2020 Fall/Winter Magazine

Published by the Indian Four Cylinder Club, for it's members
Volume 55, Number 3

Indian 4 Club

"America's Most Beautiful Motorcycles"

A colorful meet, for a colorful year... 2020.

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Table of Contents:

Front cover: A small sampling of some of the bikes from this years meet.
But, don't worry there's lots more inside!

A Letter from the President

The cat and I are enjoying a late afternoon on the deck. No idea what the cat's thinking about, but I'm thinking about the great time at Tiffin! Thanks to everyone who braved the unknown, trusted your fellow 4 Enthusiasts and made the 59th Annual Meet one of the best I can remember. Turnout was above average, there were new members/first timers (It appears that Robin will have some competition in the water carry…) old timers with new bikes and the weather was perfect. My 4 was only running on 3 so I got to navigate for the Road Run from Black Horse's left-hand sidecar! I blame being on the wrong side of the bike for the several "Michigan" left turns. That's my story and I'm going with it.

Several of the 'regulars' were unable to attend, and they were missed. I'm going to single out one by name because, it was the first meet he's missed in 43 years – Wally Krzyzanowsky. It took quite a few folks to do everything we'd gotten used to Wally quietly doing behind the scenes. Wally, I wish you the best and fervently hope you'll be able to join us next year.

I also thank the Club for its confidence in re-electing the entire Board. We work well together and the Club is running like a finely-tuned 4! Individual Board Members (and others!) are already busy with plans for next year's 60th Anniversary Bash. Everyone is hoping that Covid-19 will be behind us and we can celebrate this milestone fully in the manner it deserves.

Elsewhere in this issue are a lot more words from me so, that's all I need to say here. Hold your applause, please. I hope that everyone will be able to enjoy some Fall riding, Spring for our friends in the Southern Hemisphere, and that those of us north of the equator are lining up some interesting winter projects. Until next time, enjoy the magazine, be well and be safe!

Minutes of the Indian 4 Cylinder Club Annual Meeting August 8th 2020

Meeting at Tiffin, OH was called to order by Jim Walther at 7:33 PM EST

Roll-call by office: *(Quorum Present)*

Members Present: President Jim Walther; Secretary Drew Crafton; Treasurer Beverly Corsmeier; Trustees Dave Corsmeier, Elmer Lower, Kim Markey, and Ted Bortner; Referee Black Horse; Chief Judge Robin Markey;
Not present:; VP Brian Riegel; Sergeant-at-Arms Dave Panella.

Reading of the Minutes: A motion to dispense with the reading of the minutes of the August 10th 2019 meeting was made and accepted.

Treasurer's Report:

Treasury balance is $3,307.92 with expenses of $1,238.16 and $750 to the Fair board outstanding. $1,713 additional dues and income were received at the meet. Report accepted.

New Business:

Motion to amend the bylaws that in the circumstances that a business meeting achieving the requirements for election of officers is not held, those serving in office will remain until the next conforming meeting is held. Motion by Beverly C. and seconded by Ted B. Approved.

Motion that a quorum for a business meeting consists of a majority of officers including one trustee and at least 20 total members present including the officers. Motion by Jeff B, seconded by Jeff H. Approved.

Election of officers: The slate of current serving officers was presented for re-election. Nominations were opened and closed by a motion from Elmer L and Paul U.

President: Jim Walther
VP: Brian Riegel
Secretary: Drew Crafton
Treasurer: Beverly Corsmeier
Sergeant-at-Arms: Dave Panella
Chief Judge: Robin Markey
Referee Black Horse

Discussion: Calendars for 2021 would preorder from the Fall magazine for $20 each.

Adjournment: Meeting adjourned at 7:43 PM

Treasurer's Report

35 members who never paid their 2020 dues – this is not uncommon. It takes me making 6+ requests for dues before I receive them from the majority of the membership.

7 Lifetime Members who no longer pay dues

257 Paid memberships to-date

ALL bank statements are on file with the entire board.

Please remember dues are now $35 Annually for Stateside and$45 for all foreign (due to postage) PLEASE WAIT to pay your 2021 dues until you are invoiced in January.

Annual Meet Expenses:

$ 850.00 Seneca Co. Fair (Rental of Fairgrounds)
$ 452.19 Unew Tent Rental (Tent/table/chairs)
$ 45.00 AMA (Field Games Sanction)
$ 45.00 AMA (Road Run Sanction)
$ 50.00 AMA (This is for our AMA Sanction that we must have to purchase insurance through AMA)
$ 15.00 Square (This is our credit card reader for the sale of merchandise and membership dues at the meet)
$ 32.23 Pop/Water purchased at Walmart Super Center
$ 14.97 Ice for coolers purchased at Circle K
$ 369.35 Friday night Pizza from Domino's
$ 500.00 Was withdrawn from club checking for a "cash bank at meet" (re-deposited after the meet)
$2,373.74 Total Expenses for Annual Meet

Annual Meet Income:

$2,061.00 Cash received for merchandise, membership, donations
$ 240.85 Credit Cards received for dues/merchandise
$ 500.00 Cash bank re-deposited
$2,801.85 Deposit after Annual Meet

Bank Balance as of November 11, 2020: $4,313.47

Beverly Corsmeier, Club Treasurer

5958 Shallow Creek Drive
Milford, OH 45150
513-623-7756 cell
MembershipIndian4Club@gmail.com

1941 Indian 4 Restoration - by Gary Myers

In my younger days, I was always finding Indians and Harleys in local barns. I would buy and work on getting them running then ride the back country roads. My first Indian purchased was was a 1947 Indian Chief that had not run in years. With it came a basket case 46 Chief that was wrecked that I eventually parted out.

It was 1964 and I was 14. Both bikes were purchased for $40.00. The 47 Chief had stuck exhaust valves and other issues, but I did get it back back into running condition.

Many Chiefs and Scouts were restored over the years but my all time favorite was the Skirted fender Indian fours. I looked and looked but all were way out of my price range. A buddy and I were at the Wauseon AMCA meet in 1988. He was looking at a 51 HD 125 restoration project. We couldn't get together on a deal on the 125 and I took the guys number. Well this guy was Jack Taylor from Ann Arbor, Michigan, and I decided to stop in and take a look at this HD 125 a little closer. I walked into Jacks shop office and the first thing I noticed was a P51 fighter canopy hanging on the wall. Jack went on to explain he once owned a P51 Mustang In the late 50's but never flew it. Myself being a pilot and aircraft owner was shocked that Jack once owned a P51 and sold it, we had a lot in common.

Jack took me through his shop to check out the HD 125 project. I spotted an Indian Chief and then some Four parts on a work bench. I asked if he had a Four and he said yes, a 1941 basket case. My first thought was wow, and I asked him if it was for sale and the answer was no, but he did show me the basket case. The HD 125 project was purchased the same day.

Two more years went by with me calling Jack every six months, asking if he was ready to sell the 41. Finally, in September of 1990, I called again and Jack was ready to sell. He gave me a price and I was headed to Ann Arbor to look over the pile of parts. When I arrived Jack had a blue tarp on the floor with the entire project laid out for me to inventory and review. The bike was completely disassembled, wheels, hubs, front end, rear shocks, but the lower end of the engine was assembled. Earl Chalfant had rebuilt the lower end and installed one of his modified button clutches (this clutch was popular long before the Kevlar clutches). The rods were re-babited and machined, ready to install, cylinders were bored and a set of sport scout pistons were included. Also Included was a repop intake and exhaust manifold set, without provisions for the heat riser tubes, an NOS 441 carb, and correct speedometer which were the icing on the cake. I did a quick inventory of all the parts and negotiated on the price and I owned a 41 Four.

Returning home with a pickup load of parts I unloaded and started another detailed inventory and worked on listing all the miscellaneous parts and hardware required. I spent two weeks reviewing all the old Indian Four news letters, driving around photographing some Fours in the area, working on a hardware list and a breakdown on cad, chrome, black, and color painted parts.

First on the list was to build the wheels, check the frame and front end for alignment, and set the lower end in to the frame to check frame lugs to crankcase with a feeler gage.

I started to assemble the bike, working out the fit on sheet metal, front end parts, fuel tank fitting with dash, wheel alignment, and handle bar fit. After I completely assembled the bike I then disassembled the bike, repairing / glass beading all the hardware then sending out parts for cad and chrome plating. I blasted the frame, primered and painted the frame then set the frame on a stand that I built and started assembly. The rebuilt engine was installed, rebuilt and installed rear shocks, installed wheels and sheet metal, wiring, tanks, controls and wiring as well as hundreds of small details.

January 1, 1991 I put some gas in and started it with the second kick. Awesome! What a sound! Smooth running, although it had a little timing gear whine. The whine was coming from the generator load of 10 amps, and I solved this by turning back the third brush. Total time for the restoration was 4 months working every evening and weekends. I did all the engine work, fab work, miscellaneous machine work, painting and assembly in my home shop.

This 41 goes down the road straight and true. The engine is smooth, Chalfant clutch engages smooth, and transmission shifts great. In 1992 I found a side car, restored it and then rode the bike 4000 miles. During this time I really got in to the new AMCA judging and my quest for original restorations was building. During the next 8 years, I restored 9 Indians and got them all through AMCA judging to Senior. In 2000 I wanted to replace the oil pan on the 41 as the original had some repairs years ago that didn't satisfy me. At the Wauseon meet I found a nice used one. During the first restoration some of the parts were functional but not correct so I wanted to make the bike into a AMCA Senior division bike. I pulled the side car and engine, then reviewed all the items needing correction and made another list. After some thought, and going over the new list, I stripped the bike, blasted all painted parts, and started the second restoration. Wheels were in great condition, cylinders were painted black and needed nickel plated so I tore the engine down for hardware plating. I opened up the bottom end, rods and mains were like new, Chalfant clutch had no wear. I replaced the rings, ground the valves, and rebuilt and plated all the accessories. Intake and exhaust manifolds were aftermarket with no heat riser tubes so originals were found, repaired, and new porcelain applied on the exhaust manifold. The correct seat was recovered, replaced the exhaust with an original Nelson muffler that I repaired and had re-chromed. Bike was assembled and during the test ride it ran and handled better then ever. I ran it through all the AMCA judging the summer of 2001 and got my Senior award.

Since I purchased the 41 Four and restored it, I couldn't stop buying and restoring Indians and a couple of Harleys, 20 plus... I've lost count. I've also added three more Indian fours to my collection. Finding a restoration project is my favorite part, then hitting all the AMCA meets with my Wife Patti looking for parts is also great. Doing the actual restoration during the winter months makes the winter months fly by. I also enjoy working with Vendors, friends, and other Indian owners who share the same enthusiasm that I have.

Next project, hopefully, will be an Ace. Just have to locate the right one.


Indian 4
FOUR CYLINDER CLUB

HOW TO CHANGE A BRAKE LIGHT SWITCH

Larry Barnes, July 15, 2020

Many of you have done it or maybe need to: change a non-working brake light switch on your Indian Chief. Its way down there, under the exhaust pipe and it bolts to the bottom of the chain guard. And that's the dirtiest, most greasy place to ever get your fingers into.

While most Chief owners can put their bike over on the kickstand, lay flat on the ground, look up, and at least see the greasy pull-switch, my '47 Chief has a sidecar attached. You cannot even find the dang thing without laying a mirror on the ground, much less work on it. And it's held on by two small flat screws with tiny nuts that attach inside the chain guard. With a hard-to-get spring attached.

But you gotta do what you gotta do, so I jacked up the sidecar side of the rig and placed a cement block under the wheel for safety. Then I lay down on a creeper and tried to roll under the sidecar and over against the leaning motorcycle. I could reach the switch with one hand, maybe. But since my 70 yr. old eyes are so bad, I couldn't even see the screws that needed to be backed out. So I went back up to the house to get my close-up reading glasses, hoping they would help me see the project better.

That's when my eight-year old grandson Rider took over. While I was waiting for my eyes to adjust to the new glasses, he took the flat head screw driver and a pair of needle-nose pliers out of my hand and dove under the sidecar rig without me.

Know that Rider has never even seen the underside of a Chief before, let alone worked on it! But that little genius somehow got that bad switch off and the new one put on in just a few minutes! And he even had to put a new male end on the wire that goes into the switch! My only help was to answer his shouted commands of "hold the light better, Papa" and "go get a different screwdriver, Papa!" And give me the new switch, Papa!"

I came to realize that that he had completely taken over, and was going to do the job without my direction. You can understand my apprehension during this whole episode. One, maybe the sidecar could fall down and crush the little fellow and two, what if he messes up and breaks something else that will need to be fixed?

Nope. The brake light now works perfectly. He fixed it. Got grease in his hair and all over his face and shirt, but by golly, he fixed it. My eight-year old grandson Rider fixed my 73 year old Indian Chief. Not me, him.

And to top it off, after he completed the brake job, he jumped on his dirt bike and did a few laps around the barn. Meanwhile, I'm standing there with a big lump in my throat about what I had just witnessed. I love that boy. Put aside all the crap everybody goes through raising a kid. Put aside that my tools are scattered all over the shop all the time. I love that boy.

And now I get to thinking about how life changes. I never thought I would not be able to do tasks that I did before. Like laying on the concrete floor and looking up at the bottom of a motorcycle, searching for the oil drain plug. Oh, I can get down there OK; it's the getting back up to get the correct wrench is the hard part.

At some point Beverly told Jeff Butts that she thought it would be fun to go for a ride on the bike on the back of his rig. So after awards were given, off she went!

2020 Tiffin Meet

Roger Bales
1932 Indian Four

Ted and Sue Bortner
1929 Henderson Four

Robert and Lynn Brace
2009 Indian Chief

Jeff Butz
1931 Indian Four

John Coombs
1938 Indian Four

Rocky and Beverly Corsmeier
1924 Henderson

2020 Tiffin Meet

Rocky and Beverly Corsmeier
1938 Indian Four

Drew and Alanna Crafton
1939 Indian Four

Derrel and Irene Deroche
1920 Henderson

Mark and Karen Fogarty
1940 Indian Four

Aubrey James, Aubrey R., and Aaron Hess
1948 Indian Chief

Black Horse
1938 Indian Four

2020 Tiffin Meet

Jeff Huyck 1997
Honda Shadow Ace

Wayne Kruty
1928 Cleveland Four

Paula Kruty
1939 Indian Four

Elmer Lower
1934 Indian Four

Robin Markey
1930 Indian Four

Jim and Wendy McLemore
1948 Indian Chief

2020 Tiffin Meet

Gary and Pat Myers
1928 Indian Four

Gary and Pat Myers
1940 Indian Four

Marv and Diana Niese
1939 Indian Four

Bill Price, Eric Horbal, & D.A. Wolf
1941 Indian Four

Gordon Rienschler
1930 Indian Four

Justin Rinker and Jared Rinker
1938 Indian Four

2020 Tiffin Meet

Pete Sink
1930 Indian Four

Tamara Smith
2016 Indian Chief

Andy Tarnik
1940 Indian Four

John Thierer
1938 Indian Four

John and Betty Thierer
1940 Indian Four

Jim Walther
1940 Indian Four

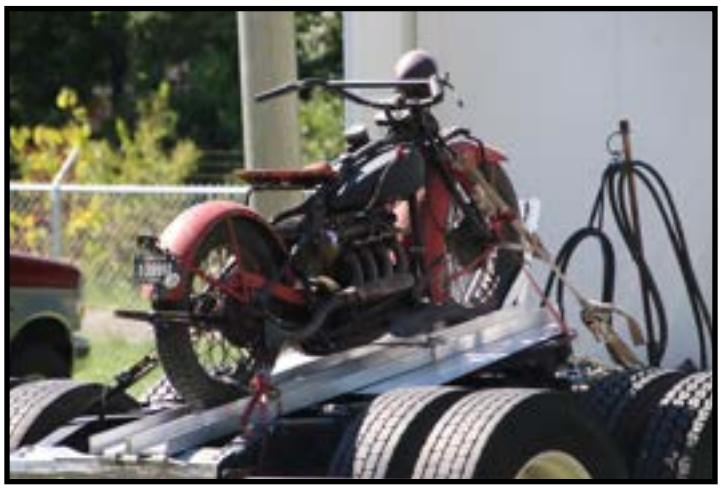
2020 Tiffin Meet

Leah Ware
1938 Indian Four

Rob Ware
1941 Indian Four

Tracy and Angie Woodall
1941 Indian Four

Proof that our club isn't just about antique four cylinder motorcycles!



Jeff Butz, one of our newest members, brought his 1931 Indian Four to the meet on the back of a 1995 Peterbilt. Imagine the looks this old girl got on her way to Tiffin!

And the Winner is... The 2020 Tiffin Awards

1st Place: Pre-1928 Derrel Deroche
1920 Henderson Model K

2nd Place: Pre-1928 Gary Myers
1928 Indian Four

3rd Place: Pre-1928 Rocky Corsmeier
1924 Henderson Delux

1st Place: 1928-1931 Wayne Kruty
1928 Cleveland Four

2nd Place: 1928-1931 Pete Sink
1930 Indian Four

3rd Place: 1928-1931 Ted Bortner
1929 Henderson KJ

And the Winner is... The 2020 Tiffin Awards

1st Place: Pre-1932-37 Elmer Lower
1935 Indian Four

2nd Place: Pre-1932-37 Rodger Bales
1932 Indian Four

1st Place: 1938-39 Rocky Corsmeier
1938 Indian Four

2nd Place: 1938-39 Drew Crafton
Original Paint 1939 Indian Four

3rd Place 1938-39: Leah Ware
1938 Indian Four

1st Place: 1940-42 Jim Walther
1940 Indian Four

And the Winner is... The 2020 Tiffin Awards

2nd Place: 1940-42 Rob Ware
1941 Indian Four

2nd Place: 1940-42 Eric Horbol
1941 Indian Four

Oldest Indian Four Shown at the Meet:
Gary Meyers 1928 Indian Four

Oldest Four Cylinder Motorcycle
Shown at the Meet: Derrel Deroche
1920 Henderson Model K

Best Sidecar: Black Horse 1938
Indian Four w/Left Hand Sidecar

Best Custom: Steve Rinker 1938 Indian
Four

And the Winner is... The 2020 Tiffin Awards

Most Unique: Jerry Ball 1953 Ariel Square Four w/Left Hand Watsonian Sidecar

Ladies Choice: Rocky Corsmeier 1938 Indian Four

Oldest Member Showing a Four at the Meet: Pete Sink 83

Youngest Member Showing a Four at the Meet: Leah Ware 50

Longest Distance Traveled: Derrel Deroche 946 Miles

Bob Markey Longest Distance Ridden to the Meet: Black Horse 80 Miles

And the Winner is... The 2020 Tiffin Awards

Toney Watson Award - Best Henderson: Derrel Deroche 1920 Henderson Model K

John Wickham Award - Best Indian Four: Pete Sink 1930 Indian Four

Paul Pearce Award - Service to the Club: Beverly Corsmeier

The Presidents Award - For Going Above and Beyond for the Club: Drew Crafton

We came, we gathered, and we had a great time!

The 2020 Games...


Economy Run: Drew Crafton 1939 Indian Four


Slow Race: Jeff Butz - 1931 Indian Four


Ball Toss: Steve Rinker - 1938 Indian Four



Water Carry: Jeff Butz - 1931 Indian Four - 7 LAPS!

Timing Your Four – reprinted from Vol 10 No. 1 Spring 1975

Timing the Four may not be as simple as timing an automobile with its timing marks and timing light, but neither need it be all that hard whether it be magneto or battery ignition. Magneto ignition is fairly simple with the spark advance lever at the end, but battery ignition has no marks or lever yet a few simple steps from the Four Manual will help keep that Four in good operating order.

Section III Engine Disassembly and Assembly, Item P. Ignition Timing.

1. If timing gears have been removed, replace according to marks on gears.

2. Reassemble generator and distributor to motor if distributor and generator drive have not been disturbed.

3. Rotate motor until piston No. 1, front cylinder is top dead center, compression stroke, firing position.
   NOTE: Both valves will be in their seats, tappets free, 5/8" spark advance. Assemble generator on motor base.

4. Rotate generator shaft until distributor rotor is pointing at the position where No. 1 spark plug wire fits in the cap. With spark lever in retard position, lever will be all the way back.
   Breaker points will be ready to open. The holes in the coupling on the generator shaft will line up. Do not tighten coupling bolt and nut so tight as to squeeze coupling out of shape. It is a simple hose coupling. If the coupling is worn, torn or damaged, secure a new coupling.

Q. Assemble Wires in Distributor Cap. NOTE: Sitting on machine, looking down at the top of the distributor, No. 1 front cylinder spark plug wire plugs in the right front hole in the distributor cap. Then clockwise (to the right), the next hole is No. 3 cylinder spark plug wire, the third is No. 4 plug wire and the fourth hole is No. 2 cylinder plug wire. Firing order – 1-3-4-2.
   Caution: Always check spark plug wire location from distributor cap to the plugs in the cylinders before dismantling ignition equipment. It is possible to change ignition timing so that No. 1 cylinder plug wire could be in any one of the four holes in the cap. If breaker points are timed with any one of the four lobes on the cam for No. 1 cylinder and changing the location of plug wires so that rotor and points are timed for their respective cylinders, the motor will fire correctly.

R. To retime Distributor Head (if removed from generator).

1. Rotate motor unit until No. 1 piston is 5/8" from top dead center in cylinder on compression stroke.

2. Advance spark control lever.

3. Slide distributor head down housing ready to mesh with drive gear in generator.

4. Set cam lobe ready to open points with rotor pointing towards No. 1 cylinder spark plug wire hole in distributor cap.

5. When set, tighten the bolt which holds the distributor in position at the base. NOTE: The points should be ready to open. One or two attempts may be necessary to mesh the proper tooth to time the distributor. A final close or fine setting may be made by loosening advance lever body clamping screw and rotate distributor head slightly right or left to arrive at proper spark setting with breaker points ready to open. Spark may be timed with piston top dead center and with spark retarded.

S. Magneto Timing – Edison Type C, CD, RMH

1. Magneto rotates counterclockwise looking at drive end.

2. The distributor rotates counterclockwise looking at distributor end of magneto.

3. Spark advance control lever location, up for advance.

4. Points gap .015.

5. Spark advance 5/8".

6. No. 1 front cylinder spark plug wire plugs into lower right hand hole in distributor cover.

7. Rotate motor until No. 1 piston (front) is top dead center of compression stroke in cylinder. NOTE: Both valves will be in their seats.

8. Rotate magneto in direction of rotation until distributor rotor (metal plate end) is pointing to lower right hand corner of magneto, spark retarded. The points will be open or nearly ready to open. The coupling disc holes will then line up.

9. Insert bolts and nuts and tighten.

10. Assemble distributor cover.

T. To Assemble Spark Plug Wires in Distributor.

11. Lower right hand hole No. 1 cylinder

12. Upper right hand hole No. 3 cylinder

13. Upper left hand hole No. 4 cylinder

14. Lower left hand hole No. 2 cylinder
NOTE: Use same caution on wiring as instructed on distributor ignition.

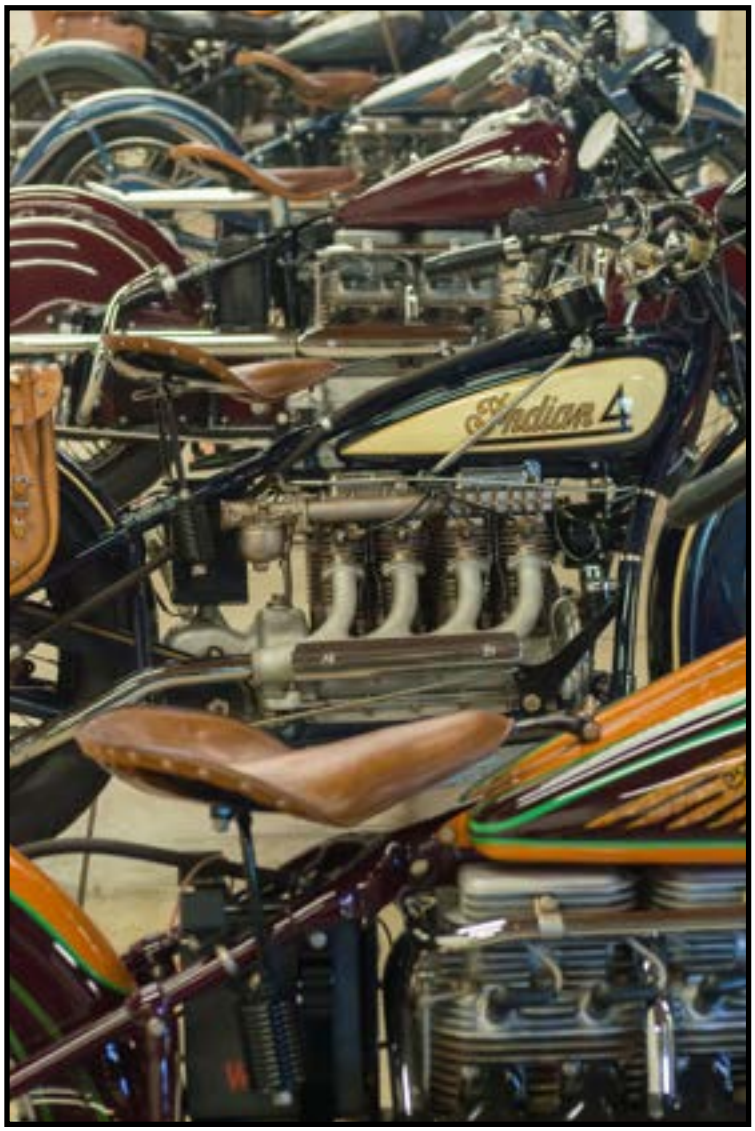
As far as magneto ignition is concerned, if wires are in the correct holes and proper firing order, the spark advance is very easily advanced or retarded by the spark advance lever. The same

precaution is necessary for battery ignition other than the distributor must be in the proper tooth setting and the final fine setting by turning the distributor right or left for correct advance. The manual suggests a normal setting of 5/8" advance which fires on the compression stroke just ahead of top dead center on No. 1 piston. This setting is calculated the same as the automobile, so many degrees ahead of top dead center.

There is however another fact about timing that should be known where smooth operation is desired. Generally, an automobile is timed at idle RPMs of the motor, and as fuel is applied and the vacuum is in proper working order, the motor will speed up giving proper advance for highway speed. The magneto ignition will advance as the mag. turns faster, giving a hotter spark at higher RPMs. Battery ignition gives the same spark intensity at all speeds. If the magneto ignition is in good working order, starting, idle or road speed will usually all be in good working order, but there can be a problem. Suppose you have a police bike with a police cam which has longer duration lobes for high speed police work. Police bikes are of either ignition. Like the race cars, longer duration cams give more fuel to add more power, but if the spark advance setting is set strictly at idle, both mag. ignition and battery ignition could have a lag in power. What we are about to suggest may not set too well if you desire a smooth running bike at idle, but if you want good operation at road speed, this suggestion will give the better operation but there could be some sacrifice. Rev up the motor to running speed setting on the gas handle and loosen the clamp bolt on the distributor and turn the distributor slightly either way and see if she smooths out at this road speed setting. On the mag. ignition advance or retard slightly adjust the spark advance lever and see if this smooths her out if you have this special cam. This attempt at a finer setting may help road speed on even the regular cam for good operation at idling may not be the best for road speed. Too much advance required on a distributor might mean it is off a whole tooth and have to be reset. On battery ignition, hand setting the distributor is the only way to get the timing near perfect. So you have your choice. On time at idle or at road speed. The setting may be the same. Race cars and hot rods today require hand setting for the degree of setting can go as high as 38 degrees in advance of top dead center. This is because of domed pistons, long duration cams and carburetion supped up for race cars.

If you experts don't agree with this professional advice on timing, I challenge you set down and give the technicalities from your professional advice. I have had more experience around the race cars although not a driver or a mechanic, but I listened closely to them. We would still like to hear from anyone of you who have come up with some good ideas that make the jobs of overhaul or working on the bike easier that genera accepted methods. Is there any easy way to change a tire? Tell us about it.

On With The Show!!




Indian 4








The Indian Story

If you will refer back to the Summer Issue 1971, you will find an article beginning on page 31, entitled "From The Air-cooled Single to the Indian Four", in which we followed the development of the single cylinder motors up to the year when the first four cylinder motors came into being around 1909. Our resource material was the "Golden Anniversary Story" of the Indian Company. This story began with the meeting of George Hendee, a builder of bicycles in Springfield, Massachusetts, and Oscar Hedstrom of Middletown, Connecticut, builder of Pacing Machines, meeting at Madison Square Garden in 1900. Hendee was displaying his new bicycles and Hedstrom his machines and motors of special design.

The motors attracted Hendee with their trouble free operation and that once they were started they would keep running with little or no adjustment every time to keep them running. George Hendee had visualized for some time the possibility of mounting a motor in a bicycle which he felt would bring to an end the bicycle business. This motor that Hedstrom was demonstrating was just the motor for a bicycle, and with a properly designed transmission of power to drive the bicycle, there was certainly great possibility of huge production and sales for such a motor driven machine.

The demonstration convinced Hendee that this Hedstrom motor was just the ticket for the bike and a quick agreement was penciled out between the two. We stop this story at this point to add some further thoughts on this romantic story and meeting, and taking information from another source of material in which there are some slight differences in the details, yet enough to make it interesting to know "the other side" of this famous story of the beginning of Indian. A new publication introduced to the public this year by the name of "Old Cars", published by Kraus Publications of Iola, Wisconsin, carried a series of articles known as Harry Pulfer's Scrapbook, and the following is a biographical sketch on Mr. Pulfer from the Old Car Article. Many Old Car readers are familiar with Harry Pulfer as an expert craftsman and authority on radiator mascots and emblems, but for those of you who haven't met Harry, a little biographical background is in order. Harry and the Automobile industry are both 75 years old and Harry has spent most of his life in auto related activities. He and his dad were in the auto body building business and Harry admits to doing a bit of stock car and motorcycle racing in his time. Harry worked for the Packard and Franklin dealers, the famous Don Lee Custom body firm, and "damn near everyone else around California" including famed racers Harry Hartz and Pete Depaolo, and the master car designer, Harry A. Miller. Harry Pulfer is a veteran of flying service in WW I, and has run several garages as well as serving as Deputy Sheriff of Los Angeles County for 17 years. Since 1945 he has been collecting radiator emblems and now has the world's largest collection of emblems and mascots. Still vigorous and active, and a familiar sight at swap meets throughout the country, Harry will be sharing reminiscences of the Auto industry he knows so well with the Old Car readers.Harry writes - The first practical motorcycle was built in Germany by Gottlieb Daimler in 1884 and was a crude but practical means of transportation. Besides being the first true motorcycle, the Daimler is noteworthy because it used the first high rpm engine. Prior to this, 800 rpms was tops. Daimler's engine, however could tum up to an astounding 1500 rpms. All this rpm with a compression ratio of 2 1/2 to 1. Daimler's wooden frame bike has a belt drive with a gear reduction of 10 to 1 and a rudimentary clutch. The single cylinder engine uses a wick carburetor and flame ignition and probably gave old Gottlieb a few anxious moments since there was no throttle control. To slow down, the rider had to cut off the exhaust valve action for a few shots. Oiling was by drip feed. You pumped it up until the motor smoked and then you knew there was enough oil in the cylinder. Daimler engines were very successful and soon found use in boats and cars. Panhard, Levassor et Cie was licensed to build them for the French Market, and it was here that motorcycle building really came into its own in terms of construction and popularity.

The name Count Albert De Dion, heir of a rich and illustrious French family, comes onto the scene

although he was noted for engaging in harmless duels and chasing women, which activity was expected of young noblemen, he also liked to work with greasy machinery which was not approved for noblemen of the 19th century society. He formed a partnership with a master mechanic by the name of George Bouton and together they built a steam car, then some experimental cars using the Daimler engines.

De Dion-Bouton's success was to come in 1895 when they commenced building their now famous motor tricycles. If it had not been for De Dion-Bouton, there probably would not have been an Indian motorcycle, for many of the "trikes" features were incorporated into the first Indians. Some of the De Dion-Bouton's advanced design features included enclosed flywheels, thru bolts to allow for a removable cylinder head, dry cell ignition and, wonder of wonders, a real spark plug. The carburetor was part of the machine and a primitive throttle was affixed to the trike although main speed control was by spark advance. The machine was started and helped up steep hills by pedaling efforts of the rider. The little De Dion even boasted a crude brake and pneumatic tires. This very crude rig was exported throughout the world. Its engine won international fame and here in the U.S., firms such as Pierce-Arrow, Autocar and Peerless bought and used De Dion-Bouton engines in their first cars.

De Dion's relationship with Indian came from bicycle racing. Huge engines built by the French Company were installed in the monstrous "pacer" motorcycles which were used to create a slipstream or draft for the racers. After pacing the track for a few laps behind the giant motorcycle, the bikes could attain speeds of up to 40 miles per hour.

We leave the article in the Scrapbook for the moment and return to the article in the Golden Anniversary Issue where we find a little more detail on the historic meeting of George Hendee and Oscar Hedstrom. It continues - Hendee persuaded Hedstrom to return to his home in Middletown and to go to work on fitting a motor in the bicycle frame and designing a good positive drive to the rear wheel. Hedstrom returned to his home in Middletown, Connecticut and commenced designing the first experimental Indian. Working entirely alone and drawing basically from the knowledge gained from his experiences in building and operating his motor pacing tandems, Hedstrom finished his first machine in the Spring of 1901. After rigorous tests in the vicinity of Middletown, Hedstrom took his newly created mechanical wonder to Springfield and told George Hendee he was ready to show him the realizations of his (Hendee's) dream of a motorcycle for everyday use. At this point there is a difference in the articles for it states in the Scrapbook article - In the fall of 1900 Hendee persuaded Hedstrom to move to Springfield, Massachusetts and design an engine he could install in his existing bicycle frames. While borrowing liberally from the De Dion-Bouton motor in areas such as enclosed flywheels, detachable head, battery and high tension ignition, the primitive float feed carburetor, and the double reduction gearing, Hedstrom's design was a "Natural" for Hendee's bike frames. The engine cranked out 11/4 hp. at relatively high rpm, the entire machine weighed in at just under 100 lbs.Back again to the Anniversary Story On famed Cross Street Hill, Springfield's steepest slope 19% grade with rough surface, Hedstrom performed uncanny demonstrations before a goggle-eyed crowd. From slow starts, he climbed the hill with constantly accelerating speeds. Again with deliberate slowdowns where the grade was the stiffest, he showed the reserve power to pick up and go over the top without faltering. Hendee quickly let it be known that Springfield was to have a new industry for which he predicted a great future. Loft space was leased and the manufacture of Indian Motorcycles began. The name of Indian was chosen to glorify and pay tribute to the original inhabitants of America, the Indians, and the true pioneers.

Up to this point there have been some differences in the history of the first Indian and what Oscar Hedstrom actually did in originality when he put a motor in one of Hendee's bikes. Nothing is said in the Anniversary Story that it was a Hendee bike that he used, but it would only be logical to assume that he did. If the experimental work was done in Springfield as the Scrapbook article states there would be no doubt that it was a Hendee bike. The story from the Scrapbook telling of Hedstrom's familiarity with the

De Dion-Bouton three wheelers definitely tells us that he did not work from scratch, and that the Anniversary Story should have credited these other early experimenters and manufacturers with their designs, and that Hedstrom benefited from them incorporating them in the first Indian. We find later in both accounts that Indian bought their motors from Aurora Motor Company and they built motors to Hedstrom's specifications. His own design carburetor drawn from De Dion-Bouton design, improved the Aurora's efficiency and power. The motor operating efficiently and capable of high rpm, along with the double gearing to carry that power to the rear wheel in a positive chain drive was all originally De Dion-Bouton's design and made the first Indian a real performer.

There was one fault in Hedstrom's design and such was to be the case for several years 'til it was changed. The bike had no clutch and the operator simply killed the motor to stop it and started it by pedaling like a bicycle. A clutch was a later improvement. From the Scrapbook we continue - The Indians were a model of simplicity. The gravity feed gas tank was placed over the rear wheel, the rider reached down under the saddle to open the throttle, the spark advance was up front and also acted as a compression release so riders could pedal or run and push the rig to start it. (This would have been an ideal reason for the first machine to have a clutch). Cork handlegrips were used. The Anniversary article approached some of these features a little differently. Taking today's machines as a yardstick, the first Indians were far ahead of their time. For example the light, high speed, high compression engine; the concentric float, automatic carburetor; the simple but very reliable and weatherproof jump spark ignition system; the remarkable flexibility of the engine: its wide speed range and instant response to spark and throttle; the positive chain drive, with minimum power loss and all weather efficiency.Then we go back again to the Scrapbook article - Performance was improved by those early standards. The engine was flexible, and at 98 lbs. for the entire bike, it was only obliged to move 55 lbs. per horsepower. It had a foolproof ignition and most of the speed was controlled by spark advance, a feature Indian would use for many years. But, all was not perfection as the rider had to remember to control the adjustable oil feed and be careful not to hang into comers or turn too fast a clip or else the skinny 28 x 1½ tires would come unglued and roll right off the rim. Since 1900 was the year in which Hendee and Hedstrom met and the next year 1901 a year of tooling up for production, just 3 bikes were built and sold in 1901. 1902 was the year of production for 143 Indians were build and sold. The name and fame of the Springfield lightweight was spreading fast. The major factor in Indian's near instant popularity was its success in racing and at this point we turn again to the Anniversary Story - Hedstrom and Hendee recognized that the quickest way to build a big and healthy market for Indian sales was to put it into competition and meet all comers. They had seen the sales magic which track victories had given such famous bicycles as the Columbia, the Pierce, the Orient, the National and others. So in 1902, Indian plunged into competition head over heels. One of its first big cleanups was at the New York Motorcycle Club, May 30, hill climb on Ft. George Hill, in the Bronx. Against American and foreign makes, Indian cleaned up and made unbelievable time over rough Belgian blocks. At this time the Ft. George climb was practically a national event in prestige for the N.Y.M.C. the No. 1 club in U. S. Next big scalping party was in the first national endurance run, from New York to Boston, 260 miles, July 1-2-3 and we tum to the Scrapbook article for the report on this event - in 1902 Indian entered 3 machines in the New York to Boston endurance contest and received the only perfect scores. Three Indians started and three Indians finished, and Indian went home with three gold medals. The riders just happened to be George Hendee, Oscar Hedstrom and George Holden, the Springfield, Massachusetts Indian dealer. Most early Indians were painted blue with the Indian name in gold decals on the tank. The engines were supplied by the Aurora Machinery Co. of Aurora, Illinois later producers of Thor motorcycles. Aurora also produced the first engines used in the Reading-Standard and the Denver built Apache motor-cycles. This same information is found in the Anniversary Story material and we pose a question since we have now read this material from the Scrapbook - what sort of engine did Oscar Hedstrom use in building the first experimental model? Was it an Aurora engine with design

changes by Hedstrom, or was it an De Dion-Bouton engine with the enclosed flywheels, bolt on cylinder heads and, of course, the Hedstrom special carburetor?

From the Scrapbook article we continue - riding control of the early motorcycles was difficult at best and downright harassing most of the time due to the rigid frames that transferred a great deal of the front wheel vibration right through the handle bars. (In other words, bicycles were never meant to be powered as a motorcycle for their front fork just wasn't designed for faster, rougher terrain riding. And, it is surprising that this problem wasn't tackled earlier in the history of the Indian, for Hedstrom surely had done enough testing and experimenting on that first bike to realize that something surely must be done about all that vibration and bouncing on the rider's anatomy. If you will recall a few years ago when the balloon tire bikes came on the market, many of the improvements in this bike were the appearance of the spring-shock forks that was called everything from knee-action to shock absorbers, etc. Regardless, the lightweight bike was never built for 40 to 60 miles an hour riding, for they had foot pedals. The Whizzer Motor that was built to adapt to any bike, either shook the rider when he got off the paved highway, or the bolts on the belt pulley pulled loose and tore out the spokes.) However, the Indian bike had a built-in motor and the chain drive which, as the articles state, was a positive drive, and proved the bike an outstanding performer. So, when would Indian engineers take this problem of the fork in hand and give the riders a break. In 1905, the article goes on, Indian came to the rescue with spring forks. This cartridge spring which allowed the forks to flex a bit, was enthusiastically welcomed by experienced riders. Other improvements of that year included; spark control by right hand grip, and the throttle by the left hand grip. The left hand throttle didn't happen by accident. It was dictated by the fact that most folks, including policemen, are right handed and Indian was actively seeking police department business. With their left hand throttle control, they could now include in their sales pitch the advantage of leaving the officers right hand free for signaling and if need be for firing his gun.Not content to let demand outstrip supply in 1903 and 1904, production increased to 377 and 546 machines respectively. Indian went after a bigger chunk of the market in 1905 by further improving their engines. Indian was still buying their engines from Aurora who built the motors to Indian's specifications which included the special carburetor of Hedstrom's design. In 1905 they began making the cylinders from steel and offered a slight increase in hp. This was a first for Indian as no other cycle had them. On the gear train or chain drive, a compensating socket was added which took a lot of the jolt out of its operation. But, there was still no clutch to allow the motor to idle with the bike standing still. The engineers at Indian were not standing idle while Aurora was building motors for production. They had been experimenting with their own version of an engine and in 1905 Hedstrom and his crew of engineers produced an experimental twin of 3.0 cubic inch displacement. Also in 1905 the cylinder capacity on production models was increased with the new steel cylinders to pump out 2¼ hp. Why all this improvement, if this bike was just for pleasure riding and the bike was still not exactly of total riding comfort? If any of you readers have ever tried to steer an ordinary bicycle and hang on to the handle of a moving automobile going 30 to 40 miles per hour, you know what it's like not only to steer but take all the bumps at this speed. Your editor (the editor at the time this was put together) had several experiences such as this and I am lucky to be among the living today. Again we ask, why all this HP improvement? Indian was much more interested in the racing field than it was in the field of pleasure riding. Remember, no clutch had yet been designed in all this HP improvement for these racing bikes still had direct drive. One of the first things this bicycle needed, if there had been no other improvements at all, was a good spring front fork to take all that shock of the rough riding. It wasn't 'til 1905 that any attempt was made to eliminate any of this shock. For many years Indian was much more interested in the racing field and it took them time to realize that there was the pleasure riding field. It was just as important, and I believe that we can safely say that it was not until competition of many other new makes began to compete with Indian in the racing field that Indian saw the need to promote both racing and pleasure riding.

Indian maintained its' lead in the racing field and had troubles in getting established in England, for there was much competition there with British and foreign bikes. It was not until Indian decided to enter the fabulous Tourist Trophy Race held yearly on the Isle of Man that Indian made its' mark. In our next installment we compare the articles on this great race. Up to 1907 Indian built only single cylinder machines although there had been some experimenting with twin motors. This year they came out with their first production twin and as usual it had some bugs. From the Scrapbook article - 1907 saw Indian introduce its first production twin cylinder engine of 3 1/2 hp. The sometimes troublesome automatic intake valve which operated by the suction of the piston was still used. Despite the exciting addition of the twin to the Indian line, the old reliable 2¼ hp. single continued to be Indian's best seller. 1907 Indians also had a separate oil tank with hand pump, eliminating the need for a sight feed oiler. Roller chains were now standard, replacing the block chains which had been on production Indians up 'til '07.A severe slump in the economy during 1907 didn't bother Indian a bit. Day and night shifts were kept busy grinding out bike after bike. A new plant was built to expand production capacity, and Indian racing victories continued with almost predictable regularity. The new plant gave Indian the facilities to begin building their own engines as Aurora Automatic Machinery simply could not keep up with the demand. This year the single was increased to 2¾ hp. In 1908 Indian's major changes included placing the gas tank between the two top frame bars between the seat and the steering post. Now Indian was going to move away from the bicycle type motorcycle frame in moving the seat back from the handle bars. Major engine changes included eliminating the automatic intake valve in favor of the more reliable mechanically operated intakes. Horse power was boosted again a whopping 3 1/2 hp. on the single (better than double the first bikes), and a Bosch high tension magneto to provide the ignition thus eliminating the dry cell arrangement used previously. 1908 was also the year Indian took the engine out of the frame and bolted it into a loop frame. We leave the Scrapbook article for a moment to explain what sort of change this was. When Oscar Hedstrom first designed the single Indian with a motor in the frame, this is literally what it means. Hedstrom took a single cylinder motor and mounted it in the seat post part of the frame. A section of this tube that supports the seat post and goes down to the crank hanger bearing where it is welded into this crank hanger bearing, was removed and the short top piece of the seat post fitted into a socket in the center of the head of the motor. On most old motors that I have seen, this is where the spark plug usually went in, but not this motor. The spark plug hole was in the side of the head. The underside of the motor mounted onto the short piece of down pipe that welded into the crank hanger. We can now see how this motor was said to be a part of the frame. I have seen motors installed in bicycles by individuals that have never seen an old Indian single, and none of them ever attempted to mount an engine in this way. The old Whizzer bike motor mounted up under the lower bar on the boy's bike and another motor built in Tiffin, Ohio mounted over the rear fender, but none of them tried this "in the frame" method. Bolting the motor into a loop frame simply means that the "V" between the front down pipe from the steering post and the seat down pipe was widened out so the motor could set right in a cradle like and be bolted in. This would make it much easier to disassemble if nothing else. Slinging it lower, lowered its center of gravity and balance.

Continuing from the Scrapbook article - Still, even with their range of engines which went all the way up to 5 hp. in the twin, Indian did not use a clutch there was no way to disengage the engine on an Indian without coming to a full stall. 1910 was really the year they "got it all together", and began producing what is essentially the modem motorcycle as we know it today. Loop frame, overhead valves, spring fork, mechanical oil pump and all the other improvements previously mentioned were teamed with the one missing element - a clutch.

While Indian was competing and winning many events in the U.S., it was not making any progress overseas. Britain liked their own motorcycles, and there were plenty of interesting machines built on the continent including the speedy Motosococche from Switzerland and the highly advanced Belgian FN with

its four tiny cylinders and shaft drive. The term Indian to most Englishmen meant the redskins they would read about in dime novels or, as the British called them, “Penny Dreadfuls”. Billy Wells, the Indian agent in England, arranged to have Oscar Hedstrom bring over some Indian racers and what they did to the British in 1911 Tourist Trophy Race at the Isle of Man you’ll just have to read all about it in the next issue.

Much of the transportation history during the time when Indian began its’ operations in 1902 up to around the 1920’s is rather comical. It was purely an era of buying parts and with any amount of capital to lease production facilities, motor vehicles of all descriptions and types rolled off production lines. Motors by one company, wheels by another, bodies by another, front and rear axles by still another, transmissions by another, and one finally assembled all the parts and put his name on the radiator on the cowl. Your editor (again, at the time) just recently wrote an article on a car produced in Findlay, Ohio known as the Grant. Back a couple of issues we printed a picture of the Club president John Wickham and my father standing beside the Grant 4 cylinder sport roadster. Two plant locations were used in Findlay to produce and finish the 4 cylinder and the 6 cylinder automobile they built. These cars were built of purchased parts and assembled in the two plants. The company had a very healthy growth while in Findlay and later moved to Cleveland. A few years in Cleveland and the company filed bankruptcy. Many Findlay men believed so much in this company and the product they produced, they moved to Cleveland to remain loyal and see a good automobile continue production. The car was known the world over and the 6 cylinder overhead valve motor was much in demand in European countries. Believe it or not, one of the faults of this speedy auto, that put this company out of business, was that the motor which they purchased had an oil ring on the piston skirt. This ring was so close to the bottom of the piston that each time the piston came down on the down stroke, if there was a variation in the bottom of the cylinder wall, this oil ring would come out of the cylinder bottom and break. They believed this ring so necessary that they scraped a rounding edge on the bottom of the wall so the ring could be pulled back into the cylinder. It would have been much easier just to leave it off for they didn’t need it anyhow.

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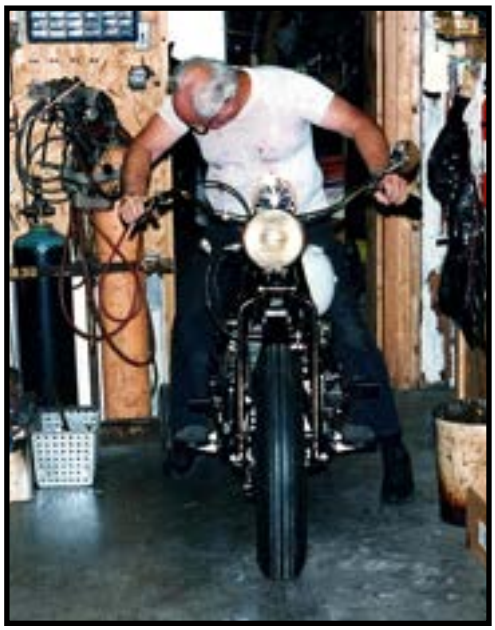
Thank you to everyone who has gone to the trouble to put together a story that explained a process, how you came to own one of these beauties, or a restoration project, all with good pictures, in order to make our publications what they have been over the past two years. Your help has truly been appreciated! We would like to keep that going so please feel free to share more and help to keep them interesting and up to date. And, speaking of keeping things up to date, please send in your wanted/for sale ads so we can keep that section of our publications updated as well. Unless otherwise directed, I will keep items in until told to remove them.

2021 marks the 60th year anniversary of the Indian Four Cylinder Club. If you didn't make it to the 50th, the turnout was amazing. We are hoping the turnout will be at least that good again, or even better. It's been mentioned that it would be great to have at least one of each year of the Indian Fours, the Ace's, the Henderson's, the Cleveland's, and even a Pierce or two. Can you imagine? **The dates for the 2021 meet in Tiffin, Ohio are Thursday, August 12th thru Sunday, August 15th.** It's well worth the trip and we look forward to seeing you there!

If you have any questions or simply want to submit something please don't hesitate to call me, Tracy Woodall, at (317) 496-7150 or email me at indian4cylinderclubeditor@gmail.com. Feedback is always appreciated as well. Thank you, your editor.

What every Battery Ignition Indian 4 Owner needs to know about Generator Drive Couplings - by Jim Walther

It was the summer of 1995 when I got the call from Dick Davies, Roy's Dad, that my motor was done and when could I come get it out of his shop! I conned Dick into agreeing to install the motor in my frame and teach me the basics of maintaining the motor he had worked so hard to restore. Oh, and how to operate a foot clutch-hand shift motorcycle! I have lots of fond memories and a bunch of good stories from that trip, but only one is relevant. (I heard that sigh of relief!)

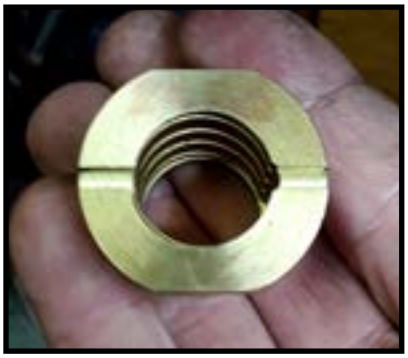


After Dick expertly maneuvered the "bike" through a door I was certain was too small, we started putting all the bits back on the motor that had to be taken off to get it in the frame. When we got to the generator, he held up this little piece of what looked like heavy-duty hose and said, "This is the last one of my NOS hose couplings I'm putting on someone else's motor. I'm keeping the rest that I have for my motors. I haven't seen any NOS ones is quite a while. Somebody needs to start making these." So began my 25-year obsession with Indian part #39045.

So exactly what are these things and what do they do? They connect the generator directly to the engine – in place of a belt and pulley – and synchronize the distributor with the valve timing. Pretty important function, agreed? Compared to the magneto drive they are flimsy and cheap-looking. That mag drive means business. My guess is that cost was a factor since the generator doesn't require as much torque as a magneto. A friend of mine in the British sports car community was looking my bike over at a car show. He called the drive coupling a "rag joint!"

That's what they do. Now exactly what are they? I'll begin with what they are not – hose! They are listed in the parts books as the "drive coupling" and consist of 6 layers of rubberized canvas - (#2 Cotton Duck, to be precise!) 1 7/8" wide, wrapped around a 7/8" diameter mandrel, with two 17/64" holes punched through at a 90°, 1 ¼" on center. I know owners have used various types of hose over the years and at least one of the leading vendors uses hose. I'll explain why most of these substitutes and less than satisfactory.

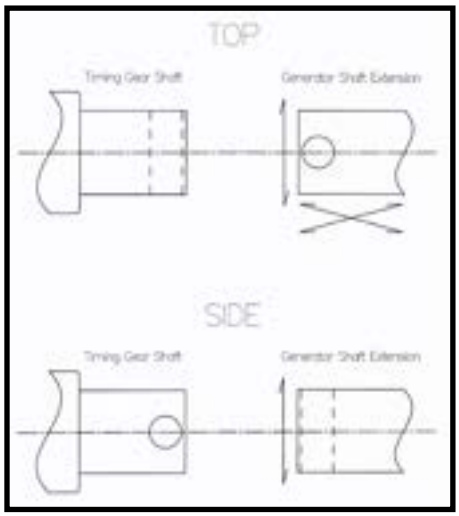
The generator/distributor are driven by a gear in the valve train that turns, through an idler gear, at the same speed at the crankshaft. (Yes, I know there's supposed to be cotter pin in that castellated nut. It was installed before the cover was put back on!) The right-angle drive at the aft end of the generator reduces the rotation 2:1 to match the camshaft. (In 4-cycle engines the cam and distributor turn once for every two revolutions of the crankshaft.) Simple enough, and you can see why the coupling between that gear and the distributor can't be too flexible or it will mess with the timing. I'll get to how flexible is too flexible in a moment.



First, the coupling does one other important thing. If you haven't had the pleasure of seeing what's behind that gear, it's a brass bearing.

The one in the picture is one of Roy Davies' excellent reproductions. The gear has to be in contact with the face of the bearing or you get this… Yes, that's the reflection of the screw head in a puddle of oil. The oil will also be slung back onto the cylinder by the rotation of the shaft. Very messy. That 1 ¼" distance between the holes through the coupling is intended to allow you gently to pull the generator/distributor rearward so that gear maintains contact with the bushing and only enough oil gets through to lubricate the bushing. This is only one of the axes involved in the proper alignment of the generator.

The drive coupling is NOT intended to compensate for a misaligned generator. The diagram shows the other three axes that need to be within a few thousandths. There are actually four more axes, but if the shelf on which the generator sits is more than a couple thou off perpendicular to the vertical plane of the timing gears you have a whole different problem – the case has likely been damaged and poorly repaired. It may have been running 'just fine' but trust me, there's a problem.



The relative height of the generator shaft to the timing gear shaft, the side view, can be adjusted with shims between the generator mounting bracket and the shelf. A good 2" long straight edge set on top of both shafts is enough to see any misalignment; a dial indicator is probably overkill but hey! That's up to you.

The alignment from the top is usually easier to maintain, unless the shelf is out of kilter as I mentioned above. What I do is assemble the whole kit and kaboodle, but only finger tighten the two nuts on the bracket under the shelf. Start the motor and watch the generator. If it's jumping around, the height is probably not quite true or the coupling is bad. Once it's running smoothly, it's 'found' the side-to-side alignment and you can snug up the nuts.

It is very important now to go back and, with the motor now off, loosen the pinch bolt on the bracket and gently pull the whole generator-distributor unit towards the rear of the bike as I said earlier to bring the timing gear into contact with the bearing.

Did I mention that it's also important not to over-tighten the clamp bolts on the coupling? It's important not to over-tighten the clamp bolts. You don't want to distort the coupling like I did! But neither do you want those bolts to come loose, so put a drop of blue Loctite on each one and just tighten them until those Indian thin lock washers start to close. They should be ¼-28 bolts just a drop of thread locker will be enough.

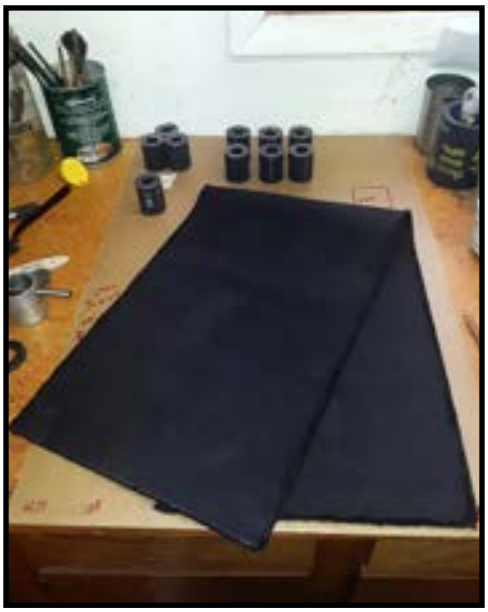
How do you know if your coupling needs to be replaced? Absent any oil leaking at the bearing, if it starts to look like the one in the above picture, it's time for a new one. They are exposed to heat and the elements and will become soft over time. (I said we'd get to this…) How soft is too soft? Drew Crafton and David Kitrosser helped me with the math. The generator under full load produces a maximum of 10 inch-pounds of torque. The twist grip advances or retards the spark 15-18° depending on how much it's worn and if it's a reproduction. Our motors don't seem to notice a variance of less than 2° off full advance.

I made a test fixture and, using a beam-type torque wrench calibrated in inch-pounds, measured how much torque a coupling could take before it showed 4° deflection on the scale. "4°? But you said 2° was within tolerance," I hear you cry. Remember the 2:1 gear reduction at the distributor drive? 4° at the generator shaft becomes 2° at the distributor. I ran this test on several of the couplings I had made and on one from a vendor. The ones I made from canvas like the

originals withstood up to 24 inch-pounds before deflecting more than 4°. The reinforced rubber hose coupling deflected 4° under only 5 foot-pounds and a whopping 15° under 24 foot-pounds. That's the equivalent of full retard. (I bought and tested two. There was ¼" difference in their lengths and the holes were spaced differently on each, so excess flexibility wasn't their only shortcoming)

You caught that I make drive couplings. Like I said in the beginning I started tinkering with them 25 years ago. I have pretty much perfected my process. Some of you have been using my couplings for years and I have had very, very few complaints. I'm told that they're closer to the originals in appearance than any on the market. I'll briefly share my 'production' process, and I am quite sure that this NOT the way Indian made them!

I get 90-108 couplings from a square yard of canvas, depending of the selvedge. (Ask your wife!) I have never been able to locate #2 Cotton Duck pre-dyed to what I believe to be the 'correct' blackish Olive Drab. At least not in quantities of less than 10 yards 60" wide! The first batch I made came from a scrap I found in a corner of an old awning shop. The guys said it had been there 'forever' and thought it was for Army tents!



I start with a square yard of raw canvas, cut into 3 pieces that will fit in a 5-gallon turkey fryer, the cheapest big pot I could find, and dye it. (No, Doreen wisely will not let me use the washing machine! Besides, it frays the edges too much.) I can dye enough canvas this way at one time to make 30-36 couplings.



It's then cut into 1 7/8" strips, 17 5/8" long. Three coats of contact cement are applied to both sides of each strip with a brush, leaving a length on opposite ends of each side raw for the inside and outside of the coupling. The strips are then hand-wrapped around a 1/32" oversize mandrel to allow for shrinkage, using my lathe basically as a big clamp! Once the adhesive is cured the holes are drilled/punched on my drill press. I made a 17/64" punch and a jig to make sure the holes are consistently at 90° and properly spaced.

I end up having close to 3 hours in each coupling. I'm sharing all of this because I'm getting tired of making them! It's very labor-intensive. Perhaps someone else would like to take over? I have enough dyed canvas for 10 more couplings. I'll give you my tooling and dye formula… Seriously. Call me.

One more thing before I close this tome. "Surely there are better ways now to connect the generator to the timing gears," I hear you ask. Indeed, there are. If you're not worried about maintaining period appearance or judging, there are at least two 'modern' options available. First is the "Lovejoy" jaw-type coupling used in many industrial applications. These are a bit more tolerant of misalignment but also have a significant drawback. The metal jaws are not attached to the rubber 'spyder' so they can't provide that rearward thrust to keep the timing gear in contact with the bearing. However, I have seen a couple of these on machines at Tiffin and they were not covered with oil. Maybe those owners know something I don't. Lots of folks fall into that category! They are available in .875 x .875 through places like Grainger, MSC and, of course, evilbay.

The other option is a 'dual-disc zero backlash coupling' used on CNC machines and 3-D printers.*[Photo: dual disc]*As the name indicates, they allow zero backlash – no radial deflection. They are not as tolerant of misalignment and the Lovejoy couplings, but do allow for that rearward tension. I've run one of these about 1000 miles on my 4 with no problems. If I were heading off cross-country, say, on a Cannonball run, this is what I'd use. One caveat – they are hard to find and appear only to be available in metric sizes. I got the ones I have on evilbay. 22mm x 22mm is just enough under 7/8" that they have to be bored out on a lathe.

And there you have it – what I've learned over 25 years about generator drive couplings. And I'm still learning! If you've had different experiences with or have additional insights into these little boogers, let's talk! I want to thank Butch Baer, Elmer Lower, Robin Markey, Roy Davies, Dave Corsmeier, Dave Kitrosser, Drew Crafton and everyone else who has tested prototypes, helped me with math, shared their years of experience and offered moral support for this project.

FROM THE AIR COOLED SINGLE TO THE INDIAN FOUR

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In 1876 a German inventor named Nicolas August Otto developed the first successful internal combustion engine that we simply call the gasoline engine. Its invention and the successful production of these engines in this country led to the eventual development of the automobile and a machine in which all motorcycle riders are interested in – the MOTORCYCLE which was the forerunner of the dozens of imports of today, the Indian Four and all its predecessors, the fours, singles and twins.

After the invention of the internal combustion engine, the other inventors took the idea and designed it to a variety of types which included the single cylinders, the twins, the inlines, big and small, plus liquid cooling and air cooling. All sorts of contraptions were designed with wheels to harness the power of the one lunger, big flywheels and water cooled, to propel this machine down the road for a joy ride. Such a machine had to be large to carry the big engine and was surely not practical for power for a bicycle.

Since the big gas engine was not practical for the bicycle, such an idea was not about to go undone. But, before we get into the bringing together the air cooled single motor and the bicycle, we would like to mention some facts about the air cooled and the liquid cooled motors. The air cooled motor could be built much more compact and smaller because it needs no water jacket. In the early years of the single cylinder air cooled a piston of about 2 inches in diameter was about as small as they were made, whereas today the very small model airplane, model boats, and small racing cars have air cooled engines that have pistons no larger than your index finger. These small engines are of the two cycle variety and turn up 12 to 20 thousand RPMs top speed. These motors generally have a threaded cylinder that screws into the crankcage. Often the cylinder and cylinder head are one piece such as some of the rotary power mowers. The Clinton and Briggs and Stratton 4 cycle motors power practically all the rotary power mowers and have bolt on heads. The air cooled motor eliminates the expensive big machinery cost necessary for machining the complex water cooled blocks plus the intricate molds and cores necessary to case the larger motor blocks. There is however, one disadvantage of the air cooled motor which all its compactness and simplicity of design, that of the higher temperature cooling and greater expansion which means tighter nuts and bolts. The liquid cooled power plant like the automobile motor operates at a cooler temperature and although it requires design of large size and is more practical designed in 4, 6, 8 and even 12 cylinders producing more power and more speed. However, there could be some dispute at this point for many World War II aircraft with up to two rows of 9 cylinders and one experimental job of several rows, all produced a lot of horsepower to carry the tremendous loads of bombs and equipment during the war.

Getting back to our comment of a practical motor for a bicycle in those early days of bicycling, the small one cylinder air cooled motor was just right to adapt to a bicycle frame providing the motor could produce enough power and keep running at near idling speeds. A young inventor and precision machinist Oscar Hedstrom from Middletown, Connecticut was in New York with a display at Madison Square Garden. He had built a pacing machine and it had an air cooled motor that would start easy and keep running. Another gentleman, George Hendee of the Hendee Manufacturing Company, of Springfield, Massachusetts, builder of bicycles was attracted to this exhibit of Hedstrom's and was very much interested in this little power plant that seemed to offer no trouble in operation. Hedstrom had adapted a carburetor of his own design, and after a demonstration of easy starting and speed of the spunky little motor, Hendee told Hedstrom of an idea he had of putting a motor on a bicycle. A lasting friendship was formed as well as a

partnership, for Hedstrom returned to his home in Middletown to design a method of adapting his small motor to a bicycle with positive drive and plenty of power.

The design was completed and the bike ready for tests. Satisfied that his motor powered bike would meet and test and with power to spare, Hedstrom packed up his new creation and headed to Springfield, Massachusetts. The news was spread of a demonstration and a crowd lined famed Cross Street, Springfield's steepest slope, 19% grade with rough surface, Oscar Hedstrom performed uncanny demonstrations before the crowd watching from the sidelines.

From slow starts he climbed the hill easily graining speed all the way, and with deliberate slowdowns, the bike showed plenty of power to pick up and go over the top without any motor trouble. Hendee and Hedstrom quickly let it be known that Springfield was to have a new industry with a great future. In tribute to the original inhabitants of this country, the new partners announced that the name of the new motor powered bike would be the Indian Motorcycle. The first year of the new company, 1901. The Hendee Company produced 3 motor powered bicycles. Production really got underway in 1902 with the production of 143 bikes. Hardly had a dozen of these machines had been sold when a problem arose that was to be a problem for the company for many years to come. Orders flowed in so fast that the company was unable to keep up with the demand for Motorcycles. The performance of the Hedstrom design and Hendee built Motorcycle with its chain drive and positive power motor, provided it a superior machine over other makes.

The racing and competition bug hit the Indian Company from its beginning and its sole interest was to build a bike that would win all the competition. The motor used by Oscar Hedstrom was the Aurora single cylinder built to Hedstrom's specifications by Aurora Motor Company of Illinois. This little single cylinder turned up 1 and ¾ HP. By 1906 the motor was redesigned and the horse power increased to 2 ½ HP. By 1907 another motorcycle was added to their line – the 3 ½ HP Twin, two cylinders. Production had increased to the point that their motor supplier was unable to keep up with their demands for motors and Indian decided to go into motor production. By 1909 the Indian Company offered a 7 ½ HP twin and the 5 ½ HP medium twin. All these bikes led Indian in the competition field and the more races their bike won the greater the demand for Indian Racers. Before we leave this history of the early Indian motorcycles we would make mention of a new motor design announced in 1915. When Indian announced its 1916 models in September of 1915 it rocked the industry with a sensational history making announcement. The world famous Hedstrom motor and carburetor had become obsolete with newer designs and now in 1915 Indian announced a new power plant, a side valve engine with L head cylinders, called the Power plus motor.

The new motor was the brain child of a well-known motor engineer by the name of Charles Gustafson, Sr. who had done some pioneering with side valve motors with Reading Standard along with other companies that had similar designs. The Power Plus engine helped Indian keep its dignity and winning record in the competitive racing field.

We leave the further development of the Indian twins which all began with the old Aurora single cylinder motor and the many design changes in the overall bike such as the frame. There had to be a beefing up of the frame to carry the heavier motors thus the motorcycle soon became more of a motorcycle and lost its appearance as a bicycle.

Since our title states "From the Air Cooled Single to the Indian four", we must next begin to look for the development of the four since we brought the history of the Indian Company up to around 1916. However, we must back up our history a bit to what might be termed the first air cooled four cylinder engine. One of the first completely air cooled engines was not built especially for a motorcycle but an early automobile, the Franklin. The Franklin automobile was also quite different from the many automobile companies of that time in that the metal aluminum was used throughout this car. This was an all-aluminum motor with sleeve cylinders. The first motorcycle to be designed with the four cylinder motor was not an American built machine but the FN made in Belgium. Look in the winter issue of 1970, page 39 in which we ran the story and pictures of the FN owned by Victor Huguenin of Galion, Ohio. The first American company to begin manufacture of a four cylinder motorcycle was the Pierce around 1909. Then somewhere between 1909 and 1911 the Militaire Company of Canada moved its operations to Cleveland, Ohio and began the manufacture of the Militaire Autocycle. In the last issue of the magazine we went into the history of the Militaire and its later machine, the Militor.

Also in 1911 another company started to build a four cylinder motorcycle which was later to have an effect on the Indian Motorcycle Company.

In Detroit, Michigan on Jefferson Street, a new motorcycle company started the manufacture of four cylinder motorcycles, the Henderson Motorcycle Company. William Henderson was to become a well-known figure in the history of four cylinder motorcycles. The Jefferson Street address could very well have been the factory for the manufacture of the machines and the downtown Elizabeth Street address, the office or sales room for Henderson Motorcycles.

The next statement we make we do not give as the gospel truth, but offering the following as items of thought regarding manufacture of automobiles and motorcycles in that day gone by. Remember how Indian purchased their first motors from Aurora Motor Company in Aurora, Illinois, well many of the early automobile manufacturer's purchased semi-finished parts and assembled cars from pre-manufactured parts. An old car built in the hometown of the editor, Findlay, Ohio was also the home of the old Grant Automobile. They built two cars, a four and a six. The fours had a motor that was shipped to Findlay in parts from a plant in Detroit known as Michigan motors. This was the well-known Continental Red Seal motor. They later changed designs of their automobile and went to a six cylinder motor made in Waukesha, Wisconsin and known by the name of a Waukesha engine. This motor was purchased as a complete motor and assembled in the cars. Many of the early automobiles, and the list is almost endless, were more or less assembled cars and not totally manufactured as we know cars today.

Now we're not saying this was the way with the motorcycle for we might stir up a heap of argument but there are certain facts that can cause us to think either way. Henderson began manufacture of his motorcycle in Detroit, Michigan, the home of many basic manufactures who sold parts to the Finnish manufacturers. Henderson continued the manufacture of his motorcycle till 1918 when financial troubles plagued him and he sought a buyer for his top quality motorcycle. At this time his was about the only one left of the four cylinder field. This machine was an all-around bike, for it could be used for pleasure riding, racing, cross country, and even police work. But for some reason or other the racers preferred the competitive and proven Indian. The Excelsior Motorcycle Company of Chicago had also run into financial troubles and sold out their interests to the great Schwinn Bicycle Company of Chicago. This gave the Schwinn Company a good field in the two wheel vehicle business with a good bicycle business and now a single and a twin in the motorcycle field.

Then along came Will Henderson with a proposition to sell out his motorcycle company, for financial troubles were plaguing him and his machine was a four cylinder machine, different from the single and the twin. A deal was made and Schwinn moved the assets to Chicago. Since they were now marketing the former Excelsior machine and now called the Super X, the acquisition of the Henderson Four now became the Henderson X. Up in Milwaukee, Wisconsin was still another manufacturer of motorcycle known as the Harley Davidson, but it always had remained a twin cylinder machine. Schwinn now had the edge on the field with everything the motorcycle riders could ask for. Singles to fours. Indian was far away in Springfield, Massachusetts, and offered little competition to this fine line of machines by Schwinn.

When Henderson sold out to Schwinn, there was a further part in the deal. Henderson and his brother were to work for Schwinn now in the engineering department. Thus in 1919, Schwinn began its first production of Henderson bakes. This partnership was not to last long for some indifferences rose between Schwinn and Henderson and Henderson left Schwinn with a thorough knowledge of the motorcycle and some new ideas that were not accepted by Schwinn. In 1920 Henderson took to the road to seek new financial backing.

Schwinn had the most complete line of motorcycles and little or no competition in the four cylinder field. Henderson evidently still strongly believed that the four cylinder machine was still the best all-around machine and was very determined to get back into production. Henderson would give Schwinn that competition with a bike that he would incorporate his new ideas for more speed.

Henderson found his backing and set up a new motorcycle company in Philadelphia, Pennsylvania. The new company was the Ace Motorcycle Company and in 1920 produced the new Ace Motorcycle. It had some of the lines of the Henderson but enough difference that it was not a carbon copy. Sales of the new machine went fairly well the first year under Henderson's leadership at the Ace Company, then another plague of bad luck hit this new company. In 1921 Will Henderson was hit by an automobile while riding one of his own motorcycles, and did not survive the accident. This was a blow that the company was not to survive too much of a future. Immediately following Henderson's death, present company personnel took over the operation. As we stated, facts about Henderson's operation when he was in Detroit, whether or not he purchased parts and assembled a machine, there is some evidence that either there was a large inventory of purchased parts machined or unmachined, there was a large inventory of parts in Philadelphia which evidenced an expected large sale of motorcycles. The Ace Company did have a complete factory for there were departments of machine shops such as grinders, lathes, drilling and assembly. Therefore we would not say that many parts were purchased and just assembled, but that Ace did manufacture its motorcycle.

Following Henderson's death the company passed into the hands of several owners. In 1924 or 25, a move was made for less expensive quarters to set up manufacturing, and the Ace Motorcycle Company moved its assets to Blossburg, Pennsylvania in a former tanning factory. Machinery was set up and production proceeded as usual. One of our Indian Four Club members, Mr. Phillip Picard of Quebec City, Canada, told us that he went to the Ace plant to secure some parts for his Ace and at that time saw Ace machines being built. He did not get to see any machining done. This was in 1925.

As before, when Henderson found himself in financial troubles, the Ace Company was in the same trouble and filed bankruptcy with the right to reorganize for manufacturing. Another move was to take place and this time it was back to the home of where Henderson began his manufacture of motorcycles. Under the reorganization under bankruptcy the Ace Company moved to Detroit, Michigan to the Michigan Motor Company and the production was resumed under the name of Ace Motorcycles. Here, it has been stated that machines were assembled from the inventory of parts.

At this point we should mention that another new comer into the four cylinder went into production in Cleveland, Ohio in 1925 known as the Cleveland Four. This production lasted until 1929 and the Cleveland Motorcycle Company ceased production of a well-known four, the Cleveland Tornado. Thus up to this time from 1925-1929, there were three four cylinder motorcycles on the market. This included the Henderson X still produced at the Schwinn Company, the Ace four and the Cleveland Four. 1929 was a year for troubles of many companies for this was the year of the market crash and the bank moratorium.

At Michigan Motors in 1927 a deal was in process which was to be a turning point in the four cylinder field. Representatives of the Indian Motorcycle Company were dealing with the owners of the Ace Motorcycle Company and in March of 1927 the entire inventory of Ace parts in Detroit and rumor states that an inventory of parts was still in Philadelphia, were all moved to Springfield, Massachusetts to the home of the Indian Motorcycle. When this shipment arrived there were a number of completed machines which were tried out around the Indian factory. In the spring showing of new machines the Indian Company showed for the first time in 1927, the Ace machine carried the decal of Indian Ace. This was known as the assembled machine. In 1929 a change in motor design was to take place and the timing was to be of essence. From the beginning Will Henderson built a motor with a three main bearing crankshaft, and it remained this design till in January or February of 1929 when the Schwinn Company beat the Indian Company by about 2 months in coming out with the five main bearing crankshaft. This meant a change in upper and lower case, cam, crank, and oil system. Then later Indian did the same. For the 1928 models of the Indian four several other changes were made. The Scout fork replaced the Ace spring plunger fork and the front and rear axles. The new Indian was known as the 401 Indian. The 1928 four was the first actual production four and a continued competitor to the Henderson X. Indian still had its twins that kept it in the competition. Indian was now a real competitor with Schwinn having a complete line of machines. However, in 1932 Schwinn discontinued its motorcycle manufacture and Indian and Harley, and Cleveland were the remaining three.

Indian had remained in business since 1901 and made itself an outstanding record in the competition field. The old original owners had passed on and the company in new hands. They managed to live through the depression years of 1929 through 39 and produced fine machines. The four went through successive design changes to make it an outstanding machine. Indian was now the only four on the market. In 1932, after Indian had outgrown some of its racing desires and had gotten into the domestic field so to speak, they began filling multitudes of orders for police departments all across the country. The police wanted a machine with a faster motor than the common machine so a longer duration lift cam was designed for police bikes. It gave more power and thus a faster machine. In 1937 a major design change took place. From the beginning of the fours, the individual cylinder design was common on all fours. Henderson's first machine and all the Ace line had individual cylinders. Up through 1936 all the Indians had individual cylinders. Then in 1937 the valve system was reversed with the intake manifold placed above the exhaust manifold, somewhat similar to the automobile. Prior to this heater tubes from around the exhaust manifold piped heat around the intake manifold to heat the intake for atomizing the gas into the cylinders.

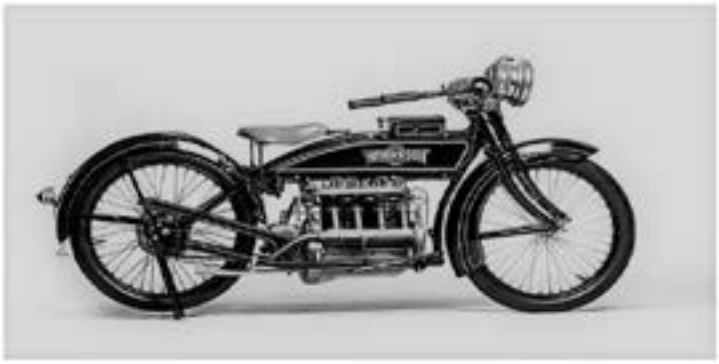
The new design had twin carburetors and claimed to be an excellent change from the former method of heating the intake. A further change was made on this model, that of pairing the cylinders. By this we mean the cylinders were cast two cylinders in one unit. After a year of test running by the buying public, the inverted engine as it was called was discontinued and the design reverted back to the use of heater tubes. They continued the new design of paired cylinders and it remained this way to the end. The inverted engine also required a new cam shaft for the change in the valves and intake and exhaust system.

These were the last changes in the four motor for in 1942 the company ceased civilian production for World War II and all fours were sold to the military.

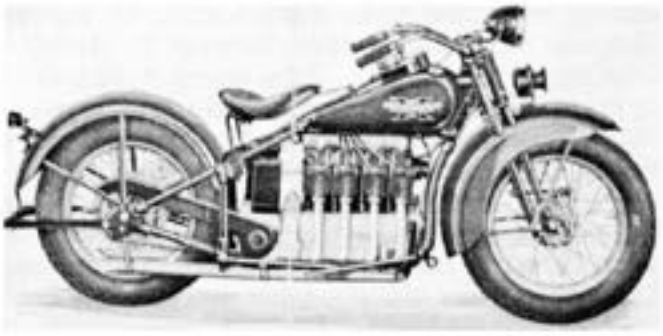
Since this article is primarily centered upon the development of the four and how the Indian Company became involved with a four cylinder machine we will not complete the history of the Indian Company till it ceased business operations.

Had it not been for Will Henderson and his desire to make the four cylinder machine the most desired motorcycle, chances are that the four cylinder machine would have died out for Schwinn ceased production of all its motorcycle line and Harley Davidson seemingly did not have success with a four cylinder machine. Indian only grasped an opportunity from someone else's investment and engineering to buy a bargain and put it back on the market under a good brand name. Indian four police bikes were known all over the country and many still operating today.

We have included with this article pictures of the machines and the places of manufacture which should be of interest. Picture credits and information credits go to the following for helping us write this article. John Wickham, our president, Enos Leass, retiring treasurer, Lou Lichva, Philip Picard, and Paul George. We do not state that somewhere in this article that we have not made an error and if you wish to write us and correct us we invite your criticism. We only hope that we have told it plain enough and correct to give our readers some history on their wonderful old fours. Tom Miles – editor –



The above cycle is truly Henderson for it is a 1917 Henderson that was built when Will Henderson still was manufacturing in Detroit.



Although often called the Henderson, this bike the Schwinn built four around 1932

The old Excelsior Plant in Chicago where Schwinn continued motorcycle production.

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NE	Tillotson	Michael	4625 Kelby Road			
NE	Wagner	Howard	1110 N. 60th St.		1indianocuple@hotmail.com	
NH	Clark	Steve	519 Clement Hill Rd		sc4242@comcast.net	603-746-3142
NH	de Greef	Roderick	45 Stewart Young Road		rod@lopstick.com	
NH	Ingraham	Robert	110 Burton Highway		robert.d.ingraham@gmail.com	
NJ	Ahlers	Walter	107 Stephens Park Rd.		twahlers@msn.com	908-813-9904
NJ	Benz	Robert	37 Burrell Road		rtbenz@centurylink.net	908-832-2660
NJ	Flanagan	Kevin	45 Woods Road		indgaco@ptd.net	973-948-3615
NJ	Mulligan	Sean	40 Carla Ct.		thefatmanllc@yahoo.com	973-652-9794
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NY	Curro	Walt	2190 Hylan Blvd		Supercyc1@aol.com	718-984-1286
NY	Dridge	Edward	3 Burchell St.		egdridge@msn.com	
NY	Lensu	Wayne	53 Davis Avenue		Lensway@sbcglobal.net	516-239-4360
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OH	Cozens	James	6065 Clay Street			
OH	Ehemann	Gene	308 S. Pike Street		gehemann@nktelco.net	
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2020 Club Roster - Updated

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OH	Negelspach	Noel E.	1614 W. Market Street		nnegelspach@gmail.com	419-229-3892
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OH	Peplin	Steve	18800 Cochran Avenue		spep@talanproducts.com	
OH	Reichenbaugh	Carl	1421 Bernard Ave.			
OH	Rosenberg	Frank	2812 Brainard Rd		truckit2u@sbcglobal.net	
OH	Scharff	Brian & Deb	8520 Twp 237		FortyHD@aol.com	419-722-7427
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OH	Stewart	Jeff	12392 CR 37		stewart.id@towerautomotive.com	
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OH	Vasil-Horse	Ted	1647 Lincoln Hwy		tedmouse@aol.com	
OH	Ware	Rob & Leah	2393 Michelle Ct		VF750@aol.com	216-509-5389
OH	Williams	Cliff	12515 Sylvania Ave		cwilliams@WLS4KIDS.org	
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TN	Bortner	Sue	822 Trent Lane		simplysue2000@aol.com	502-641-1983
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TX	Heye	Lewis	755 County Road 304		farmcomputer1@airmail.net	
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WI	Serocki	Bob	7417 S. Schenrei Dr		maryserocki@yahoo.com	
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WV	Walther	Jim	1028 Ridgemont Drive		indianfourrider@yahoo.com	304-552-2152

2020 Club Roster - Updated

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	Beckert	Peter	Zwischen den Wegen 54	Germany	superbrain.peter@web.de	
	Berry	Tim	24a Homefield Close	UK	indian344@gmail.com	
	Bramwell	Byrne	5687 William McEwen Dr	Ontario	beb.2@hotmail.com	
	Buendig	Frank	Reinsdorf 23	Germany	indian4@mail.de	
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	Medina	Michael				
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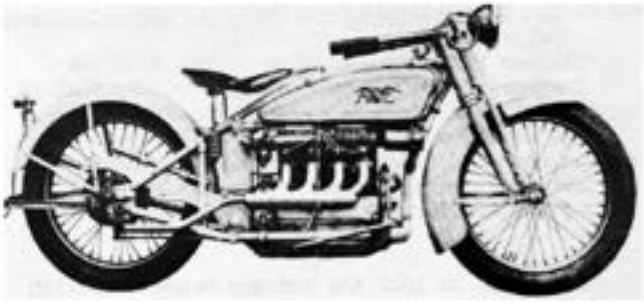
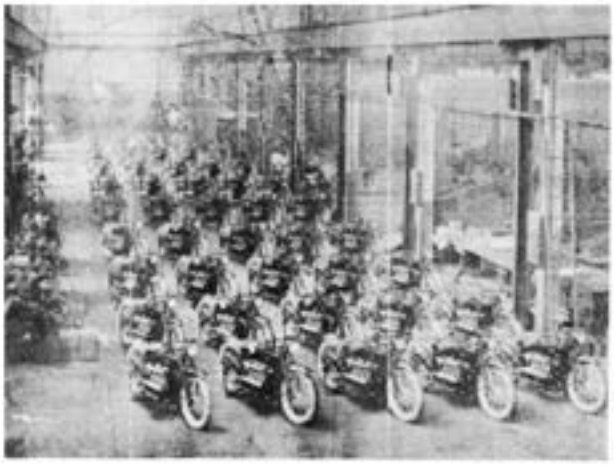
	Smith	Stewart	2860 Woodsdale	British Columbia	info@turtlebaymarina.com	250-801-8437
	Staton	Myke	5000 Thunder Rd	Ontario	mykes47@gmail.com	613-240-3781
	Van Beurden	Wm	Hoffmeyerstratt 52	Netherlands	wim@vbeurden.eu	
	Vronski	Laurent	2bis rue Andre Barsacq	France	Larrydevil@hotmail.com	
	Wilcock	Tom G.	2994 Concession Rd. 8	Ontario	twilcock@hotmail.ca	905-263-2557

Below – The 1924 Ace built at the Blossburg, Pennsylvania plant. The between the frame tank didn't change until several years after the Indian made a design change.





Police motorcycles made at Blossburg plant.

Our thanks to Lou Lichva, Philip Picard, and Paul George for materials on the Ace and Henderson

In the picture below is the Blossburg plant where Ace moved from Philadelphia for might be termed today as an economy move or austerity program. Shortly after the Company became bankrupt but production continued.

Indian 4 Club Putting Our Club on the Map! Where Our Members Are Located.

PAY YOUR 2021 DUES

on New and Improved Club Website

www.Indian4Club.org

To All Members,

Last year I rolled out a new website which some of you had difficulties logging into and paying your dues. Please note, some major changes have been made and the club is now using **PayPal** as the way to pay your dues on the website. It would be much appreciated if you would pay electronically through the website and NOT snail mail checks. However, the club will continue to take paper checks if this is the only means you have to join the club. (Mailing address is at the bottom of this page)

When you open the website, go to the far-right corner and click **LOGIN** **(DO NOT click Sign Up this is for new members only)** then enter a capital letter for your first name and all lower case last name **(User ID Example: Bcorsmeier)** Your password is your first name with your zip code. **(Password Example: Beverly45150)** You have full access to the website. Once in, go to Pay Your dues and pay for 2021…Pretty please. Lifetime members are already entered into the website and do not pay dues. Spring magazines will not be mailed to any member who has not paid their dues at the time the spring magazine comes out.

Once in the website please edit your information and answer the questions. The club must have your permission to be in the roster, Do you want to be added to the private club FB page? (Indian 4 Enthusiasts is not our club's page) Also, knowing what size shirt you wear helps when we order new inventory. Thanks in advance for filling out the form!

Beverly Corsmeier, Treasurer
5958 Shallow Creek Drive
Milford, Ohio 45150

Email: MembershipIndian4Club@gmail.com

Indian Four Cylinder Club Publication Back Issues

These back issues are available to purchase by contacting Drew Crafton. Some are in short supply so it will all be on a first come first served basis. Cost per publication is $2.00 plus shipping. If multiple issues are desired, please request what you would like and what is available will be gathered and shipped at the same time in order to help reduce shipping costs.

Vol. 14 No. 4	Winter 1979	1933 Indian 4 / Art Haffer / Timing a Four
Vol. 15 No. 1	Spring 1980	1932 Indian 4
Vol. 15 No. 2	Summer 1980	1931 Indian 4
Vol. 15 No. 3	Fall 1980	1930 Indian 4 / 402 Series / 1980 Meet
Vol. 15 No. 4	Winter 1980	1929 Indian 4 / 1961 Indian Four Meet Photos
Vol. 16 No. 1	Spr/Sum 1981	1928 Indian Ace
Vol. 19 No. 1	Spring 1984	Indian Four Story / Magneto lgnition on Indian 4 Motorcycles
Vol. 21 No. 1	Spring 1986	lndian Service Shots 1928 / I 929
Vol. 21 No. 2	Summer 1986	25th Anniversary of Club / Danish 4 / 1939 Nimbus 4 / '29, '30, & '32 Service Shots
Vol. 21 No. 3	Fall 1986	Ace Register / Henderson / First Indian 4
Vol. 21 No. 4	Winter 1986	Membership List / 1986 Meet
Vol. 22 No. 1	Spring 1987	Crocker
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Vol. 24 No. 2	Summer 1989	How the club began / Lubrication of the Ace Model "F"
Vol. 24 No. 3	Fall 1989	89 Annual Meet Minutes - Photos / Eric Marreel trip from Belgium to Indian Meet in Germany
Vol. 24 No. 4	Winter 1989	Battery hint / Majestic M/C / 9,000 miles on an Indian Four by Max Bubeck
Vol. 25 No. 4	Winter 1990	1990 Minutes and Meet
Vol. 26 No. 1	Spring 1991	Letters from Members / Article about John Yaros
Vol. 26 No. 3	Fall 1991	30th Anniversary Meet / Overhaul Instructions for 438 through 442 Models
Vol. 26 No. 4	Winter 1991	Kenneth Everett Young I 907 - 1991 / Photos of Members at 30th Meet
Vol. 27 No. 3	Fall 1992	Minutes / 1991 Italian M/C Meet / Instructions, Care and Operation of 4 - 45 Cleveland Motorcycle
Vol. 27 No. 4	Winter 1992	1992 Meet

Indian Four Cylinder Club Publication Back Issues - Continued

Vol. 28 No. 1	Spring 1993	Story of Henderson Motorcycle (Part I)
Vol. 28 No. 2	Summer 1993	Story of Henderson Motorcycle (Part 2)
Vol. 28 No. 3	Fall 1993	Story of Henderson Motorcycle (Part 3) / 1993 Minutes & Photos of Meet
Vol. 28 No. 4	Winter 1993	Cannonball Run 11 / 1993 Meet Photos
Vol. 29 No. 1	Spring 1994	Dollar Four Motorcycle / Indian M/C Show in Italy
Vol. 29 No. 2	Summer 1994	The Pre-Four Days / Jerry Hatfield Article on Indian
Vol. 30 No. 4	Winter 1995	1941 - 1942 Indian 4 / Service Shots & Parts List for 1941 & 1942 Four Cylinder
Vol. 31 No. 1	Spring 1996	Cleveland Four Cylinder
Vol. 31 No. 2	Summer 1996	Cleveland / Parts Catalog for 4-45 & 4-61 Cleveland Motorcycles
Vol. 31 No. 3	Fall 1996	1996 Meet Minutes & Photos / 1936 Marvel Model Carburetor Parts List & Photos / Auto - Lite Part Numbers for Indian M/C 1933 to 1940.
Vol. 31 No. 4	Winter 1996	1996 Meet Photos I Charles Qua 's Sintered Bronze Clutch for Indian Fours
Vol. 32 No. 1	Spring 1997	1996 Membership Roster / Indian Schebler Carburetor List 1916-1940
Vol. 32 No. 2	Summer 1997	70 Years of AMA 1924-1994.
Vol. 32 No. 3	Fall 1997	Meeting Minutes / 1928 Service Shots on Front Wheel Brakes / 1928 Service Shots on Indian Generators / 1926 Police Accessory List
Vol. 32 No. 4	Winter 1997	1997 Membership Roster / 1944 Service Shots on 1932 - 1941 Model Indian Four - Clutch & Flywheel Assy.
Vol. 33 No. 3	Fall 1998	1927 First 5 Indian Service Shots
Vol. 33 No. 4	Winter 1998	1998 Meeting Minutes & Awards / 1998 Roster
Vol. 34 No. 1	Spring 1999	Truing Wheels / Four Cylinder Frame & Engine number / Plating Choices for Parts
Vol. 34 No. 2	Summer 1999	1927 Ace Information & Contact Points
Vol. 34 No. 3	Fall 1999	1999 Meeting Minutes & Awards / Installing Permite Piston Pins / Installing M/C Chains
Vol. 37 No. 4	Winter 2002	2001 Meeting Minutes / 2002 Meeting Minutes, Roster & Meet Photos / Service Shots / Ace 4 Cylinder / Riding Indians Across Country on the 100th Birthday Bash
Vol. 38 No. 4	Winter 2003	2002 Awards / 2003 Meeting Minutes, Awards & Meet Photos / Service Shots on Ace / Polarizing a Generator
Vol. 39 No. 2	Winter 2004	2004 Meeting Minutes & Awards / Reprints of Earlier Club Magazines
Vol. 45 No. 2	Summer/Fall	2010 Awards, Minutes & Meet Photos / 1928 Mini Four / Rebuilding Seat Post Assembly

For Sale/Wanted to Buy

For sale:
1946 restored Indian Chief
1941 restored Indian Sport Scout
1938 Indian Chief
1970 Triumph Daytona
1938 Restored Indian 4 with side car
1996 Harley Soft-tail Springer
Contact: Sarah Cecil (859) 351-4817

For Sale: 1940 to 1945 Indian complete sidecar. Have mounting brackets for Chief 1940 to 1953. $12,000 or Best Offer. Contact: Elmer Lower Phone: (717) 379-2827 or indnelmo@yahoo.com

For Sale: 1932-1935 and 1938-1942 exhaust manifolds is now $750.00. I had to use a different foundry for the castings and the costs are more. The aluminum manifolds are still $475.00. Tom Wilcock - manifolds - castings - (905) 263-2557 or twilcock@hotmail.ca

For Sale: Princess Sidecar, restored. Presently attached to a 1938 Indian 4. $29,500 for the sidecar. Located in Florida. Contact: Mike Grossberg, email: r985mike@yahoo.com

For Sale: Indian 438 $79,500. Mike Grossberg (904) 402-2774, email: r985mike@yahoo.com

For Sale: 41 Indian 4 cylinder. Numbers matching. Shows 16,000 Miles. Running. Plus 39-4 engine and all extra Indian Parts included. $74,000. Blair Duncan Dillsburg, Pa. Blabonrt@gmail.com or 717-796-9755 leave message & call back number.

For Sale: Longer side stand leg's and a stronger return spring. The legs are for 1932-39 Indian 4 Cylinders only. The leg is $ 80.00 and spring is $ 8.00 plus shipping. All parts are repro. Contact: Wally Krzyzanowski (574) 896-2695 or email: wjkindian@hughes.net

For Sale: 1940-45 Chief and 4 cylinder #42596 rear shock upper springs 2 for $ 20.00. And 1946-53 chief # 809015 rear shock upper springs 2 for $ 20.00 plus shipping. All parts are repro. Contact: Wally Krzyzanowski (574) 896-2695 or email: wjkindian@hughes.net

For Sale: 1930-1936 Indian 4 cylinder Simms magneto freshly rebuilt by Marks.
Contact: Mike Tillotson, Omaha, NE (402) 453-8185

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Elmer E. Lower - Restorer

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indnelmo@yahoo.com
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H: (717) 938-4004
C: (717) 379-2827

Wanted: Looking for a tire pump and a kick lever for a 1931 Indian 402. Please contact: Lincoln McIlravy email: lmcilravy@southslope.net

Wanted: Marvel 1663 carburetor for a 436 motorcycle. Contact: Colin, email: calinba11@yahoo.com

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Wanted: Looking for everything 1934 Indian Four. Have a 1936 frame to trade for 1934 frame. Please contact: Ray Sutton 419-204-4822

Wanted: 1933-1935 cylinders and intake. Will purchase outright or trade for earlier cylinders and intake. Tom Wilcock (905) 263-2557 or twilcock@hotmail.ca

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Indian FOUR
CYLINDER NEWS

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From the Indian 4 Club

TO: