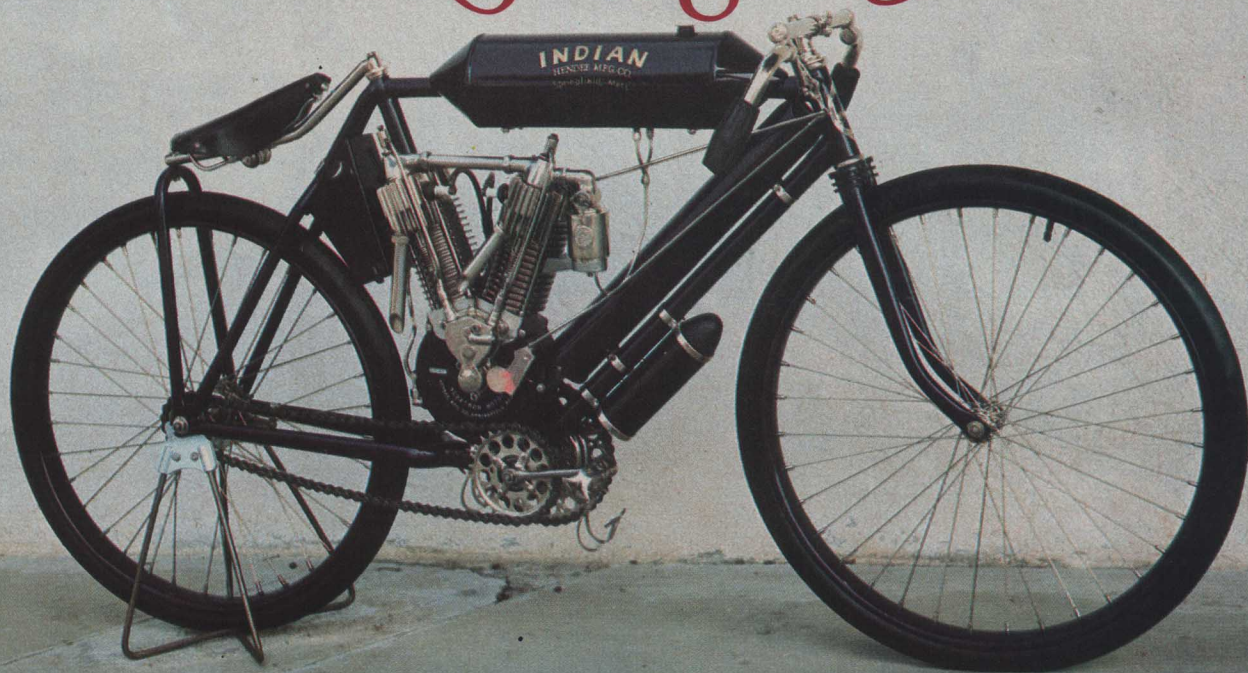


Yankee Ingenuity



Very rare now, the 1908 Indian racer would run 65 mph and was used with great success on early bicycle racing tracks.

by Richard Renstrom

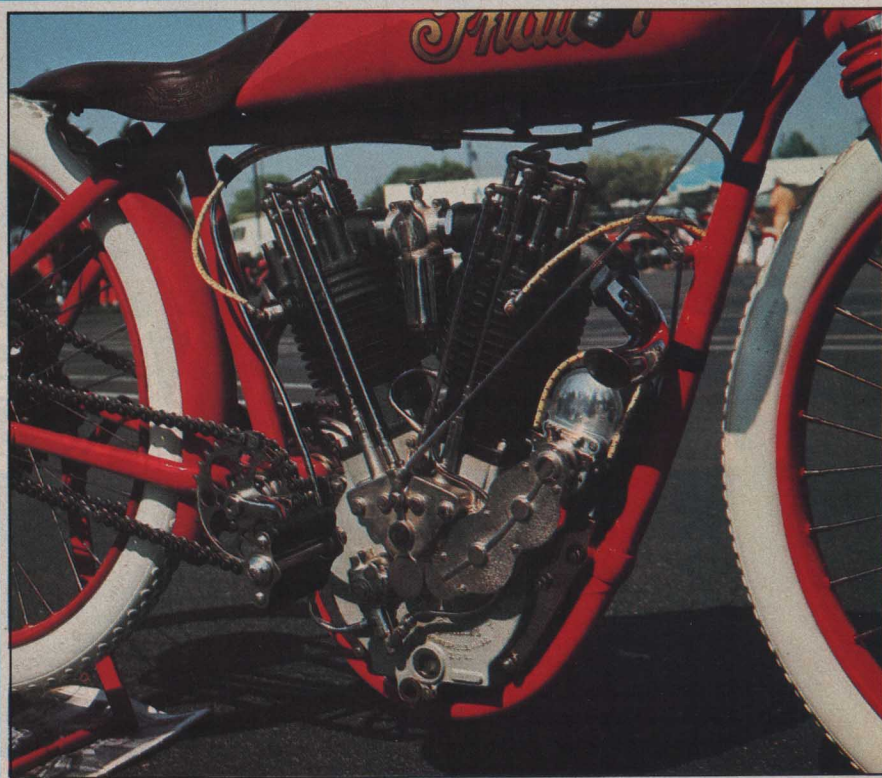
Younger motorcyclists may find this hard to believe, but Japanese motorcycles have not always been the technological leaders in this sport. Riders of greater experience may remember periods of English or Italian racing success, but when motorcycling first began as a sport it wasn't Japan or Europe that dominated racing and technological achievement, it was America.

During the early days from 1910 to 1926 there were more than 100 different American motorcycles. Some were just backyard operations that folded after producing a few motorcycles. Competition was fierce and the motorcycle manufacturers soon discovered that duking it out in competition helped both sales and the design of the motorcycles.

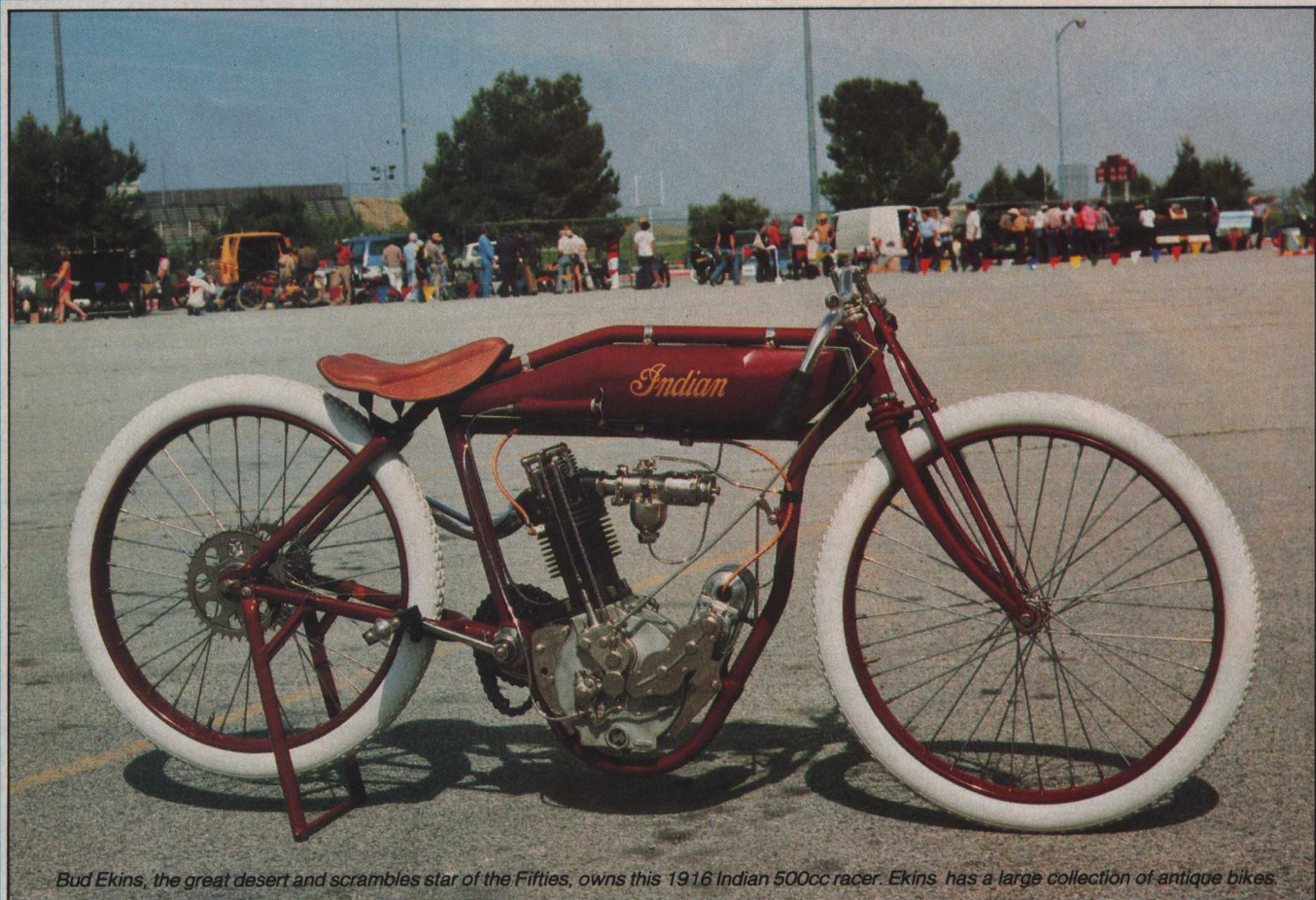
During the really early years the designers contented themselves with just stripping down and tuning a roadster to produce a racer, but by 1908 the Indian Company decided the time was ripe to produce and market a real racing model. Offered as both a 500cc Single and 1000cc Twin, these pukka racers had a bore and stroke of 3-1/4 x 3-7/16 inches, a spindly frame with either a sprung or rigid front fork, and a short 51 in. wheelbase.

With a top speed of 65 mph on alcohol, the engine featured a novel idea—me-

How America Ruled the Racetracks of the

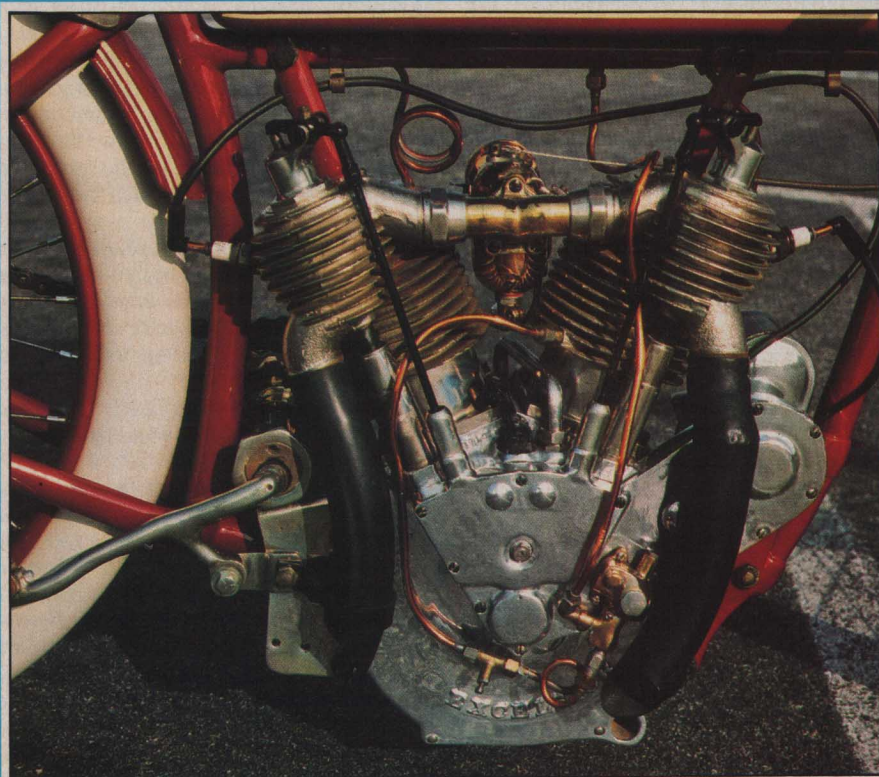


The 1916 Indian eight-valver ran on alcohol fuel and revved to 5000 rpm. The top speed was in excess of 100 mph.



Bud Ekins, the great desert and scrambles star of the Fifties, owns this 1916 Indian 500cc racer. Ekins has a large collection of antique bikes.

World and What Happened to the Spirit.



This shot reveals the overhead intake valve and side exhaust valve on the 1916 Excelsior.

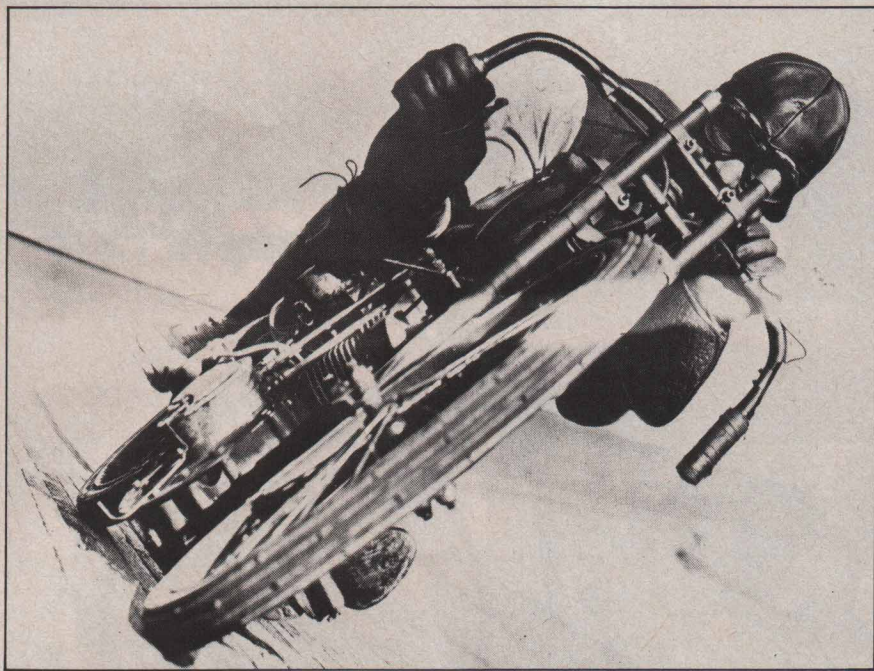
chanically operated intake valves. Prior to this, the overhead intake valve had been fitted with only a weak spring and depended upon the downstroke of the piston to suck open the valve, but with this new method of pushrod valve control, the valve could be better controlled and revs soared.

Weighing only 120 lb. in 61 c.i. trim, the new racer had direct chain drive, since the clutch had yet to be invented. Despite their primitive specifications, some remarkable speeds were racked up by these early racers, such as Jake DeRosier's 68.2 mph clocking for a lap over the highly banked quarter-mile bicycle racing track in Patterson, New Jersey.

Indian went on to become a world leader in both speed and sales. In 1911 the marque scored its stunning 1-2-3 win in the Isle of Man TT. After this epic victory, Indian went on to set many speed and racing records for 15 years that were well beyond anything being clocked in Europe—a fact that still galls British and Continental pride.

The Springfield, Massachusetts company featured the most brilliant designers in the world then, with Oscar Hedstrom from Sweden and Charles B. Franklin from England.

When Indian traveled to the Isle of Man in 1911 they had a road racing ma->



This posed picture from the early board track days reveals the tucked-in riding position and tall, thin tires.

chine that was superior to the British bikes. The British still favored belt drives and no gearbox, while Indian had a two-speeder with an all-chain drive and a clutch. Indian also used a reliable magneto and mechanical pump lubrication, while the British were still laboring with a hand pump in a total-loss system.

While the great win by Indian was internationally significant, what counted at home were the many races over the dirt and board tracks that were flourishing all

over the country. Indian was at the front then, and they even went so far as to produce an all-out racer that was so far ahead of its time as to be visionary.

First used as a works racer in 1911 and then marketed in 1916 as an over-the-counter model, these old Indians were very special and featured a bore and stroke of 3-1/8 by 3-31/32 in. The engine was a new overhead valve design, but the really remarkable thing about the engine was the head design. Overhead valves

were not in general use then, but Indian went one step beyond this and used four valves per cylinder. A set of short exhaust headers were used on the twin and one on the single, but both engines used only one carburetor.

The ignition system was by a Dixie high tension magneto, which fired spark plugs made by Indian. The lubrication system consisted of an oil tank, a worm-gear pump, and a supplementary hand operated pump for use under really hard running conditions. The oil feed was adjustable to suit track conditions.

To transmit the power, Indian used a primary chain, a multi-plate clutch, a countershaft, and a rear chain. No transmission was needed on the flat tracks, so this was dispensed with.

The frame was a standard Indian type made from chrome vanadium steel, which had a girder type front fork with no provision for suspension. The wheelbase was 53 in., and the fuel tank was available in several sizes to suit the length of the race.

The wheel size was 28 in. with narrow 2 1/4 in. tires, which gave the racer the tall and lean look so admired by vintage bike fans today. The dropped bars added to this impression of speed, as did the lack of fenders.

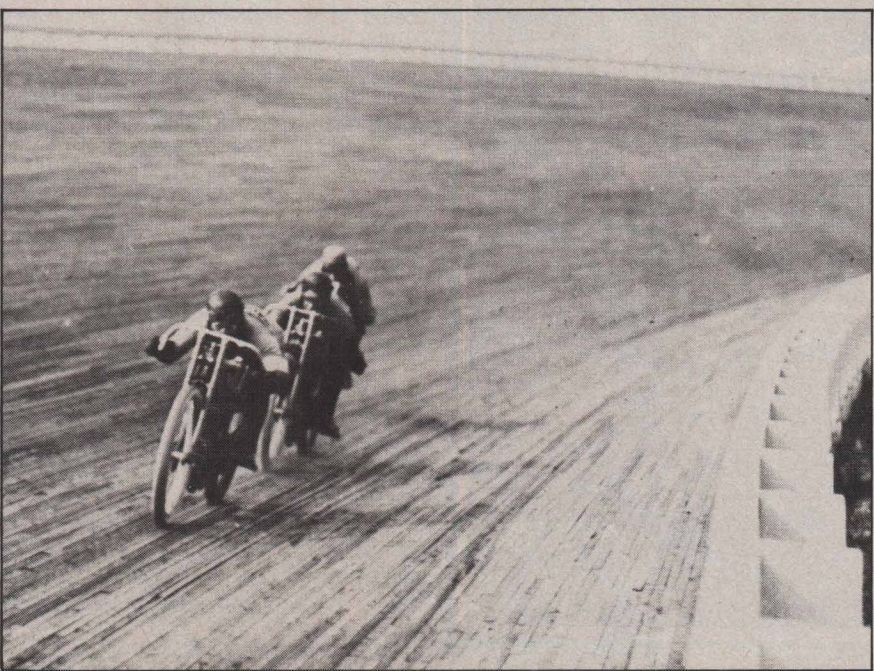
A rear prop stand was fitted, as was a low mounted solo seat. Pedals for starting and for use as footpegs came with the bike, but many riders dispensed with these in favor of a more tucked-in riding position.

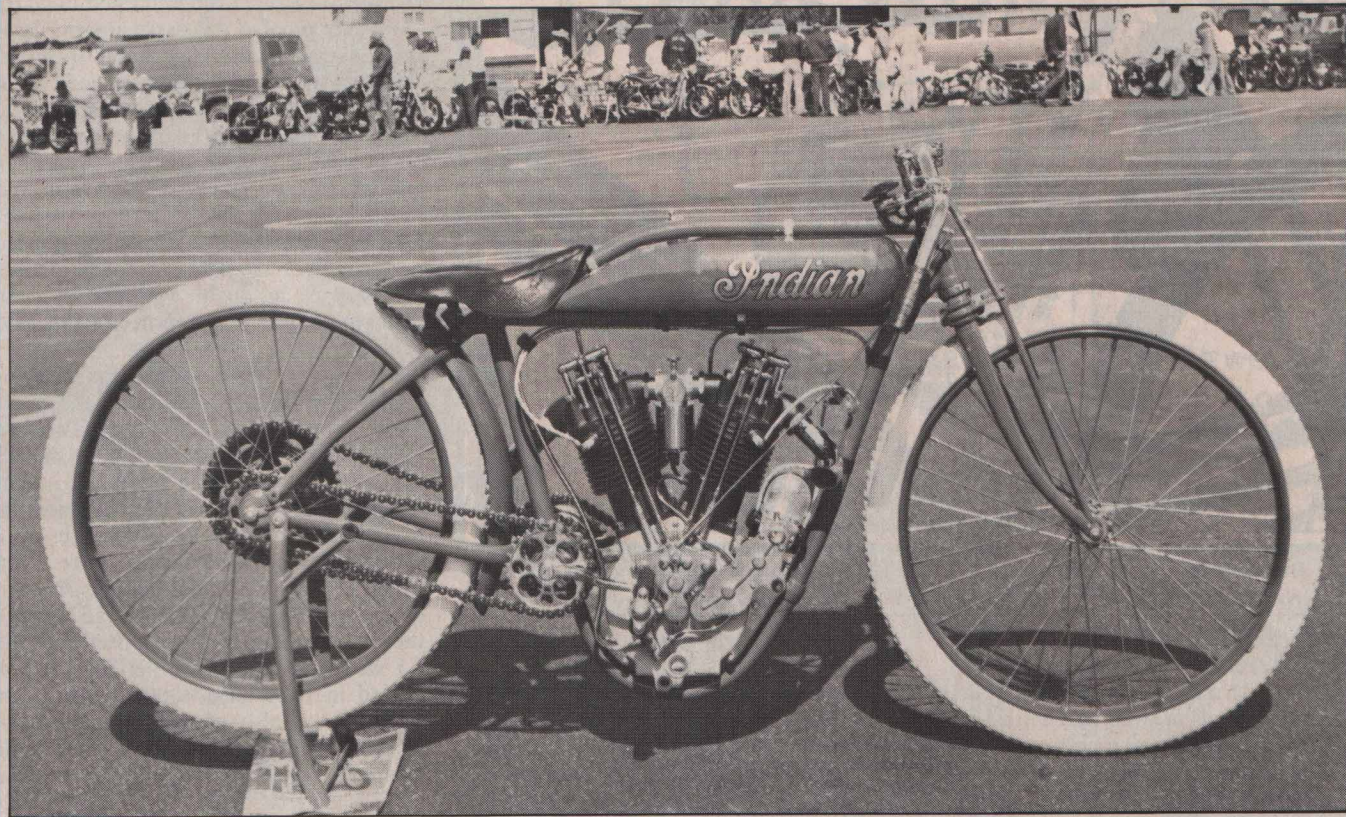
The carburetor was set up to be all on or all off. A kill button was used to cut the power for corners, which resulted in a rather hairy riding style on dirt tracks. One had to learn to control a power slide or fall off! The throttle was operated by a twist grip—this was many years before the Europeans cottoned on to the idea. There was no front brake on the racer, and the rear brake was an external band type that was foot operated.

Finished in the bright Indian red with gold striping, the new Indian racer was beautiful. It was also as good as it was pretty, and the record books are still dotted with the marks set up by these old board trackers.

As remarkable as this four valve racer was in 1916, it was not the first such model produced by Indian. The company's first eight-valve Twin appeared in 1911 as a 1000cc works racer, followed by a batch of 25 half-litre four-valve Singles in 1912 for selected private owners. In 1913 Indian produced the new swinging arm rear suspension. In 1916 the great 1000cc Powerplus was introduced with its all enclosed side-valve engine, disc clutch, and three speed gearbox. A rugged and reliable machine, the spring frame Powerplus was surely the best motorcycle in the world then—a claim that was substantiated by the nearly 40,000 Indians that were sold to eager dealers all over the world.

Three riders battle it out on the boards. Slipstreaming, shoving, and boxing in were all a part of the game then.





Stephen Wright of Huntington Beach, California, an authority on early American racing, owns this beautifully restored 1916 Indian 1000cc eight-valve Twin.

The banked board tracks and dusty one mile dirt tracks were no place for side-valve engines and spring frames, since the 1910 to 1926 era was a time of works teams, with big victories helping sell thousands of motorbikes to a speed crazed America. In this environment Indian raced enthusiastically—first with works racers and then in 1916 with replica 500 and 1000cc four and eight valve models for the private owners.

The first rage was the motordrome. The motordrome was a small one-quarter to one-third mile oval track with turns that were banked steeply to permit flat-out speeds. Most had a 45° to 48° banking, although a few went to 60°. A concrete base had a board surface, with the challenge being to obtain a smooth transition from the high banked corners to the straightaways.

The first motordrome opened in Paterson, New Jersey in 1908. Within a year new tracks sprang up in most major cities, with the tracks often being built near the amusement parks that were so popular then. The small tracks marketed their speed and excitement well, so that large crowds flocked to see these new-fangled inventions perform.

Motordrome racing was intense and close. The rivalry between teams was fierce, so that bumping, elbowing, and boxing a rider in made up the finer points of the game. At first the speeds were modest on the warmed-over road models, but

with the advent of technology the speeds shot up and the game became lethal.

As the lap speeds got into the 90 mph range the danger was escalated. Tires were pumped up to 100 psi to withstand the tremendous centrifugal force on the high banked corners. Tires would rupture and riders would faint.

Despite these problems, the motordromes continued on until World War I. The many gruesome accidents were beginning to attract public criticism, however, especially when the spectators got into the show. Curious fans, standing at the top of the dromes, invited decapitation when a machine went out of control. The higher speeds soon had bikes flipping over the edge at 90 mph and into the crowds, so that by 1913 the cynics were calling them "murderdromes".

The speeds by 1916 had become so great that a new type of track was needed. The answer was the great era of road races and board tracks that began about 1915 and endured to the middle 1920s. America had fewer than 40 motorcycle manufacturers by 1915, with Indian, Excelsior, and Harley-Davidson accounting for about 90 percent of the sales and nearly 100 percent of the racing wins. Harley brought out eight-valve racers in 1914, so that Indian had a formidable new challenger.

The road races then were over one to two mile dirt tracks, but the new breed of board track was something else. Also one

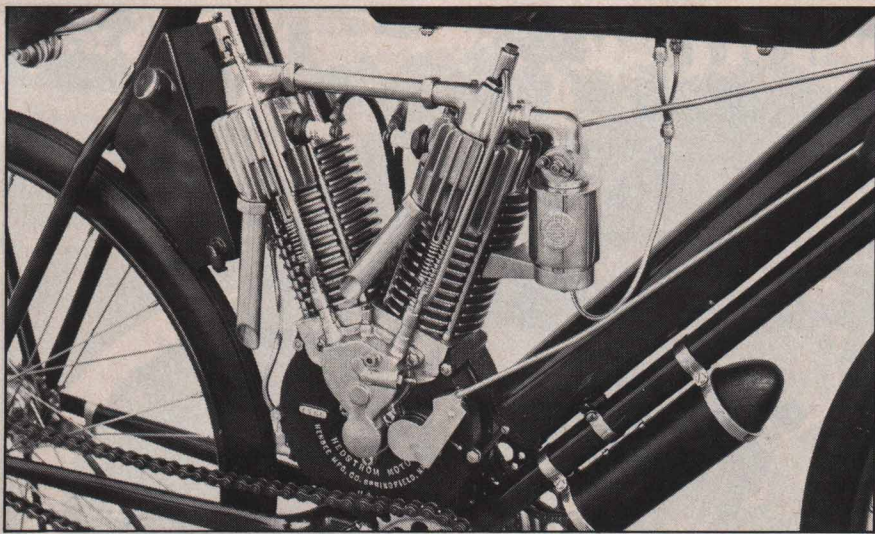
to two miles in length, these tracks had corners banked to about 30° to 40°. With their much larger corners and long straights, these new speedways allowed the bikes to attain incredible speeds.

Class A professional racing became a big time sport then, with board tracks springing up all over the country. The races were often up to 300 mi. long, so that reliability was every bit as important as speed. In 1915, for instance, Carl Goudy rode his Excelsior Big Valve Twin to a new 300 mi. record over the Chicago boards at 85.71 mph—an incredible performance by European standards.

Equally as beautiful as the Indian, the Excelsior 1000cc Twin was not quite as fast, but with exceptional durability it scored many wins in long distance races. Excelsior favored the standard inlet-over-exhaust-valve design as commonly used on roadsters then, but they developed it to a high level of performance.

One such Excelsior racer that is still intact is the beautiful 1916 Twin belonging to Rusty Kay of Santa Monica, California. Rather than being an exotic works racer, Rusty's bike was built up by some enthusiast in the early days—using some chassis parts from both a Harley and a Flying Merkel.

The engine is similar to the factory racers and has a 2-21/64 x 3-1/4 in. bore and stroke, a 7.0 to 1 compression ratio, a Bosch magneto from Germany (these were standard then on most American ma->



The old IOE or F head design was used on the 1908 Indian racer, with both automatic or mechanically operated intake valve models being produced.

chines), a 2.4 gal. fuel tank, a long 59 in. wheelbase, and a weight of only 200 lb.

Fitted with a single speed, countershaft drive, the Excelsior went like hell on alky fuel. Rusty says the engine was rated at only 20 bhp at 4500 rpm, but it must have punched out a great deal more power than this, since 20 horses won't go anywhere near the 100 plus mph the bike was capable of.

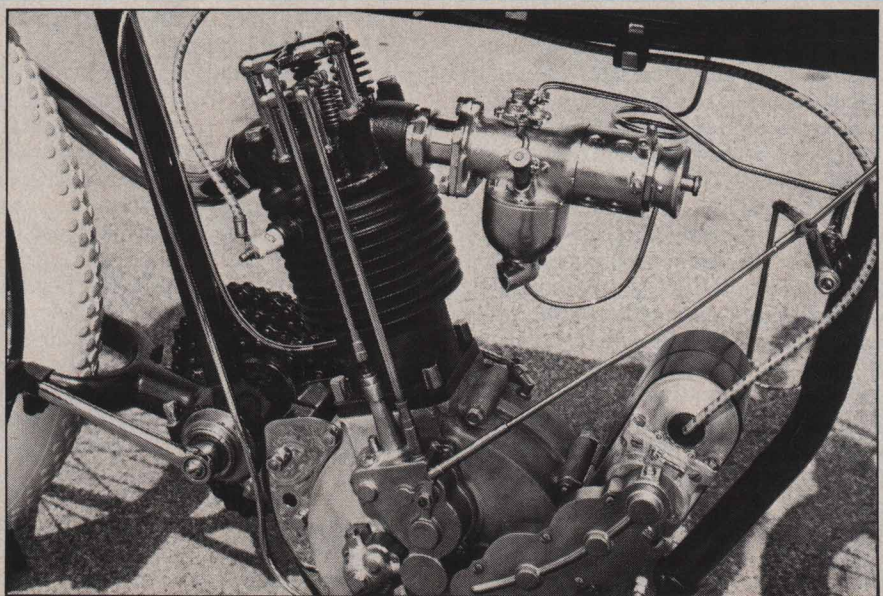
After the war, racing resumed with even faster bikes. In 1919 Otto Walker set a two mile lap record of 96.5 mph at Chicago, but then in 1921 at the Fresno, California track he pushed this up to 107.78 mph. The Harley star also set a new 25 mi. record of 104.43 at Los Angeles, followed by a 109.29 mph one-mile lap later in the season.

In 1922 the alcohol burning 61 in. beasts were even faster. Walker racked up

a 117 mph lap in the Cotati, California 100 mi. race over the boards, followed by Joe Petrali's unofficial 120 mph lap on the San Carlos oval. In the East, Curley Fredrichs with his Indian was the man to beat. Curley turned the Altoona, Pennsylvania track at 114 mph, and then went to the board of the Salem, New Hampshire track where he set the all-time board track lap record at a smashing 120.3 mph average speed, using a factory prepared Powerplus side-valve engine instead of the eight valve type.

These speeds were all beyond anything being clocked in Europe. At Brooklands in England, which had concrete high banked corners Bert Le Vack became the first to lap at over the ton in 1922 but it was not until the middle 1930s that Eric Fernihough and Noel Pope broke the 120 mph barrier on their Brough-Superiors—

The 500cc Indian racer had a cast-iron cylinder and head, a magneto ignition, and a mechanical oil pump.



and they had to be supercharged to do it!

Further proof of this early superiority of the Indian were the remarkable speed records set up by Johnny Seymour in 1926 over the sands of Daytona Beach, Florida. Seymour used a 500cc Single and a 1000cc V-Twin to set up new American and world records of 115.640 mph and 132.001 mph for the two classes. Neither bike had the benefit of streamlining, a supercharger, or any additives to the alcohol fuel. The 61 in. engine was a hemi-head, eight-valve type that had been developed from the earlier 1911 design.

By comparison, Europe's best then was Claude Temple's 121.41 mph speed on his J.A.P. powered O.E.C. 1000cc Twin. In 1929 Bert Denley finally got a British AJS to beat the Indian 500cc speed, and in that same year Ernst Henne used a huffer on his BMW to wrest away the absolute speed title at 134.5 mph. These 1926 speed records were not Indian's first, of course, since Eugene Walker had become the first to put a 100 mph speed into the F.I.M. record book with his 103.95 mph record in 1920 on a 1000cc eight-valve racer. Walker also set an American record at 115.79 mph, but this mark never made it into the F.I.M. record book, since world records were based on the average of two-way runs and the American record was the fastest one-way run.

Change, however, was in the wind. The industrial revolution was at its peak then in America, with machinery and the new technology providing an ever increasing standard of living. This took Americans off their motorcycles and put them into the mass produced automobile. Americans could afford cars, which spelled the end of the golden years of motorcycle sport.

Within a few years only Harley and Indian remained, and Indian was ill. Sales plummeted, and so did the profits.

To Harley and Indian it was obvious that the declining sales volume did not justify an exotic racing program. The profits were no longer there to support it, and the publicity fell on deaf ears. A new and less expensive formula was needed, which gave rise in 1933 to the American Motorcycle Association and its Class C racing formula. By using stock and standard designs with few allowable modifications, the costs of racing were greatly reduced. The result was a stagnation of research and development that produced reliable but dull side-valve models for both road and sport.

The golden years of American motorcycle sport thus came to an end. The victim of increasing affluence and fashion, the great old racers of the past became just relics of a once proud industry—relics to be resurrected today by owners who lovingly restore them to once again capture the romance and intrigue of an era when American showed its tailpipes to the rest of the world. □