple to the hardware store. No matter how many lists were made out, it always seemed to take one more trip for parts.

Step one of the building process was realigning the frame. The rear dropout width was not wide enough for the derailleur gearing setup, and required careful spreading. The trick was keeping everything aligned so the rear wheel would still be in the middle. This was accomplished by careful prying with a two by four

and a little subtle stomping, with a piece of string tied around the frame to check for straightness. The process was accompanied by incantations of the four-letter variety. The frame alignment was rarely permanent, since the frames were made of small diameter mild steel rather than the oversize chrome-moly used now, and realignment was necessary now and then for bikes that saw heavy service, until the frame gave up the ghost at one of the overstressed welds.

Two-speed coaster brake hubs were the first step toward multiple gearing on clunkers. The Bendix company made two varieties of this component, one that was shifted by a lever and cable, and one that was shifted by backpedaling. The cable-operated type was much preferred, since on the other type each application of the brakes shifted the gear.

One gearing experiment involved the use of an internally shifting 3-speed hub used in conjunction with a 3-speed cluster and derailleur for a 9-speed combination. Three-speed hubs with drum brakes were available, and this looked like a promising direction. The compound low gear of about 18 inches was attractive; with a pair of 185 mm cranks the rider should be able to ride straight up a wall. That was the theory. In practice the internal gearing was not capable of handling the torque developed by a bike-and-rider combination weighing over 250 pounds, using these long cranks, and attempting to climb a tree. The internal planetary gears exploded into dust on the first steep climb, and the experiment was declared a failure.

Although Gary Fisher is generally credited with being the first person to try a drum brake 5-speed hub on his clunker, he should be more properly credited with being the first person from Marin County to do so. In 1974 the California state cyclo-cross championships were held in Marin, a low-key affair, since the "Bike Boom" was just getting underway. Two of the participants, who did not live in the area, rode balloon-tire bikes equipped with multiple gearing and drum rear brakes. To this day I have no idea who these men were, but had they continued to work in that vein, one of them might have been writing this book!

Nearly a year later, Gary Fisher found an old tandem rear drum brake at a flea market and brought it home. Any of us who hefted it thought that the massive steel hub was too heavy to be of any use, but Gary went ahead and built a wheel on it. The process involved a typical clunker adaptation, since Gary was unable to find the correct length of spokes. He shortened some by bending them an inch or so from the spoke head and hooking them through the flange.

The drum hub added more weight to an already heavy bike, but Gary convinced all his skeptical friends on the first ride with his 5-speed bike. In spite of the extra weight, he pulled away on a long hill so convincingly that within a week drum rear brakes had been added to the list of items to be obtained whenever they were available.

Marin County has more than its share of bike shops, and suddenly all of them were besieged by clunker riders demanding tandem drum brakes. This was the sort of item that the average shop might sell once in ten years, and suddenly it was the hottest component around. The sudden demand for the obscure part was



Gary Fisher: Repack course record-holder and modern-day mountain bike manufacturer



Gary Fisher's original 5-speed, drum brake clunker, c.1974

likely the first indication to the bike industry that something unusual was going on there. After the second or third re-order, Marin bike shops dragged their drum brake hubs out of the back room and began displaying them as prominently as such a fast-moving item deserved. No doubt the wholesalers who supplied the shops began to notice that most of the drum brakes sold in the United States were going to one obscure location.

Front drum brakes were popular also; the only practical alternative was a rare pair of Schwinn cantilever brakes that bolted directly to the fork blades. The most stylish front drum brake to have was the original equipment Arnold-Schwinn drum brake, but this was as rare as the cantilevers. Riders scrounged for a variety of drums made in Scandinavia and England. Another source was a front drum brake drilled for 24 spokes and used as original equipment on a line of Schwinn 20-inch bikes. Riders redrilled them for 36 holes.

Having converted their bikes to multiple gears, now clunker riders needed a proper shifting assembly. Down tube shifters didn't work, because for one thing the diameter of the down tube on an old clunker was too small for the clamp, and for another, riders decided that they didn't want to be reaching for the shifter while going over rough ground. The obvious solution is bar-end shifters, but these met with limited favor because they could easily snag on brush on a narrow trail and could be snapped off in a crash. At first riders tried "stem shifters," which are found on cheap 10-speeds and mount on the stem right over the headset. The problem with these was that the rider still had to take his hands off the bars to shift, and when he stood up, he could hit them with his knees.

One early solution was to mount the stem shifters on the handlebar near the right grip. This permitted the rider to shift with his hands on the bars, and considering the alternatives it was no trouble to handle all the shifting with one hand. Gary Fisher deserves credit for adapting the "thumb-shifter" to clunker use. If off-road bikes had not come along, this component might have drifted into the obscurity it was headed for, since until that time thumb-shifters were only found on inexpensive ladies' middleweights. For some years in fact, thumb-shifters were made only for the right side, since the original design was for the rear derailleur only. Clunker riders became used to the asymmetrical shifters, using a right for a left by turning the clamp around.

Gary Fisher's other major contribution to clunker design was the introduction of the quick-release seat post clamp. Modern mountain bikes use a cam-type quick release similar to an axle quick-release, but the QRs used on early clunkers were more commonly threaded screw-down seat post tighteners taken from stationary exercisers. The reason for using this device is so the saddle could be lowered during descents, but clunker riders had reasons for lowering the saddle that weren't related to the center of gravity. The old frames used a small diameter seat post made of mild steel, which was nowhere near as strong as the larger diameter alloy seat posts used on racing bikes. Clunker frames were of the "one size fits all" variety, and for the 6-foot-plus riders this meant that in order to get proper leg extension they had to expose a considerable length of seat post. If the rider landed heavily on the saddle during a bouncing, rocky downhill, it usually bent the seat post. Saddles were lowered to prevent this possibility by reducing the amount of leverage that could be applied to the seat post.

Speaking of seat posts brings up the subject of saddles. The saddle of choice during the early clunker movement was the Brooks B-72, a wide leather platform supported on four rails rather than the more common two-rail arrangement. Modern mountain bikes have saddles similar to those found on road bikes, but the early clunker riders wanted something wider. The only problems with the B-72 were (1) durability and (2) finding one. Problem one was solved by having a few extras in the parts box, but problem two took careful scrounging. Of course, anyone who wanted to go into a shop and spend \$30 could have a B-72, but this was not the spirit of the times. The trick was to find an old Raleigh 3-speed, which featured the B-72 as original equipment; after terminal neglect had set in and the only useful part left was the saddle, the entire bike could be purchased for a couple of dollars.

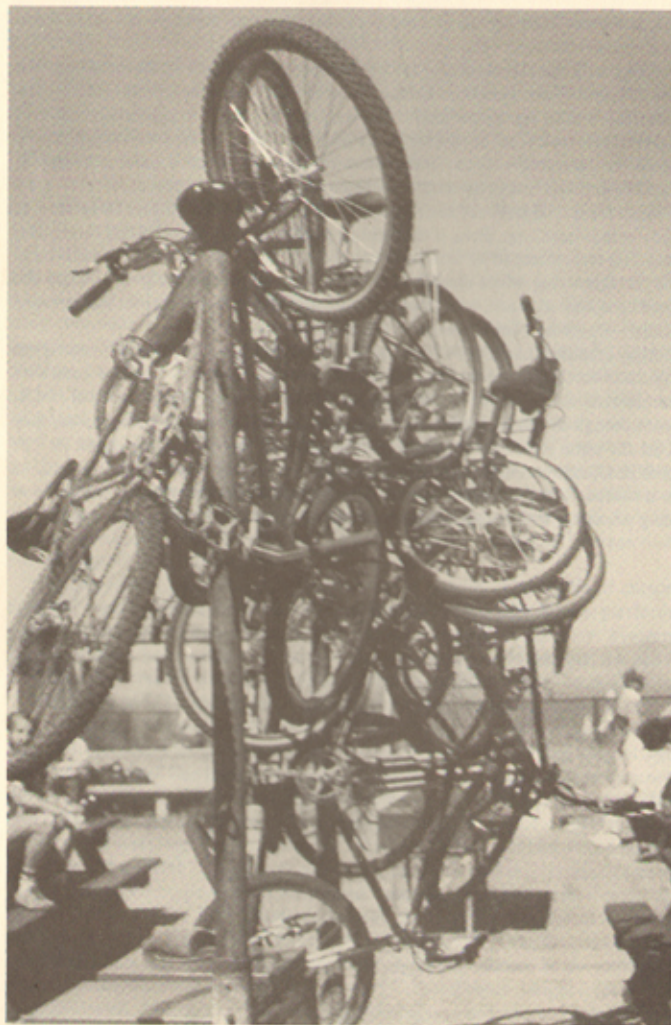
One of the features that sets mountain bikes apart from standard road bikes is the upright handlebar. Clunker riders didn't have the modern versions of one-piece "bullmoose" type or the other refined handlebars that have been developed by custom mountain bike builders. Instead they used a variety of unusual handlebars; one style popular with the early 1-speed clunkers was the "longhorn" swept-back bars that were original equipment on the old frames. As the multiple-gear clunkers became popular, riders opted for handlebars designed for BMX or motorcycles. At first the style was to get the biggest and widest available, but

the problems these caused on narrow trails influenced riders to cut them down to a more reasonable size.

Along with the thumb-shifters riders mounted motorcycle brake levers on their handlebars. These were used because the only bicycle brake levers made for flat handlebars were cheap specimens that were not up to the rugged treatment they received off-road. The motorcycle levers had threaded cable adjusters which proved useful in a time when drum brakes required constant attention and adjustment. In addition, the longer motorcycle lever provided more leverage.

With the introduction of the 5-speed clunker by Gary Fisher, the 10-speed was the obvious next step. Even if they didn't plan to use ten gears, riders found that they had to mount a front derailleur as a chain guide, since the chain would derail off the front ring when the bike started bouncing down a steep hill. Once the derailleur was in place, it seemed silly not to find an old Schwinn Varsity steel double chainwheel on a one-piece crank and mount it up.

Alloy cranksets had to wait until the special adapter necessary to mount cotterless cranks to the 2-inch bottom bracket shell was available. Just as they had done with handlebars, riders turned to parts created by the rapid rise in popularity of BMX. Even though the 20-inch bikes were considerably smaller than clunker bikes, they used the same standards for parts such as headsets and bottom brackets. At this time BMX riders were demanding higher quality cranksets, which led manufacturers to introduce the necessary adapters. This permitted clunker riders to upgrade to alloy cranksets with considerably more variety in gearing than the steel one-piece.



Meanwhile in the Rockies

1978

Crested Butte, Colorado, a small town located high in the Rocky Mountains, is the scene of what is certainly one of the most unusual bicycle tours in this country. Not to be confused with traditional bicycle touring, in which a 10-speed bike is loaded with camping gear and directed down a smooth ribbon of asphalt, the "Crested Butte to Aspen Klunker Tour" pits a rag-tag collection of balloon-tire bicycles and free spirits against some of the roughest terrain ever attempted on two wheels. The result is a two-day expression of exuberance reminiscent of frontier festivities.

Crested Butte, sometimes called Crusty Butt by the locals, is an isolated town with a population of about 1,500. The elevation of nearly 9,000 feet is rendered insignificant by the surrounding mountains, massive, treeless peaks ranging from 12,000 to over 14,000 feet. The town boasts two paved streets, and except for the presence of motor vehicles, it still looks like a mining town straight out of the 1880s. Half the buildings do not appear to have been painted since they were built in the last century. In its longest dimension, Crested Butte measures no more than ten blocks.

Distances and road conditions being what they are, there is little need in Crested Butte for a \$1,000, 19-pound, handcrafted Italian racing bicycle. It is no more than a five-minute ride for the slowest cyclist on the heaviest bike from any part of town to any other, and in the last few years most of the citizens under the age of forty have equipped themselves with some form of "town bike," assembled from whatever parts are available. While the local bike shop (operated out of the

proprietor's living room) has access to a few new parts, the main supply of components comes from occasional expeditions to a rich vein, the Denver Dump.

The people of Crested Butte are an individualistic collection, since the long winters and limited local economy combine to keep out all but the hardest souls. During the short summer many of the men work on the forest fire crews, putting in long days of hard work under dangerous conditions for \$4.50 an hour. The cultural gulf between Crested Butte and Aspen, 35 air miles but over 100 driving miles away, is enormous. Aspen is well known as the home of celebrities in the fields of sports, motion pictures, and recording. In Aspen people Have Money; in Crested Butte people Make a Living.

Given the cultural differences, it isn't surprising that the good ol' boys from Crested Butte consider their counterparts in Aspen somewhat effete. As long as the Aspen residents stayed on their side of the mountain they could be ignored, but in the summer of 1976 a group of motorcyclists from Aspen rode over rugged 12,700-foot Pearl Pass; when they reached Crested Butte they parked their machines in a row in front of the Grubstake Saloon and stepped inside to wash down the dust.

The Grubstake was the main watering hole for the Crested Butte firefighting crowd, although they didn't drink much water there, and they weren't impressed by what they viewed as a cultural intrusion. Ringleader Rick Verplank sensed a need to top the invasion from Aspen with a gesture from Crested Butte, and came up with the idea of duplicating the feat on town bikes and parking a pile of typical Crested Butte machinery in front of the biggest bar in Aspen.

The first epic ride was carried off in fine style, even though some "riders" covered much of the distance by traveling in one of the several 4-wheel-drive vehicles that accompanied the group. The group took two days to reach Aspen, camping out for the night at Cumberland Basin at 11,000 feet. Richard ("Richard the Rat") Ullery achieved some notoriety on the trip; hampered by a broken leg but not to be left out, he followed the cyclists in a support vehicle riding in a padded, antique copper bathtub. The event was such a success that plans were laid to make the ride an annual event sponsored by the Grubstake Saloon.

The next year, 1977, was a dry year, and most of the original riders were too occupied with firefighting duties to take part. The Second Annual Klunker Tour was canceled. The dry summer was followed by a dry winter, and the local skiers were frustrated by an absence of snow. As an outlet for the accumulated energy they staged impromptu town bike events, such as a lap race on a course in the middle of town that started on the main street and threaded its way through backyards and a frozen 6-foot-wide alley. Another event called for blocking the street in front of the Grubstake for a bike-jumping distance contest off a 2-foot ramp; this led to an enormously satisfying amount of personal and mechanical destruction.

During this same period on the West Coast, a number of Northern California cyclists including myself had been experimenting with cross-country bicycles. For the most part these were old balloon-tire frames converted to multiple-gear derailleur

systems, using drum brakes but retaining the balloon tires. In 1977 these bikes had been taken a step farther with the construction of a few hand-made prototypes. The frames for these new bikes are made for 26-inch balloon-tire wheels and the geometry is copied from a popular bike from the thirties, but there any resemblance to the old "newsboy" bike ends. All the tubing is straight chrome-moly instead of curved mild steel, and all components are high-quality bicycle parts such as sealed-bearing hubs and bottom bracket, and brazed-on cantilever brakes. Twelve gears with the emphasis on the low range make these the ultimate mountain bikes.*

When the Crested Butte to Aspen ride came to our attention through a magazine article we contacted Duane Reading and Bob Starr, owners of the Grubstake Saloon, and they informed us that the ride was on again and was scheduled for September 23 and 24 with the same campout at Cumberland Basin. A 4-wheel-drive vehicle would carry all the gear, so cyclists were free to enjoy themselves while pushing their bikes 8 or 10 miles uphill. The ride sounded like an interesting challenge and a great time, so with as little planning as possible, five of us from California made our way to Crested Butte, where we joined some of the local citizens in what turned out to be a unique experience.

Entering Crested Butte on a beautiful afternoon, our first impression was that everyone in town owned a bike. Most of the machines were the products of years of crossbreeding: a 10-speed, for example, might be modified by the addition of fatter tires, a banana seat, and high-rise handlebars (with ribbons on the ends) so that a person may sit properly upright and observe his or her surroundings. Since the streets are so rough and the distances short, the old balloon-tire bikes with 1 speed and kick-back coaster brakes are more popular than skinny-tire 10-speeds. The average speed of a cyclist in Crested Butte is usually just enough to keep the machine upright; the stately and graceful progress of the citizens harkens back to a gentler era and is itself an argument against the use of the automobile.

On our arrival we searched out Duane Reading at the Grubstake and introduced ourselves, and in turn he introduced us to just about everyone in Crested Butte. The arrival of a truck loaded with strange bicycles did not go unnoticed, and within a short time most of the locals who would eventually accompany us to Aspen had checked us out and inspected our bikes.

After introductions and shop talk with the town bike mechanics we were hustled over to the local radio station for a live interview, since we were the closest thing to news that had happened all week. The disc jockey was taken by surprise, so we all sat in the tiny studio and tried to think of clever things to say. Failing in this, we were saved by the bell, figuratively speaking, in the form of the town fire alarm, which assured us that no one was listening.

As might be expected the Crested Butte boys are maniacal downhill riders, having hundreds of miles of steep dirt roads close at hand. On a slow afternoon some of the crew get a truck ride to the top of a convenient local peak and then ride

*This piece first appeared in 1978 and was probably the first time the term "mountain bikes" was published.



Media hype Crested Butte style

back to town in a wild rush on the challenging terrain. After our "interview" Duane suggested that we go out to a favorite local downhill, a long, steep hill with the reassuring name, "The Ride to Die." After a couple of days of driving, we were ready for some action, so we jumped at the offer.

The first order of business was rounding up a truck to take us out there, and Duane took care of that by stopping every pickup coming down the street, looking for a volunteer driver. The process took a little while, but eventually we climbed into a wheezing old Chevy truck piloted by a madman and headed out of town. The trip up one side of the ridge was at least as exciting as the trip down the other side on bikes, as our driver kept his dying vehicle in motion by hoarding his momentum, holding the pedal to the floor on the level stretches and hitting the steep pitches as fast as possible. On the last turn before the summit the truck balked, so we all piled out while the driver backed off 100 yards for a flying attempt. Amid a cloud of dust, blue smoke, and profanity, the truck made what was certainly its last assault on the ridge, since by this time the cab was alarmingly full of smoke.

The scenery on top of the ridge was, as expected, spectacular, so we spent a few minutes taking it all in before starting down toward Crested Butte. The "Ride to Die" is a typical Rocky Mountain back road, steep, rocky, eroded, rough, and lots of fun. The first half-mile or so resembled a stream bed, pure loose rock and gravel, then it changed to a smooth dirt surface with a few surprises such as scattered large rocks or deep erosion ditches which here and there cut completely across the road. The best way to handle the ditches is to approach at high speed and lift the front wheel at exactly the right time; the consequences of poor timing are obvious, but we all had plenty of experience at this and there were no mishaps.

Near the bottom we encountered several sweeping curves, and as we entered these all the members of our group were whooping and screaming with exhilaration. The combination of the fine weather, beautiful surroundings and great riding overwhelmed our senses and created one of those jewels of experience that stands in the memory as a time when everything was perfect.

Reaching the bottom of the ridge we found a gently sloping valley floor which was shared equally between beavers and cattle. We were immediately impressed by the ingenuity of the beavers, expressed in their elaborate water projects, contrasted with the stupidity of the cattle. Perhaps thinking we were cowboys there to round them up, a couple of dozen cattle trotted down the road in front of us in a slow-motion stampede until Joe cut across the rough field to outflank them and herd them off the road while we passed. None of the beavers stampeded.

On the rolling road our group stretched out as each of us found his own pace. We regrouped at the Grubstake after riding the 3 or 4 miles of smooth dirt road back to town, and Duane offered us the use of his house during our stay. Having put no previous thought to the matter of a place to sleep, we accepted politely and rapidly.

The next morning dawned warm and clear, and with one day to kill before the big ride, we set out to explore Crested Butte. Our first stop was the local living room bike shop, where the proprietors were busy getting their own machines ready. The shop is in an old house with a yard full of wheels, frames, and bikes either partially assembled or disassembled depending on one's point of view.

From the shop we wandered over to a house on the other side of town where the unfenced front lawn was strewn with bike parts, tires, wheels, cans of solvent, spray paint, and assorted nameless fragments. Here a group that varied from three to nine people conducted all day what can only be described as creative bike repairs. There had been talk of canceling the ride due to extreme lack of local participation, but our arrival had changed all that. After all, we even had a woman in our group, and no Crested Butte firefighter was about to admit that she was capable of something he wasn't. Unfortunately, until we arrived no one had given much thought to bicycle maintenance, and at this late date the situation was universally desperate among the locals. With the only real bike mechanics in town hard at work on their own bikes there was a shortage of labor, so we pitched in to help out some of the worst cases.

Due to the lack of new parts, some bikes were ruthlessly pirated in order that others might live. Minor differences in components make a ball-peen hammer an essential tool in this operation. These eleventh hour efforts left little time for testing of the results; the test would come the next day, and some would fail it.

Later that evening most of the firefighters gathered at the Grubstake for what appeared to be some kind of purification ritual. They toasted each other until they were all completely toasted.

As we assembled casually the next morning in front of the Grubstake there were obvious differences between the California crew and the local riders. On our side

were the dedicated cyclists on the custom machinery, in addition to myself, Joe Breeze, Gary Fisher, Mike Castelli, and Wende Cragg. By contrast the locals were not so involved with cycling as they were involved in doing outrageous things, such as dragging town bikes over the pass. They were surprised that anyone would travel 1,000 miles to do anything so ridiculous. Eight riders from Crested Butte took part, along with one from Denver and another from Hotchkiss, about 50 miles away. A local retriever named Chump, owned by local "Archie" Archuleta, lent mascot support.

We piled camping gear into two 4-wheel-drive vehicles that would act as motorized support. In the lead would be Tour organizer Duane Reading, and following us would be jeep acting as sagwagon and carrying a photographer. For an hour or so moderate confusion reigned as riders compared bikes, took pictures, and packed the support vehicles. A small crowd of spectators had gathered, since this was the only visible activity in town, so no one was in a hurry to leave and give up all this attention.

At eleven o'clock we finally assembled for an "official" start. The point was repeatedly and loudly made that this was a tour and not a race, as we lined up sixteen strong (some stronger than others) from curb to curb. Duane impatiently directed the limited auto traffic onto other streets, and surprised drivers muttered imprecations as they were told in no uncertain terms that this street was in use and they would have to use another. A few more photos were taken, and then Duane shouted, "Go!" We were off on the great adventure.

Repeated assertions notwithstanding, the start of the ride resembled a race as the group tore down Elk Avenue, still using the entire width of the street along with the sidewalks and a few front lawns. At the edge of town we joined the highway for about 2 miles, and the group strung out immediately as the experienced riders dropped into a pace line. The pace slackened as soon as we turned off onto the dirt road, and we regrouped, riding slowly together for a few miles and marveling at the fine weather and perfect conditions.

The first real climb was short, but it opened a gap, so as we rolled onto level ground the leaders called for a rest stop, no more than 4 miles into the ride. As the slower riders rolled up, the reason for the gap became obvious; some of the riders were showing the effects of heavy bar training in the form of nearly terminal hangovers.

While we rested, Albert discovered that his bike had been sabotaged with grease on the rear rim, rendering his caliper brake useless. No one claimed credit, but all were amused as it was cleaned off. Bob Starr, who was hung far over, demonstrated his version of a purification ritual by returning his breakfast. This was greeted by a round of the "Golf Clap," a politely restrained, almost inaudible form of applause which in Crested Butte is reserved for dubious achievements.

We shoved off again, and were stopped immediately by a flat tire on Archie's bike. If it was possible, Archie was in even worse shape than Bob Starr, and he looked as though he might cry as he surveyed his tire and considered his alternatives.

Joe Breeze took over. He was well equipped with tools and a spare tube, and in a few minutes he had removed the wheel and replaced the tube. The account of this incident in the *Crested Butte Chronicle* reflected the local awe of the California skills. It read as follows: "The California boys immediately jackknifed into action; tools selected after years of experience glimmered in the sunlight as the intrepid Californians removed the wheel, replaced the tube, tuned the spokes, remounted the wheel, slacked the cones a tad, adjusted the chain, and had Archie's bike back on the road in 35 seconds flat!" The cause of the flat tire was found to be part of a 3-speed shifting mechanism that had somehow found its way inside the casing. This revelation was greeted by another round of the Golf Clap as we got underway.

The quality of the road surface continued to deteriorate as the scenery improved. Climbing and dropping along the side of a lush valley we made several shallow creek crossings, giving us an opportunity to test and/or demonstrate the various methods for riding through water. By the time we reached the deepest crossing, which was over the hubs, the group had strung out again, so the lead riders called a halt on the far side. The stop was not so much for rest or regrouping as it was to watch everyone else try to ford the creek.

The following vehicle arrived with the last riders, so in the absence of any real leadership the group decided it was time for lunch and a few beers. By this time Cloud's springer fork had fallen apart and the bolt holding his high-rise handlebars had broken, so more repairs were necessary. Nearly an hour passed before another spontaneous group decision was made to push on.

By this time it was well into the afternoon, and everyone proceeded at his or her own pace with no further efforts to regroup. Archie immediately took a nap. The terrain from here to the campsite was rugged and climbed sharply, so with the advantage of having lower gears, our California group was first into camp at Cumberland Basin, 11,000 feet elevation. Duane had already arrived with all the essentials, food, sleeping bags, and a keg of beer, which was shaken up by the rough ride. Riders straggled into camp for the next hour and a half, and bikes and bodies were thrown on the ground as everyone tried to find a lungfull of what passed for air at this elevation.

By this time a clear sky had given way to clouds, and a few anxious eyes were turned skyward. Those with tents pitched them immediately and some of those without regaled the rest with the information that on the first epic Pearl Pass ride it had rained heavily during the night. A few drops of rain fell, then the threat moved on and by sunset the sky was clear. In contrast to near record cold several nights previously, the temperature stayed around 50 degrees all night, rare and wonderful conditions for this altitude and time of year.

Dinner was steaks cooked on a campfire 3 feet across and potatoes baked in the coals. After dinner the campfire was stoked with a couple of foot-thick logs, and as we relaxed around it we were treated to tales of amazing exploits by the locals and graphic descriptions of the first Pearl Pass ride. There was some discussion of the proper methods and the problems of cooking lunch while fighting a forest



Line-up for the Crested Butte Annual Klunker Tour, 1979

fire. "You look around for a nice hot spot, and as soon as you find it and go to get your food, some jerk comes over and puts it out!" Some of the stories were entering into their third renditions by the time we slipped off to bed.

The next morning dawned warm but overcast. The fire was stirred back to life and one by one the group crawled out of scattered sleeping bags and assembled around it. Breakfast was cantaloupe and OJ, but Duane, who didn't drink coffee, hadn't brought any, and he was subjected to a stream of abuse for the sin of omission. With one day's removal from their watering hole, the firefighters were a little more clear of eye. No one seemed to be in much of a hurry to break camp, but eventually all the gear was loaded onto the truck, which headed back toward Crested Butte. Leaving with the truck were local rider Susan and the retriever Chump. The Denver rider announced his retirement also, and headed back to town as the rest of us started the final assault. From here our only motorized support was the jeep, and it was barely capable of making some of the steeper pitches.

After much procrastination a gradual exodus began from the camp. Starr was offering encouraging gems of coaching wisdom such as, "...when the going gets tough, the stupid get going." The going got tough. We covered the 3½ miles to the summit at a plodding pace, and our bikes had to be pushed, dragged, and carried over most of the distance. Above treeline there was little dirt, and the road surface became slabs of loose rock. Gasping, aching, and stumbling over rocks, we were in a bike rider's version of heaven.



The climb to the barren summit of the pass at 12,700 feet elevation took most of the crew nearly two hours. Having recovered from their hangovers, the firefighters were tougher than we had given them credit for being. Based on his performance from the previous day we had thought the climb would finish off Bob Starr, but like the train that thought it could, he trudged up the road on nothing but mental strength, his body having given out the day before.

Having expended so much energy to get to the top, no one was in a hurry to leave, so snacks were passed around, tire pressures were checked, pictures taken, and the excellent echo demonstrated by a burst of alpine yodeling.

As we rested, who should arrive from the Aspen side of the pass, but a half-dozen motorcyclists. These were the kind of people we were here to impress, and their arrival couldn't have been more perfectly timed. They gave us great satisfaction by assuring us that we were as crazy as we had hoped we were.

The road over the pass was built in 1882 for mule trains to take ore from Aspen to the railhead at Crested Butte. Looking at it was enough to impress us with the hardness of Colorado mules. It strains the imagination to picture even a powerful team dragging a wagon load of rocks up here. There has been no maintenance of the road since the twenties, and much of what we were about to ride down resembled a streambed more than it did a road.

The wind was biting, so when no more excuses were available everyone lined up across the top of the descent. While the last few pictures were taken we reminded

each other that this was a tour and not a race, "... but don't get in my way while I'm touring!" Finally Starr boomed out, "As elder statesman of the Crested Butte to Aspen Bike ride, I declare the course ... OPEN!" Fourteen riders tried to elbow their ways into the lead of the "tour," but the rough and narrow road soon stretched out the group.

It took half an hour to cover the 7 miles downhill to the paved road, and during that time the sensation was similar to that of being strapped to a paint shaker. Arms and legs were soon aching from absorbing shock and hands went numb and blistered from hanging on to the brake levers. There was relief in stopping, but doing so would allow other riders to pass, something no one was willing to allow. Even so, no one covered the 7 miles without stopping to rest. Richard the Rat was put out of action when his coaster brake shattered; he continued for a short way by jamming his foot against the front tire and by plunging into convenient snowbanks, but he was forced to pack it in and ride into Aspen in the sawwagon.

When we reached the paved road the going became easy, 15 miles downhill with a tailwind on smooth pavement. We stopped just outside the Aspen city limit, where Starr issued each of us balloons. We put these on the bikes so they would rub on the spokes and make the schoolyard motorcycle sound. Then we rode into Aspen and vroomed to the chosen public house to park our bikes in a row and brag. Our support drivers had purchased a case of beer, which we set on the sidewalk while we celebrated and carried on. When we told curious passersby what we were up to, they would walk away shaking their heads.

We had all paid \$15 for the privilege of going on the ride, and Starr had with him all that was left after our expenditures for food, beer, and gas. Taking this into the saloon, he laid it on the bar and the serious bragging began. Starr, who had been saying, "Never again," was already talking about next year's ride and what a great support driver he would make because now he knew the road so well.

There was some disorganization concerning transportation back to Crested Butte, and as the afternoon wore on and no one showed up to get us, the pessimists started thinking about what it would be like to ride back over Pearl Pass. Finally a beat-up flatbed truck with no muffler and a flat tire roared into town to pick us up. After repairing the tire, we piled all the bikes and most of our persons into the back and made ourselves as comfortable as possible for the three-hour drive back.

Crested Butte Revisited

Since the preceding account was written, a lot of dirt has passed under a lot of tires. The handmade prototypes we rode in Crested Butte were further refined, and in turn gave birth to the mass-produced mountain bike, or All-Terrain Bicycle.

In the decade that has passed, Crested Butte has itself changed. Now most of the streets are paved, and the town has grown. The Annual Klunker Tour has changed considerably, and is now a major event on the town's fall calendar. Symptomatic of the changes is the fact that none of the original firefighters goes

on the ride any more; a new generation of cyclists rides the finest hand-made custom mountain bikes instead of patched-together "town bikes." In fact, the ratio of expensive mountain bikes per capita in the town must be the highest in the United States. The town has gone crazy for mountain bikes, and each fall the third week in September is dubbed "Fat Tire Bike Week," a cycling celebration capped by the Pearl Pass Tour.

The Tour has outgrown itself in some respects. With upwards of 300 riders showing up for the event, the support logistics became impossible, especially since the Pearl Pass road is now virtually impassible in places to any form of 4-wheel transportation. Rather than focusing on the tour, Fat Tire Bike Week has become a series of one-day rides in the mountains, along with races, picnics, and other activities for cyclists. Because of its reputation as the home of several top riders and the many roads and trails available, Crested Butte has served as the de facto training camp for mountain bike racers training for the national championships. Other areas have used Fat Tire Bike Week as the model for similar events, and now the recreational mountain biker has several "Bike Weeks" to choose from.

Aside from all the other activities that take place during Fat Tire Bike Week, the Pearl Pass Tour itself has attained a status comparable to a pilgrimage. Since Bike Week organizers have withdrawn motorized support, riders trek without benefit of sag support to the top of Pearl Pass. Some continue over into Aspen, but most spend a few moments at this beautiful but otherwise undistinguished and remote location before the chill wind drives them back down the valley to Crested Butte. The ride takes an energetic rider all day, and the last 3 miles to the top can take a couple of hours.

Once the Mecca for all serious mountain bikers, Fat Tire Bike Week has seen its importance diluted by the host of other mountain bike events springing up all over the country. Perhaps the residents of Crested Butte took it for granted that every fall during the slow tourist season, hundreds of cyclists would show up, but as other areas where such activities are possible began conducting their own versions of Fat Tire Bike Week, and in spite of its unsurpassed setting, Crested Butte began getting competition for the riders. After a significant decline in the number of riders and quality of activities organized by an overwhelmed volunteer staff, the local Chamber of Commerce stepped in to assist, and Fat Tire Bike Week has been to some extent reborn.

But with hundreds of riders taking part, most of them completely sober and equipped with the latest in mountain bike equipment, Fat Tire Bike Week will never be the same as my classic first ride over Pearl Pass in a group of only 13 people.



Joe Breeze, the first mountain bike frame builder, riding Repack

The Coming of the Custom Bike

As we have seen, a number of people contributed ideas or worked along similar lines independent of what was happening in the Bay Area in the seventies. If any single development brought mountain biking to the world, though, it was the construction of a bike frame built especially for multiple gear, fat-tire bikes. As the limitations of the old bike frames became more and more apparent to those of us racing them, it seemed inevitable that someone would build a custom frame. Since most of us also had road bikes, the difference in quality was glaringly obvious, and if enough money were applied to the problem a custom clunker frame didn't seem out of the question. Long before anyone ever built one, custom off-road frames were the subject of interminable discussions, which always boiled down to who would be the first to convince a frame builder and put up the money, an opportunity that finally fell to me.

The first custom mountain bike frame that I know about was built for me in 1976 by a friend named Craig Mitchell. The idea was good, but the resulting frame didn't have the desired handling characteristics, so the bike was disassembled.

If any one person got the ball rolling, it was Joe Breeze. Joe was one of the Marin clunker group by virtue of a friend whose 1-speed clunker inspired Joe to buy an old used bike and refurbish it. Having done so, Joe was equipped with fairly standard clunker equipment, and his skills with it were reflected by the fact that he still holds the all-time second best time on Repack.

In one sense Joe was not like the other members of the clunker group: he was a skilled machinist and had taken Albert Eisentraut's bicycle frame building course. The pressure was still on for custom frames, and some time in 1977 I gave him a few hundred dollars and asked him if he would get started. Rumors spread fast,

and in a short time, before he had welded a single tube, he had eight more orders. He decided to build ten bikes.

It took Joe a long time just to finish the design work. Because he was dealing with new design problems and trying so many new things, and because he is by nature a meticulous person, it was eight months from the first exchange of money to the delivery of my bike, the second (after Joe's) to be finished. Joe's personal bike now resides at the California Museum of Technology, in its own way as interesting a mechanical artifact as the first airplane, which, not at all coincidentally, was built by a pair of bicycle mechanics.

The bike as delivered had several features that have become standard on mountain bikes. Most significantly it had cantilever brakes rather than the drums used on clunkers. This reduced weight and permitted the use of high-quality hubs. The handlebars were flat motorcycle bars, and brake levers were Magura motorcycle (clutch and brake) levers. These served as the original standard on mountain bikes, and the brake levers now used were strongly influenced by them.

Breeze's bikes were limited in their performance by the rims and tires then available. Subsequent manufacturing developments took several pounds off each wheel. The cantilever brakes were not very effective on the steel rims, especially when the wheels were wet.

For at least a year Joe Breeze's ten bikes were the only real mountain bikes in the Bay Area. In early 1979 a pair of Marin County brothers, Don and Erik Koski, introduced their own version of an off-roader, called the Trailmaster. Unfortunately, the design of the bike was far ahead of the Koski's ability to get it manufactured, and the bike was not a commercial success.

Concurrent with the development of his first off-road frames, Joe Breeze was involved in an attempt to set a tandem coast-to-coast record with his friend Otis Guy (Guy owns the third-best-ever Repack time). They had decided to have a young Bay Area frame builder named Tom Ritchey build their special bike.

Ritchey lived some 50 miles south of Marin, and for this reason he was only vaguely aware of the clunker movement going on there. Still, for years he had ridden his road bike on dirt roads and trails in the hills above his home in Palo Alto, and he had built for himself a bike based on the European 650-B tire size that he used on the trails. In the course of designing the tandem, Joe showed Tom his mountain bike, and Ritchey was interested immediately.

Tom decided to build himself an off-road bike based on the 26-inch wheel. Because he thought he might as well see if anyone else wanted one, he built three rather than one.

Ritchey's design took the Breeze bike as a starting point, but Tom added his ideas as well as Breeze's own impressions of what might be improved. The result, according to Ritchey, was not a radical departure in design from bikes that had existed for decades, although the use of balloon tires with a derailleur gearing setup was unusual. As we have seen, bikes along the same lines had existed in the fifties, gears and all. The major difference between Tom Ritchey's bikes and those

which preceded them was that Ritchey could make a lot of his, and the time was perfect for someone who wanted to do just that.

Having completed his first three mountain bike frames, Ritchey sold one to Gary Fisher, whom he had met when both raced road bikes. (Despite his local status as Repack record holder, Gary was still riding an old clunker, although Breeze had built his ten bikes a year earlier.) Fisher helped sell the other to a friend of his. At the same time, Gary had been talking with a Santa Rosa frame builder named Jeffrey Richman, who also built a pair of experimental mountain bikes that Gary helped sell to Marin County riders.

Getting one of Ritchey's first bikes wasn't a lot different from building a clunker. All that came from Ritchey was the frame, fork, handlebar, and bottom bracket, and it was up to the purchaser to select and assemble the equipment. The process still involved modifying equipment made to do something entirely different, and because the parts were purchased at retail prices in several different locations, the price was far above the range of the casual cyclist. Only a fanatic would spend over \$1,000 to get what amounted to a bike kit.

About a month later Ritchey called Fisher and casually mentioned that he had in the meantime built another nine frames, in various sizes. Because the market for this kind of bike was better in Marin County than it was in Palo Alto, Ritchey asked Fisher if he wanted to help sell them.

At this point of the narrative I have to drop into the first person. Gary Fisher had been my roommate while both of us discovered clunkers, and we had done much of our mechanical experimentation together. A little shocked by Ritchey's voluntary production, he came to me and asked if I would help him get rid of these bikes.

We scraped together a few hundred dollars and opened a checking account in the name of our new business, which we decided to call "MountainBikes." I am not sure who first called these bikes "mountain bikes," and I was willing to give Joe Breeze the honor, which he rejected. He says that our commercial use was the first time he heard it, but I am certain that I heard the term when it was understood that it referred to a specific local mountain. An attempt to trademark that name was later rejected because of an administrative error in filing (an expensive error if there ever was one), and almost by default it has become the generic name for the bikes. Somehow the term ATB (for All-Terrain Bicycle) doesn't have nearly the romantic sound, and even where there are no mountains, people call them mountain bikes.

In its original form the arrangement was for Tom to build the frames, while Gary and I procured the parts, handled the assembly, and marketed the product. At first the entire process took place in each of our houses, and it required an enormous act of faith as well as disposable income to get one of our bikes. Because the business had virtually no capital, we required payment in full of \$1,300 in advance; then we would go out and buy the parts and assemble the bike for delivery about a week later.



Top-notch road racer Tom Ritchey, inventor of the one-piece bullmoose pattern handlebar, was already an established framebuilder when he teamed up with Gary Fisher and Charlie Kelly.

In the natural course of events we rented a shop and got down to the full-time business of making mountain bikes. As far as I can discover, this was the first commercial production of them.

The concept of mountain biking was not new by any means in 1979, since any number of people over the previous 100 years had ridden bicycles on roads as rough as any we were used to. But the concept of off-road riding, coupled with bicycles of the quality of a fine road racer, was perfect for the times. Despite the skepticism on the part of the industry, bicyclists of all stripes accepted the new bikes as more than a fad.

More than anything, the ride convinced people. One gentleman came to our shop just to accompany a friend who was looking at bikes, and to let us know that he wasn't impressed by our bikes, he went on at length about his immaculate Cinelli. Finally, we talked him into taking a mountain bike for a spin around the block. He was gone for quite some time, and when he returned he wheeled the bike in with a sheepish look, saying, "You know, this thing is very hard on prejudices."

The first notice of the mountain bike movement in the press appeared in 1978 in a magazine published in Marin County, the *Co-Evolution Quarterly*, and the article had a significant impact. The writer, Richard Nilsen, lived part of the year in Colorado and part of the year in Marin County. While in Colorado he heard about the first Crested Butte to Aspen tour in 1976, and while in Marin he heard about the crazy Repack racers. Although at the time the groups had little in common, he linked them together in his article, called "Clunker Bikes."

When the article appeared, it was the first news the Californians and the Coloradans had of each other's accomplishments. It was this article that led five of us from Marin to arrange to go on the 1978 Pearl Pass tour, which in turn introduced the modern mountain bike to Crested Butte.

This leads to the interesting speculation that by spreading the awareness of the sport, the media had as much to do with the popularity of mountain biking as any mechanical development. In the next two years the bicycle press began to carry articles about mountain bikers, although few suggested that this was anything to take seriously. But for the sport to become popular, mass production had to be a part of the process. Various magazine articles detailed the expense and complications riders were willing to go through to get one of the few limited production mountain bikes, and perhaps it was this influence that turned the tide of industry indifference by suggesting that there really was a market for fat-tire bikes.

The mountain bike phenomenon would not have gone anywhere unless bicycle manufacturers had gotten into the act by producing mass-produced bikes. But bicycle companies are conservative, and the idea of introducing an entirely new type of bike did not catch on easily.

The first manufacturer to look into the market was the Schwinn company. Since the clunker aficionados were buying large quantities of unusual bike parts from Schwinn dealerships to feed their off-road habits, company representatives took note. At about the same time in Southern California, the "Beach Cruiser" craze

was warming up. Cruisers were not like off-road clunkers; instead they were stripped-down 1-speed ballooners used by beach dwellers for local transportation around the level coastal towns.

Since balloon tires seemed to be coming back, Schwinn brought out a new balloon-tire model that displayed the Marin County influence in its name, the "Clunker Five" (for five speeds) and its general setup including a tandem drum rear brake. The Clunker Five was a long way from the Marin County clunker standard, since it had a feeble caliper brake on the front, inadequate brake levers, and rubber pedals, but it showed that the industry was watching. Although no one in Marin claimed ownership of the name "Clunker," a few riders were somewhat miffed by this appropriation of the name, and said so in a letter to the Schwinn company. In a return letter a Schwinn attorney pointed out that the name had not been trademarked by anyone in Marin; however, with no other fanfare the name of the bike was changed in short order to the "Spitfire Five."

The Schwinn entry into the market didn't make many waves, especially since it was outdated from the moment of its introduction. At the same time the Beach Cruiser had made an impact among BMX fans in Southern California, and the "Cruiser Class" of 26- and 24-inch wheel bikes was becoming popular at BMX meets. Small BMX manufacturers began bringing out frames modeled after the old cantilever frames, but built from chrome-moly tubing. Clunker riders seized on these as the starting point for a new level of clunker construction, but except for the use of modern tubing, which saved several pounds, these bikes were not a great departure in design.

In January 1980, the first year that modern balloon-tire bikes began appearing at the bicycle trade shows, there were four off-landers on display at the Long Beach Bike Show. Of these, two were built on the BMX cruiser-style frame and only the Ritchey Mountain Bike and the Koski brothers' Trailmaster bike had diamond frames and looked like the modern version.

By the next year at the same bike show there were 15 manufacturers with their versions of mountain bikes, more and more commonly built on a diamond frame and similar to the Ritchey bike in design and choice of equipment. Surprisingly, some major manufacturers put their lack of vision on display by announcing pointedly in the cycling press that mountain bikes were a fad. Whatever the initial attitude, as it turned out all major bicycle companies now have mountain bikes in their catalogs.

In 1980 Specialized Bicycle Imports of San Jose, California, bought four of Ritchey's mountain bikes, which were used as the starting point for designing a mass-produced mountain bike. In 1981 Specialized introduced the Stumpjumper bicycle, which was very similar to the Ritchey, possibly setting the "California Style" for mountain bikes. Other manufacturers followed suit within months, although much of the bike industry still refused to believe that mountain bikes were going anywhere.

During the same period when the bicycle manufacturers were catching on to

the trend, components began appearing that helped the mountain bike movement considerably, starting in 1979 with the introduction of new rims and tires. These were most likely inspired by the popularity of Cruiser Class BMX racing, because mountain bikes were not yet much of a force in the market place. Whatever the inspiration, these components were the last major breakthrough in the evolution of the mountain bike. Components have been refined since then, but nothing has been introduced since that time that improved performance as much as lighter rims and tires.

As the bikes evolved into a standard configuration, manufacturers started looking into componentry that was designed specifically for them, rather than attempting to adapt the components already available as clunker riders had done all along. The two giants of bicycle componentry, Shimano and SunTour, were skeptical at first, but paid close attention to the market, which threatened to explode from its grass roots just as BMX had. In the winter of 1982 both companies introduced component groups for mountain bikes, which included new designs of thumb-shifters and cantilever brakes, dirt-resistant hubs and bottom brackets, motorcycle-styled brake levers, and wide-range derailleurs.

The availability of component groups was the last stage of assembling the infrastructure necessary for mass production, and from that time forward mountain bike production swung into high gear, maintaining for several years the highest growth curve in the bicycle industry. For better or worse, mountain bikes were no longer a garage industry.

RICHARD'S

MOUNTAIN BIKE

BOOK

The complete guide to all-terrain bikes—
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of off-road riding and cross-country touring!

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