

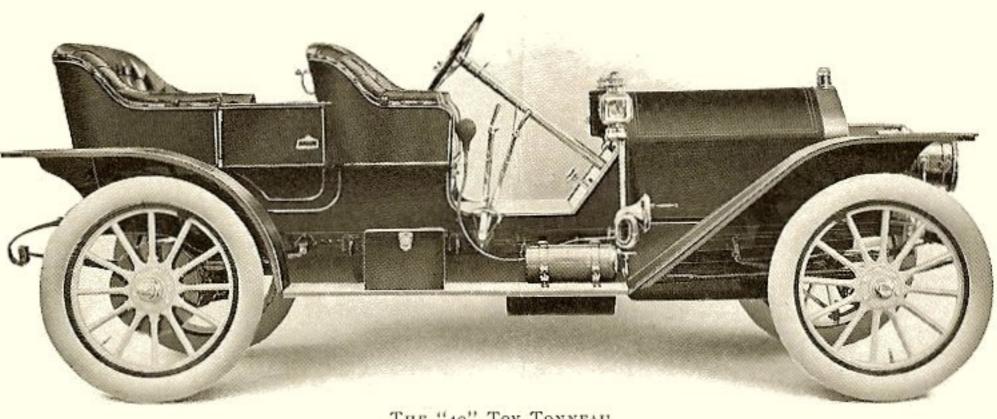
NATIONAL MOTOR VEHICLE COMPANY INDIANAPOLIS, INDIANA.

The National Line

1910

"FORTY"-Four cylinders, 5x5116	\$2500
"FIFTY"-Six cylinders, 4½x4¾	4200
"SIXTY"-Six cylinders, 5x5.	 5000

Touring, Baby Tonneau or Roadster body optional. Limousine, Landaulet or Coupe at extra cost.



THE "40" TOY TONNEAU

The National "40"

MAGINE a fast, classy, high-powered car at \$2,500! Not merely rated at forty horsepower, but delivering better than seventy right along, as shown by dynamometer tests from four cylinders, 5x5 11-16, through the most approved driving system! A long, handsome touring car for five passengers, with wheel-base of 124 inches and 36-inch wheels! Not a cheap car in any particular, mind you, but a car built in the National way, the evolution of ten years' experience in building motor cars of the highest class! A car that shows better than a mile a minute on a circular track and does it in long races without distress! A car with nothing slighted, nothing skimped, built of the finest materials by high-priced workmen; equipped with imported Bosch magneto and the best of everything.

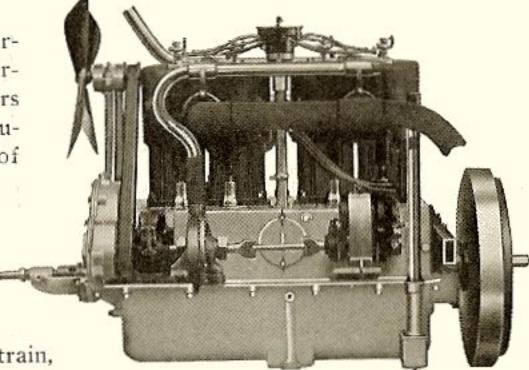
Study the performance of the first two "Forties" that came through the factory, as shown in the Indianapolis Motor Speedway races, and bear in mind that there are 500 more exactly like them coming through for 1910, to sell at \$2,500.

NATIONALCAR

All National motors are of the fourcycle, high-compression type, watercooled, with integrally cast cylinders mounted on the upper half of the aluminum crank case. The cylinders are of

a special mixture of iron of very high tensile strength. After the first machining both cylinders and pistons are thoroughly annealed, thus producing a closer

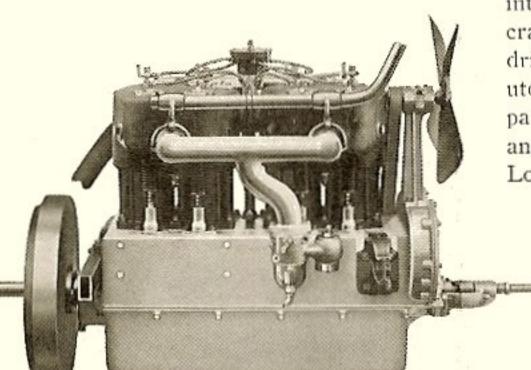
grain and relieving the metal of all strain, after which they are finished and ground to a perfect fit. Specially selected steel is



EXHAUST SIDE MOTOR "40"

used in the crank shaft, and all its bearing surfaces are accurately ground to within one-thousandth of an inch. The wide-faced spiral gears operating the cam shafts are encased in a separate compartment, accessibly located in the front end of the crank case.

The oiling system is complete and entirely automatic in its operation. The oil-tight aluminum crank case is partitioned into compartments. The bottom is a separate compartment holding several gallons of lubricating oil, which is forced



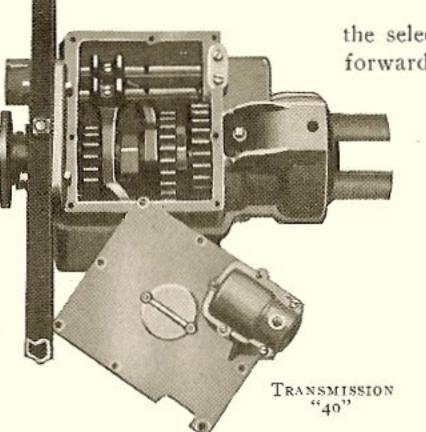
INTAKE SIDE MOTOR "40"

into the various compartments of the crank case proper by a gear pump driven off the lower end of the distributor shaft. Deep pockets in each compartment catch all sediment in the oil and prevent its return to the reservoir. Long spoons on the end of each con-

necting rod produce an oil spray which lubricates the cylinders and all bearings, and in fact penetrates all working parts of the motor.

The double system of

NATIONAL CARS



jump spark ignition is used with

two separate sets of spark plugs.

Bosch high-tension, gear-driven

magneto is used for operating the

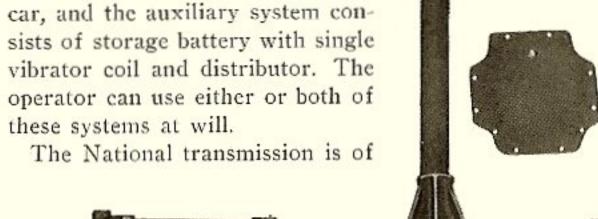
the selective sliding gear type, providing three speeds forward and one reverse, with direct drive on high

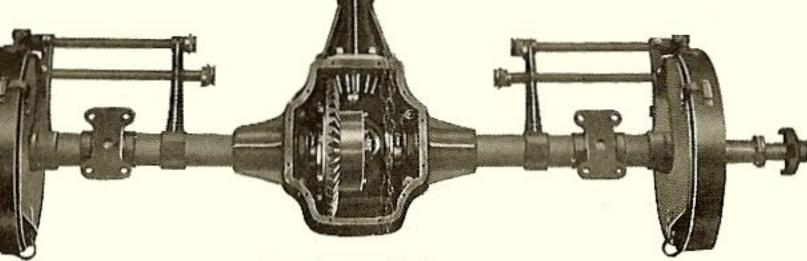
speed. The entire transmission is readily accessible through the floor of the car, and, by lifting the inspection plate, the shafts, gears and bearings of the transmission are easily removed without disturbing the case.

The strength, rigidity, accessibility and the protection against undue friction provided in the National rear system, are points

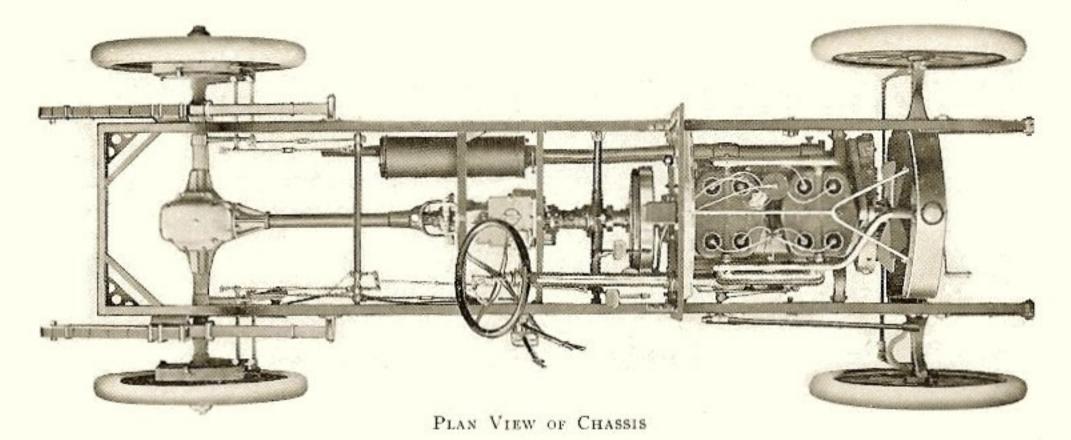
> of strong and convincing appeal to those who have endured conventional rear axle troubles. The upper part of the gear case is removable, leaving a large opening through which the complete differential, with the driving gear attached to it, may easily be adjusted or even lifted out without remov-

ing the propeller shaft or taking off the rear wheels. All parts of the mechanism of the car are equally accessible.





REAR SYSTEM "40"



THE NATIONAL "40" - SPECIFICATIONS

Motor—Four-cylinder, 5x5 11-16 inches vertical, cast in pairs, mounted on main frame, extra large mechanical valves exhaust and admission on opposite sides and interchangeable. Two separate sets of spark plugs. Tapered nipples used on intake, exhaust and water pipes in place of packing. Extra long Parson's white bronze bearings. Gear-driven distributor. Divided aluminum crank casc. Interchangeable parts.

CLUTCH - Self - contained aluminum cone, leather faced, spring cushioned.

Transmission — Sliding gear selective type. Three speeds forward and one reverse; direct on high. Self-contained annular type ball bearings on main and counter shafts. Gears run in oil.

WHEEL BASE-124 inches.

GAUGE-561/2 inches.

Drive—Bevel gear. Through propeller shaft and flexible joint to rear axle of improved design.

OILING-Crank case, constant level force feed oiler, oiling all working parts of motor.

Ignition—Two separate complete systems. One a gear-driven, high-tension Bosch magneto. The other a storage battery, single coil and distributor. Each system has a separate set of spark plugs.

TIRES-36x4. Diamond or Michelin. 36x41/2, or 34x41/2 wheels and tires options at extra cost.

Dust Protection - Detachable metal dust pans protect all working parts.

FEED-Touring cars and toy tonneaus, gravity; roadsters, pressure.

GASOLINE CAPACITY-20 gallons.

Brakes—Two systems. Two internal expanding metal to metal hub brakes operated by foot pedal and two brakes on outside of rear wheel drums operated by hand lever.

FRAME—Pressed steel, 41/2-inch channel, section firmly riveted and braced and curved up over rear axle. No sub-frame.

FRONT AXLE—I-beam steel one-piece forging.

REAR AXLE—Compound construction; inner
axle used only as a driver; wheels turn upon
double bearings on hollow axle which carries all
weight.

Bony—Straight line, sheet metal side entrances. Divided front seats. Carrying capacity, five passengers.

Finish-National red, National green or National blue for body and gears.

STEERING SYSTEM—Eighteen-inch hand wheel, inclined post. Worm and gear, non-reversible chuck. Ball joint connection to steering knuckle.

COOLING SYSTEM—Special straight line cooler, ball-bearing fan attached to engine base. Circulation by centrifugal pump.

CONTROL—Single lever at driver's right controls all speeds. Three forward and one reverse.

Springs - Half elliptic, 40-inch front; 48-inch rear, 34-scroll elliptic.

EQUIPMENT — Two 8-inch Gray & Davis Gas-lights with Prest-O-Lite tank; side and tail oil lamps; horn, tools, jack; can Harris Medium oil; tool boxes under tonncau seat and metal box on running board.

PRICE-\$2,500.00, F. O. B. Indianapolis.



A Word on Racing

HE driving is a large factor in racing, of course, but in the long run it may be assumed that a factory whose stock cars win time after time in not only short dashes but in long races is putting up a good car and a fast car. The National has entered its stock cars in a few of the leading events of the season just closing and has scored a number of notable victories, involving the breaking of not a few records. We do not recall another concern that has scored anything like the National's percentage of victories out of number of cars and races entered, not even excepting two or three foreign and American concerns who have done their work with special racing cars driven by professional racing drivers.

To our mind the winning of a race proves nothing concerning a factory's product, unless it is done with a stock car, which differs in no particular of material or workmanship from those regularly on sale. And there can be no other justifiable purpose in racing than to demonstrate the quality of a factory's product.

The National does not build racing cars. In no case has it entered a car that was not for sale at the list price of the particular model entered. The National does not maintain a racing team. In every one of the records shown both driver and mechanician were lads employed regularly as testers or mechanics in the National factory.

Why enter races at all? Every automobile engineer, every manufacturer, every man who has studied automobile construction knows that the car that will stand up under a terrific strain of top speed for mile after mile in the hot competition of a race must be correctly designed, must be built of the finest materials obtainable and must have the most accurate and skillful workmanship. No other demonstration of motor-car value will or can serve the same purpose.

Kindly note that the first two cars of the new National "Forty" that came through the factory won their laurels at the Indianapolis Motor Speedway races in competition with specially built racing cars, and demonstrated their worth right handsomely.

Actional Victories.

FORT GEORGE HILL CLIMB

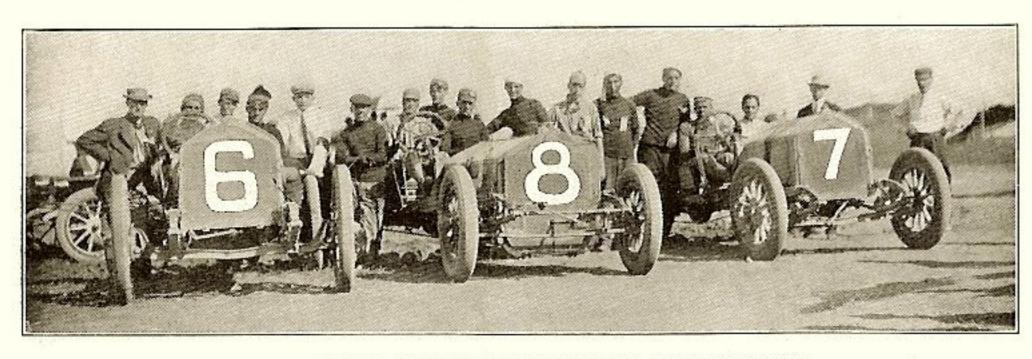
The first events entered in the 1909 season were the Fort George hill climb contests, held in connection with the New York Motor Carnival on April 27. The National sent a "Sixty" stock car, made and sold as such for two years and continued in the 1910 line, and a "Thirty-Five," both being driven by Aitken. The distance was 1900 feet up a 11 per cent. grade, standing start. In the event for six-cylinder cars selling at \$4,000 or over, the National took first in a large field, making the distance in 34 2-5 seconds, beating its nearest competitor 5 4-5 seconds, practically one hundred feet.

In the free-for-all third place was won by the National "Sixty" against a field of the most famous American and foreign racing cars. The National was beaten only by powerful racing cars of foreign build. Its time in this race was the fastest made by a stock car during the day—33 3-5 seconds.

In the class listing from \$2,000 to \$3,000 the National "Thirty-Five" made the climb in 42 3-5 seconds, faster than many of the big cars had shown in the free-for-all.

JAMAICA SPEED EVENTS

The next day the scene was changed to Jamaica, L. I., where the programme was speed events on a straightaway course. Here the National "Sixty," driven by



THE NATIONAL CREW AT THE INDIANAPOLIS MOTOR SPEEDWAY

Cational Victories.

Merz, scored two victories, defeating a car of 50 per cent. more power in both events and making time very close to the existing records.

In the six-cylinder events its time was 48 3-5 for one mile, and it cut the two miles in 1:42 flat.

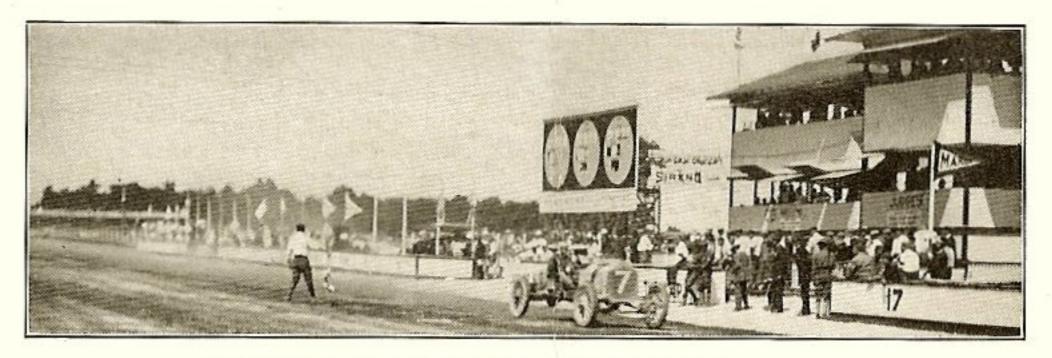
In the free-for-alls the National "Sixty" covered two miles in I minute 35 2-5 seconds, and one mile in 44 seconds flat.

In the two-mile race for cars listing from \$2,000 to \$3,000 the "Thirty-Five" driven by Aitken made the distance in 2:024-5.

WILKESBARRE, PA., HILL CLIMB

Pennsylvania's great classic came along a month later, on May 30th. The National sent two stock cars, a "Sixty" driven by Merz and a "Thirty-Five" driven by Aitken. There was a large field of entrants and the competition was hot. The "Giant's Despair" course is one and one-sixteenth miles, with grade varying from 12 to 22 per cent., and some dangerous turns. All events were with a flying start.

In the event for six-cylinder stock cars selling at \$3,000 or over, first place went to the National in 1:48. In the event for gasoline stock cars selling from \$2,000 to \$3,000, the National "Thirty-Five" made the climb in 2:11 1-5. This same



MERZ WINNING THE TEN-MILE RACE-INDIANAPOLIS MOTOR SPEEDWAY

Cational Victories.

National "Thirty-Five" won second place in the gasoline stock chassis class with pist n displacement of 301 to 450 cubic inches; minimum weight of car, 2,100 pounds. The little car raced up the mountain in 2:03 4-5.

FORT WAYNE, IND.

In the automobile meet at Fort Wayne, Ind., July 31st, a circular track record went by the board. In a trial for track record the National six-cylinder, "Sixty," made a mile in 55 4-5 seconds, beating previous record of 58 seconds flat made by Barney Oldfield.

In the five-mile open race, the National "Thirty-Five" made the distance in 5:38, and a National "Sixty" was second, defeating a Vanderbilt cup car of 120 horsepower.

A five-mile match race between the National "Sixty" and this same Vanderbilt cup car was won by the National in 5:15.

LEXINGTON, KY.

On August 9th the track meet at Lexington attracted quite a number of racing teams and cars. The National sent three cars, a "Sixty" driven by Aitken, a "Thirty-Five" driven by Kincaid, and the first of the 1910 "Forties" the factory had turned out, driven by Merz.

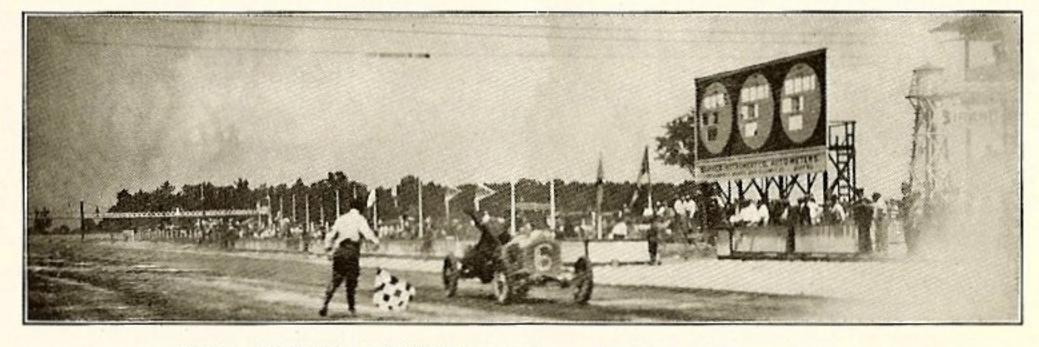
The one mile against the track record of 584-5 seconds was won by the National "Sixty" in 583-5 seconds. In the five-mile amateur race, the smaller Nationals took first and third in 5:16 and 6:07. In the ten-mile handicap they took first and second in 11:03 and 11:25—actual time. The fifty-mile free-for-all was won right handily by the National "Sixty" in 53:282-5. Its fastest mile in this race was 573-5 seconds.

Actional Victories.

Indianapolis Motor Speedway

HE opening of the new Indianapolis Motor Speedway was the event of the year in motor racing. This magnificent oval, two and one-half miles in circuit, with wide turns banked high, was hailed as the American Brooklands, and drew many of the most famous drivers and racing cars of the world for the opening meet, August 19, 20 and 21. Among the foreign racing cars were the Benz and Fiat, and practically every American car making any pretense to speed was represented.

The track was barely completed in time for the meet, and, like all new tracks, it showed some imperfections. At that, however, track records were shattered right and left, and the three National entries, a "Sixty" driven by Aitken and two of the new "Forty" stock cars, driven by Merz and Kincaid, did the lion's share of the work. No one make of car has ever made such a handsome clean-up as did the National with the records for every distance from thirty up to one hundred miles to its credit, in addition to winning four firsts, two seconds, two thirds and two fourths.



KINCAID WINS THE FIFTEEN-MILE HANDICAP-INDIANAPOLIS MOTOR SPEEDWAY



Indianapolis Motor Speedway

Thursday, August 19th

In the ten miles free-for-all handicap the National "Sixty" started from the back row, with a couple of rows in front of it. It plowed through the bunch and went after the leaders, who had I:25 the best of the start, but the distance was a trifle too short, and Aitken, driving a fast-gaining race, came in third, having made the ten miles in 8:36.2, which was going some.

In the long race of the day, the grind of 250 miles for the Prest-O-Lite Trophy, the two new "Forty" stock cars got their baptism. They had considerably more than their share of tire troubles, and Kincaid's car suffered a broken spring-clip, but notwithstanding these difficulties, the "Forties" came in third and fourth, finishing the long run in 4:57:07.1 for Merz, who got third place. They performed consistently and well under the strain of nearly five hours of high speed.

Friday, August 20th

Friday was not unlucky. Merz in his "Forty" led off the winning by capturing the ten miles for stripped chassis up to 450 cubic inches piston displacement in 9:16.3 from standing start, showing an average of 55 3-5 seconds.

Then Aitken went in with the "Sixty" and grabbed first in the ten miles for competitors in Event S, making the four laps in 9:26.6. Kincaid in his "Forty" burst a tire just at the start of this race, but pluckily ran the ten miles on the rim, and came in fourth among a big field of famous racers. Immediately afterward Aitken took his "Sixty" into the ten miles free-for-all and got second, driving the ten miles in 8:32.6, defeated only by a car of 20 per cent. more power, while a whole field of higher powered cars were defeated.

The last race of the day, a five miles handicap, proved sensational. Aitken in his National "Sixty" started from scratch and won by a hair-line finish from Merz in his National "Forty." Both were timed at 4:25 flat, up to that time a world's record with standing start.



Indianapolis Motor Speedway

Saturday, August 21st

Kincaid, with the National "Forty," opened the ball on Saturday by winning the fifteen miles free-for-all handicap. With 1:00 handicap, he took the race in 13:23.5—corrected time 14:23.5.

In the last race of the day, the three hundred miles race for the Wheeler-Schebler cup, which was stopped after 235 miles had been run, Aitken in his National "Sixty" went out after the hundred miles record, and burned it up. He covered the first twenty-five miles in 21:27.6, and then made the following records:

Fifty miles	44:21.2
Seventy-five miles	
One hundred miles	1:31:41.9

No prettier driving nor more consistent running has ever been seen on any course. With a field of nineteen starters to contend with, Aitken was engaged nearly all the time in passing other cars, occasionally having to get by a whole bunch and always keeping well to the outside, thus driving at least two miles farther than any other car in making the century mark. He stopped but once—for tires—and changed a set in 2:57. Thus his actual running time was 1:28:44.9 for the hundred miles, an average of 67.6 miles per hour.



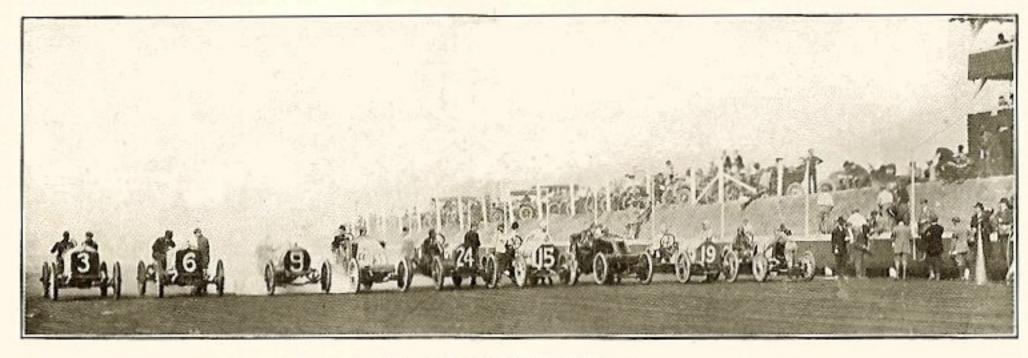
AITKEN MAKING WORLD'S RECORD FOR ONE HUNDRED MILES-INDIANAPOLIS MOTOR SPEEDWAY



Atlanta Speedway

The opening of the new Atlanta Speedway gave additional demonstration of the remarkable speed and durability of the National "40." Two cars of this model were sent to the track, and after standing the pounding of five days of hard racing one of them went in on the last day and won the big free-for-all handicap for eight miles in the fast time of 6:42.73. It broke the world's record for twenty miles, making the distance in 16:42.76. It captured first place in four races, second in five and fourth in two. In every race where it took place, instead of first, it was defeated only by another National car or by a car of much greater power and price. The National "60" took third place in three great free-for-alls, defeated only by foreign cars of much higher power and price.

John Aitken, one of the National drivers, had a higher percentage of successful races than any other driver at the meet, having to his credit four firsts, four seconds and three thirds.



LINE-UP FOR THE FIRST RACE



Atlanta Speedway

Tuesday, November 9th

The two National "40s" made their bow in the event for stock chassis of 451 to 600 cubic inches piston displacement. Since their displacement figures out less than 450, they were thus out of their class, meeting cars of considerably higher power. Practically all the big stock cars at the track were in this race, but the two Nationals finished in one, two order, leaving the others so far behind that they had not yet entered the stretch when the Nationals finished. Aitken's "40" wen first place, doing the distance in 8:27.22, Kincaid making a close second in 8:27.71.

In the free-for-all handicap Aitken in his "60," while winning only third place, starting from scratch, ran far and away the fastest race of the bunch and broke the world's record, doing this ten miles on a two-mile circular track in 8:02.41, a rate of something over 74½ miles per hour. Kincaid in his "40" took fourth place, making the distance in 8:28.3.

Aitken in his "60" again met all the big cars in the two miles free-for-all, and took third place in 1:43.72.

Wednesday, November 10th

A wet track on this day stopped the races after comparatively few of the events had been run. Among those that were pulled off was the free-for-all for four miles, in which Aitken in his "60" won third place in 3:10.41.

Thursday, November 11th

In the free-for-all handicap for twenty miles Kincaid went in with other starters strung half way around the track ahead of him and took fourth place. Then came the twenty miles race for stock cars of 301 to 450 cubic inches, in which Aitken broke the world's record for twenty miles with his National "40." There



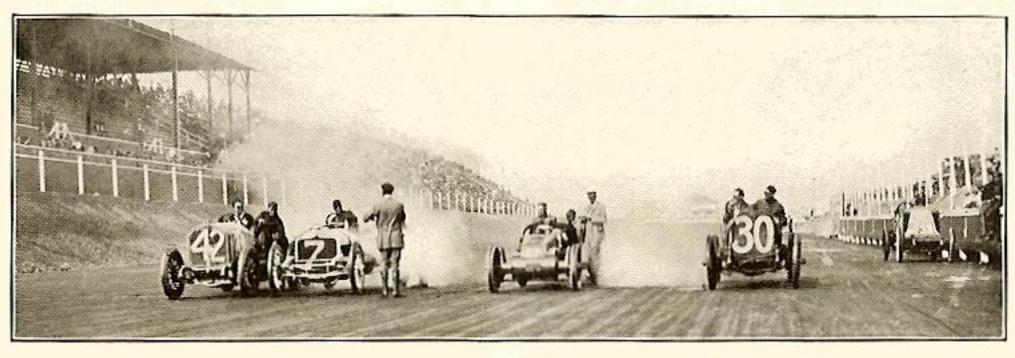
Atlanta Speedway

was a large field, but the excitement was furnished by the two National "40s." Kincaid gave Aitken a hard fight during the early part of the race, but the latter finally got the better of it. He made the distance of twenty miles in 16:42.76, an average of very nearly seventy-one miles per hour.

In the ten miles race for cars of 600 cubic inches or less Aitken's "40" took second in 8:22.87. Immediately afterward he entered in the free-for-all handicap for ten miles, and again took second place, making the distance in 8:27.25. This was a rather remarkable record of extremely fast running of three races in quick succession.

Friday, November 12th

The big race of the day was the fifty miles free-for-all, in which all the crack cars at the meet were entered. Aitken's "40" won second, defeated by a foreign car of twice its power. Tire trouble developed, and he was stopped I minute and 20 seconds at the pit changing a tire, but even with such a handicap he was able to finish the race a very close second, making the distance in 43:11.41. If his time at



NATIONAL IN COMPETITION WITH MACHINES FROM 120 TO 200 H. P.



Atlanta Speedway

the pit were subtracted, his actual running time would be 41:51.41, an average speed of 71.7 miles per hour for fifty miles, which is going some.

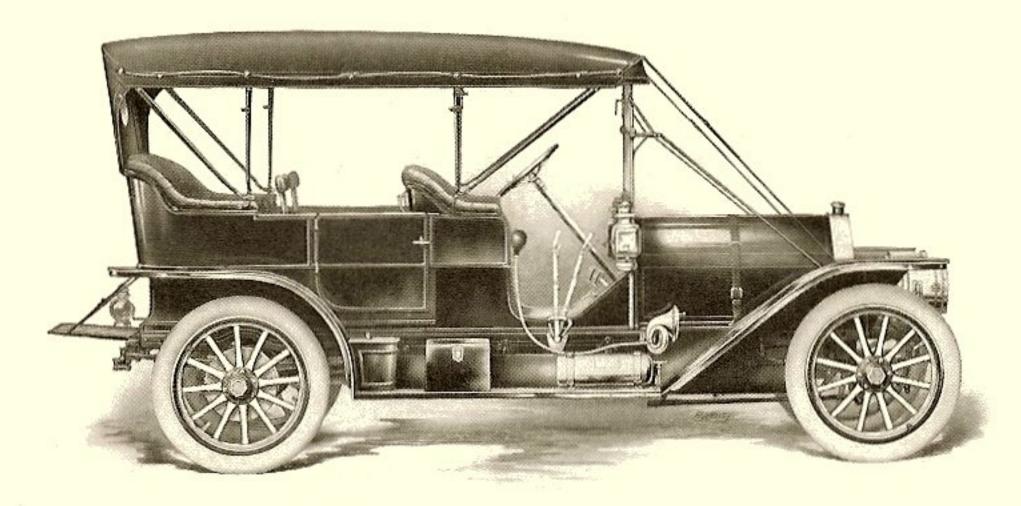
The next race Aitken entered with his "40" was the six miles for cars of 451 to 600 cubic inches, in which he wen second in 5:11.11, defeated by a car of much higher power.

In the next race, twelve miles for cars of 301 to 450 cubic inches, the National "40," driven by Aitken, was an easy winner, making the distance in 10:07.65.

Saturday, November 13th

Aitken with his National "40" entered the eight miles free-for-all handicap, in which he started from scratch, and won right handily in 6:42.73.





THE NATIONAL "50" - SPECIFICATIONS

Motor—Six-cylinder, 4½x4¾ inches, vertical, in pairs, mounted on sub-frame. Mechanical valves, exhaust and admission on opposite sides and interchangeable. Ball-bearing crank shaft and ball-bearing cam shafts. Two separate sets of spark plugs. Tapered nipples used on intake, exhaust and water pipes in place of packing. Extra long Parson's white bronze bearings on connecting rods. Gear-driven distributor. Divided aluminum crank case. Interchangeable parts.

CLUTCH — Self - contained aluminum cone, leather faced, spring cushioned.

Transmission — Sliding gear selective type. Three speeds forward and one reverse; direct on high. Self-contained annular type D. W. F. ball bearings on main and counter shafts. Gears run in oil.

WHEEL BASE-130 inches.

GAUGE-561/2 inches.

DRIVE—Bevel gear through ball-bearing propeller shaft and flexible joint to rear axle of improved design.

IGNITION—Two separate complete systems. One a gear-driven, high-tension Bosch magneto. The other a storage battery, single coil and distributor. Each system has a separate set of spark plugs.

Oiling—Crank case, constant level force feed oiler, oiling all working parts of motor.

GASOLINE CAPACITY-18 gallons.

Body-Straight line sheet aluminum; side entrances; divided front seats; seven passengers. Finish National red, National green or National blue for body and gears.

Tires-36x41/2. Diamond or Michelin.

BRAKES—Two systems. Four dustproof internal expanding metal to metal hub brakes. Hand lever applies one set. Foot push pedal applies the second set.

FRONT AXLE—Seamless, cold drawn steel tubing, heavy gauged, forged yokes or I-beam steel forging.

REAR AXLE—Compound construction; inner axle used only as a driver; wheels turn upon double annular type D. W. F. ball bearings on hollow axle which carries all weight.

Bearings-Annular type D. W. F. ball bearings throughout.

STEERING SYSTEM—Eighteen-inch hand wheel, inclined post. Worm and gear, non-reversible chuck. Ball joint connections to steering knuckle.

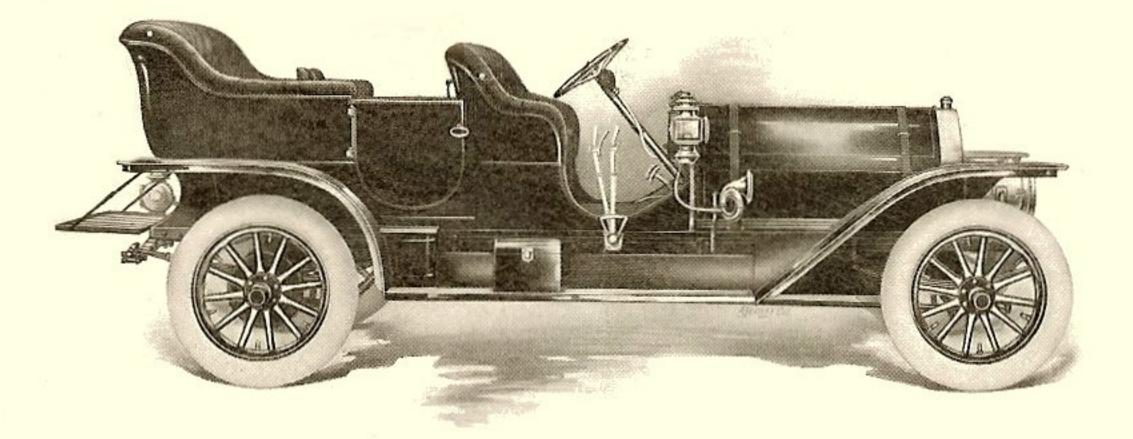
COOLING SYSTEM—Special straight line cooler, ball-bearing fan attached to engine base. Circulation by centrifugal pump.

CONTROL—Single lever at driver's right controls all speeds. Three forward and one re-

Springs—Half-elliptic, 40-inch front, under frame, 50-inch rear, outside of frame, 39-inch cross on rear.

EQUIPMENT — Two o-inch Gray & Davis Gas-lights with Prest-O-Lite gas tank; side and tail lamps, horn, tools, jack; can Harris Medium Oil; tool boxes under tonneau seat and metal box on running board.

PRICE-\$4,200.00, F. O. B. Indianapolis.



THE NATIONAL "60" - SPECIFICATIONS

Motor—Six-cylinder, 5x5 inches, vertical, individually mounted on sub-frame. Mechanical valves, exhaust and admission on opposite sides and interchangeable. Ball-bearing crank shaft and ball-bearing cam shafts. Two separate sets of spark plugs. Tapered nipples used on intake, exhaust and water pipes in place of packing. Extra long Parson's white bronze bearings on connecting rods. Gear-driven distributor. Divided aluminum crank case. Interchangeable parts.

CLUTCH — Self - contained aluminum cone, leather faced, spring cushioned.

Transmission — Sliding gear selective type. Three speeds forward and one reverse; direct on high. Self-contained annular type D. W. F. ball bearings on main and counter shafts. Gears run in oil.

WHEEL BASE-137 inches.

GAUGE-561/2 inches.

Drive—Bevel gear through ball-bearing propeller shaft and flexible joint to rear axle of improved design.

Bearings—Annular type D. W. F. ball bearings throughout.

OILING-Crank case, constant level force feed oiler, oiling all working parts of motor.

Ignition—Two separate complete systems. One a gear-driven, high-tension Bosch magneto. The other a storage battery, single coil and distributor. Each system has a separate set of spark plugs.

GASOLINE CAPACITY—20 gallons.

FINISH-National red, National green or National blue for body and gears.

Tires-36x5. Diamond or Michelin,

Brakes—Two systems. Four dustproof internal expanding metal to metal hub brakes. Hand lever applies one set. Foot push pedal applies second set.

FRONT AXLE—Seamless, cold drawn steel tubing, extra heavy gauge, forged yokes; or I-beam steel forging.

REAR AXLE—Compound construction; inner axle used only as a driver; wheels turn upon double annular type D. W. F. ball bearings on hollow axle which carries all weight.

Boby—Curved line cast aluminum, side entrances, removable tonneau, platform type. Divided front seats. Carrying capacity, seven passengers. (Five carried in tonneau.)

STEERING SYSTEM—Eighteen inch hand wheel, inclined post. Worm and gear, non-reversible chuck. Ball joint connections to steering knuckle.

Cooling System—Special straight line cooler, ball-bearing fan attached to engine base. Circulation by direct driven gear pump.

Control.—Single lever at driver's right controls all speeds. Three forward and one reverse.

Springs-Half-elliptic, 44-inch front, under frame; 56-inch rear, outside frame; 39-inch cross on rear.

EQUIPMENT — Two 9-inch Gray & Davis Gas-lights with Prest-O-Lite gas tank; side and tail lamps, horn, tools, jack; can Harris Medium Oil; tool boxes under tonneau and metal box on running board.

PRICE-\$5,000.00, F. O. B. Indianapolis.

\$2500 "40"

NEW YORK CITY.

A HIGH-POWERED HIGH-CLASS CAR for

\$2500