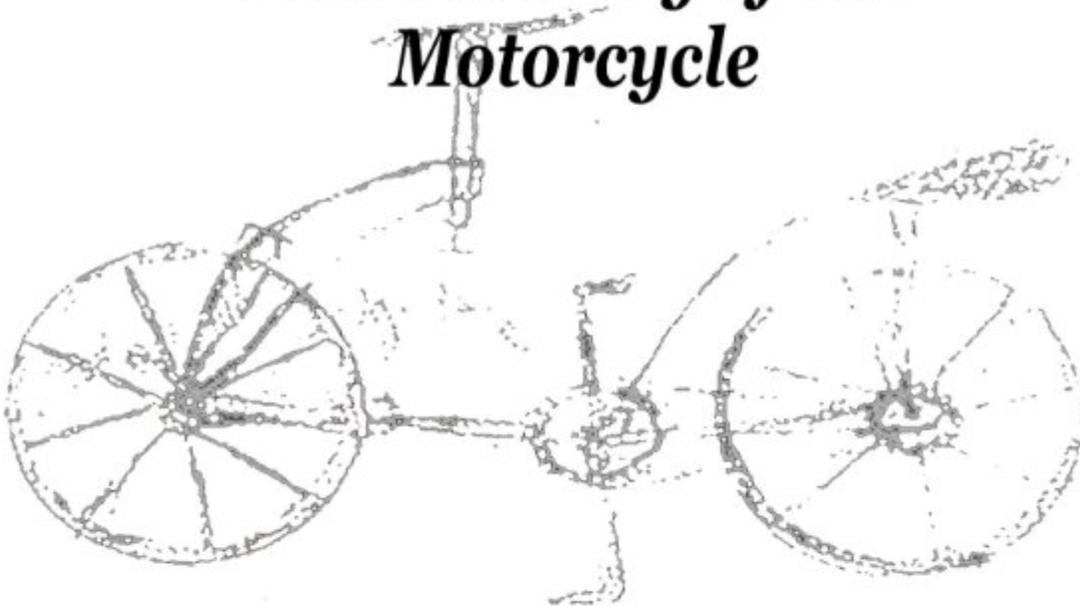




*Short History of the
Motorcycle*



By
Matthew and Big Sid Biberman

Plus
**A pocket guide featuring the top twenty
motorcycles essential to any collection**

The History of the Motorcycle, Part One:

The Golden Age: FROM DA VINCI TO TE LAWRENCE

The motorcycle sits at the cross roads of at least three key ways humans have thought about how to best transport themselves. The first is the scooter. Foot powered examples of such vehicles must truly date back to the Ancients. The second is the horse, the domestication of which also predates the historical era. The third path is one far more recent and thus the usual starting point for discussions about the origin of the motorcycle. It is simply said that the motorcycle is best understood as a modified bicycle where an engine, rather than the rider's feet, generates the energy used to spin the vehicle's wheels.

Yet here to there is debate among historians because inventing is a messy business and rarely confined neatly to the efforts of one man or woman. The simple story is that Pierre Lallement invented in the bike in the early 1860's while still a young blacksmith in Nice. He then moved to Paris where he was fell in with the Michaux family and together they set about the manufacture and sale of this new means of transport. A few years later, the disgruntled Lallement moved to Boston where he again pursued the dream that he had begun to give the world what the Michaux brothers' called the Velocipede (and their first riders quickly dubbed the boneshaker). In the ensuing two decades, chain drive technology improved to the point where an English man, James Starley introduced them into the bicycle's design (in place of either belts or simply attaching the pedals to the wheels as one sees done on children's tricycles or Big Wheels today). Thanks to Starley, by the late 1890's the boom in bicycles that continues to this day had begun.

But before we proceed to talk about the addition of the motor to the bicycle I would like to point out that the conceptual roots of the bicycle can be traced back further. Among Leonardo Da Vinci's drawings there exists one rough sketch of a modern bicycle complete with rear wheel chain drive. Some—ok, pretty much all—experts have from the beginning considered the drawing a forgery, and from sound detective forensics of the sort that would impress any audience schooled on television shows such as CSI. The story that passes academic muster is that the forger added the drawing during an early restoration of the Da Vinci codex called the *Atlantius*. Fingers have been pointed at curators, librarians and even monks but the perpetrator remains unknown. The paper is not in question, nor other drawings on the sheet, nor even key geometric shapes that comprise the bicycle. All of that is accepted as dating back to the time of Da Vinci and consistent with the many other documents we have associated with his name.

What the forger did then was to add to the drawing that was already there, thought to have been made by one of Da Vinci's pupils. What the forger supposedly saw was this:

133 VERSO. New. Black chalk.

Scribbles, including the word 'salaj', not by Leonardo, probably not from Leonardo's time. Self-explanatory.

SEE f. 132 VERSO, to which this sheet was originally joined. When I examined the original sheets in 1961, holding them against a strong light so as to detect elements of their (at that time) hidden versos, I noticed the presence of scribbles in black chalk as well as light traces of circles in pen and ink, which appeared to be the beginning of some geometrical diagrams.

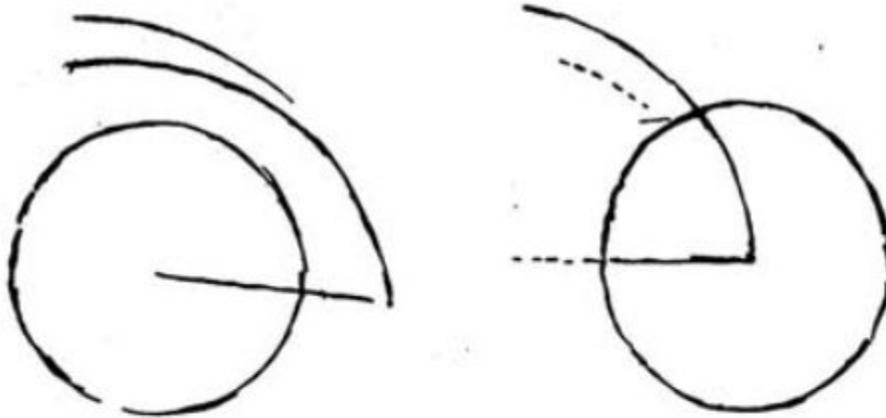


Fig. e.

Author's record of geometrical diagrams on f. 133 VERSO as seen from the RECTO in 1961.

He then took out his pencil and traced in the lines needed to make the bicycle image reproduced at the head of the chapter. The final blow to the Da Vinci claim then comes from the chemical analysis that the additions just discussed are made in graphite, a substance that is not discovered until decades after the great man's death, and then in England, Cumberland to be precise.

About this debate first let me stress that facts are facts and that it is important to remember that it is not until the mid to late nineteenth century that we encounter successful examples of the bicycle. At the same time, it is hard to believe that at least in concept, a man such as Da Vinci was not able to envision two-wheeled motive transport achieved via manual input. Let us assume that our forger was not a genius but a man of common intelligence like you or me. He was able to look at those two

circles and see wheels connected by a frame, with the resulting vehicle propelled by feet. It is hard to believe that the teacher of the pupil who made this sketch would not be able to look at it and make the same deduction. One need only think of Da Vinci's other undisputed inventions to recognize that I am raising a very plausible argument. He certainly thought of shrouding horses in armor and shaping them into battering rams. He thought obsessively of flight and drew designs for parachutes, planes and helicopters. He drew trains and four wheeled devices propelled by complex leaf spring mechanisms. He revisited his horse clad war machines and replaced the animals with one of his four wheeled devices and added a cross bow battery for fire power. The very codex under discussion has beautiful drawings of chain links and yet the key innovation added by our forger—chain drive—is said to be beyond Da Vinci. It would seem that producing such a design was indeed too advanced for the Renaissance but certainly not the concept.

And this notion of graphite being too modern. If there is one thing we know about Da Vinci it is that he was compulsively in search of new mediums to draw with. What if the so-called forger was just restoring? What if the bicycle bit had been added by Da Vinci in a burst of inspiration while looking over the shoulder of one of his beautiful boys. The master reached down and with a flourish drew in a bicycle.

At once the boy saw the fabulous device just as we do today.

Then years, or decades or centuries later, a later reader of the sheet took out a pencil and crudely copied over the last traces from Da Vinci's hand.

Be that as it may, the realization of the concept is beyond dispute. Or is it? Back to the common story: Lallement and the Michaux brothers. Shortly into the manufacture of the bicycle, and the first taste of success, a disgruntled Lallement sails for Boston where he introduces the idea into America.

When Parisians start to take notice of the device zipping around their fair city's streets, they hail the bicycle as the invention of the Michaux brothers alone. It will take decades for historians to take seriously the claims made by Americans that the true inventor got stiffed and later worked with them.

But regardless of how the credit should be allocated, this new device soon captured the imagination of inventors all over the world, and what everyone wanted to do was simple—add a motor. The fuel source, then as now, was open for debate. The largest camps were two: those who favored steam and those who favored petroleum based gasoline.

At the same time, the placement of the motor had yet to be established. Like Da Vinci's forger, we know the answer—because we see it all around us. The best design is going to stick the motor right where Da Vinci's forger put the front sprocket and the foot pedals, thereby centralizing the weight and positioning it down low to the ground for a good center of balance. But these guys didn't know that back then at the turn of the century.

Motor selection brought additional problems for the simple reason that in most instances, none of these devices were intended by their engineers to power a bicycle. As a result these engines were often very heavy, not to mention intensely hot, and to top it off, foul smelling. At first the inventor sought union wherever practical and arrived at arrangements that often left little room for the rider. This heady period of trial and error saw in quick succession a menagerie of competitive designs featuring engine placement in every conceivable location (in front of the handlebars, to either side of the rider, above the rear wheel, even in the wheel's hub, both front and rear).

In Europe, development soon came to center, quite sensibly, on small engines. The aim was urbane, with the goal largely limited to providing the kind of speed one could get with one's feet, but now sustained for as long as you had fuel. A consistent forty miles an hour was a common target. The resulting machines were agile and sprightly, perfect for a pleasant jaunt out in the country or a refreshing run across the cobbled streets of the city. Meanwhile, the sons of Lallement, that is, the Americans thought as Americans do, and went instead for big motors in a big way. To cite but one example, in upstate New York, Glenn H. Curtis built a motorcycle around a massive vee eight motor. In 1907 on Ormond Beach Curtis recorded a speed of 136 mph, becoming the fastest man on earth. The British marveled at this accomplishment but dismissed it as well, reasoning that those straight line top end speeds the Americans posted were made on ungainly and impractical machines that would never handle or corner as their proper motorcycles did. In a real road race, they declared, the British machines, or their European rivals, would trounce them.

The first dust up came in 1909 at the Isle of Man. It was only the third year for these races (called the TT's, short for timed trials) but already the small island in the English Channel had established the reputation it still holds today as motorcycling's Mecca. That year an Indian piloted by Lee Evans stunned the smug Europeans when he promptly seized first place and then held it. In the early laps, H. A. ("Charlie") Collier, the crowd favorite, on a Matchless, trailed behind, waiting for the Indian to break. It was almost too late when Collier abandoned that hope and began to try in earnest to erase the deficit. At the spot they call the hairpin and indeed all along the island route, from Cronk-ny Mona to Bray Hill young men clamored up on to the stone walls, or stood near the hedgerows to urge on their champion, who in a gallant final lap overtook the vermilion red racer from Springfield, MA. Two years later, Indian would finish first, second and third. It was a powerful blow to the national consciousness of England. The leader of the American wrecking crew, Jake DeRosier, came to epitomize the Yank invader. Clad in tennis shoes, he wore black theatrical tights and covered his chin with medical tape so as to cushion the blows that came from resting his head against the tank. In contrast, his British competitors wore ties and Scottish hunting jackets with riding boots. More importantly manufacturer George Hendee had defined the future with his Indian racer and after the

American sweep at the Isle of Man, the world knew it. Belts were soon seen to be inferior and the Indian's chain and sprocket system was embraced, so too was the American twist grip throttle (rather than the use of a small lever mounted on the handlebar). Even more stunning was the fact that these wins were scored with what were for Indian tiny motors. That year the TT was limited to twins with a displacement of no more than 585 cc. Back home DeRosier raced Indians powered by either 750cc motors or 1000cc motors. Even more telling, those big Yank bikes were sporting four valve heads when the European standard was two.

After that 1911 Isle of Man, the British and the rest of Europe pushed development with a keen sense that a significant gap had opened up in favor of the Americans. Across England, school boys dreamed of building a "yank buster" while lusting after those big vee-twins, however treasonous it was to want something made in the former colonies and ridden by crazied bohemians. They studied the smaller American makers, Excelsior Henderson, ACE, Thor, among a host of others. Most especially they studied the Joerns' Cyclone.

From out of the desolate space of St. Paul Minnesota came this yellow speed demon. Like its American kin, the Cyclone utilized a 1000cc vee twin motor. When Vincent would later draw up his twin and went big, the inspiration, no doubt, stretched back to the Cyclone. The Cyclone also employed an overhead camshaft design, a remarkable innovation that would become, much later, Ducati's signature. Its all there in 1914, thanks to the foresight of Andrew Strand, the engineer behind the design, one injected with a host of automotive innovations, all derived from Strand's earlier work for the Welch and Jackson car companies.

But it might have all been for naught had not Cyclone become, for a time, the favored mount of a

young man named Don Johns. Soon many of the men competing against Don Johns would find themselves locked in the fearsome combat of the western front. But before that somber experience, they spent their last crazy days of peacetime barnstorming across the USA bunking in warehouses, while they rode the board track circuit under banners that proclaimed them to be “neck and neck with death.” From 1915 to 1924, America was home to 17 board tracks, wooden ovals complete with spectator stands. In an age of greats as colorful as the era's heavyweight boxers and baseball sluggers, no board track rider—not DeRosier, Fearless Balke, Shrimp Hepburn or Joe Petrali—none of them every got round the track like the great Don Johns.

Raised in LA, Johns became fascinated with motorcycles while still a child. His first significant wins came at the age of 14 on a junior sized Thor when he won the 5,10 and 25 mile races at San Bernadino. He weighed sixty pounds and stood just four feet ten inches then and the joke was that he needed a stepladder to get in the saddle. Two years later, he broke all the amateur records for distances from 2 to 20 miles. Johns continued his winning ways, establishing a reputation so fierce that the following year, 1912, he won the national dirt track championship in a race at the Hawthorne, Ill track where he rode uncontested. Earlier in the day, he had won nine warm up races so convincingly that every other competitor withdrew from the big race. After that no one doubted that Johns could scrap with the best of them.

Once he began to make a name for himself, Johns started hanging around the local Indian dealership, eager to apprentice himself to DeRoser, who happened to race out of that shop. Soon the two men became friends and when Ignaz Schwinn lured DeRosier away from Indian to race for Excelsior Johns followed. Schwinn, already successful with his bicycles, had just bought the small Chicago based motorcycle maker in a bid to expand his empire and so was intent, as new owners usually are, to raise the profile of their latest acquisition. The timing was impeccable as the Excelsior factory's latest

pocket-valve racer turned out to be a real winner. Johns now had a factory ride on a true contender and the opportunity to learn from other "X" riders, including Charles "Fearless" Balke. According to Johns, Balke welcomed the young boy, who he saw as posing no threat, but he took an intense dislike to the newly added DeRosier, and in short order the animus was returned in kind. Seeking to capitalize on this simmering rivalry, the local promoters set up a grudge match, DeRosier vs. Balke, each on identical X's to be held at the new Los Angeles Metrodrome complex, which featured a board track a third of a mile long, pitched at a 60 degree angle. While circling the track at 90 mph, the two men tangled, elbows flying and DeRosier went down. He died later at the hospital.

By 1913 Johns had taken his mentor's place on the team and in the firmament. Fred Ludlow, another racing great, said of Johns that you had to knock him off his bike to beat him and "then you had a first class fight on your hands, after the race." As Johns was busy winning, a new manufacturer, Joerns Engineering, emerged with a competitive mount they called the Cyclone. Their agents approached Johns and managed to get him to agree to a test ride. After a few laps, Johns was convinced and he jumped ship. What followed was one of the greatest chapters in all of racing. On Labor Day of 1914, Johns delivered on the promise of the Cyclone, collecting two Championships, for 5 and 10 miles, at the Stockton, CA track. The crowd mobbed Johns in the winner's circle and it is said that the machine was mauled by souvenir hunters. And so the pattern was set. With Johns in the saddle, his Cyclone was assured victory unless mechanical failure intervened. He cemented his legend when, later that same year, in Phoenix at the Arizona State Fair he raced around a dirt track in an open competition to determine "the Championship driver of the world." The distance was one mile and the racer with the best time took home a thousand dollar cash prize. The twist was that any machine was eligible—a bike, car or plane. That day Johns did the mile in 46 seconds, almost three seconds ahead of the great Barney Oldfield in a 300 h.p. Christie racing car, with the barnstormer Lincoln Beachly coming in third flying his bi-plane powered by a Curtis V-8 motor.

By the time the guns of August commenced and the great war had begun, it was clear to all that in the little war held on the race course, the American made Cyclone had seized the palm. In the summer of 1915 at the Dodge City 300, the Indianapolis of motorcycling, Johns raced in a field of 29 mounts. After the first lap he was third, behind Goudy on a big valve Excelsior, and Taylor on an Indian. When the pack roared by again, Johns was first, having shattered the track's previous lap record with a speed well over 90 mph. On the sixteenth lap, Johns was close to lapping the field when he pulled in to the pits for fuel. According to Inez Patterson writing in the *Pacific Motorcyclist*, "there is a near riot in the grandstand. Some of the crowd thought Johns was not given credit for the right number of laps." Johns rejoined the pack, regained the lead and held first, lap after blistering lap. Soon the crowd realized that Johns was intent on setting a new world's record for 100 miles at over 90 mph. Euphoria mounts as the officials announced that Johns was now entering his 100 mile, but then mechanical failure struck and the crowd groaned at the news that the Cyclone's fuel tank had cracked, forcing Johns from the race.

The persistence of such faults during races ultimately led Johns to return to Indian. The machines from the Springfield manufacturer were not quite as fast but they were more reliable, especially over long distances. Johns' exploits proved that the Cyclone's design was truly ahead of its time, but it suffered failure because contemporary metallurgical practice could not produce parts equal to the required tasks. Sadly the Joerns brothers were never able to realize their dream and soon when out of business. Nevertheless, their innovations would inspire countless engineers, among them the teams working at Vincent and Ducati.

Across the Atlantic the English had nothing to equal the Cyclone until George Brough introduced his first motorcycle, called the Brough Superior, in 1919. Brough was essentially a custom bike builder, who worked mostly with components built by other makers. For a world class engine, he turned to

the great firm of J. A. Prestwich and JAP did not disappoint. Here at last was a big vee twin that was fully the equal of the American designs. The resulting model, called the SS100 Alpine, was road tested before delivery and every new owner was supplied with a written note from George testifying to the fact that his machine had been run up to 100 mph. A true enthusiast, Brough raced his motorcycles, turning 100 mph at the famous Brooklands speedway, a feat that earned him the coveted "Gold Star." Later he made an attempt on the ultimate land speed record on a heavily modified Alpine featuring Harley front forks, achieving 130 mph one way, enough to break the record which then stood at 124 mph. Unfortunately, Brough suffered piston damage and was unable to do a return run and so did not secure the record. The following year, Bert la Vack ran the same machine, nicknamed Old Bill, to a new record of 129 mph.

While Prestwich was first developing what would become the SS's engine, George Brough's best customer was away at war. That young man's name was T. E. Lawrence, better known as Lawrence of Arabia, and he would own a succession of seven Brough's. He called each Boanerges (or Boa short for Sons of Thunder) and died on the last of them, in 1935. Lawrence once wrote to a friend that he rode because his 'nerves are jaded and gone near dead so that nothing less than hours of voluntary danger will prick them into life and the 'life' they reach then is a melancholy joy.' But that of course is a half truth. His recollections of rides with Lady Astor on pillion, for example, reflect a much different emotional resonance. They prove that Lawrence was also quite able to enjoy motorcycling without any sorrow. This kind of youthful pleasure burst through the jaded façade that Lawrence wore so carefully after his return from war.

There in the desert of what is now Iraq and Syria, Lawrence gained fame as one of the greatest tacticians to ever command a guerrilla force. Striking the Turks with small bands of local gunmen, Lawrence effectively hobbled a key German ally. Where Churchill had failed tragically with his

attempted invasion at Gallipoli, Lawrence succeeded and without requiring the English to commit any significant resources. Turkey's exit from the war quite probably decided the affair in favor of the Allies.

After such an exploit, Lawrence returned to England as a man adrift, seeking some second act but knowing that nothing would ever equal what lay in his past. Or at least many of his actions and statements projected such an identity. The decision to turn down knighthood, for example, or his decision to enlist in the RAF under another name. Still, Lawrence was fully able to assume a different identity from that of the world weary vet. At other times, he acted the part of the epicurean, relishing life's simple pleasures. At the top of that list, for Lawrence, was a good ride on Boa.

Lawrence immortalized one such ride in his piece called "the Road." There he celebrates his trips on Sunday when he sped off from the airfield first to church and then to shop, sussing out milk, cheese, eggs and rashers of bacon, all stuffed away in his trusty saddle bags. On this particular trip, Lawrence writes of an encounter he has when "a huge shadow roared just overhead. A Bristol Fighter, from Whitewash Villas, our neighbour aerodrome, was banking sharply round." You know what comes next. The pilot points up the road to the town of Lincoln. Lawrence looks over and with a nod the race is on. After pulling ahead, Lawrence slows to play with his opponent. It is a move Don Johns would have applauded. The pilot passes Lawrence, giving him the "up yours" with his hand. Lawrence writes that the pilot was "hoping I was a flash in the pan, giving them my best. Open went my throttle again." And soon Lawrence has regained the lead for good. "Down went my left hand to give the engine two extra dollops of oil, for fear that something was running hot: but an overhead JAP twin, super-tuned like this one, would carry on to the moon and back, unfaltering."

And perhaps it would. If a black sedan doesn't cross your path, distracting you so that you are not ready when from out of the shadows of a dip come two boys on pedal bikes. On that later day in 1935 the man they called Lawrence of Arabia would swerve to save the spirits of those children and hit, head first, a stone wall. When he died, Hitler was already in power and the storm clouds were once again gathering. It was the end of motorcycling's golden age.

HISTORY OF THE MOTORCYCLE II:

The Silver Age: THE VINCENT

Philip Vincent was born in Fulham England on March 14, 1908, but he grew up in Argentina on a farm about 300 miles west of Buenos Aires. His father farmed and grew fine livestock, importing prize British bulls and rams. Vincent remembers life on the farm as idyllic and largely without traffic. The first motorcycle to make a clear impression on the young boy was an Indian Scout. A repairman rode it out to the farm to work on his father's Model T Ford. While the mechanic worked, Vincent wandered out of the house and over to the motorcycle. He later watched the bike speed off trailing a blooming dust cloud. It was an awesome sight.

Years later when Vincent was twelve he was shipped back to England to be schooled. He started at Downsend before advancing to Harrow, where at the age of fourteen, he began to take a serious interest in motorcycles. According to Vincent, he was then prone to getting sick and often spent time in the school sanitarium. It was there while recuperating that he met another boy whose one obsessive subject was the joys of motorcycling. The delirium combined with this boy's enthusiasm made for a concoction that seized Vincent's soul there and then and gripped it firmly for the rest of his life.

Fueled by this desire, Vincent mounted a relentless campaign for a motorcycle of his own. Finally as Christmas approached and 1924 was coming to an end, Vincent managed to coax his mother down to a shop by the name of Gamages where he bought a 350cc BSA sidevalve. Though thrilled by the ride, Vincent soon became convinced he could do better. In that spirit, he traded up to a 398cc flat twin A.B.C., a move he first welcomed as a big improvement over (in his words) that “atrocious BSA.” But once again, he soon grew dissatisfied. He then began drawing up a machine of his own design. The project soon consumed him and though the bike was slow in coming, he now knew what he wanted to do for the rest of his life.

Vincent took the project with him when he went up to Cambridge to study engineering at King's College and later completed it in 1927. Vincent chose a 350cc MAG motor and mated it to an able Moss gearbox. The resulting machine was an impressive feat for an eighteen year old college student and Vincent knew it. He took steps then to patent the elements of his design he rightly considered innovative. His key improvement lay in his willingness to depart from a rigid frame. As Vincent explains in his autobiography, “it was common knowledge of all the motor-cycle experts of those days it was impossible to ride a spring frame motorcycle. It would throw you off every time you tried to go round a gentle bend...” (16). In contrast, Vincent's design included springing so that the rear wheel could flex up and down in response to the road's input. Today, Vincent's invention (often referred to as “the monoshock”) can be seen in use in practically all modern motorcycles, and indeed in many BMX styled bicycles.

According to Vincent, he took the steps to secure the patent in order to fulfill an agreement he had made with his father. When Phillip had informed his father of his desire to become an engineer and to go into the motorcycle business, his father responded by saying that before he went along with this

plan he would need to see some proof from his son demonstrating both real desire and promise. After he saw the patent, Vincent's father agreed to support his son's venture, provided that Vincent agree to the appointment of a family friend, Mr. Frank Walker as managing director. A seasoned business man, Walker was an agricultural engineer and an avid motorcyclist. It was Walker who located and secured Vincent his first workshop in the town of Stevenage. Later Vincent would learn that the elements of the structure dated back to the seventeenth century, and that it had been in almost continual use by generations of horse tenders and coach builders. This lineage pleased Vincent greatly and offered him a sense of comfort as he set out to make his way in the world.

Walker also encouraged Vincent to buy the rights of an established brand and to use that name to introduce to the public a new product. Opportunity came Vincent's way in 1928, right as he was finishing up at Cambridge and starting his venture. The H.R.D. company had failed and the current owner of the rights, Ernie Humphries, was willing to sell. Vincent very much wanted the name and thought himself fortunate to gain the association.

The H.R.D. company was the brainchild of Howard R. Davies. Davies had made his reputation as a racer, winning the Senior TT in 1921 on an AJS. Even more notable was that he had bested the 500cc field on a junior sized mount, a 350cc. Then in a comeback of sorts, Davies won the Senior TT again in 1925. The second time out, he did so on a machine of his own design, one he dubbed the H.R.D. So doing Davies was the first and perhaps only man to win the TT on a machine that bore his own name. As Vincent recalls, "Howard Davies was the idol of my teenage years." And Vincent admired the machines the racer later built and offered for sale. Like George Brough's motorcycles, the original H.R.D.'s were really custom motorcycles, the product of a single mind working predominately with outsourced subassemblies that were then assembled into a unique machine that reflected the builder's sensibilities. Vincent admired what Davies built, most especially the decision to mount the fuel tank

saddle style so as to lie over the top of the frame. He also liked the H.R.D.'s somber paint scheme of black with gold striping. For four hundred pounds, Vincent acquired the remnants of the HRD firm and the rights. He and his small crew then worked feverishly in order to build a range of motorcycles to formally announce to the public that he was a new manufacturer.

One of the first of the assembled HRD's went to Jack Gill, a twenty eight year old engineer from Bradford. Gill was then in search of a machine to ride around the world. The young man had already secured an engine and promises of support from JAP. Thinking that most of the financing would be coming from the motor maker, Vincent agreed to build the complete outfit—bike and side car—in the hopes that the adventure would drum up publicity. It was a logical decision because such reliability trials were at that point considered the ultimate test of a machine and generally more valued by potential customers than wins secured on a race track. For evidence, Vincent needed only to consider the boost Rudge was then enjoying thanks to S. T. Glenfield's recent successful global trip, accomplished in an astounding 120 days. In response BSA had sent two sidecar outfits, thus one upping Rudge, and motorcyclists all over England were eagerly reading about their progress. Indeed this ongoing exploit is probably what inspired Gill.

After Gill's departure on May 3rd 1929, Vincent returned his focus to the development of his motorcycles. Earlier he had prepped five machines and showed them at the 1928 Olympia bike show, but failed to book a single sale. Vincent thought then of throwing in the towel but couldn't bare the thought of telling his father he had failed. After all, Gill's trip might be the break Vincent was waiting for. In the meantime, he arm twisted old Cambridge pals Peter Fry and John Cockshott into buying two of the five show bikes. Then news came of the Wall Street crash and its aftershocks rocked Vincent's fledgling efforts. Suddenly international restrictions prevented him from drawing off of his father's Argentinean funds and without those funds bankruptcy loomed as creditors were now

demanding immediate payment. Yet this time luck intervened when the owner of another of those first machines learned of Vincent's dire straits. Bill Clarke, then at Oxford, had bought his HRD at King's motorcycle shop and was immediately smitten by it. Thanks to his intervention, his father, Captain Clarke, supplied the needed funds and became chairman of the Vincent board of directors.

While Gill carried on, Vincent, buoyed by this support, threw himself into developing a new slate of models for 1930. He dropped the Jr sized bikes and concentrated on larger machines, featuring JAP motors in various states of tune. To his satisfaction, Vincent's efforts paid off in good press and, more importantly, the sale of over 34 bikes that year. At the same time, however, Vincent's attitude toward the components he was acquiring to build his motorcycles began to sour. Most especially he came to abhor the JAP motor. In his words, "it was everything a motor should not be," a judgment borne out by the rapid failure rates his new owners then experienced. Later he would switch to the Rudge's Python motor, but soon, Rudge would refuse to make engines available to rivals, and from Vincent's point of view that was simply rude because it was not as if those engines were marvels. A customer could expect 70 mph out of them, but Vincent thought he could do much better if he took matters into his own hands. Only then would he be able to offer a motorcycle for sale that met his standard. But this was not a job he could do on his own and he knew it, not when he had no room for an error in execution. Vincent understood that his strength was in unorthodox thought, but he was green and prone to overlooking details. Fortunately, he had just recently encountered the right man to compensate for his weaknesses. His name was Phil Irving.

Born in Australia in 1903, Irving made his first voyage to England in July of 1930 as the passenger in Gill's Vincent HRD outfit. Gill's original passenger was a Londoner named Walter Stevens. The trip had gone well until Istanbul, when the two found themselves thrown in jail and charged with espionage. After the British Consulate won their release, they continued on (despite Stevens' doubts)

into the Middle East, where they almost fell victim to Bedouins. Fortunately Gill's exhaust spooked the camels carrying their attackers, allowing the HRD to outrun them. When the HRD reached Canberra, Australia, Stevens resigned and made arrangements for passage back to England via ship. Now riderless, Gill continued on, motoring across Australia, eventually making a stop in Ballarat. One of the locals eagerly awaiting Gill's arrival was Phil Irving who was then co-owner of a motorcycle shop. Irving was delighted to meet this world traveler, and somewhat relieved, as, for a time, he thought Gill may have come to an unfortunate end as there had been no updates between Istanbul and Canberra. Upon hearing of Stevens's departure, Irving offered his services almost immediately. Although Irving was then largely a field mechanic, he had a degree in engineering and dreamed of securing steady work as a factory designer. In Gill he saw an opportunity to get to England, then the logical place for him to seek out his ideal job.

The pair set off and finished the journey, traveling across New Zealand and Canada before successfully arriving in London aboard the liner *Athenia* in July of 1930. Irving's initial impression of England came when they docked in Liverpool. All around him he saw impoverished men huddling on street corners, sights that made him realize the depth of the depression and doubt his decision to depart Australia. Vincent greeted Irving warmly upon his arrival in Stevenage but could not offer him employment. Disappointed but resolute, Irving then made inquiry at AJS, whose bikes he had sold in Australia, but there too he came up empty.

Next he stopped in at the Velocette factory where his recent appearance in the press as Gill's intrepid rider gained him an interview and eventually an offer to keep him on provisionally at a salary of three pounds a week for work down in the Service and Repairs division. Soon he was transferred to The Drawing Office under the direct supervision of development director Harold Willis, where he was given the job of designing the new engine for a proposed model to be called the M. The project

floundered because the bike's weight meant the owner would incur large taxes and with the depression worsening, any undue burden had to be avoided. Sensing trouble, Irving renewed his search for secure employment, eventually leaving Velocette for a job with a private racing team comprised of Alan Bruce, Arthur Simcock and Keith Horton. Here Irving got the opportunity to ready a Brough Superior nicknamed Leaping Lena for an attempt on the world's record which had recently been upped to 150.7 mph by Joe Wright on a Zenith sporting a supercharged JAP motor. Although the team failed to secure a new record, their effort was impressive, recording a one way speed of 153.86. On the return run Simcock was seized with fear, and throttled back, recording only 115 for a two way average of 135, far short of the Zenith's mark. Nevertheless, prepping this machine and building its streamlining amounted to more valuable experience for Irving. The team retained Irving as they turned their attention to road racing where they had better results, finishing high up at the Isle of Man and in various continental GP races. It was only then, about two years into his stay, that the Australian received a letter from Vincent. In it, Irving was asked to join the Vincent team then designing the new HRD.

When Irving returned to Stevenage, Vincent's primary goal was to redesign his frame to better hide its unconventional springing. Irving was assigned the task of making the necessary jigs to go forward with its commercial production. Despite positive reviews in the press for this new model, called the D (for diamond frame), sales of the HRD remained flat, with perhaps fifty examples on the road. Yet Vincent struggled on, bringing out smaller, cheaper models but to no avail. The following year, 1933, Vincent introduced several new innovations, chief among them in-house wheels featuring "duo-brakes." Irving hit upon the idea when his old employer Alan Bruce commissioned him to build an HRD outfit to race at the Isle of Man in the Senior sidecar class. As the project came together, Irving realized that he would have to increase the bike's braking power to account for the sidecar. And so, in a fashion that is typical of his design thinking, rather than attempt to produce bigger brakes (a proposition that was prohibitively expensive), Irving thought to fit a second brake to the other side

of the wheel, thus installing two brakes where everyone else had only thought to fit one. The result was the pioneering use of four drum brakes (one on each side of both the front and rear wheels), and it proved so superior that a machine so equipped would outbrake all other machines with ease.

In 1934, Vincent entered three machines at the Isle of Man only to have all three retire due to engine failure. The experience so disgusted Vincent that he decided that henceforth he would only use motors of his own design and construction. By this point, Irving had earned Vincent's trust, and together the two men began to talk about drawing up a new in-house 500cc motor. The result was the first Comet and with it, Irving left his definitive mark on the emerging nature of what would become a legend. The engine was about as tall as it was long, proportions that reflected Vincent's preference for balance and his marked dislike of tall motors. Many of the design features associated with the post-war twins are present in the first Comet including the port shapes, the valve sizes, and the unique rocker layout.

Vincent's new engine was showcased at the 1934 Olympia exhibition. In addition to one Comet, the Vincent stand also featured a cheaper model called a Meteor that was built up with a lower compression piston and a smaller carburetor. At the last moment, Vincent decided to add yet a third model, a TT Special. Irving always attributed such behavior as testament to Vincent's boundless optimism and confidence in his design team, but it clearly put Irving under intense pressure. The result was that on the day of the show none of the bikes on display could run because Irving had to parcel out the available parts among them. His anxiety increased during the show when he listened to Vincent point to the TT Special that lacked among other things a piston, and declare to the press that it would deliver 100 mph laps at Brooklands and the coveted gold star that came with that feat. By the end of the show, Vincent had taken deposits on 6 TT Specials and left Irving to make good on his word. Fortunately, when the TT was delivered it backed up Vincent's claim.

Over the next year, Vincent and Irving enjoyed the success of their line of singles, but the Stevenage brain trust was not satisfied. Vincent in particular wanted to make a machine that would equal or see off the 1000cc Brough Superior. Long ago, Vincent had acquired a strong preference for a lusty, large capacity vee twin, able to effortlessly pull a tall top gear. Irving shared this vision, and one day, quite by accident, the solution came to him when he saw two tracings of his Comet single, one reversed and lying on top of the second so as to form a V. In a flash, he saw how he could design a compact twin which would need very few new components, except for the crankcase. The fruit of this labor emerged in 1937 in the form of the Rapide, Vincent's first twin. The Rapide was clocked at 108 mph and covered the quarter mile in 11.75 seconds. Despite these astounding figures, Vincent was unable to make headway with his new creation, as the joys of motorcycling were beginning to fade before the news of Hitler's actions on the continent. Only 78 examples were made before the world was once again plunged into war.

Until 1945, the Vincent Works ceased making motorcycles, turning instead to aiding the war effort. While making landmine housings, as well as rocket and tank parts, the Vincent design team would pass the time planning various improvements they hoped to introduce into their motorcycles once peace was at hand. As Vincent had taken a fondness to the name Rapide, he decided that he would retain it and designate the post war model the Series B. During the blitz and later while the buzz bombs fell crashing to earth, Vincent and his men ceaselessly turned over in their minds how to better their bikes. Thinking of the many soldiers and airman, Vincent insisted that provisions would have to be made to mount the kickstart on either side of the bike to aid the man with a bad leg. The clutch would have to be soft enough and yet functional so that if you had lost some fingers you could still ride his motorcycle.

As the fortunes of war turned and victory came, Vincent swelled with pride at what he would soon unveil before the world. He kept up a steady drum beat in his ads, promising in 1943 that “For all servicemen, and for hardworking civilians, too, peace will bring the opportunity to own the world’s finest and fleetest motorcycle.” And already he was declaring that the Vincent HRD Rapide was going to be “the world’s fastest standard motorcycle” and that “this is a fact, not slogan.” By mid ’45, the ads read “its coming . . . the fastest of all!” To the discerning eye, the accompanying artist’s image revealed the biggest innovation at the heart of the series B redesign. Vincent had decided to revert to his iconoclastic concept of bike building and had dispensed with a conventional frame altogether. Instead of placing the engine within a frame that cradles it, Vincent decided to use the engine as the frame itself, bolting the seat, swing arm, and fork assembly to it, thus saving much weight, and making a motorcycle that was both very compact and very rigid.

Convinced that sales at last would blossom, Vincent also advertised for help, taking out half page ads reading in bold “WILL YOU HELP US TO BUILD OUR SUPERB MOTORCYCLES?” And come they did. Out of over 1000 applicants, only a select handful made the cut: Matt Wright (formerly of New Imperial and later to work at AJS), Jack Williams (who would also end up in the Matchless/AJS racing department), George and Cliff Brown (who would become famous fielding Gunga Din and later Nero and Super Nero), Denis Minett (who would head up the production of the Black Lightnings), Johnnie Penn, Geoff Manning, Nobby Clark and Ted Davis—all were to become critical to the Vincent’s success. Another applicant, Paul Richardson responded late to the advertisement, but Vincent and Irving decided to retain him because Paul was an able linguist, able to converse or read in a half dozen languages. It was a skill he had honed after escaping from a German POW camp. He lived on the run, until joining up with the British forces in Holland. It was there that he had come across Vincent’s ad and he had made his way to Stevenage expressly to answer the call. Paul was to serve as Vincent’s liaison with the press and with visitors to the Works.

The first post war Rapide was ridden on April 27, 1946. In an act of brazen confidence, Vincent gave the first ride to Arthur Bourne, then the editor of the *Motor Cycle*, who published his review in the May 29th issue of the blue one. Bourne called the Rapide “a road-burner’s dream,” writing that on it, “the natural order of things [was] to cruise at speeds between 80 and 85 mph.” Bourne then adds, “It may sound unreal to quote such high cruising speeds. But rapid road work is the type of riding for which the Vincent-HRD is designed.” He then admits that “it was not possible to find a private road with a suitable run in to achieve a mean two-way maximum speed in top gear” but that he did reach 114 mph. And he ends by once more stressing that it was only for “a rider who is competent to handle its colossal performance;” and that it will be “a machine that will continue to be talked about wherever motor cyclists gather.”

Bourne’s words remain true even now. This stunning performance was largely due to the radically new chassis, and to Vincent’s decision to utilize his own clutch and gearbox, thus replacing bought components that had bedeviled the Series A, by proving unable to transfer the massive power now being generated by Irving’s power unit. Taking no chances and showing immense forethought, Irving designed a transmission consisting of massive oversize gears modeled on the system used in Bugatti racing cars. The results not only sustain the horsepower generated by the standard engine but also have proven up to increases on the order of four times the load as illustrated by Dave Matson’s 230 mpg plus Bonneville special which features a stock gearbox. The unique clutch utilizes a servo-mechanism that works rather like a drum brake and it too proved up to its job, sustaining tremendous loads over massive mileage and years of use. Equally important both clutch and gearbox were incorporated into the crankcase, making the Vincent one of the first instances of unitized construction, a design element that also had the benefit of introducing tremendous rigidity to the bicycle.

Vincent loved to test ride his bikes and this passion proved invaluable in the development of the new

B. Unfortunately, he was involved in a serious road test malfunction. Out on a tuned Rapide in May of '47, Vincent was conducting a high speed shake down run in preparation for the upcoming Isle of Man races. The bike was to be raced by a privateer, who had put over 10,000 miles on the bike, and true to form, she was behaving in smashing fashion throughout a day of repeated thrashings. Vincent was traveling at about 118 mph when the back wheel suddenly locked. He tried to ride the bike to a stand still, leaving a long squiggly mark across the tarmac before veering off and into the sparse and overgrown gutters falling away from the landing strip. Unfortunately Vincent was not wearing a helmet and sustained serious head injuries. He awoke in the hospital and eventually was released. The next time he got on a motorcycle, Vincent discovered that his recovery did not include the retention of his sense of balance. As he puts it, he could no longer "feel my wheels through to the road." This end of his riding days was painful to Vincent, but he consoled himself by taking what joy he could in being around his machines and overseeing their development. But he was always pained to have to rely on other's road tests.

When Vincent returned to work after his accident, he discovered that Phil Irving had been working with a group of his factory testers, among them George Brown, Phil Heath, and Charles Markham, to develop a Rapide for competition. The resulting mount, nicknamed Gunga Din by Markham, was already winning races all over England with ease. George Brown was making quite the reputation for himself as Gunga's regular rider and he was a fearsome competitor. At Silverstone, Brown found himself so unwelcome that the other riders on Nortons and Ajays banded together and refused to race if the 1000cc Vincent was allowed to compete. They backed down when the rules committee said no and Brown romped to another victory. More prized by Vincent were the true amateur tales, coming out of America. The feats are astoundingly comical. The couple out for the Sunday ride on their new Rapide, spy a hill climb. They watch everyone fail to get to the top, leaving Indians and Harleys in heaps. The Vincent owner, asks his girl to step off and calmly rides all the way up to the top, stops and waves to his honey. She waves back and down he comes. Not to be undone and displaying the

kind of spunk Vincent liked in a woman, she then got on the bike and did it herself before away they went. Speeding ticket tales were equally prized, particularly ones where our hero escapes with only a heavy fine or, even better, a slap on the back.

Thrilled by these reports, Vincent's first act upon his return was to order Irving to develop a new "sports" model of the Rapide, replicating the additional hop up work he had done on Gunga Din. According to Irving, no one can quite remember how the new bike came to be called a Black Shadow. This name, perhaps the most fabled in motorcycles, seems to have arisen naturally from Vincent's decision to finish the motor in black enamel. The name may also reflect the secretive nature of its development. Walker and the other directors had opposed the model, believing that it would not sell and instead would further drain Vincent's meager profits. From their point of view, the Rapide was already the fastest standard motorcycle in the world. Prospective owners were already being scared away by tales of its speed. Margins were not good and the firm still hovered at edge of bankruptcy with his creditors threatening to throw Vincent into receivership. All were opposed. Why on earth would you build a hopped up version—just so you can say that where before you could cruise at 90, now you can hold 100 indefinitely and, should you so choose, rack it on up to 125 mph where before it topped out at around 115?

Heedless, Vincent directed Irving to build two Black Shadows on the sly, and then left England having decided to travel while he recovered from his spill. Vincent flew to New York where he stayed with two of his six American dealers. First he visited with Rod Coates who lived in Plukamin, NJ in a tiny cottage. He and his wife Marge put a mattress on the floor of their living room for their guest, arrangements that PCV graciously accepted. Vincent also stayed with Gene Aucott in Philadelphia, before then flying home to Argentina to enjoy a long holiday in the warm South American sun.

Upon his return, Vincent sought out Irving and the Black Shadows. They weren't quite ready and neither had been run. Vincent extracted a pledge from his head engineer for the new model to be ready in another two to three weeks. Then Vincent called on his friends in the press and had them announce to the public, and indeed to his own board, the arrival of the Black Shadow. Soon Irving had signed off on ad copy to be run in the February 26th 1948 issue of *The Motor Cycle*, stating that the new Black Shadow was "a standard model capable of 125 mph in road trim." Irving had no choice but to conclude work and make the test bike available to back up these unproven claims. The journalist was once again Bourne. His road test scooped Vincent's own ad copy when it appeared the week before. There he writes that he ran the bike up to 114 mph in 14 seconds during a gentle break in run and that from this ride he has concluded that "the claimed maximum speed could be achieved without difficulty."

None of the Black Shadow's initial road tests dwell on the one modification that Irving made concerning the speedometer, but the change has become legendary. Given the machine's projected top speed, Irving realized that the standard speedometer, provided to Vincent by Smiths, and in use throughout the industry, would not be sufficient because it topped out at 120 mph. Irving met with a Smith's rep and together they drew up a large five inch clock to be used exclusively for the Shadow. The numbers on the dial face start at 10 and end at 150 with numbers progressing in increments of 20, thereby omitting the fabled ton (100 mph). This detail, to which Irving gave no thought, would become the bike's signature. As for why—it is most often said that motorcyclists understood the omission and the size of the speedo as a statement: on this machine 100 was just another number. Now its large size and vertical placement right square above the headlight produce an outline that is immediately recognizable in any reasonable cartoon as being a Vincent. For whatever reason, from then one guys would always want the big clock.

For the first time since end of the war, Vincent came under serious pressure from his board members and, determined to prove them wrong, he made a second trip, this time to the American west coast, where he visited with Vincent (“Mickey”) Martin, his Burbank dealer. Triumph was getting real sales out of their LA operation and Vincent believed he could get similar results. While out in LA, Vincent really began to try to understand the American motorcyclists: they wanted speed but also style. The idea came to him then to finish a batch of Rapides in a Chinese Red, a rich warm color he thought beautiful while admiring it in LA’s China Town. Over dinner one evening at a local café, Mickey introduced Vincent to a local enthusiast, John Edgar. Upon learning of the Black Shadow’s claimed top speed, the Hollywood playboy perked up because it was only about 12 mph below Joe Petrali’s record of 136 mph, made on a Harley knucklehead. His mark still stood as the American land speed record despite having been achieved back in 1937. Vincent took the bait and promised Edgar a tuned Shadow that, for an additional 50 pounds, would break that record. Naturally, Vincent would not sell him a stripped model. The price included all the parts required to ride it legally on the road and to carry a second passenger. Edgar finished off the last scotch he would drink until he had broken the record and the deal was made. Vincent wrote back to Irving, informing him of the special order. Thus was the first Black Lightning born.

After posting the letter, Vincent thought little about the forces he had put in motion. His focus was on spreading the word to his dealers about the Black Shadow. In his mind, he saw sales of the Black Shadow lifting off and pulling the business firmly out of the red. He would show those money-men. Unfortunately, though Vincent didn’t know it, his money-men were busy showing him. At that very moment they raised prices an additional 15 pounds in the hopes that the increased profit would allow the company to remain solvent. Their action would have the opposite effect, sparking a sales plunge.

Meanwhile the oblivious Vincent traveled from LA to Springfield, MA to meet with Ralph Rodgers who was then President of the Indian Motorcycle Company. At that point in time, things had become dire for America's oldest manufacturer of motorcycles. Under Rodgers' direction Indian had concluded that the future lay not with the big vee twins such as their now legendary Chief but with lightweight vertical twins. Unfortunately for Rodgers, motorcyclists who shared his vision were passing over Indian and selecting instead bikes made by the British firms—most especially, Norton, BSA and Triumph. Rodgers now realized that what the Indian faithful wanted was simply a modernized Chief, one that would fully be the equally of the new Harley panhead. But as things stood, Rodgers felt that it would not be possible to secure either the funds or the time to retool to correct his misjudgment.

Searching for a way out, Rodgers had already entered into negotiations with the English business man John Brockhouse. Brockhouse saw an opportunity to buy Indian and convert their network of dealerships into one that would service and sell Norton, BSA and the other English firms such as Vincent who were having difficulty penetrating the large and then mostly untapped American market. When Rodgers met with Vincent, that deal had yet to be sealed and Rodgers was willing to explore other possibilities to save Indian. He and Vincent fell into a discussion concerning the possibility of partnering so as to produce two models. The first would be a Vindian: a Chief with a Rapide power unit fitted in place of their old, and now outdated sidevalve. The second prospective model would be to take a Rapide and restyle so as to more closely look like a classic big American cruiser and then simply rebadge it and sell it as an Indian. Vincent listened intently, most especially when Rodgers then suggested that when the agreement got up and running, he expected to be ordering 50 Vindians and 20 Indian Vincents a week. This boast would mean Vincent would be doubling his production. It seemed like the perfect opportunity and Vincent hastily arranged to have one Chief shipped back to Stevenage, and wrote to Irving informing him of the need to construct the two prototypes.

When Vincent returned to England, he implemented another change that reflected his improved knowledge of the American market. He decided to retire the HRD name. Too many Americans who approached him thought that the initials stood for Harley Davidson. Perhaps for the first time, Vincent began to appreciate that Harley could not be dismissed as an inferior copy of an Indian.

Vincent's low opinion of Harley was (and often remains) typical among motorcyclists who put a premium on performance and cutting edge innovation. For from the beginning, William Harley and his partners, the Davidson brothers, had taken a different direction. They aimed to make sturdy, reliable motorcycles that would sell well to farmers and working men who needed a vehicle and couldn't afford a car. The allure of technological advances and gold trophies had little effect on them. With a focus on pleasing the customer and making a profit, Harley introduced improvements slowly. For example, they did not catalogue a chain drive model until 1912, four years behind their Springfield rival, and unlike Indian and Excelsior, Harley was also slow to enter competition, not fielding a factory team until 1914. Their first major win did not come until the following year when Red Parkhurst finished first in the Venice, CA 300 miler. But public opinion in America would continue to shift in favor of the Milwaukee brand when the results from Dodge City came in that year. Don Johns may have rocketed off into myth, but after his Cyclone's tank cracked, it was Otto Walter on a Harley that emerged from out the pack to take the checkered flag. The next racing season saw Harley dominate, winning fifteen nationals. So from its first days, the character of Harley was set. They start slow and finish strong and they refuse to depart from their formula. They build for their customers, that nation of orange and black, the shield and the bar, and if you don't like it, well then, buy a different motorcycle. And in practical terms what that meant is that where once there were many brands in America, eventually there would only be Harley.

The decision to drop the HRD badge came too late to affect the special model Irving was then finishing up for Edgar. Vincent promised that the bike would arrive in August and he wanted to honor that pledge. Before crating up the machine, George Brown took it out to an airfield and rode it

up to 143 mph before throttling back. Off the bike went to Edgar who transported it up to Bonneville. Earlier Edgar had met Roland Free, an old Indian racer, who was then working at a gas station in Hollywood. The two men bonded over their shared fascination with fast cars and bikes.

Free grew up in Kansas City, and counted among his schoolyard playfellows, Walt Disney. So perhaps all those dashing heroes out to humiliate the evil villain have the spirit of Rollie Free in them. Free started out on an ACE that he bought from Newby's, the local dealer. The formative moment in his life came when he and a buddy decided to field a Harley in a local race. At first the Harley factory ignored their inquiries, then they sold them what to Free was a poorly made engine, and then to top it off, they sent in the factory team to trounce Free in what he judged to be an unfair fight. Having been kicked to the gutter once, Free dusted himself off and vowed to get even with Harley and devoted his life to executing his plan of revenge. He sought out the local Indian dealer and pleaded for a job till he got one. Then he prepped a fast Scout and went hunting for the local Harley boys, "crowding" them off the road, as he puts it, or "trimming" them in top speed bouts. Soon Free's Indian shop was thriving as hot shoes showed up ready to buy the kind of bike Free rode. In March of 1938, he went down to Daytona with a Sport Scout and a big Chief and took aim at Harley's ownership of the 750cc and 1200cc stock motorcycle records. Before a small crowd comprised mostly of the press and Indian executives, Free claimed for Indian both records, with speeds of 111.55 mph on the Scout and 109.65 mph on the Chief. Photos of Free during the run were widely circulated and for the first time the world saw his signature style of riding the bike "flat out" with his head on the tank, his stomach on the seat, his crotch on the back fender and his legs straight behind the bike. Later in life Free would say that he hit upon the idea on his own, and that once it was widely adopted he felt as if he had created a nation of monsters.

Ten years later he had teamed up with Edgar to deliver the coup de grace. With the first Black

Lightning he would break Petrali's record of 136 mph and once more strike a blow against Harley. After the Lightning arrived in August 1948, Edgar and Free took the bike out to the nearby Rosamond lake bed for preliminary tests. With Free sitting conventionally and in full trim, the bike went 138 mph. Free then altered the bike's gearing and removed the finders and ran 144 mph, once again sitting conventionally. Convinced the bike was ready to break the record, Free then took the bike to his Texaco Station for final preparation. He modified the standard rear fender, replacing the struts with stronger ones and secured to it a wooden tail so that he had something upon which to rest his thighs. He removed the front foot pegs and the big speedo but retained the tach. He took off the seat and the kick start crank but did not even bother to remove the side stands. On Thursday September 9, 1948 Free, Edgar and Mickey Martin left for Bonneville. Shortly before 7am on the morning of September 13, 1948 Free recorded a two way average of 148.026 for a new American record. Free wanted more; he wanted the magic 150, but the next set of runs produced no improvement. Now Rollie decided to do something both crazy and unprecedented. He stripped and slipped on his bathing trunks. Then he borrowed a pair of tennis shoes. Then when the judges weren't looking, he ditched his helmet and donned his wife's swim cap, reasoning that it would be mistaken for a helmet once he was up at speed. Then before anyone could stop him, he was off. Shortly before 8 am, his two way average yielded a speed of 150.313 mph.

Hearing the news, Vincent was elated. These developments, he felt, would propel the Vincent into solvency. He decided then that the addition of the Black Shadow was not enough. He would make the Black Lightning available as a cataloged model as well (though only by special order from the factory). With two new models, Vincent thought it best to break with the past and announce that the line up heralded a new range, the Series C. The board could do nothing but agree, though in an effort to temper the focus on speed, they pushed for the reintroduction of the smaller single, once again to be called the Comet. Vincent agreed.

Yet despite Free's incredible success, Vincent was to remain in dire straits thanks to the hike in price. Considering his situation, he concluded that the only way out was to work to make this proposed partnership with Indian a reality. Unfortunately, Vincent and Rodgers were both about to be played by Brockhouse who had little interest in risking his money in the Vindian. Not when there was sure money to be made simply importing popular existing brands such as Norton. The problem though was that Britain's trading laws were preventing Brockhouse from transferring his capital to the new American company he wanted to set up. English law did not like to see 400,000 pounds leaving the country. Here is where the Vindian came in. The prospect of the deal working to enable Vincent to dramatically expand his Stevenage factory was precisely the sort of secondary concern Brockhouse could hold out as justification for a waiver that would allow his capital to flow out of the country. To get it, the prototype Vindian and Indian Vincent were literally wheeled into a courtroom and by the end of the proceedings the deal was done. Ecstatic Vincent went ahead and laid in the additional raw materials to double production. It was only then that he learned that Brockhouse was pulling the plug on this risky aspect of the venture and was instead simply concentrating on going forward with the importing part of the plan.

The additional costs Vincent had incurred in anticipation of the Indian orders was the final straw. His creditors now placed his company into receivership. For the remaining years of production (1950-55), Vincent would strive to get out from under this debt but ultimately without luck. Before he went under he tried two more desperate and yet characteristic schemes. First he redesigned his motorcycles yet one more time. Second, he attempted to bring to market the Amanda, an early jet ski.

Both projects turned on Vincent's fascination with a new developments in chemical engineering. The product was called fiberglass. Vincent saw its potential immediately. In a flash he conceived of the fully enclosed motorcycle, the modern touring machine so popular today in the form of Honda Gold

Wing. And he saw the explosion that would come in personal watercraft. Unfortunately, Vincent was once again too far ahead of the public and science.

His final series of motorcycles, the enclosed D's, were rejected, largely because of their nontraditional look and the fear that a cross wind would blow them over. Indeed sales were so poor that Vincent was forced to reintroduce the "open" bikes. The Amanda, however, seemed poised to save Vincent after he secured a large order from a distributor in Florida, but the project had to be scraped when further testing revealed that the resin in the fiberglass was of a poor grade and could not withstand the engine heat. When the Amanda failed, Vincent reluctantly halted motorcycle production and sold his company to Harper's Engineering. He was an early failure, but soon the other British makers would wink out as well as motorcyclists began to fall in love with the amazing machines now being built in Japan. Despite this turn, Vincent remained an optimist till the end. He now had a new vision for the motorcycle, complete with a new engine, the series E. One day the world would give him a second chance and then he would show them. But while he waited, we came to the end of another era, that of motorcycling's silver age.

HISTORY OF THE MOTORCYCLE III: THE AGE OF IRON

DUCATI And THE SUPER-BIKES

Although Vincent ceased making new machines in 1955, his motorcycles remained the pinnacle of development until the late sixties. For most historians that event—the surpassing of the Vincent—occurs in 1969 when Honda unveiled its CB 750. Until that moment, the British and the Americans had somehow continued to dismiss the idea that the Japanese were finished with their learning curve and no longer content to remain on the sidelines when it came to fighting for the

attention of motorcyclists who wanted to ride big bikes. An oft told tale captures how in this case pride truly went before a fall. As the story goes, Honda executives made a pilgrimage to visit with the Triumph team in charge of North American operations. The meeting took place in Triumph's North American headquarters in LA. After a show of reverence, the Japanese announced that they would soon be selling 10,000 motorcycles in the USA. The Triumph guys smiled and said, "but we only sell 3000 a year." At that the Honda men looked stern and said, "10,000 *a month!*" And with the CB 750 they hit that mark.

Sid vividly remembers his first encounter with the Honda 750, the machine that many say changed the world. Ron, another of Sid's motorcycle buddies and a fine machinist, bought one of the first available on the east coast. He actually traveled to Fayetteville, NC where they were being dumped by the truck load at Red Nebors' shop. Shortly after he returned to Norfolk, Ron stopped over the house on a bright Sunday morning and found Sid working in the garage. He invited him to come outside and have a look. Standing in the driveway, Sid found the sight of this shimmering metallic gold beauty so overpowering that he turned away. The 750 featured disc brakes, overhead cams, and an electric start, and all for the startlingly low price of one thousand dollars. Ron lit her off and Sid was instantly transported to the Isle of Man. The Honda's four into one exhaust system emitted an exotic wail that evoked the then legendary Italian MV Augusta, as well as the Gilera, both clear inspirations for Honda's talented design team. Sid threw a leg over it and road off, down Thole Street and up Granby Street. As he accelerated through the gears, he was immediately impressed with how well sorted out it was. Like most motorcyclists he thought the ride lacked nimbleness, a fault he attributed to the bike being a tad top heavy.

The Honda 750 was the opening salvo from Japan. Rival Kawasaki eventually bested it when in 1973 they unleashed the first of their now legendary Z's, the 903cc Z1. Once again the Japanese utilized a transverse four, meaning an engine comprised of four cylinders positioned across the frame (rather

than in line with the frame as seen in a Vincent or a Harley). This configuration would soon become so common that bikers took to calling them UJB's, meaning a "universal Japanese bike." But the appearance of the Z1 was special. Hearing the rumor that this new bike's top end had been designed by Ferrarri, Sid rode over to a small dealership in Norfolk, Commonwealth Kawasaki on Little Creek. As he walked towards the Z, he found himself slowing and then he came to a stop about a dozen feet away. It was as if he had come before a new emperor. For Sid, the feel of power radiating from this bike was so intense that he felt an urge to fall to his knees right there before it.

Eager to explore the capabilities of these two marvels, Sid soon built up one of each for drag racing in the new Pro Stock class. Both bikes were fully kitted and punched out in displacement. One trick he employed that he is particularly proud of was to run a breather hose from the crankcase into that section of the exhaust where the four header pipes join together. The aim was to induce rapid evacuation of the motor's lower end, thus realizing a gain in power. This mod is still in use today on top racing bikes and touted in the mags as cutting edge. In racing these bikes, Sid's aim was to drum up business and it worked, leading to many such hop up jobs.

I used to go to the drag strip regularly with Sid when he raced these bikes. Most of the fans came to watch the funny cars and the rails. Like many kids who played with Hot Wheels in the early 70's I had my Snake and Mongoose toy cars. Those races occurred out on the west coast in the sixties and so I never saw them battle in real life but I staged many a classic show down in my room. But I did watch similar epic battles at drag strips near Norfolk. The bikes usually finished up in the morning, and so Sid and I would wander around the pits and watch the cars guys go at it after he had packed up. Most of the big names came through: TV Tommy Ivo, Big Daddy Don Gartlitz, and yes, even Paul "the Snake" Proudhomme—I watched them race and wrench between runs in the pits. To gain Sid's respect, a marquee driver needed to display an ability to get his hands dirty. Once we watched

Big Daddy push his own pit chief out of the way in a rush to get ready for a run. He instinctively knew which cylinder was misfiring and he tore into the motor, fishing out a shattered cam follower. Garlitz tossed the wreckage into the bed of the truck where Sid slinked over and retrieved it as a memento. Once or twice Sid bumped into his old rider Paul Hall at the drag strip. He was making a living as a welder then and for fun, he was racing an opened wheeled rail job. He seemed happy enough whenever he encountered him but later Sid would learn that he took his own life in a McDonald's parking lot. When Sid had attended the funeral, he noticed how frail his old jockey looked and heard that he was near the end of a protracted battle with cancer.

At times Sid is haunted by the sense that he contributed to Paul's destruction, having hooked him on racing. The drags became a consuming passion, causing his wife and children to leave him. When he died, he was alone. Racing and riding motorcycles for such men moves from a recreation to one's whole world. When that happens, as it has for me as well, motorcycling comes to encompass all emotions and experiences, the good and the bad, the painful and the joyous. So without denying the darker aspects, I look back on those experiences at the drag strip fondly. I was just a kid but I acquired a good sense of the character of the Honda 750 and the Z1, the bikes that ushered in the age of the super-bike.

Both of Sid's modern drag bikes ended up departing with their rider, D. He was an especially unsavory character. He worked for a time at Big Sid's and though he was a superb drag racer and a smart technician, he was dishonest and prone to violent rages. Sid watched him once slam a tool into the ground in anger. It bounced up and smashed a windscreen on a customer's bike parked near by. "I'll pay for it," he grumbled, but he never changed his ways. Another time the phone rang in the middle of the night and Sid had to go down to the shop and meet with the police because D had been caught racing the Z1 out on the street for money. Only the fact that the cop was a Blue Knight and

knew Sid prevented the filing of serious charges. Any time I was around, I sensed strongly that D. exuded danger and deadly intensity. I was glad when my father fired him after catching him pocketing stock to sell. But by then the ownership of the drag bikes had become joint and to save himself the trouble of settling up in cash, Sid had let them go. But while we had them, I watched D. win his share of races, usually with the Z. The 750 was pretty but not in the same class. It became the warm up bike and that is pretty much an accurate understanding of how the Z surpassed both the Honda and the Vincent.

The arrival of these Japanese super bikes sealed the death of the fading British manufacturers. Sid, like so many bikers of his generation, deeply mourned the loss of BSA, Norton and Triumph. You will often read that unrealistic demands brought by the unions wrecked these companies and while there is an element of truth to this charge, the larger reasons lie with poor management decisions. The fatal act was simply a failure to invest in building state of the art production facilities. Equally important, these executives proved unresponsive to dealer demands. They should have focused on improving the quality of the current product, thereby securing their hold on what is today called the luxury (or top of the line) class. Instead they spent their profits buying each other in a wave of consolidation. Then they pursued doomed efforts to produce motorcycles that would go toe to toe with the Japanese in terms of price. Harley, BMW and Ducati would learn from this cautionary tale to avoid this strategy and instead concentrate on selling high end bikes that exuded character. So long as the ride was thrilling and the reliability good, these bikes would continue to find buyers for the simple reason that many motorcyclists wanted a different experience than the Japanese provided, however, superb that experience was. But the British refused to listen to their base and so brought down their own house. Despite the merger, among motorcyclists the proper way to bid them farewell, at least over in America is to note that Triumph was the last to succumb because new Bonneville's could be had as late as 1983. The Norton faithful, in contrast, saw their fabled Commandos disappear from the scene in 1977, while the first of the three badges to be retired was BSA. This event occurred after the

BSA Rocket failed in 1972 due to hideous styling. The decision was then made to restyle the chassis and reintroduce it as a Triumph Hurricane and with that BSA faded away. I am familiar with all of these machines and none come remotely close to what the Japanese were offering in terms of power, let alone in reliability. Nor was the handling of the British bikes significantly better. So as much as Sid loves these machines, he does not think of them as of the royal line and I would agree.

His opinion of BMW is much higher and when the English packed up he duly drew much comfort in riding the latest German bikes. It was a painful shift in allegiances for him but he managed it. Among their models two stand out in particular for Sid: the R69 and the R90S. Sid's interest in BMW's and all German motorcycles had been sparked by his stay in Germany during his years in the service. He attended the Frankfurt international motorcycle show in 1953 and had come away with real affection for German engineering excellence as found in machines offered by such makers as Adler, Hoffman, NSU, Horex and Zundapp in addition to industry leaders BMW. After his return stateside, and in the midst of rebuilding the Rapide that had been so abused by GG, Sid bought a bedraggled BMW R50. He hopped it up and overbored it to accommodate R60 pistons. Although the higher compression made for difficult starting in cold weather, he enjoyed riding it for many years before finally selling it. During this period, he also often sampled the R69 600 cc twin which he found to be silky smooth and tireless over good road. These Beemers were owned by his old friends Dallas and Bill, the sons of Pop Gaws, an Indian dealer in Norfolk Virginia. They had first meet as kids riding their whizzers. Bill was cool in the saddle, but Dallas was a hot shot and paid the price one rainy Sunday morning when he died on his R69. Year later Sid fell in love with the larger R90S. He got a Silver Smoke edition in a trade and then later sold it back to the owner. But while he had it, he enjoyed riding it, though he never fully trusted its handling through tight switchbacks.

Above all though, Sid rooted for the Italians to somehow stay above water. For in this period, it was

only Ducati who offered a truly credible competitor to the Z1 and the Honda 750 and that came in 1971 with the release of the Ducati 750 cc GT, the first of their big vee twins. Here Sid found the power and the handling, as well as the style and grace to equal or perhaps surpass the best the Japanese had to offer in terms of real world riding. And to top it off, the bike seemed custom made for a big American, it was rangy and encouraged a rider like Sid to stretch out, relax, and enjoy the ride.

It is hard to imagine now, but Ducati did not even begin life as a maker of motorcycles. In the wake of WWII, the Italians found themselves having to start over and to make due with whatever they could get their hands on. For the men and women attached to a tech firm started by the Ducati brothers that meant entering into negotiations with the Italian government about what to do with their bombed out factory. The decision came down, as only it could in Italy, that a company that had made radios and other sophisticated transmitting devices once central to Il Duce's war machine would now engage in the largely unrelated business of making internal combustion motors suitable for use in mopeds, a device the government deemed essential for its national economic recovery plan.

And so, by late 1946, Ducati motorcycles speed down streets. They were just tiny push pedal bikes but they bore with them the spirit of Italy, all its flare, beauty, and speed. Engineer Aldo Farinelli, the man behind these first machines, must have seen his share of Whizzers, and if not, he certainly knew the equivalent European made machines, such as the French Moto Légère, once a ubiquitous sight in front of cafés across the continent. For Farinelli's motor, a 48 cc two-speed, affectionately dubbed *Cucciolo*—"the puppy," is a very impressive design, complete with "pull rod" operated overhead valves. The chassis also featured a low center of gravity with the motor positioned at the base of the frame, just in front of the sprocket and its pedal cranks, another excellent design point.

Such a layout is identical to the Whizzer Sid first rode, and superior to the well-known French Vélosolex where the motor sits forward of the handlebars. It also marks an advance over another common design where the engine is mounted below the pedal crank with its drive wheel rubbing against the rear tire tread. The British Miller designed and Vincent produced Firefly is one such an example, and though its popularity would help keep Vincent solvent, he never liked the moped because the motor's drive wheel rapidly wore the tire, and, of course, rain dramatically reduced performance.

The next major event in Ducati's history comes with the arrival of engineer Fabio Taglioni. Dr. T, as he was dubbed by the faithful, was hired in 1954. His first effort was called the Gran Sport and it inaugurated the line of Ducati singles that would continue uninterrupted until the introduction of the GT twin. Introduced as a 98cc engine, Taglioni soon after punched it out to 125 cc, whereupon he discovered his powerful high revving motor would suffer from valve spring breakage. His solution was to eliminate the springs and use another cam to close the valves. These arrangement, called desmodromic, had been in use for decades in both cars and bikes, but its complexity had precluded it from use in mass production motors. Taglioni's daring in going after performance was matched by his eye for beauty. The early Ducati singles feature enchanting lines and a profile that exudes sex appeal.

From the beginning then we see how the Vincent and the Ducati call to the rider and to each other in profound complimentary ways. Both began life as sporting singles, both prove effective race and street motors, with unconventional design elements. Despite that, both continue to strike the appreciative eye as the very embodiment of timeless beauty. The individual components reflect an aesthetic that prizes "organic form": the lines flow and curve in ways that call to mind the body and the landscape. The jelly mold gas tanks of the early Duke singles are perhaps the best examples of this departure from angularity in motorcycle design. The preference for a sweeping curve is also

everywhere present in the Vincent, its cases and covers fill the hand in pleasing shapes that repeatedly call to mind the female anatomy. This appeal only doubles in impact when the Vincent and the Ducati emerge as vee twins.

No doubt the affinity between Vincent's chief designer Phil Irving and Ducati's Fabio Taglioni, was a profound one, though Irving's letters to Sid reveal differences. Irving wrote that if they attempted to press into manufacture Taglioni's complex desmodromic design they would have been laughed out of the room. On the other hand, like Taglioni, Irving did contemplate and even drew up a 90 degree vee-twin layout of the sort adopted by Ducati with the front jug pointing straight ahead (making for an L shape, and so designated), but it was rejected as a poor position for a cylinder. The fear was that it would get covered in mud and snow and prevent proper cooling.

Though Taglioni drew up a 750 cc twin as early as 1962, Ducati's management remained content to sell singles throughout the fifties and sixties. By the late sixties, Honda and the other Japanese makers had secured such market dominance when it came to bikes of small displacement that Taglioni was finally given permission to go forward with his dream of drawing up a large vee twin. The resulting GT was a true benchmark, offering superb handling and a thrilling ride. In head to head comparisons with the Z1 and the Honda 750, it received good marks and often won out. Always skeptical, the motorcycling community saw these claims confirmed in 1972 when Paul Smart won the first Imola 200 on Ducati's new sport model V-twin, the 750 SS. Eager to sample this experience, the editorial staff of the American magazine *Cycle* took delivery of a 750 SS. Dubbed the California Hot Rod or "Ol' Blue," this bike, ridden by Cook Nielson and tuned by Peter Schilling, won Daytona in 1977.

As powerful as this design proved to be, the market for big bikes kept demanding more. Men like Sid

rode the 750's and wanted that ride plus the power of a Black Shadow; they wanted a 1000cc motor. This demand only increased after Mike 'the bike' Hailwood came out of retirement to win the Isle of Man in 1978 on a Ducati twin punched out to 900 cc. This victory is considered by many to be the greatest racing victory in the sport. The next step for Ducat was to offer an 860 as an interim modeled followed by the roll out of a 900SS commercial model. These bikes would be the final Ducatis prior to the sale of the floundering company to Cagiva in 1983 who, with patience and good planning, would steer a firm that was deeply in debt, back to profitability, thanks largely to the emergence of Massimo Tamburini as the true successor to Dr. T.

Though the last of these pre-Cagiva bikes offered much, real aficionados felt great disappointment when it came to their styling. With them, Ducati went away from the GT's "round cases" and adopted what riders began calling the "square cases," a development (however warranted) that represented a real fall off in the bike's classic beauty. Soon air cooling would be surpassed by water cooling and with that advance the need for the motor to have cooling fins would be eliminated. For many this development marks the end of the last great age of motorcycling, the bronze age of the Superbike. Now the motors would come to look increasing like long flat sided boxes. Sid constantly likened them to air compressors. They have little beauty and where before guys objected to hiding the motors behind a fairing, now that look became popular, encouraged no doubt by the fact that a nicely painted piece of fiberglass looked better than the latest water cooled motor. The ultimate example of this modern approach is Tamburini's 916, the bike that enabled Ducati to survive both its own poor business practices and the Japanese competition. Riders today love that look, and what's not to love, so long as you keep that densely packed mess of an engine compartment behind sexy red panels. With that I welcome you to our world and the age of iron.

The Big Sid List

20 classic bikes to start your collection.

The list of truly marvelous machines that follows reflects nearly a half century of riding, racing, restoring, and just plain loving motorcycles. Naturally such prices are dependent on market demand and the condition of the bike. With luck, of course, you might still be able to make off with one of these gems from some unsuspecting sucker who only saw it as a pile of parts in grandpa's barn, but this is what you should expect to pay on the American market in 2012 (and are given in American dollars) for an original running example finished to show quality.



1. Brough Superior SS100 KTOR, 996cc V-Twin Over Head Valve (O.H.V.), 1924-1940

It is said that no two motorcycles made by George Brough were identical. The Brough customer was given considerable choice in cycle components, a large number of which were "bought out" rather than manufactured in-house. Quite rare, but long lived, the SS100 was the premier model of the line. Only 384 SS100s were built (some with J.A.P. and others with Matchless engines). Greatly admired the world over for their quality, beauty of line, and character, Broughs also had an enviable history of racing and Records success. Perhaps a bit weak in brakes and rear suspension, yet nonetheless truly a desirable classic of utmost value. "Top of the heap," and demanding \$450,000+.



2. Vincent H.R.D., 1000cc V Twin O.H.V., 1937-1955

Beyond all doubt the fastest classic motorcycle ever produced. The record books particularly attest to the awesome Black Lightning models from '48 on, an example of which, if a genuine Works built machine, can bring 100,000 or more if a true Record Holder. One peg down in performance is the Black Shadow, nearly identical to the Lightning but road equipped and capable of 125 m.p.h., a good example of which can be had for anywhere from 17 to 30,000. Vincent Vee Twins proved to be years ahead of all contemporary machines, their rigid structure, dual braked wheels front and rear, and innovative suspension leading the way for future designs.

The single cylinder comets sell for 25,000+ in show quality. The coveted Black Shadow twin sell for 120,000+ and the ultra rare factory racers, the Black Lightnings sell for 350,000+. The first Black Lightning, the bike on which Rollie Free set his famous record of 150.313, was recently sold in a private sale where the reported price was said to be in excess of one million dollars.



3. Cyclone, 1000cc V Twin O.H.V., 1915-17

Although only a few were produced, these legendary machines were the most advanced twins ever made in America, boasting overhead camshaft configuration driven by shaft and bevel gears, not too unlike those utilized later in the Ducati twins, circa the 70s and 80s. Cyclones proved to be much faster than the contemporary designs from Harley and Indian, particularly in the hands of one Don Johns. \$5500,000+.



4. Crocker, Vee Twin 61 cubic inch O.H.V. Pushrod Operated, 1936-42

Produced in limited quantities during the late thirties and on into the early forties, these memorable machines possessed an early customized styling that swept through America like wildfire after WW2, ultimately evolving into what became known as the "chopper." Crockers proved extremely fast and capable of besting both H.D.s and Indians because of its agile handling and powerful acceleration. \$275,000.



5. MV 750 Sport America, 750cc, Transverse Double O.H.C. 4 Cylinder, 1973-77

Race fans around the world dreamed of--actually lusted after--one of these Italian fire engines, which together with the Gilera 4 cylinder racer had toppled Norton from its long held position of World Champion. After repeated rumors, they finally made it available in road form, and those fortunate enough to sample one never forgot the incredible sounds of those four exhaust pipes as well as the motor's long train of straight cut gears. The Japanese later copied the layout, typically improving upon a proven design by employing a chain for the drive to the topside camshafts, which had the effect of reducing engine noise and weight, as well as manufacturing cost. \$60,000 and up.



6. Harley Davidson, 61 cubic inch V Twin O.H.V. Knucklehead EL, 1936-41

This nicely balanced and quite handsome design proved a stout performer, clearly throwing down the gauntlet to Indian, Harley's chief rival, who sadly were never able to field a modern contender. Highly prized, they are seldom seen available for sale. One look at the peculiar shape given the push rod tube/rocker box explains the term "knucklehead" as a clenched fist is easily imagined. In 1936, one of these, suitably modified, set a new record in America of 136.183 m.p.h. Prices range from \$20,00 to \$35,000.



7. Norton Manx Senior, 500cc Single Shaft and Bevel Driven O.H.C. 1927-63

The Manx Senior ruled its racing class for so many years it seemed unbeatable. A remarkably tireless overhead camshaft single cylinder design, it reigned until more modern 4 cylinder designs from Italy forced it out of the winner's circle. Although Norton also offered the Manx as a 350 cc Junior model, it is the big brother that proved the more successful, and today continues to demand prices in excess of 40,000. One can also purchase new replicas, built from aftermarket components that still run strong.

Matchless G50 1962



8. Matchless G50 500cc and AJS 7R 350 cc Single Chain Driven O.H.C. 1948-63

A development of the A.J.S. Jr. 350 cc "Boys Racer," these remarkably capable machines have proven to respond to modern tuning techniques by running faster than ever, and now will generally "see off" a Manx with ease, having won countless vintage events. Its combination of quality, beauty, and power is altogether stunning. Quite rare and bringing in excess of \$ 25,000. As with the Manx, modern replicas can be purchased today and are themselves proven race winners.



9. Indian, 1265cc Intake Over Exhaust (I.O.E.) In Line Four, 1927-42

Although in production for several years, the 38 version "got it right" both style wise and in its porting arrangements. This super smooth performer had no counterpart at Harley and proved very popular as a Police mount. A superb road bike, now valued at 20-30,000 dollars.



10. Henderson and A.C.E., 1068cc I.O.E. In line Four 1912-41

First to clear up some confusion-- Henderson, ACE and Indian were all directly the fruit of one man,

Bill Henderson, who, aided by his brother Tom, created the original four cylinder prototype in 1912, and christened it the Henderson. In 1920, Henderson became ACE, which in turn was absorbed by Indian in 1927. Much of the subsequent design was done by Arthur O. Lemon, who had worked with Henderson since 1915. The end of these great motorcycles finally came when Indian allowed them to die in 1941. Prime examples demand 30,000 to 40,000. Henderson: 15,000 to 35,000. ACE: 25,000 to 35,000.



11. Ducati, 750cc Desmo SS Vee Twin, Shaft and Bevel Gear Driven O.H.C., 1974

Produced in very limited quantities, these incredibly smooth and exquisite Italian machines simply enchant all who are lucky enough to sample their perfectly balanced qualities of great speed, "on rails" handling, effortless butter-slick gear shifts, and a booming unforgettable exhaust note. In a class by itself as far as providing soul satisfying experiences. One to keep. Demanding prices of 20,000 to 35,000.



12. Indian Chief, 74 cubic inch Flathead Vee Twin, 1925-53

Many customers fell for the opulent style of these colorful machines, certainly more flamboyant than technically advanced! However many preferred the more modern offerings of Harley, and so these dated designs faded away. Loaded with character, Indian Chiefs still attract devotees. Pre 40s: 8,500 to 15,000. Post 40s: 15,000 to 30,000.



13. Indian 101 Scout, 500 and 750cc Flathead Vee Twin 1924-1939

Perhaps the most versatile and beloved models from the great firm, not only for road use, but also for record setting and racing. These lovely and compact machines also became the favorite choice of every fairground's Wall of Death feature, from coast to coast. Similar in overall size and weight to most European and British machines, a Scout would not be out of place today as a town bike. A very desirable acquisition, indeed. 20,000 to 30,000.



14. Velocette Thruxton Single, 500cc, O.H.V. 1964-71

A prime example of the British thorbred big single, a "Velo" still holds the World's Record for 24 hours continuous running at better than 100 m.p.h.. Noted for its quality construction, fine handling, and good performance, these machines also offer great elegance and proper British good looks. 20,000-30,000.



15. B.S.A. Gold Star Single, 350 and 500cc Pushrod Operated O.H.V. 1949-62

Generally regarded as the most versatile of the British clubman-type street bikes, the Gold Star proved a winner in most forms of competition: whether it a road race, flat track, or scrambles; all fell to the booming Gold star. The Factory provided a wide variety of pistons, cams, etc. of proven race quality, so helping to facilitate many successes by private owners. Nice examples go for anywhere from about 8,500 to 17 grand.



16. Ariel Square Four, MK I and II 1000cc Four Cylinder Pushrod O.H.V. 1937-58

Remarkably smooth, and with a broad torque band, these beautifully cast and polished power units were exceeding compact for a 1000 cc motor. Their unique exhaust music is certainly thrilling, and Ariel's top gear spread is unmatched as it allows one to trundle along at 12 m.p.h. and smoothly accelerate to over one hundred, all the while in fourth! Clearly a gentlemen's tourer of great elegance and style, they function best when operated in a reasonable manner. Brutal riding will certainly reveal the bike's questionable handling and lead to engine overheating, possibly worse. For the cultured, not the racer. Prices range from 10,000 to 20,000.



17. B.S.A. Rocket Gold Star, 650cc Vertical Twin Pushrod O.H.V. 1962-3

The Rocket is a rare model (fewer than 1500 were built) combining a highly tuned 650cc vertical twin motor set into the Gold Star single cylinder chassis and wheels. Rockets sport good looks and offer excellent handling over twisties and back roads. Sadly it proved less reliable than the single at speed. Quick through the gears though, and possessing a wicked exhaust note, these attractive devices demand values of 8 to 20 grand.



18. Triumph 6T Thunderbird, Vertical Twin Pushrod O.H.V. 1949-66

Initially garbed in a sombre slate blue color, these vertical twins were endowed with wonderful character and serious good looks as well as great power from a tireless and willing engine. Sadly they lacked sufficient frame integrity to handle such power safely beyond speeds of 70-75 when they would begin a disconcerting weave, discouraging use of more throttle, except by the very brave! Their only rear suspension, termed a "sprung hub" was undamped and of little help regarding comfort, and only made handling worse. The frames were later to improve, becoming an equal of any then available. 5,000 to 15,000



19. B.M.W. R69, 600cc "Boxer" Twin Horizontal Opposed Pushrod Operated O.H.V. 1958-9

Quite the best of the line, these superbly finished and crafted motorcycles had no equals in regards to comfort, stamina, electrical equipment, and brakes. Damn near silent, dead oil tight, and having a top speed of over 100 m.p.h., Boxers were able to maintain high cruising speeds safely, day or night, with no rider fatigue or tiring of that marvelous motor. Their handling was generally quiet good; however, the wise rider quickly learned to turn the wick down when negotiating tricky "s" curves, or risk an unpleasant end to the ride. 15,000 to 30,000.



20. Matchless and AJS Vertical 500cc Vertical Twin O.H.V., 1948 -61

Imported from England first in 1949, these beautiful twins boasted very modern and finely crafted engines having a center, or third main bearing which contributed to their smoothness, particularly in their original 500cc capacity. Their superb swing-arm frame gave a remarkable ride, while providing improved handling. This layout, combined with the bike's overall finish, came to define a look of adventurous sophistication which worked to broaden the appeal of motorcycling in the fifties. 5,000 to 10,000.

