

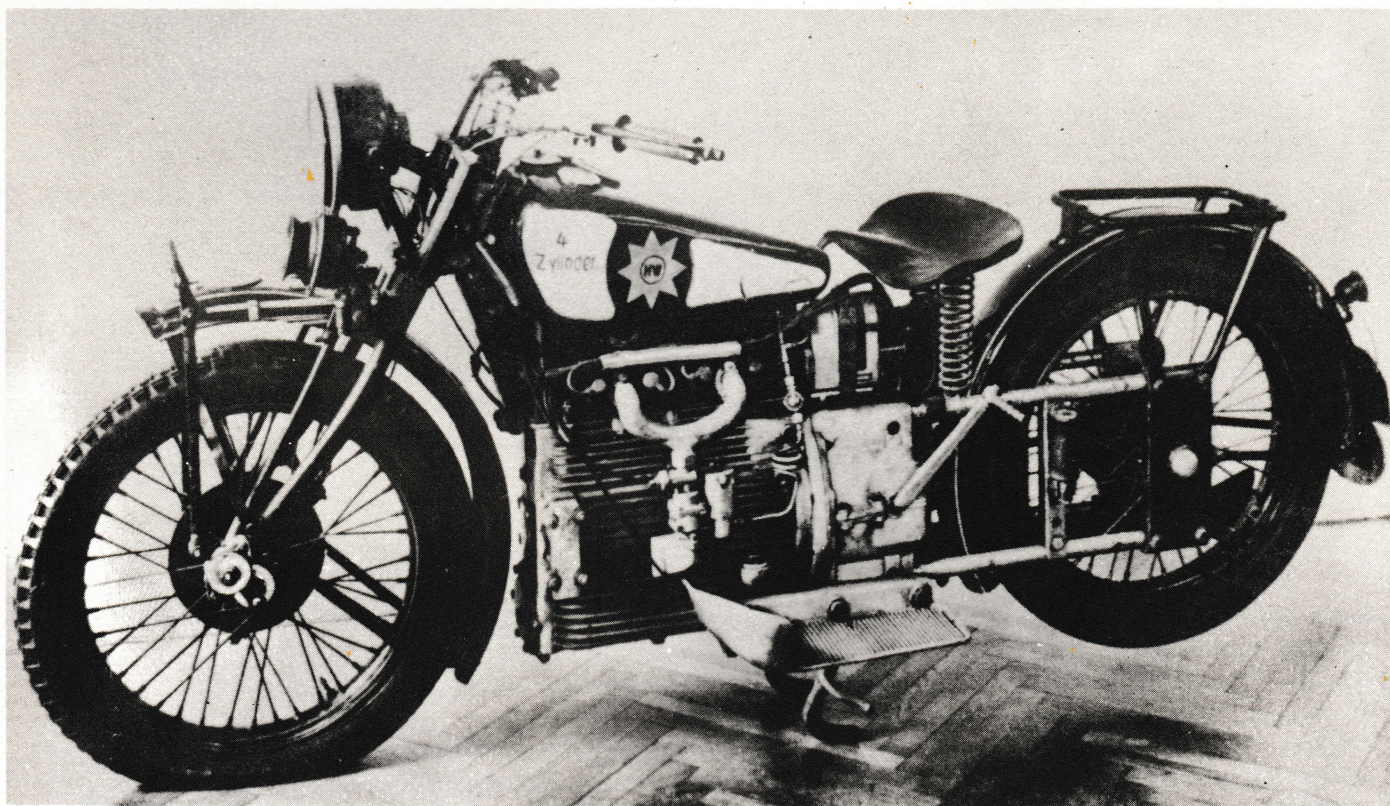
Indian



FOUR MOTORCYCLE NEWS

VOLUME 12 NUMBER 2

SUMMER ISSUE 1977



AMERICA'S MOST BEAUTIFUL MOTORCYCLES

PUBLISHED BY THE INDIAN FOUR CYLINDER CLUB, INC.
FOR ITS MEMBERS

C O N T E N T S

Editorial	1
June Meet	2 - 3
Letter from Tim Thomson, New Zealand . . .	4
The Windhoff Four	5 - 15
Mistic Metal For Cutting and Drilling . .	16 - 18
Bill Meade of Seattle, Washington	19
Mail List	20 - 24
Ads	25 - 28

Cover Picture

Although not an American Made Four, The Windhoff Four is a German made four from 1927 thru 1929. A very unuauual design yet capable of high speeds and used for racing. Pictures and letter were sent to us by Mr. Peter Wieg of Berlin Germany.
Is there a Windhoff Four anywhere in The U S.

The Indian Four Motorcycle News is published four times each year for the members of the Indian Four Cylinder Club Inc.. Price of the magazine is included in the membership fee of \$12.50 annual dues, mailed to the treasurer, Jim Cook, 3608 Reimer Road, Norton, Ohio 44203.

The Indian Four Club is a non-profit club, incorporated in the State of Ohio. The Indian Four News is published by Thomas J. Miles, Printing and Photography, RR 5 Box 2, Findlay, Ohio 45840. The Indian Four News is available to non-members for \$12.50 per year contribution or \$2.50 per single copy mailed to the treasurer. Applications for membership in the Indian Four Cylinder Club should be sent to the Treasurer.

Editorial

For the benefit of all our readers of the Indian Four News, we begin this issue with the announcement of our resignation as editor and publisher of the Four News. Resignation became effective at the 1977 Annual Meet after 9 years of continued service in publication of the News.

Our first issue was the Spring Four News of 1968 and 4 issues each year to date making a total of 36 issues of the Indian Four News including this, our last. Although we have never been a member of the Four Club, simply because I never owned a four and have never ridden a cycle in all my years. We became the publisher of the Four News at the request of our lat friend John Wickham whom I have known since childhood. My father and John worked together at the old Buckeye Traction Ditcher Plant here in Findlay.

John had taken over as editor in 1968 and served till 1970 when we assumed the post till the present date. We have seen the Club grow as the result of the Four News outreach to over 300 members and become international with members in 8 foreign countries.

Our experience had been mostly in the field of publication, layout and printing, but the job of editor put us into a field in which we were not familiar to write material for a motorcycle club and publish each quarter a 30 page News magazine. Our mistakes were many and we welcomed criticism to help us improve in the field of experience. Stories of various types came to us and we endeavoured to print them all. While we were busy printing a publication each quarter, we also held a full time job as offset operator at Marathon Oil Company. That plus serving in the ministry of the United Methodist Church. Never any dull moments.

On several ocassions, criticism requested that the material be changed to a more technical paper, a field in which we were not familiar. We often asked for anyone who wished to take over as editor to offer more qualified experience, but no one wanted the job. We felt the editor should above all things be a member of the club which would make him an owner of a four cylinder machine.

We had considered resigning long before but felt we could not let the club down till another editor was found.

Since we gave notice of our decision to resign last December, the Executive Committee appointed a committee to begin search. Jim Sutter of Aurora, Illinois was selected and offically appointed at the June Meet. He assumed the duties of editor at the Annual meet of 1977 as our resignation became effective. We were granted the right to publish the Summer issue right after the August meet and Jim is to publish the Fall issue.

Being Editor as long as we were, we were bound to learn something about the four cylinder motorcycle and being the history buffs we are, we can give from memory the history of the fours and all the Indians back to the first. With this issue, we extend our thanks to the membership and subscribers for your faith in our efforts these 9 years, plus your cooperation in materials sent in for publication. We will continue to attend the Annual Meets for we have many many friends we appreciate seeing each year.

Drop us a line - we'd appreciate hearing from you.

Mr. and Mrs. Thomas J. Miles
Editor and Publisher
Indian Four News

1977 JUNE MEET

The Indian Four Club had normally held its June meet at the same location as the Annual Meet, as was the experience at the Traveler's Club in Toledo, Ohio and the one year the Club met at the Dux Club at Lambertville, Michigan for both the June meet and the August meet.

For the past three years a combined meeting has been held or shared with the All American Indian Club with the All American meeting held on Saturday and the Indian Four Club meeting on Sunday. Expenses were shared by both clubs making meeting costs less expensive. However, for the 1977 June meet, the Indian Four Club was invited to meet with the All American Club at the Dux Club Grounds as guests of the All American Club. A vote had been taken at the 1976 Annual meet to hold the June meet at the Dux but at the regular date of the second Sunday of June. The invitation by the All American postponed the regular date to June 19, the latter part of June.

The registration for the meet shows 36 present but from report there were over 60 present. With two clubs present, a lot of activity in events was held and good participation. As we are now experiencing many more Flea Markets and both meets, wherever they are held, there seems to be a lot of parts springing up in many hands for all sorts of bikes. The meets are bringing out the owners to shop around for a good item at a good price. But there is one fact about with the Flea Market business, the older these bikes become, the more valuable the parts and the higher the price. We realize this only too well when we see a beautiful restored four and the price tag on it. A few years ago the owner may have bought several parts in the Flea Market and carefully restored the part and the total machine. Today many of these bikes are priced at a good profit.

Also present at the June meet was the Ladies Auxiliary and with their table of goodies. They now call themselves "the Teepee Tenders". They are doing a remarkable job organizing the women who come to the meets and enlisting many of them into joining the auxiliary. Any of the women who attend the meets need not have Club affiliation to be a member.

At the noonhour the business meeting was called to order by President Metzger
Present were Trustees - Dave Sloan and Ed Wolski

Directors - Jack Maurer, Northern Region
- Bob Aldrich - Michigan

Charter Members - Bob Aldrich, Homer Mahle, Percy Wallace, Dave Sloan,
Ed Wolski.

Officers present - Whitey Metzger, President - Bill Newhouse, Vice Pres.
Jim Cook, Treasurer - Ed Wolski, Sergeant at Arms,
Bob Aldrich, Referee - Dave Sloan, Area Rep. -
Cliff Olgesby, Librarian.

Registration revealed 24 members present and 13 guests.

Treasurer Jim Cook reported balance in Treasury as of June 19, 1977, \$1466.07
Saving Certificate \$500.00, leaving balance in treasury of \$1966.07

New Members received into the club were - Jack Yeck and Carl Jacobson.

President Metzger announced that Tom Miles, Editor and Publisher of the Indian Four News for the past 9 years has resigned as editor and publisher effective the Annual Meet in August 1977. No written contract was ever signed between he and the club, but in his letter of resignation agreed to publish one issue following the Annual Meet to help the new editor adjust to the job. President Metzger was giving authority to decide the cut off date. He decided that the one issue would work for a better transition between outgoing editor and the new editor.

At the business meeting held in April, committee was appointed to make inquiries and locate a printer. Fred Provin gave quotations from Ace News - \$785.00 and Kopy-it Printing - \$457.00. Jim Sutter presented a 16 page facsimile with printer's estimate of \$350.00 based on 300 copies. If this is extended to 400 copies the cost is \$450.00.

Jim Sutter had been asked to accept the position as editor and agreed to accept. On motion by Bill Newhouse, Jim Sutter of Aurora, Illinois was appointed editor of the Indian Four News. Seconded by Dave Sloan, motion carried.

Since 1976 the Club banner has been missing and President Metzger requested that anyone with information to its whereabouts to please contact the president.

Fair Grounds Expense

Insurance for the Seneca County Fair Grounds for the 1977 Annual Meet was not yet awarded and Fair Grounds officials suggested a \$5.00 weekend camping fee. Expense for the Fairgrounds for the meet are as follows - \$100.00 Grounds deposit fee, \$70.00, gate help committment, \$110 Insurance Certificate (Fair Board requirement), Food Concession Risk. Total for this expense for the two day meet is \$370.00.

The good side of the ledger provides plenty of grounds space for campers, flea markets and events. Grounds are dry, with available building for cycle shelter, excellent rest rooms and shower faculities, enclosed snack and eating area, and air conditioned meeting area large enough for all members to attend. Such accomodations cost for they are the finest yet. Going to Tiffin allowed the members to enjoy these fine accomodations and then weigh them above something of lesser accomodations. The feeling as generally been to stay with the Seneca County grounds.

The club ten year pins have not been promoted at each meet as formerly was the procedure and several were eligible to receive a pin. Motion was made by Jack Maurer that pins be made available to any member with 10 years concurrent membership. The pins may be ordered through Treasurer Jim Cook who has the record on the membership. Motion was seconded by Walley Enders, Motion carried.

The president noted that data pretaining to the coming annual meet was being published in the Spring Issue of the Four News.

The Business meeting was adjourned for the noon meal and afternoon activities.

Dr. Claude Walters Secretary
per H. G. Metzger

Member in New Zealand

Tim Thomson of Otago, New Zealand owns a modified Four and is looking for parts to restore his Indian Ace to original. We have an ad in the Ad Section for the parts he desires. He tells in his letter of their National Motorcycle Rally held in Blenheim, New Zealand.

The meet was held in March (late summer in New Zealand), with approx. 250 motorcycles present. Of the 250, 30 were Indians, 2 Indian fours, 1 Ace and 5 Hendersons. The Rally is a three day affair with competition runs on Saturday, a Picnic run combined with field trials on through Sunday. The rally is followed by a 1000 mile tour of the south Island of New Zealand and ends in Christchurch, New Zealand for another rally held in Christchurch. About 20 different cycles set off on this 1000 mile ride. My 1938 Four, a 1918 Henderson and a 1925 Henderson formed a group among the entrants. Others on the long ride were, 1918 Power Plus, 1942 Army Indians. The 1000 mile took us down the scenic west coast of New Zealand, mountains, glaciers, rain forest and Alpine lakes. This area of New Zealand is renown for its hospitality, every stopping point lunches were served and plenty of ale to wash it down. Daily milage varied from 1 - 200 miles and plenty of stops in the scenic areas.

(editor's Note - An idea for an Indian Four Meet. The Four owners could start out on a trip on Monday and send their wives home with the campers.)

There are 4 restored Indian fours in New Zealand, there are several other Indians but not restored. Quite a number of restored Hendersons and several restored Ace Fours. To my knowlege, there are no Cleveland Fours here.

1927 Indian Ace - Norman Hayes

1925 Indian four - Keith Staples

1938 Indian four - John Williams (this bike belonged to Pat Wood, once a member of the Indian Four Club)

I came to Australia in May and since then have been teaching in Melbourne. I purchased my BMW as transportation. Since arriving here, I've located and purchased an Indian Ace or 401, not sure which it is, as it has been modified. It has Henderson forks and handle bars. There is a complete spare engine and a complete Henderson frame (1925) forks, front guard came with it. The engine numbers are - D 8794 and CA 837. Can anyone help me with specific dates for the motors. The top tube of the frame has been cut out and bent so that it sports a pair of Harley Davidson tanks. The motor runs quite well, considering its been setting for 12 years.

I'll be looking for original forks and tank and headlight, if any members can help me.

Well, thats about all the news from "down under"

Kind regards

Tim Thomson
C/O 50 Taylors Mistake Rd
Christchurch 8 New Zealand

P S - editorial - Maybe Tim would explain what is meant by Taylors Mistake Rd.

An Usual Four

We stated in the Spring issue we would print a story sent to us by Mr. Peter Wieg of Berlin Germany, of a very different four cylinder motorcycle, although it is not an American made four.

The Indian four, not an original by the Indian Motorcycle Company, was a closing chapter on the fours built in this country, that started with the ambitious Will Henderson around 1912, after the Belgium F N, further developed the Ace and finally taken over by the Indian Company and produced until 1942 into one of America's most beautiful motorcycle.

The Henderson, Ace, Indian, Cleveland, Pierce and Militaire, all started with one design in common - single cast cylinders bolted to the upper case. Indian later designed this by paring two cylinders to a unit and bolting to the upper case. This was the extent of the four cylinder engines in the United States.

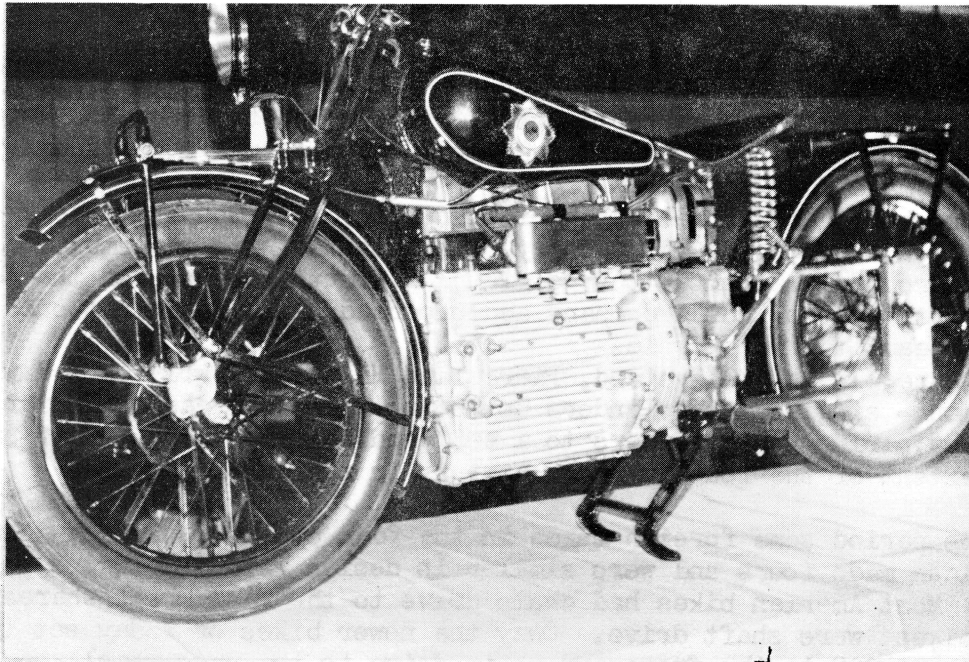
During the same period some foreign makes in the four cylinder variety competed with the American made fours and were similar in design with the engine parallel to the frame. Most American bikes had chain drive to the rear wheel whereas some foreign bikes were shaft drive. Only the newer bikes of today set the four cylinder motors at 90° to the frame and chain drive to the rear wheel.

One old cycle which we might call a rare bird, was little or never heard of in this country, called the WINDHOFF, made in Germany. Engines to German inventors was just as much obsession as motor cars were to American inventors. Windhoff had to be different and designed the unusual, but also what he believed to be the most practical. Most American fours used the same upper case design, cast of aluminum, cast cylinders, and aluminum lower case. Each cylinder was cast singly and separate cast heads. We once heard that all upper and lower cases for all American four's were cast in the same foundry in Milwaukee, Wisconsin. We do know that Atlas Crankshaft of Fostoria, Ohio, made crankshafts for either Indian or Henderson machines.

Windhoff made an even greater use of the lightness of aluminum by casting his entire engine of Aluminum. It was cast in two pieces vertically or split from top to bottom, making left half and right half. It was valve in head which was cast iron, and sleeve cylinders of steel. The entire outside of each half was cooling fins and the inside designed for oil cooling. A three main crank of heavy forged metal and what appears to be ball bearings for mains and rod bearings. The gear train was at the front to power the cam shaft on the top and the oil pump at the bottom. Like most motorcycles, the ability of the design and its power, was often decided on the race track or cross country run. Most fours, even though considered the most powerful with two extra cylinders, didn't always prove out too well on the track or the cross country run on the account of their extra weight and low slung pan. We stated that it had oil cooling and racers found that the machine overheated.

The Windhoff Company was short lived, for they built machines for two years, from 1927 to 1929. Like the automobile races in this country often decides new tire designs or many other new designs, the racers found the cooling problem. The company produced about 1000 machines.

From the pictures on the succeeding pages we see in one the heavy forged crank with just three main bearings. Rod and Main bearings appear to be heavy roller type with large circumference rods all in one piece. The rods are apparently held in place with small square blocks that bolt to the crank at either side. In the picture, number 4 rod has been removed and the outside block is also removed. We are unable

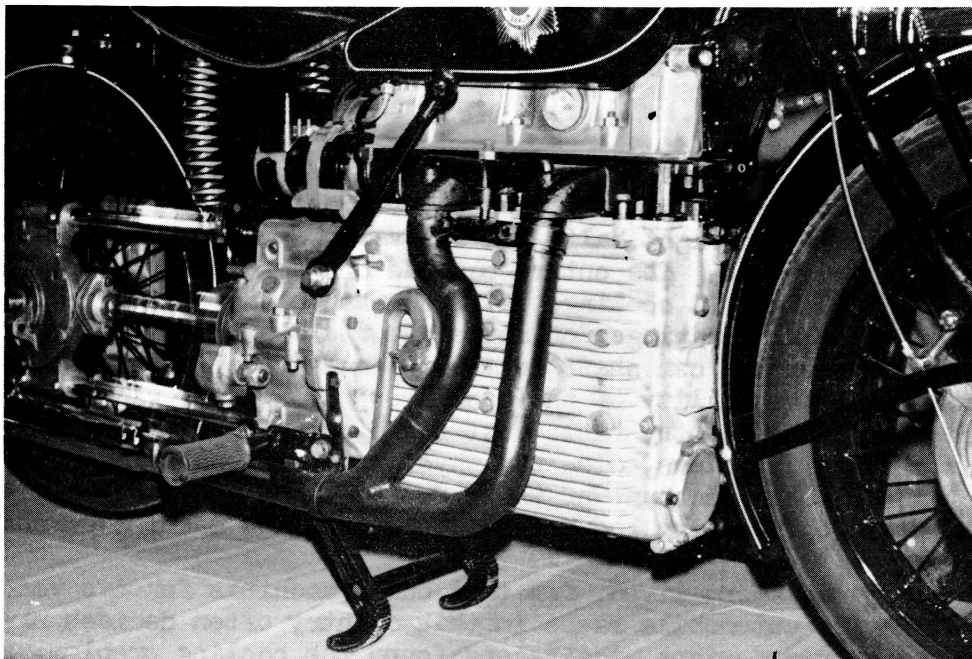


A very beautiful and unique four Cylinder Motorcycle

THE WINDHOFF FOUR

Possibly modified for racing

The Germans were great believers in the flat or pancake engines - least resistance. This is surely just the opposite.



Quite different from most American built fours - the exhaust is on the opposite side. Shows the fork mounting to the valve cover and top front of engine.

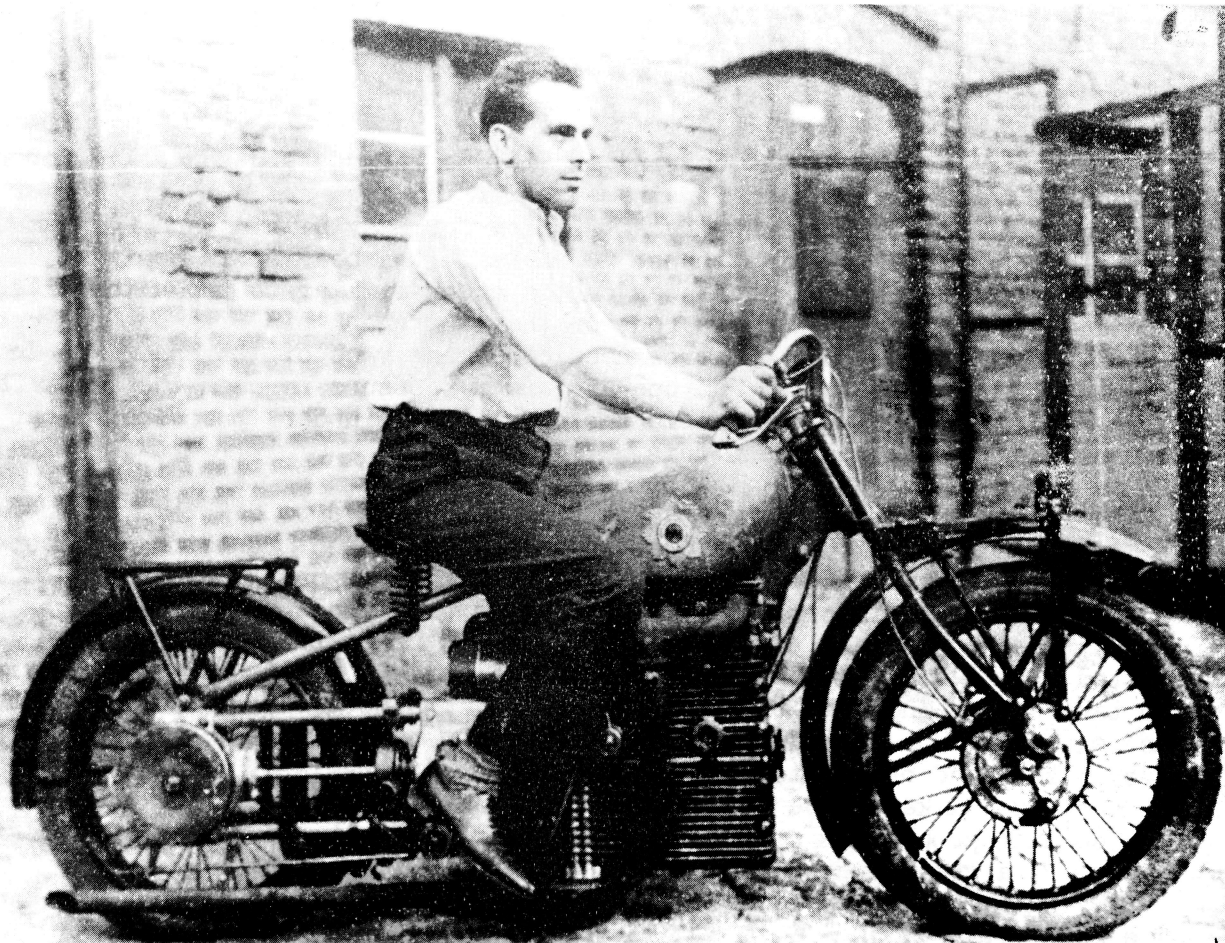
to detect if the rod at the bearing end is open at one side or solid for removal. Evidently shoulder surfaces for these roller bearings are slightly larger than the sections between the shoulders to allow for easy bearing and rod removal. The blocks must be for side thrust to maintain the bearing in position. The Indian four is made with bearing surfaces on the crank similar to the automobile, the Indian Chief and Scout has two rods on the same crank pin with one rod cut into the other. Each segment has a narrow needle bearing race of its own. The Indian four bearings are rather sealed and operate under pressure through the crank, but how would this ball bearings arrangement in the open operate under pressure. What do our technicians have to say about this.

If our observations are correct, the crank would have to be removed from the case to remove the rods. Once the case is unbolted, the entire motor falls apart and to reassemble, rods would have to be in place on the crank, pistons on the rods, and cylinders on the pistons. Then carefully lay the whole train in the one half of the case. The entire gear train would be in place up to the head, then the other half bolted into place. So what we are saying is this - if the gas tank can be removed, to take out the head bolts, only one half of the motor case would have to be removed and out falls the cylinders, crank and the rods and pistons. You can't do a four that easy. Yes, and only remove two bolts from the transmission and just leave it in tact. It may sound like a Rube Goldberg, but the machine sold a 1000 copies, and except for the cooling problem in racing, for ordinary riding, it had great possibilities. Remember, a great many more chiefs were sold over the Indian fours.

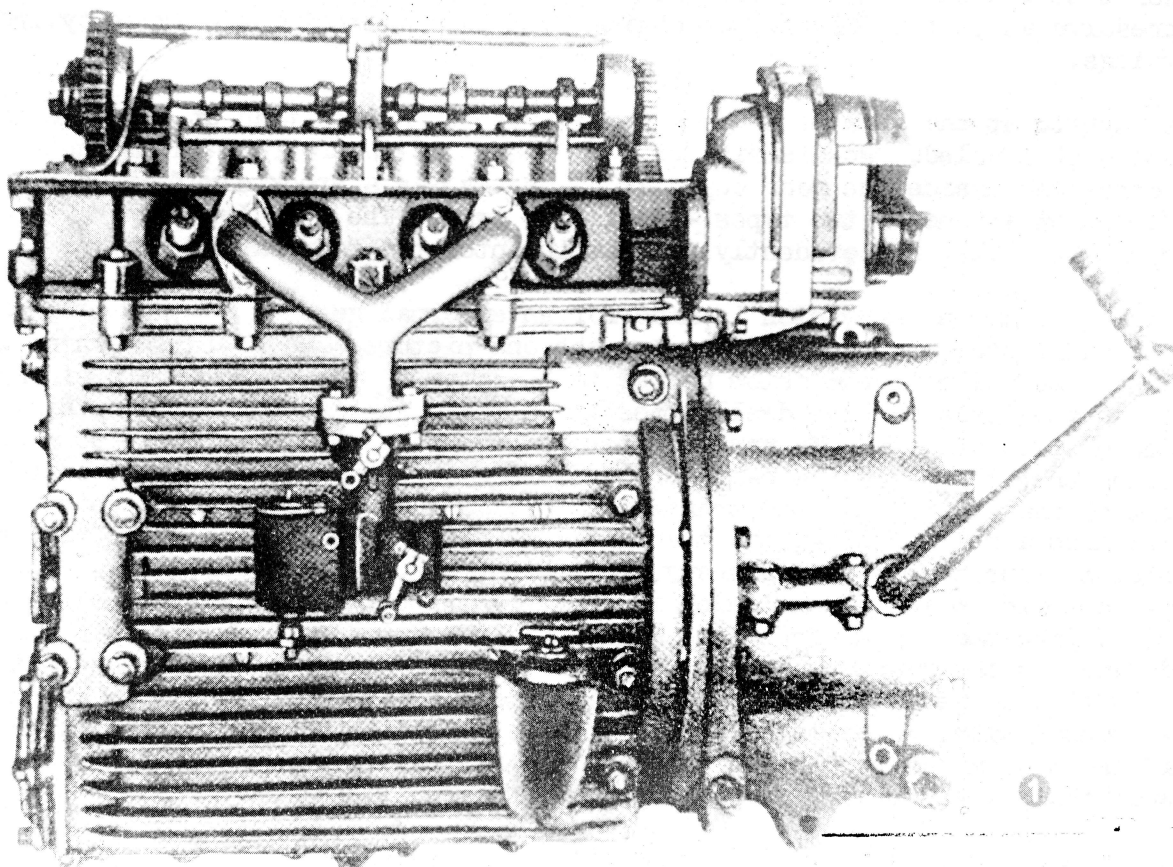
The gear train at the front end of the engine operated the oil pump below and one or more gears to the overhead cam shaft. At the rear of the shaft is the gear for the magneto. Maybe in some future issue, the technical editor might do an article on whether it is technically true or just believed, that overhead cams produce more power than L head engines. The photos showing the engine in the bike are very impressive as is the Indian four engine with those towering two large cylinder castings.

The magneto at the back of the engine is less vulnerable than at the side and is geared instead of coupled. No distributor cap is seen at the rear of the magneto and must be concealed inside the rear cap. It evidently was a stock manufacture of that day. Carburetion is one of two types - single or twin. The twin type may have been used for racing. They had evidently not yet invented the four barrel type.

In the gear train, provision is made for an external gear at the front of the engine for a super charger drive as shown on the one picture. Maybe this machine was ahead of its time. The transmission bolted to the rear of the engine and performs a two-fold duty. Since we have dwelled mostly on the motor, we have said nothing about the frame of this machine. We want to look at this part more completely so will only mention that the engine is part of the frame with a special fork unit bolted to the front of the engine, and the transmission is part of the rear frame unit. Built like a bell housing, the transmission is suspended in the outer ring which contains four mountings for heavy shafts that support the rear wheel. The shaft drive coupled to the transmission in a coupling that looks almost like the distributor cap. Unlike the Indian four, the Windhoff has a dry clutch and is operated by the hand lever to the rear, right hand side of the engine. This would suggest there was no shifting of gears from start up to top speed. With no pictures to see the inside of the transmission, we could only guess that it might have had a sort of automatic shifting that moved into high gear from centrifical force. Regardless, Mr. Wieg states that it was a very fast motorcycle.



61 cu. in. racing model 1929 with drive gear for supercharged version. Located, lower front of motor.



THE WINDHOFF MOTOR

The kick start on the transmission suggests that it was not an electric start, and the gear shift, that it was not a foot shift.

Newer bikes of today are not built as rugged as the fours and the Chiefs with the heavy metal frame, but this bike is unusual with the engine and transmission as part of the frame. The fork is somewhat like that of the Indian four with the leaf spring to absorb the shock, and appears almost as heavy.

You four critics will not appreciate the post mount bolted to the front of the engine and no down tubes or separate frame to the rear wheels. The optional foot boards or foot rest were simply for the feet for there is no foot brakes or clutch peddal or shifting peddal. Flexible cables from the handle bars controlled the gas, and the breaking. This bike evidently had plenty of torque, to start out and increase speed up to 100 miles an hour. A hand clutch could slip the machine into start out and then full clutch to increase speed with the gas lever.

We have already stated the rear wheel is supported by support shafts from the transmission. Two shaft mountings on each side of the wheel, securely fastened in the transmission and a mount on either side of the rear wheel. This also gives the impression that it would not match the frame of the four, but again, it reduced weight. The shaft drive is driven from gears from within the transmission and drives a pinion inside the rear mounting. Fully enclosed gears gives better lubrication. We noticed in the picture in which the gentleman is seat on the machine an additional tubing brace from under the seat to the rear wheel mount. This is not unusual to do if the bike is used for racing, for Indian beefed up their racing bikes in motor and frame which was not standard on all models. The famous T T Indians with the twin engine were specially built for the English races.

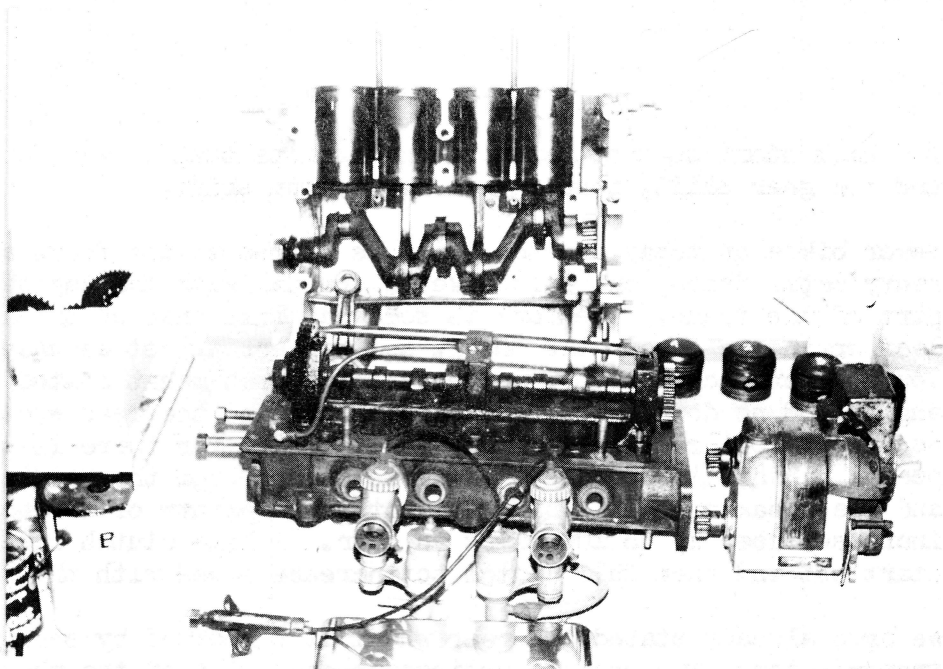
Variations was also found in the exhaust on the Windhoff. One picture shows a four outlet exhaust manifold connected to one exhaust pipe, but another shows small manifold covering two outlets and two down pipes, and both connected one exhaust pipe. Whether or not all this is true origional we do not know, for some of it appears as though it was modified for racing.

Even though production of this bike last only two years, 1000 were built and put into the German market and withstood many years of service. Modifications were probably many and origional parts lost, yet many still in existance in origional shape. We learned from our friend Hans Arendt, also of Berlin, any road vehicle must be in good operating shape or it cannot be driven on the highways.

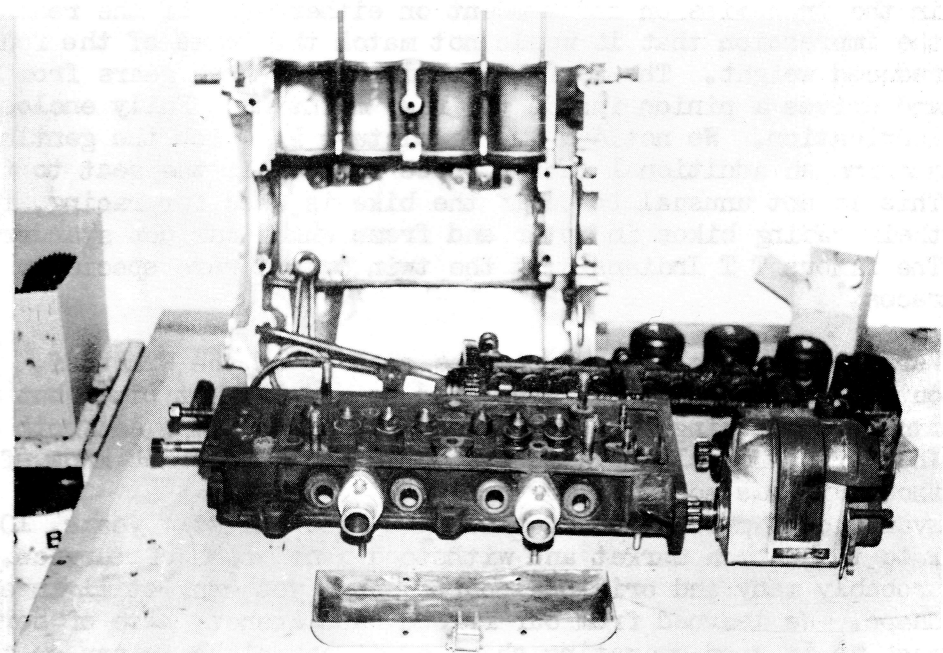
Home builds are not permitted and any modification for a highway vehicle under the same laws. All vehicles must be of factory production to assure highway safety. A VW is a safe vehicle ? They must send all they make to the U S.

The Windhoff would be a unique machine to own and a very interesting engine to dismantle and reassemble. We appreciate Mr. Wieg's effort to assemble the large number of pictures and the technical data on this machine. We are sure that he will appreciate seeing his material in the Indian Four News as he sent it to us.

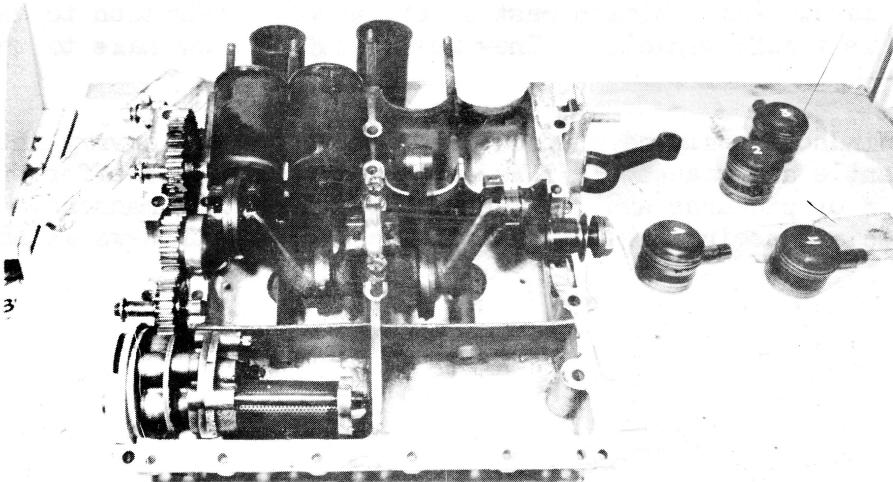
Dis-assembled motor showing
lineup of cylinder, rods
and crank.
Head with cam and magnito.
Shows twin carbs.



Empty case and head without
cam assembly.



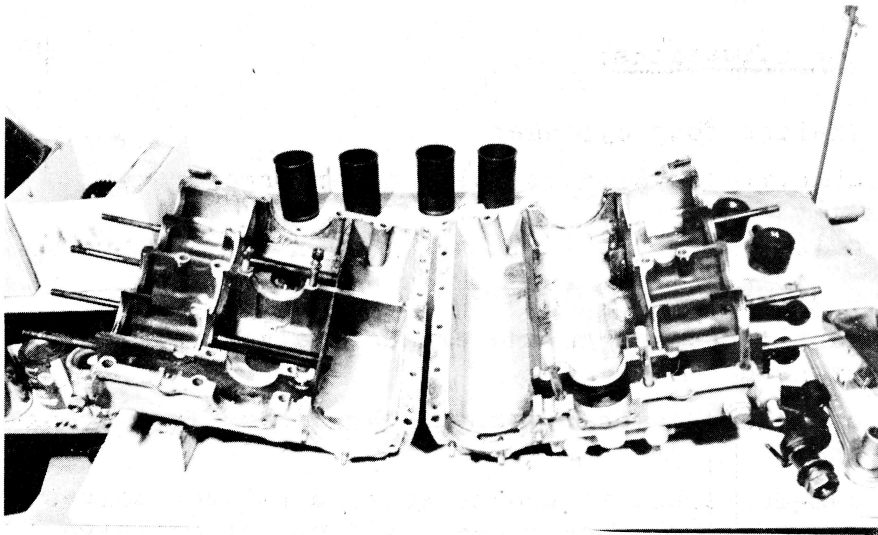
One half motor case with
sleeve cylinders, crank,
gear train and oil pump.
Pistons and wrist pins.



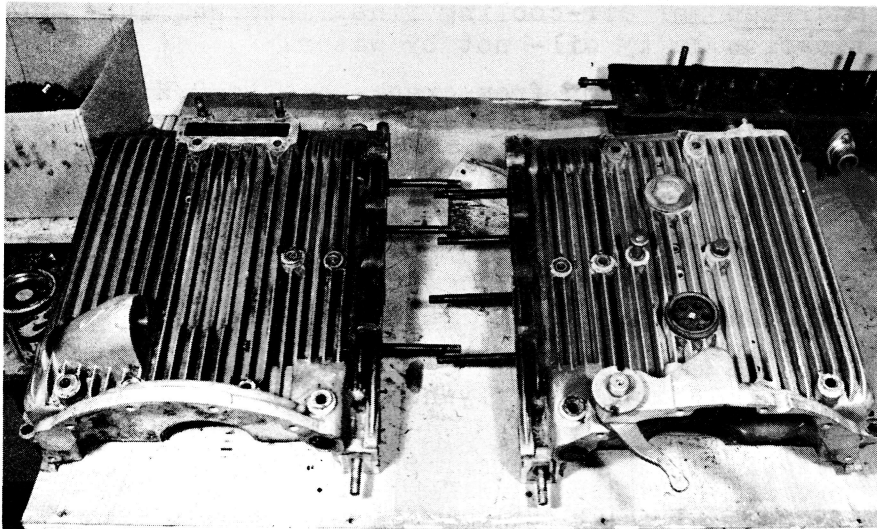
Specifications:

Motor : In-line four cylinder
Displacement : 45 c.i. and 61 c.i. (also supercharged racing model)
Bore : 2 1/2" 2 1/2"
Stroke : 2 3/8" 3 1/8"
Head : cast iron, intake and exhaust valves vertical in head
Camshaft : over-head camshaft driven thru gears from crank-shaft
Valve operation : cam-followers in bronze housing between valves and cams- no rocker arms. Adjustmant of valve tappets by inserting plates of necessary thickness in cam-follower
Cooling : Cylinder Block like Motor Car Block but with addition of air-cooling fins. Internal lubrication is by oil- not by water.
Oil Pump : 45 c.i. - oil pump from crank-case to O.H.C. - then gravity
61 c.i. - same as 45 c.i. but additional pressure feed to all main and big end bearings.
Oil Capacity : 45 c. i. about 1 U.S. gallon
61 c. i. about 5 quarts
Bearings : 3 main, 4 big end and 3 camshaft bearings, all roller
Clutch : multiple disc in dry flywheel
Gears : 3
Final Drive : shaft drive
Frame : No middle frame. Steel casted steering head fixed on front of motor and 4 steel pipes- that's the rear end- fixed on back of gear box
Top Speed : 45 c. i. about 85 miles p. h.
61 c. i. about 100 miles p. h.

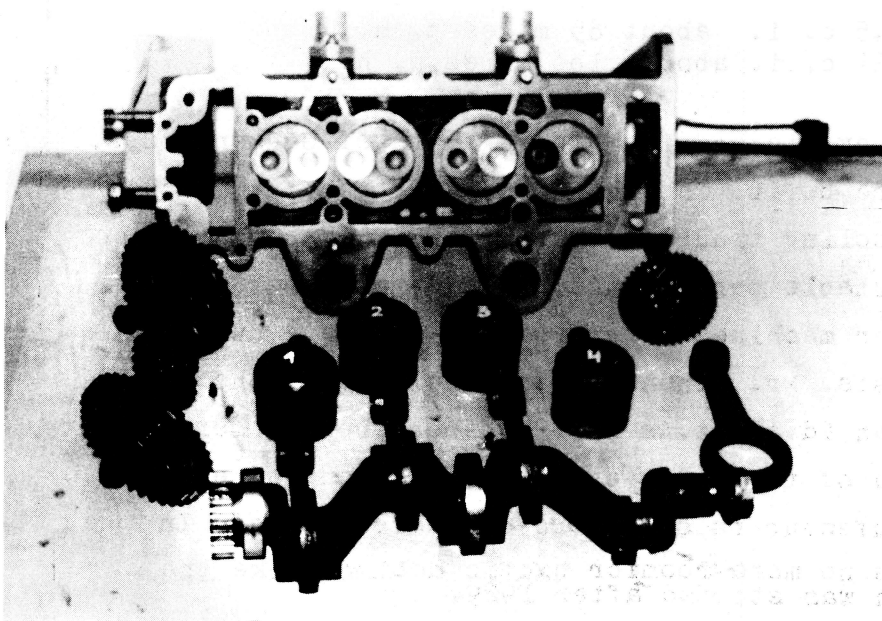
The Windhoff was an exotic and isolated example of German Fours. Only about 1.000 were built. Though it was very fast, in races it seemed to have cooling troubles. But in every day's service it gave good and reliable performance. In contrast to USA in Germany four cylinder machines were produced in small numbers by, and for, idealists. Mr. Windhoff- the designer of the Windhoff Four was such an idealist. As life became more and more difficult at the end of the twenties thru inflation and economic crises many manufacturers of motorcycles disappeared. In those years there was no more room for exotic designs like the Windhoff. Production was stopped after 1929.



Motor halves showing
inside compartments



Motor halves showing
outside cooling fins



Underside of head -
Gears of gear train -
Crank, rods and pistons.

The Windhoff Story

A short time ago I was visiting an old friend of mine who has a small shop in Berlin-Kreuzberg, a largely Turkish area of West-Berlin today.

Since the twenties he has been collecting everything that had something to do with motorcycles. And today he would probably possess the most wonderful collection, had not the war come. During the war he had to give away most of the frames for scrap because the Nazis needed iron for weapons. He could keep only engines and is selling them since people are more and more interested in antique machineries.

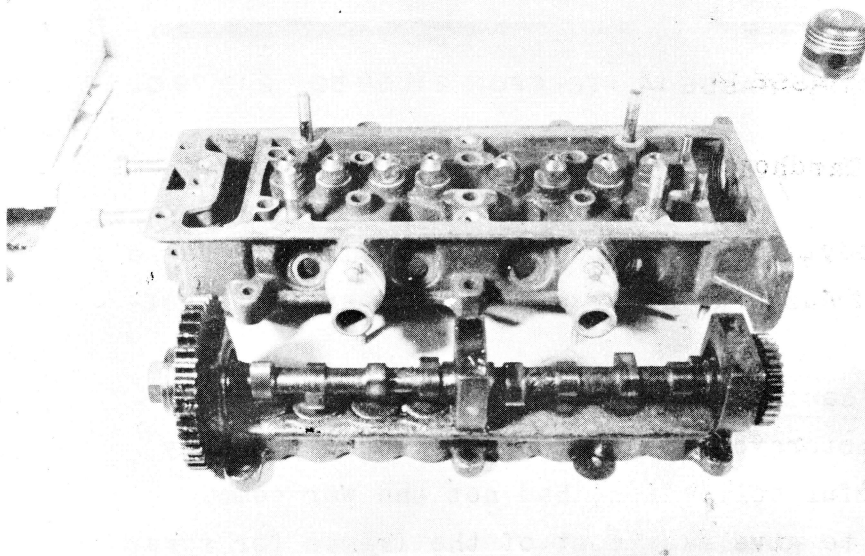
As he was an Indian rider in earlier days and is an Indian fan in heart like me it was not difficult to make friends with him. He allowed me to search all over his stock for Indian parts and I purchased all I have found. He never owned an Indian Four but original Scout and Chief accessories, lamps, speedos, wheels, frame parts etc. are valuable because they are suitable for Fours, thanks to standardisation efforts of the Indian Company.

At one of my last visits he again allowed me to go searching his stocks. I had climbed on a pile of gearboxes and crankcase-halves and sat there trying to identify the parts when suddenly an odd looking four cylinder head came into my hands. At first I thought that this was from a car but then I remembered that my friend was only interested in motorcycles and so it should be of a four cylinder motorcycle. I suddenly realized that the cylinder head I had in my hands was of the famous Windhoff motorcycle - an oil cooled in-line four - built in the twenties in Berlin.

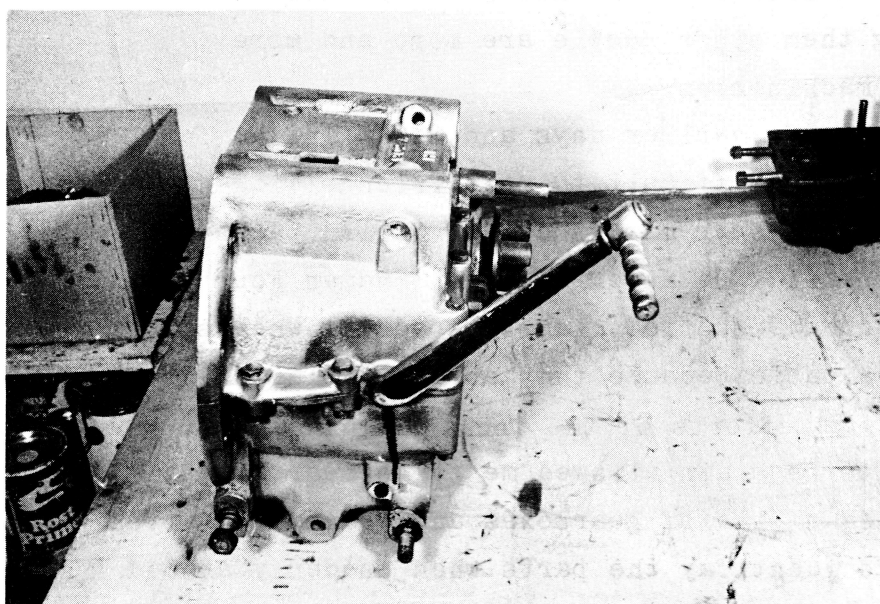
After having searched all rooms carefully I had found a Windhoff almost complete.

This motorcycle is so interesting that I decided to let you know the construction details.

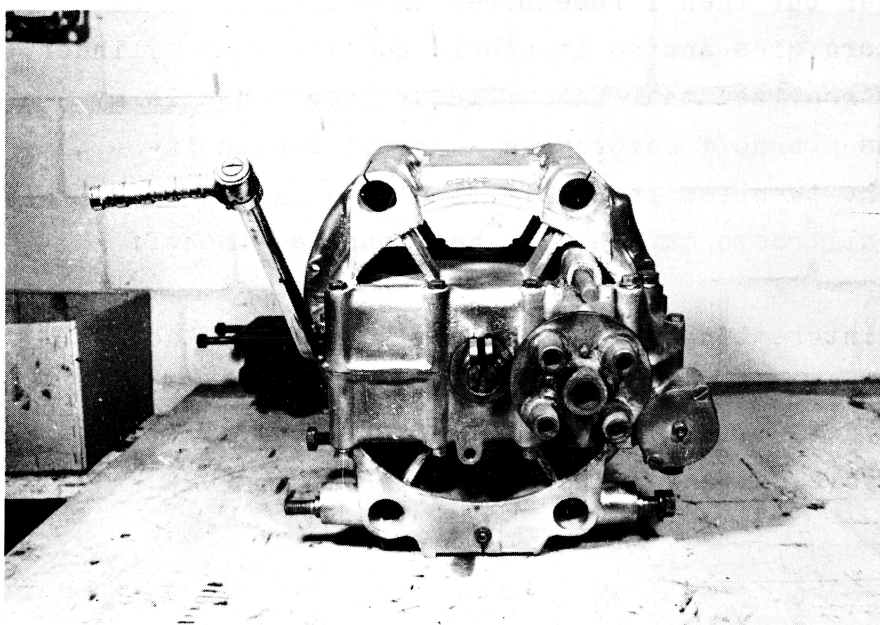
Here are the technical data of the exotic Four built by the Windhoff Motorcycle Company in Berlin from 1927 to 1929 :



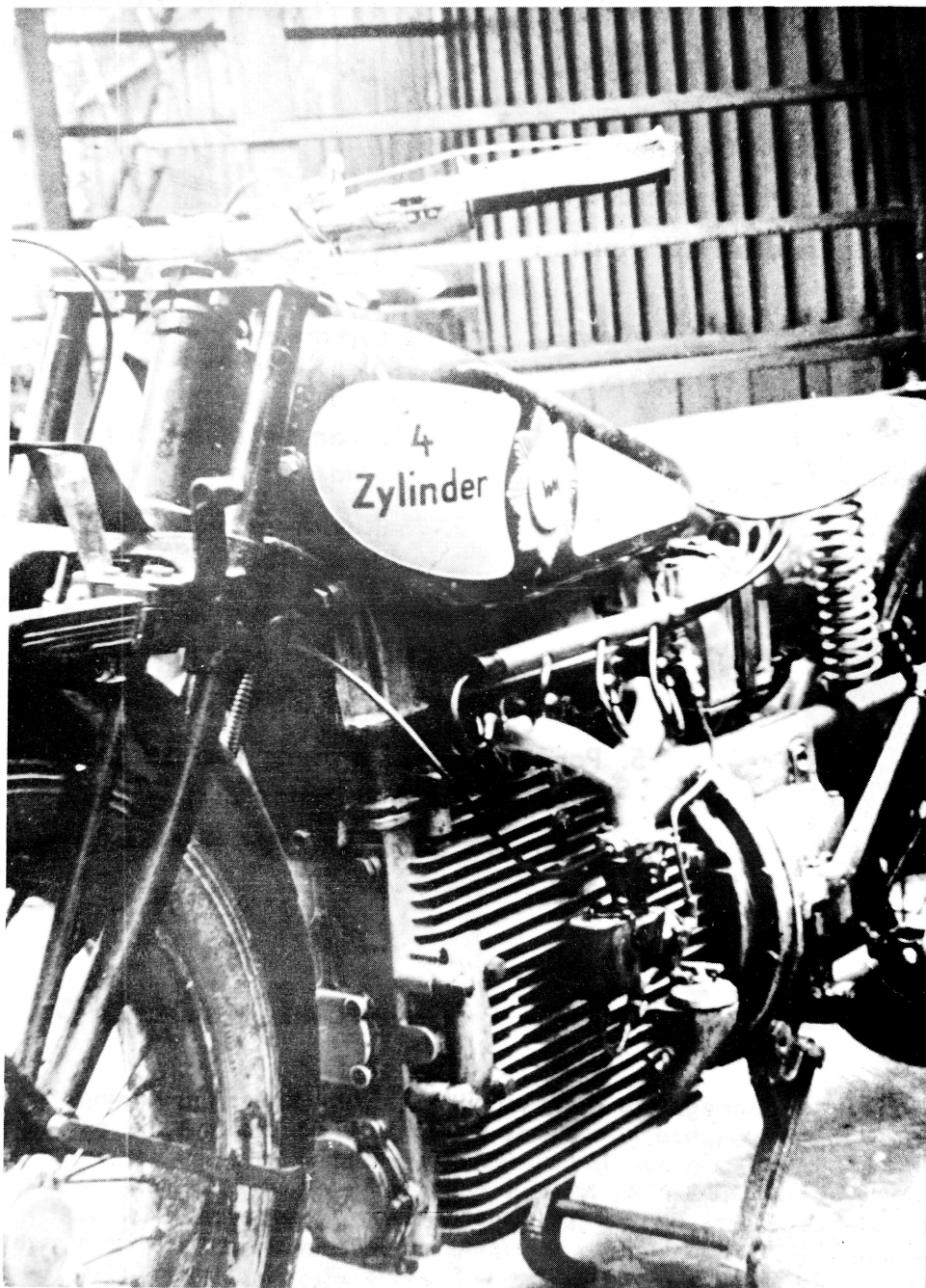
Head and Cam assembly



Transmission and Foot
start



Rear of transmission and
outer mounting for rear
wheel assembly -
Coupling for shaft drive.



Depends on what your Nationality is, how you spell C Y L I N D E R

Add our comments to the 2 page letters sent with the pictures, plus the 1000 words each picture tells, and you have quite a story on the Windhoff 4 Cylinder motorcycle.

Our thanks again to Peter Wieg for this fine contribution to the Indian Four News

MISTIC METAL MOVER

Tools Sail Through Metal

A cutting fluid that lubricates to the point of cutting down heat, giving increased tool life, closer tolerance, and a finer finish.

APPROVED
U. S. Navy



MISTIC METAL MOVER

1. Can be added to high sulphur cutting oil for improved cutting ability.
2. Makes drilling of 304 Stainless possible with a dull drill bit.
3. Makes it possible to press a tight bearing without gauling or jumping.
4. Evaporates and leaves no contamination.
5. Penetrates and softens rust for quick removal of rusted and frozen parts.
6. Has no fire point and no flash point and will not conduct electricity.

HOW TO USE FOR BEST RESULTS

When drilling, tapping, boring, broaching, milling, sawing, threading, turning, or filing, MISTIC METAL MOVER should be applied in a steady stream. A pin hole in the spout will give you enough flow to drill a one inch hole in two inches of stainless, or a piece of grader blade, without the bit getting hot. MISTIC METAL MOVER will remove oil from metal surfaces so a protective coating should be added after use to protect from rust. A pint of MISTIC METAL MOVER, added to a gallon and a half of sulphur pipe threading oil, will improve the thread cutting ability of the oil a great deal for about four hours. It will eventually evaporate out and more will have to be added for best results. Do not use MISTIC METAL MOVER on ALUMINUM. Use ALUMICUT, the best cutting oil, by far, on the market today. ALUMICUT works on ALUMINUM where all other cutting oils fail, because it stops all pile-up on tools.

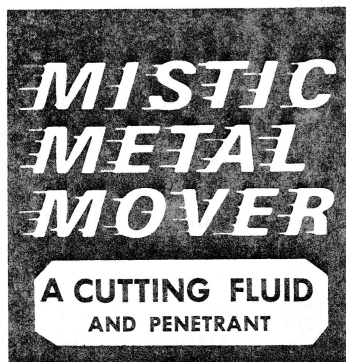
Some users of MISTIC METAL MOVER are: J & L, Boeing, Eastman-Gelatine, De Laval, Philco-Ford, Bendix, All American Engineering, RCA, XEROX, Weston Instruments, Bethlehem Steel, Union Carbide, Rock Island Arsenal, National Aeronautical & Space Administration, FMC Corp. Winchester-Western, Allison Div. of General Motors, and many, many more.

CONTAINS NO OIL

NO CONTAMINATION

Mechanics - Repairmen - Servicemen Metalworkers - Electricians

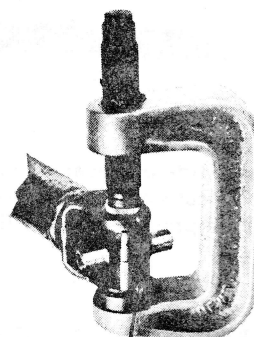
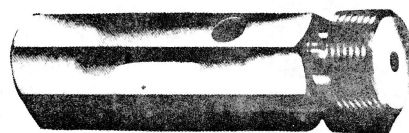
GET the Can with 100 uses — MOVES METAL IN MANY WAYS



ALL METALS
EXCEPT
ALUMINUM

IS
SLICK

HOLD THAT TOLERANCE



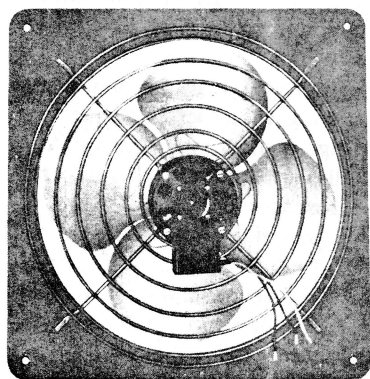
CUT PIPE
THE EASY WAY



SLIP IN EASY
STAY IN TIGHT

WILL NOT CONDUCT ELECTRICITY **SAFE**
NO FIRE POINT — NO FLASH POINT
IT DOES NOT CONTAIN CARBONTETRACHLORIDE

PUT THE RUSTY ONES BACK TO WORK



CLEAN GUMMED UP MOTORS

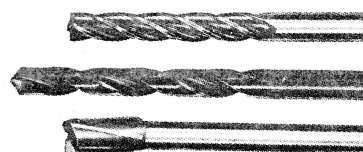
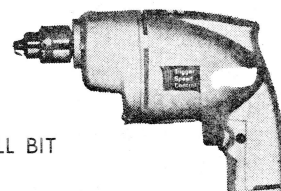


CLEAN GUMMED
UP CHUCKS

DRILL FASTER & EASIER

WHILE BITS LAST LONGER

DRILL STAINLESS WITH A DULL BIT



SAVE DOWN TIME



DIES LAST LONGER

TAP THE TOUGH ONES TOO

CUTS BETTER THREADS EASIER

SOLD BY:

MISTIC METAL MOVER, INC.

RR2

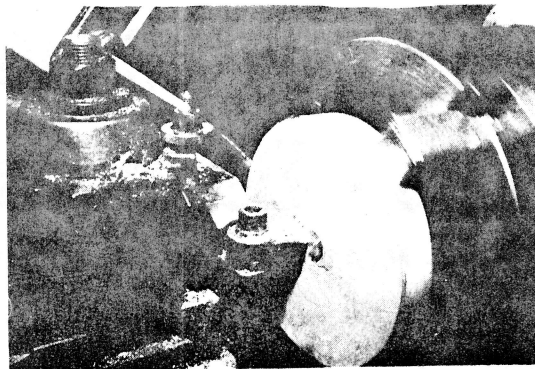
P. O. BOX 336

PRINCETON, ILLINOIS 61356

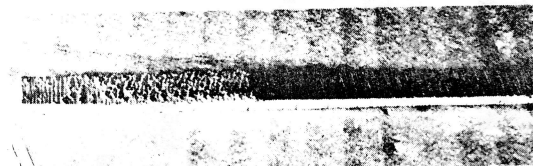
AREA 815/875-1371



Routing and milling soft aluminum result in metal sticking to cutting tools and piling up—unless you use an engineered cutting lubricant.



The special cutting lubricant can be misted, recirculated or applied directly—as it is here—to prevent metal pile-up as tool and workpiece heat up from cutting pressure.



Right side of sawed aluminum plate shows where Alumicut stopped pile-up and let a wood-cutting blade produce a good finish, for such a tool.

Clean-cut aluminum machining

Aluminum was the original aerospace metal; and it still is a leading material for aircraft—and other—construction. While soft and easy to work, it is hard to cut cleanly—without seizing and galling—unless you use a chemically engineered lubricant.

MACHINISTS have known for a long time that aluminum—especially in the soft grades—tends to stick to cutting-tool metals when they get hot. This trait causes galling and tearing, ruined finish and out-of-tolerance work. Routing is almost impossible with soft aluminum, and drilling deep small-diameter holes in it has always been a machinist's nightmare.

For years, most shops used kerosene as a cutting oil for aluminum—and it was an improvement over other machining fluids they had been using. Today, many metalworking manufacturers swear by a metal-cutting lubricant called Alumicut for drilling, tapping, sawing, fly cutting, milling—any operation used to cut aluminum or other metals.

Its manufacturer, Mistec Metal Mover, Inc., says the fluid can be misted, recirculated or applied directly—and can be expected to increase tool life about five times. Mr. D. K. Thompson, Mistec's president, reports that in one test, coating with this liquid

made a belt sander last 15 minutes instead of 3.

Lab analysis

An aeronautical laboratory performed independent tests on this "oil" and published a technical report of its findings. Here are some of the significant highlights:

"Analysis indicates that this liquid is made up primarily of animal fats and oils with an aliphatic thinner added to maintain fluidity. The formulation contains no chlorinated hydrocarbons; and it is not corrosive to aluminum, steel, magnesium, or titanium.

"Tests showed it nontoxic and non-irritating. Continued exposure to the lubricant should not cause drying or cracking of the skin. And its odor proved inoffensive.

"This product will not ignite at room temperature; however, if heated to 190 F and exposed to an open flame, it will ignite and continue to support its own combustion until consumed. The

flame thus produced is sooty, has a relatively low temperature, and does not constitute an undue fire hazard.

"This cutting lubricant is not water emulsifiable, but it is easily solubilized with most industrial solvents. Vapor degreasing readily removes it from any metallic surface, even after extended exposure to high-temperature drying conditions such as 10 hours at 250 F.

"On the basis of the various tests performed, we conclude that Alumicut has no property that would render it unsuitable for shop use."

Results

A National Bureau of Standards institute reports on a sawing job as follows: "We recently sawed a segment from a \$3800 pure aluminum crystal, using fluid Alumicut as a lubricant. We were successful in cutting a piece $\frac{7}{16}$ " x 5" x 7" from the 5" x 5" x 7" crystal. We then cut the segment into $\frac{7}{16}$ " x $\frac{7}{16}$ " strips. All these cuts were made with a Do-ALL Contourmatic band saw equipped with a $\frac{1}{2}$ "-wide Do-ALL blade. We set the table pressure at No. 4, used a very slow table feed, and ran the saw at 50 band fpm. The finished strips showed no sign of contamination or of chip galling on the sawed surfaces."

A metallurgical research lab says, "Your cutting fluid performed in an outstanding manner in drilling 4"-deep small-diameter holes in aluminum for an aerospace component." And a computer manufacturer wrote in to say, "We find that Alumicut works quite effectively in punching, blanking, drilling and tapping aluminum parts for computer hardware."

An engineering plant manager tried the lubricant on castings and sent in this reaction: "Thanks for solving a problem that has been bugging me . . . how to get a top-quality finish when machining aluminum sand castings. I tried Alumicut . . . with amazing results; the finish appears to be honed or polished. And I have noted a substantial increase in cutting-tool life."

Motorcycle nut likes ancient, easy riders



BILL MEADE is a self-admitted motorcycle nut, but you won't see him tooling cross-country on a chrome-plated "hog." Meade repairs ancient motorcycles, the newest of which were manufactured in the 1940s.

more than a bicycle frame with engine attached. Its drive chain was a bicycle chain wrapped in rawhide to give it traction.

Near the Autobi is one of Meade's restoration successes — a 1911 Wagner. It was a motorcycle whose designers decided to retain bicycle pedals so that an unfortunate rider who ran out of gas miles from home could always get back by foot power. (This kind of bike is making a comeback today as more and more states approve the use of so-called "mopeds," or bicycles with small motors and pedals.)

Meade's pursuit of rusting frames and corroded tailpipes gives him an intuitive sense about whether an area is "bike country."

SEATTLE (AP) — Bill Meade is a self-admitted motorcycle nut, but you won't be seeing him tooling cross-country on a chrome-plated "hog."

If he is a wild one, it is of an earlier, slower, smokier, bumpier generation.

Meade repairs and rides ancient motorcycles.

Bang! Puff! Bang! Meade slips out of the driveway of his home in the sedate suburb of Edmonds. Sputtering down the street, he leaves round, billowy clouds of white smoke as the accumulated deposits of oil in his engine cylinders ignite.

He rides the 1919 Indian Scout slowly, since its old, thin tires almost go flat under a rider's weight.

He moves cautiously, since the worn leather helmet his mother made for him 46 years ago wouldn't meet today's legal crash helmet requirements.

He has about 35 motorcycles. The newest were manufactured in the early 1940s. The company that built his Indian Scout went out of business more than two decades ago.

His work space is mostly in two warehouses jammed with cycles in various stages of restoration. Stored on shelves or stuffed in boxes are thousands of spare gears, brake pads, light bulbs, magnetos, gas tanks and other unattached cycle parts.

Meade, a mock-up mechanic at the Boeing 747 plant, says part of his interest in preserving motorcycles is his mechanical inclination.

"And there's so much unpreserved history in old things of all kinds — I'm trying to preserve something for posterity. My interest just happens to be motorcycles," he says.

In a corner lie the rusty remains of a 1902 Thomas Autobi, which was nothing

Once he drove more than 100 miles on a tip that a family in Havre, Mont., might have a motorcycle he was interested in buying. A man there had a motorcycle frame which he said Meade could have, provided Meade paid the freight costs.

After returning home, Meade made 18 trips to the train depot, but the motorcycle never arrived. Later he got a letter saying the owner had died. He learned that another relative wanted to restore the motorcycle. Still later, the second man died, and Meade was able to secure the bike.

But it took four or five years and two deaths before he was successful, he adds.

And Meade is still leaving them.

Putt. putt. putt. ...

ALASKA

Chuck Metenkanich P O Box 4 1978 Anchorage Alaska 99509

ALABAMA

Herman Kullins P O Box 44 Huntsville Alabama 35804

ARIZONA

Harold E Baker Box 215 80th Broadway St Mesa Arizona 85208
Darrrell Kight 1608 S Craycroft Tucson Arizona 85711

ARKANSAS

Russel Dilday Box 398 Tuckerman Arkansas 72473
Dr Claude Walters 416 Hospital Dr Camdem Arkansas 71701 Club Sec

CALIFORNIA

William T Alloway 821 Columbus Dr Capitola California 95010
Alan Barnes Rt 2 Box 555 Dixon Calif 95620 (sub)
Cliff Cochran 220 Mariposia St Dinuba California 93618
Russell R Cupp 461 45th St Sacramento California 95819
Jack Danvers 2840 Forest Hill Blvd Pacific Grove California 93950
James E Davis 1613 Chester Ave Arcata California 95521
James E Davis Jr 695 San Miguel Santa Clara California 95050
M M Denham 19163 Garrison Castor Valley California 94546
Robert L DeSaussure 160 Altura Way Greenbrae California 94904
Beverly Ferriera 74 Cragmont Ave San Francisco California 94116
C Walter Frick 4304 Varsity St Ventura California 93003
Allan D Fowler 4615 Varisity St Ventura California 93003
John R Oale RR 2 Box 105A Oakhurst California 93044
P R Goetz 333 Hengenberger Rd Oakland California 94621
John F Gormley 2005 Capitola Ave Sacramento California 95814
James B Humfield 325 Blue Oak Lane Los Alto Calif 94022
Tom Kelly 1571 Placentia Ave Newport Beach Calif 92663
William Kirtley 1104 Ben Franklin Dr Sarasota Florida 33577
Jack Lange P O Box 56 Kalamath River California 96050
Roy A Lessen 746 Ashley Rd Montecito California 93108
Ernest Pretor 2294 43rd Ave San Francisco California 94116
Robert A Schnaible R O Box 5202 San Jose California 95150
Francis A Sooy MD Univ of Calif 3rd and Parnassus San Francisco California 94112
Robert E Stark 1941 Tedman Ave Anaheim California 92804
Harry V Sucher 8841 Garden Grove Blvd Garden Grove California 92641
Jebb E Tagasuri 12027 Rialto Sun Valley California 91352
Bert Whalen 27 Stoney Brook Ave San Francisco California 94112
Dennis Young 622 E Hill Long Beach Calif 90806
Ken Young 622 E Hill St Long Beach California 90806

COLORADO

Oliver Flury Rt 2 Box 120A Montrose Colorado 81401
Robert V Hoyt 1307 N College Ave Ft Collins Colorado 80521
Billy G Sanders 1010 Panorama Dr Colorado Springs Colorado 80904
R W Kerns P O Box 6065 Denver Colorado 80240

CONNECTICUT

Richard Adams 30 Bridle Trail Ridgeville Connecticut 06877
John Yaros 1027 Monroe Turnpike Monroe Connecticut 06468
Kenneth Wetmore 79 Grand Ave Rockwell Connecticut 06066

NORTH DAKOTA

Gilbert E Horton Box 1351 Jamestown North Dakota 58401
Marwin H Gebhardt RR 1 Box 71A Larimore North Dakota 58251

SOUTH DAKOTA

Fran Backer 2724 E 26th St Sioux Falls South Dakota 57103
E McComish KOA Riverside Rt 3 Mitchell South Dakota 57301
Curtis B Weigold Flandean South Dakota 57028

FLORIDA

Casper Barnes Hawaiian Village 6323 Tahitian Dr Bradenton Fla 33507
R A Burke P O Box 3429 Tallahassee Florida 32303
Ralph Embler 61 8th Ave Shalamar Florida 32579
George Hopps 307 Pine Ave Anna Maria Florida 33501
Kenneth Hill 8013 Gardina Dr Tampa Florida 33617
William Kirtley 1800 Flower Dr Sarasota Florida 33579
Peter A Maros 501 NE 105th St Miami Shores Florida 33138
Bernie B Morgan RR 4 Box 26 Porter Rd Sarasota Florida 33577
Ray Munn 2720 NE 8th St Pompano Beach Florida 33062
Ollie Raunseu 6621 Katherine Rd West Palm Beach Florida 33406
Charles W Roadman 370 Geneva St Point Charlotte Florida 33950
Jerry Wilson 217 SW 29th St Fort Lauderdale Florida 33315
Arthur Woods 4211 26th Ave E Bradenton Florida 33505

ILLINOIS

John F Alexander 6825 Hawthorne Lane Hanover Park Illinois 60103
L H Anderman 7718 Claredon Hills Rd Claredon Hills Illinois 60514
Jack Bafo 14816 Minerva Dalton Illinois 60419
Harold E Baker 4740 Northeastern Blvd Columbus Indiana 47201
Louis Bartley 16314 238th W Illinois City Illinois 61259
J Dornal 9437 Burlington Blvd Brookfield Illinois 60513
E R Elaele 215 E No Ave Naperville Illinois 60540
Clare G Frantz Box 27 Sugar Grove Illinois 60554
Stanley E Jensen 230 Sharon Dr Dundee Illinois 60118
Donald Kolad 2903 N Dawson Ave Chicago Illinois 60618
W K Lau Box 336B Wheeling Illinois 60090
Stanley Pernic RR 1 Box 632C Levi Waite Rd Round Lake Illinois 60073
Angelo Ranieri Jr 2905 78th Ave Elmwood Park Illinois 60635
Ted Ruiter RR 1 Box 50 Chicago Heights Illinois 60411
Barry Stelford RR 1 Urbana Illinois 61801
James D Sutter 324 S Ave Aurora Illinois 60505
D K Thompson RR 2 Box 336 Princeton Illinois 61356
Robert G Walker 11255 Walker Rd Lemont Illinois 60439
Herman Weber 501 Spring St Quincy Illinois 62301
Fred Wacker Jr 2100 Commonwealth Ave No Chicago Illinois 60064
Mervel E Wood 911 Washington St Oregon Illinois 61061
Don Lipsky RR 2 4370 Westport Circle Galesburg Illinois 61601

INDIANA

Harold E Baker 4740 Northwestern Blvd Columbus Indiana 47201
Robert D Beard 1241 Pinehurst Dr Ft Wayne Indiana 46815
John Blouch 1532 8th St Terre Haute Indiana 47802
Glen Brutus RR 1 Box 37 Pine Village Indiana 47975
C W Crafton RR 3 Box 44 Plainfield Indiana 46168
W Leroy Delph RR 1 Wilkinson Indiana 46186
H Frank Entwesle RR 3 Auburn Indiana 46706
Nick Gansinger 1246 119th St Whiting Indiana 46394
Ronald Gruenks 8344 W C R 350 - N Michigan City Indiana 46360
G S Harbison Box 637 Syracuse Indiana 46567
John D Jacobs RR 27 Box 225 Terre Haute Indiana 47802
Louis Kamanski 1508 Bullseye Lake Rd Valparaiso Indiana 46383
Henry Krueger 97 Walnut St Morroco Indiana 47963
Chester W Miller 61758 Cedar Rd Mishawaka Indiana 46544
Lynn A Miller 500 S Ruston Ave Evansville Indiana 47714
Edward J Morrison 1926 Lincoln Ave Whiting Indiana 46394
Bob Speck 1353 Sagers Rd Unit 38 Valparaiso Indiana 46383
R E Wasson 3151 Lockburn St Indianapolis Indiana 46241
Arthur P Smith 602 Napoleon St Valparaiso Indiana 46383
Warren Wetsel 178 SE 7th St Linton Indiana 47441

IOWA

Loren Flanders Rt 2 Oskaloosa Iowa 52577
Raymond Harvey 139 Sycamore Lane Riverdale Iowa 52722
Dale Duane Pearson 122 Edgewood Rd NW Cedar Rapids Iowa 52405
Robert D Saar 310 23rd St Fort Madison Iowa 52627
Joe Pawars Box 87 Boone Iowa 50036
Bill Phillips 1010 Creek Top Council Bluffs Iowa
Paul George 2590 SE 52nd Ave Des Moines Iowa 50320

Kentucky

R W Paulette P O Box 401 Midway Kentucky 40347

KANSAS

Lon D Hudspeth 307 Main St Ellenwood Kansas 67527
Herb Ottaway 3702 Elmwood Dr Wichita Kansas 67218
Donald Scott Rt 1 Oberlin Kansas 67749

LOUISIANA

Derrel J Deroche P O Box 479 Gramercy Louisiana 70052
Gerald Neighbors 807 Crosley St W Monroe Louisiana 71291
Ernest E Cox 3431 West 10th St Wichita Kansas 67203

MAINE

Nathan C Chapman 676 County Road Westbrook Maine 04092

MARYLAND

Richard T Dashiell 3097 Brenkley Rd Oxan Maryland 20031
J Leonard Rinehart 802 Maryland Ave Harve De Grace Maryland 21078
Harry G Shaffer 3920 Sunset Drive. Hampstead Maryland 21074
Rufus Wysong 601 Whittingham Silver Springs Maryland 20904

MASSACHUSETTS

William E Boutelle 70 Dana St Cambridge Mass 02138
Ed Larter Main St Dunstable Massachusetts 01827
Roger A Mathieu Sterage Rock Rd Brimfield Massachusetts 01010
Frank Peckham 2147 Pleasant St Fall River Massachusetts 02723
Fred E Small Root Rd Westfield Massachusetts 01085
Newton E Thompson Hillcrest Ave Rd 2 Southwick Massachusetts 01077
William A Wescott Box 66 N Chatham Massachusetts 02650
Charles F Labrecque 302 Old Westford Rd Chelmsford Mass 01824

MICHIGAN

Ken Adams 33531 W Six Mile Rd Livonia Michigan 48152
Robert Aldrich 28616 Dover Livonia Michigan 48150 Referee
Edward J Bortner 193 Hurst Troy Michigan 48048
A Daniel Cronin 9921 Hubbard Livonia Michigan 48150
Victor L Grahm 6511 Johnson Rd Coloma Michigan 49038
Marvin A Grahm 6511 Johnson Rd Coloma Michigan 49038
Robert Lamb 1505 Bradford N E Grand Rapids Michigan 49503
William Laport 6254 Brace Detroit Michigan 48228
David Leitner 390 Robert Court Pontiac Michigan 48057
Glen Logan 221 Vass St Battle Creek Michigan 49017
Frank Long 30723 Everett Southfield Michigan 48076
Robert C Loomis 816 Lafayette Ave E Grand Rapids Michigan 49503
Homer Mahle 2835 Schroeder Rd Farmington Hills Michigan 48024
Mark S Marlinga 20434 Charest Detroit Michigan 48234
Jack Maurer 12626 Seven Mile Rd Detroit Michigan 48205
A L McCann Box 24 Sandusky Michigan 48171
Jack D Missler 3062 Summerfield Rd Petersburg Michigan 49270
Dimitar Miteff 6128 W Vernon HWY Detroit Michigan 48209
Clifford Oglesby 2076 E Ten Mile Rd Warren Michigan 48091
Paul Pearce 639 Pontiac St Oxford Michigan 48051
Andrew Pelc 16146 Eureka Southgate Michigan 48192
Sylvester Price 166 Redman Rd Milan Michigan 48160
John A Scholtens 3561 Knapp NE Grand Rapids Michigan 49505
Carl M Stroh 909 E Elizabeth St Detroit Michigan 48226
Henry Vogel 2020 W Lincoln Birmingham Michigan 48009
Dick Winger Box 58 Newsport Michigan 48166
Ed Wolski 16514 Toepfer Rd E Detroit Michigan 48021 Trustee
George Young 5748 E Rose City Rd Box 329 Love Lake Michigan 48743
Richard Rial Box 36 Sherwood Michigan 49089
Jack Yeck 77 W Larch Ave Muskegon Michigan 49441

MINNESOTA

Earl D Bray Jr 1411 5th St St Paul Park Minnesota 55071
Lynn Harpster P O Box 415 East Grand Forks Minnesota 56721
Russell Moga 2624 Bittersweet Lane St Paul Minnesota 55109
Randy Nelson 3013 Alarich Ave So Minneapolis Minnesota 55408
Kenneth Trimbo Box 166 Henderson Minnesota 56044
Maynard Whetstone 270 Bellevue St Winona Minnesota 55087
William Wiczorek 111 Flandrau Rd St Paul Minnesota 55106
Thomas McCleed 1001 So 4th Stillwater Minnesota 55082

MISSOURI

Jerry Havenhill 11531 E 19th Independence Missouri 64052
L S Juillerat 3810 S Golden Springfield Missouri 65807

MONTANA

Jack Kullish P O Box Stanford Montana 59478

NEBRASKA

Dr Arthur R Croft 722 Londendary Box 364 O Neil Nebraska 68763
R W Peterson Peterson Mfg Co De Witt Nebraska 68341
Stephen Swan 4928 Lowell St Lincoln Nebraska 68506
Howard P Wagner 855 Parkwood Land Omaha Nebraska 68132

NEW HAMPSHIRE

Fred S Tinkham Kendall Pond Rd W Winham New Hampshire 03087

NEW JERSEY

Walter Ahlers Main St P O Box 19 Flanders New Jersey 07836
Bill Fainglass 62 Washington Ave Morristown New Jersey 07960
John Hoffman 1522 Sage Street South Plainfield New Jersey 07080
Allan Lowell Lewis 86 Warren St Washington New Jersey 07882
William J Mathias 5 Cadualander Dr Trenton New Jersey 08618 (sub)
Leslie H Salisbury 306 Washington Place Englewood New Jersey 07631
L R Schwoerer P O Box 189 Lebanon New Jersey 08833
Edward J Skillman 908 Hamilton Ave F Trenton New Jersey 08629

NEW YORK

Robert Drumm C L V 158 E Gibson St Canandaigua New York 14424
Harry Ellis Savage Rd Sardinia New York 14134
Leonard Moeller 2124 Grove St Baldwin New York 11510
Allen Moore 2748 S Main Rd 358 Albion New York 14411
Ira Philbrick 406 Court St Little Valley New York 14755
Steve Rauch R D 2 Colosima Rd Fulton New York 13069
Virgil Dale Smith Worthington Corp P O Box 69 Buffalo New York 14240
Emanuel Sperazza 2339-129th College Point Long Island New York 11356
Charles Vetri 1148 Erie Ave N Tonawanda New York 14120
Robert Siebert 215 6th Street Landerhurst New York 11757

OHIO

Robert C Bertollette Box 204 Washingtonville Ohio 44490
Forest R Bidlack 1881 Lexington NW Warren Ohio 44485
Charles Buck 341 Beechgrove Rd Bucyrus Ohio 44820
Robert Burge 7612 Erie St Sylvania Ohio 43560
W B Cleveland MD 2522 Norfolk Rd Cleveland Heights Ohio 44106
Warren V Coe 515 Pease Ave West Carrollton Ohio 45449
James L Cook 3608 Reimer Rd Norton Ohio 44203 Treasurer
Fred G Dieter 809 Birch Hill Dr Youngstown Ohio 44509
John O Elber RR 2 Box 55 Milan Ohio 44846
W C Enders 1117 Teddy Ave Bucyrus Ohio 44820
Ed Fessenden 9 Southwood Dr Norwalk Ohio 44857
Eugene Goble 701 Chase Ave Hamilton Ohio 45000
John Groves 22477 Twp Rd 214, Fosteria Ohio 44830
Anthony Harpster 16577 State Rd North Royalton Ohio 44133
Thomas W Harris 800 Hazel St Akron Ohio 44305
Max Harry 834 Santa Cruz Dayton Ohio 45410
Cecil F Hasser 525 Fairfield Pike Yellow Springs Ohio 45378
Joseph E Hassett 1210 Union Ave Astabula Ohio 44004
Steve Hess 33 Hall St Tiffin Ohio (Sub) 44883
William L Howell 228 Lesbon St Box 138 Waynesburg Ohio 44688
Victor E Huguenin 706 Fairview Galion Ohio 44833
Ralph L Javens Sr 453 Shawnee Rd Indian Meadows Dover Ohio 44662
R E Kerns RR 2 Belle Center Ohio 44310 (sub)
Steve Kertez 2020 Marlow Rd Toledo Ohio 43613
John Labash 3922 W Central Ave Toledo Ohio 43606
Earl Luedeker 6508 Meis Ave North College Hills Ohio 45224
Harry Maule 414 Main St Box 96 Castalia Ohio 44824
Lew Maule 405 Kansas St Box 566 Green Springs Ohio 44836
Ted McGee 2009 Fifth St Sandusky Ohio
Theodore L McWayne 14524 Mayfield Rd Huntsburg Ohio 44046
Lloyd McWilliams 1255 Grindler Rd Nw Rt 7 Lancaster Ohio 43130
Milton Mehl 2641 Andrew Ave Hamilton Ohio 45015
C E Monnet 22413 Wallace Ave Alliance Ohio 44601
Dan A. Nealiegh RR 1 Rossburg Ohio 45362
Bill Newhouse 3788 Valley Forge Drive Stow Ohio 44224 V.Pres.
Fred Provin 371 Heath Rd Heath Ohio 43055
Clarence F Puckett 4378 Catalina Ave Dayton Ohio 45416
John S Rees 6332 Maplewood Rd Mayfield Hts Ohio 44124
Carl J Reichenbaugh 1412 Bernard Ave Findlay Ohio 45840 Trustee
Hugh Riddle Box 287 Ravenna Ohio 44266
Leland E Scholl 184 N Center St Pickerington Ohio 43147
Carl Jacobson 4635 Erie St NW Canal Fulton Ohio 44614
Robert Norris Route 1 Warsaw Ohio 43844

23

Karl R. Schuele Deer Lick Farm R D 3 West Salem Ohio 44287
Dave Sloan R F D 3 Kenton Ohio 43326 Trustee
William H Scott 6512 Branch Hill Miamisville Rd Loveland Ohio 45140
Waldo Stevick 916 Dingledine Ave Lima Ohio 45804
Ron Thomas 164 Prospect St Painsville Ohio 44077
Charles Thompson 103 Canton Ave Huron Ohio 44839
Percy Wallace 302 Petrie Rd Atwater Ohio 44201
William Wolfe 2696 Rayalton Road W Broadview Hts Ohio 44147

OKLAHOMA

Lon Hudspeth 2519 Fairfield Dr Norman Oklahoma 73069

OREGON

Richard Greco 286 1/2 Patterson Ashland Oregon 97520

John Hedderly 2111 103rd Drive Portland Oregon 97216

PENNSYLVANIA

James F Altman 1815 4th Ave New Kensington Pennsylvania 15068
Larry Armstrong 13410 Stevens Rd Philadelphia Penna 19116
Eugene Aucott 6204 Wessahiclon Ave Philadelphia Pennsylvania 19144
Leon C Blackman 43 Buckeye Rd Emans Pennsylvania 18049
Louis Friedman 3008 Azelea Terrace Norristown Pennsylvania 19403
Frank George Jr 317 Hartel Ave Philadelphia Pennsylvania 19111
Daniel P Graham 2333 Forest Dr Pittsburgh Pennsylvania 15235
Samuel H High 1618 Fort Washington Ave Maple Glen Penn 19002
Paul R Hawthorne 1352 Simpson Ferry Rd New Cumberland Pennsylvania 17070
Edwin R Johnson 1065 Raston Rd Horsham Pennsylvania 19044
Joseph Karis 18 Edgemore Rd Cheltenham Pennsylvania 19012
Otto Link 2nd and Charles Sts Cooperstown Pennsylvania 18036
William J Lockett 1705 Ridge Rd Perkasie Pennsylvania 18944
George W Llano 495 Red Coat Lane Wayne Pennsylvania 19087
Robin Markey R D 3 Box 3449 Ebers Penna 17319
Robert Markey RD 3 Box 3449 Ebers Penna 17319
Lester J McQuade 6021 6th Ave Altoona Pennsylvania 16602
Herman G Metzger Jr 2174 Wintthrop Rd Huntingdon Valley Pennsylvania 19006 Vice President
Steven Savory 4420 Elk Ave Oakford Penn 19047
David Salitrynaki 901 State Rd Croydon Penna 19020
Albert P Sigmans Rt 212 Pleasant Valley Pennsylvania 18951
John P Smagach 2840 E Thompson St Philadelphia Pennsylvania 19134
Matthew J Smagach 2840 E Thompson St Philadelphia Pennsylvania 19134
James Statts 7 Kiltie Dr New Hope Pennsylvania 18937
Edward Stoner Rd 2 Box 32 Lewisberry Pennsylvania 17339
Fred J Wood 821 Cedar Rd Philadelphia Pennsylvania 19111
Fred M Portelli 115 Beidler Rd King of Prussia Penna 19106

TENNESSEE

Jim Davis Jr 126 S Matlock SW Athens Tenn 37303

Douglas B Green 3611 Meadowbrook Ave Nashville Tennessee 37205

TEXAS

Chester R Casey 1125 Murray Bay Dr Houston Texas 77055

William Daniels 1224 Carby St Houston Texas 77037

Stacy Hart Box 766 Littlefield Texas 79339

Frank Krawiec Route 1 Argyle Texas 76226

Stanley J Krawiec 1113 Monaco La Lewisville Texas 75067 Sub

H J Norman P O Box 568 Weatherford Texas 76086

Jerry Preimesberger Fort Parker Motel Rt 1 Box 256A Mexia Texas 7667

Sidney E-Roberts Rt 2 Box 127 Alta Loma Texas 77510

Harry W Robinson 1300 Kipling St Liberty Texas 77575

Robert Shingler RR 1 Box 46R Palmer Texas 75152

Joel D Starnes Jr 601 W Rexas Midland Texas 79701

Harbert L Bloom 807 E Abram Arlington Texas 76010

VIRGINIA

Rick E Buie 1911 Ingram Place Alexandria Virginia 22308

Donald E Collar Box 3006 Alexandria Virginia 22302

Michael A Kearney 2835 Woodlawn Ave Falls Church Virginia 22042

Clifford K Pease 4164 Ewell Rd Virginia Beach Virginia 23455

Carl M Rau 600 55th St Virginia Beach Virginia 23451

Mervin Ryan RFD 1 Edinburg Virginia 22824

John M Sandy P O Box 1144 Stephens City Virginia 22655

Robert E Lyons 500 Valley Drive SE Vienna Virginia 22180

West Virginia

Russell D. Blake Jr 2061 Enslow Ave Huntington W Virginia 25701

Ben Marshall 1020 Cresent Rd Charleston W Va

Washington

L J Gerdan 8105 SE 14th St Mercer Island Washington

Kenneth Slecter 17403 8th NE Seattle Washington 98155

WISCONSIN

John Gierono 217 69th St Kenosha Wisconsin 53140

Donald J Huber 715A S 22nd St Milwaukee Wisconsin 53204

Ervin G Vanbeek 517 N Main St West Bend Wisconsin 53095

Hawaii

Linley S Wright 98 - 715 - 11 Place Unit 1105 Area Hawaii

AUSTRALIA

Donald G Liddle 43 Austin Crescent Wentworthville 21145 Australia

CANADA

Iynden Becherjaise C.P. 339 New Carlisle Quebec Canada G0C 120

Michael Bryce 60 Stevensen Rd Unit 1507 Rexdale Ontario Canada

James C Dreher Box 132 Oxbow Saskatchewan Canada (sub)

Lewis Laverdiere 10333 115th Street Edmonton Alberta Canada T5N 2X7

Robert McKie 29 Ashwood Crescent Isslington Ontario Canada

Thomas Stackhouse 49 Queensway West Simcoe Ontario Canada

George P Taft 210 Elmwood Crescent Milton Ontario Canada

Newel Taylor 2760 E 27th Vancouver V5R 1 N5 British Col Canada

Frank Tucker 9204 Allison Dr SE Calgary 30 Alberta Canada

Charles Wilson 2017 Ward St Ville St Laurent Montreal Quebec Canada

Peter Gagan 116 Dieppe Blvd Lethbridge Alta Canada

ENGLAND

Robert Sidney Powell 27 Clinque Ports Ave Hythe Kent England

FRANCE

Bernard Bresson 2 rue Champvisen 63170 Aubure France

GERMANY

Hans-P Arendt 1000 Berlin 44 Burknerstr W Berlin Germany

Peter Wieg 1 Berlin 30 Keithstr 14 W Germany

ITALY

Benito Battilani Vici Paola 45 I-40026 Imola Italy

SWEDEN

Ali Drimmer Slaragaten 27 412 69 Goteborg Sweden

Lars Emiar Illerbacker 5 S 181 44 Lidingo Brotby Sweden

Henry Melin Prastgarten Akerby 740 22 U P L Balinge Sweden

Hans Rennerfeldt S 18040 Brotby Sweden

NEW ZEALAND

Tim Thomson P O Box 7 Clydesdale So. Otago New Zealand

FINLAND

Anter D. AALTO - 10120 TÄHTELÄ Finland

ADS

Wanted - 6 - Indian A, B, or C spark
plugs for 440 and 841 Indian.

Write John Dohnal
9437 Burlington
1 Brookfield, Illinois 60513

Wanted - Parts for Indian Ace or 401
Bike has Henderson Forks and Handle
bars. Motor numbers are D 8794 and
CA 837. Need original forks, Tank
and headlight.

Write Tim Thomson
C/O 50 Taylors Mistake Road
Christchurch 8
1 New Zealand

For Sale - 1946 Chief
3500 miles - runs like new
Will consider any reasonable offer
Write - Sidney Roberts
Rt 2 Box 136
1 Alta Loma, Texas 77510

For Sale - New Henderson clutch by
Earl Chalfant \$75.00
Write Fred Provin
371 Heath Rd
1 Heath, Ohio 43055

NEEDED - "urgently" upper crankcase
for 1935 Indian Four. Upper cases
1929 through '42 will work.
5 main bearings or will buy complete
motor for 1938 through '42.
Write or call Joe Hassett
1210 Union Ave.
Ashtabula, Ohio 44004 2

Wanted for a 1938 four -
Indian face horn in any condition.
Solo seat pan, side stand,
spot light bracket, front fender
light, heat riser control lever like
one on '40 model.
Speedo cable and chain drive, Chief
solo pan or H D.

Have a Henderson front fender to
swap 1929-31. Some Chief parts also.
Write or call Robert H. Lamb
1505 Bradford N E
Grand Rapids, Michigan 2
49503

For Sale - Metal foot boards for
Indian Scout, Pony, Prince, Chief,
and Fours. All holes drilled -
\$20.00 pair plus \$2.00 postage.
1928 to 1939.
Louis R. Bartley
RR 1
Illinois City, Illinois 61259

2

Wanted - Complete engine and
Transmission for 1941 Indian Four
Also seat, bearings, washers and
nut for fork. The parts must be
in usable condition. Please state
condition and price
Write - Russell Dilday
Box 398
Tuckerman, Arkansas 72473
Phone (501) 349-2725

3

Indian Motorcycles
A list of 30 dealers, parts and
supplies for 1 - 2 - 4 cylinder
machines, also 3 clubs.
Send \$1.00 and self addressed envelope
to INDIANS
Box 8084
Kentwood, Michigan 49508 2

For Sale - 1948 Black Indian Chief 74,
has luggage rack, spotlights, nice shape.
Also, 1939 Indian 45 Scout all restored,
red paint job.

Have several boxes of good used and
new parts for Indian Chief and Scout 45,
and few parts for Indian four.

Parts consist of bearings, rods,
transmission parts, speedometer parts,
cylinder heads, rings, few Indian head
fender lights, chrome header pipes,
muffler for Chief 47 and 48 model, plus
many more, all in a box, plenty of
goodies.

Will take \$4200 for everything or -
best offer on machines and parts
separate.

Write Jerry Preimesberger
C/O Ft. Parker Motel
Rt 1 Box 256 A
Mexia, Texas 76667
Phone 817-562-3097

2

For Sale - 1950 Indian 80, 80% original
Two tone blue, road worthy, excellent
condition.

1948 Indian 74, 90 % original, black,
good running condition.

1949 - 1149 Arrow 100% original in
excellent condition, only 7000 miles
Several disassembled complete Chiefs,
1940, 1946, and 1947, approx. 70%
assembled.

Write - Steve Savroy
4420 Elk Ave.
Oakford, Penna 19047
215-355-2764 phone

2

For Sale - 1936 Indian four Cyl.,
1962 B M W R 69, 1933 Indian Chief,
1952 B M W 600cc, 1954 Zundapp 601

Write - Joe Karis
18 Edgmoor Road
Cheltenham, Penna. 19012
Phone 215-WA7-6050

2

PARTS FOR SALE BY

KEN YOUNG AND SON

622 E Hill St

Long Beach, Calif. 90806

Main and Transmission bearings
with spacers.

Cluster and Slider gears

Oil Pump Gears (late model only)

Pistons (T - slot .030, .040, .060 and
.1250 fit with .010 wrist pins.

Clutch release shaft

Thrust Bearings

Gasket sets

Valve adjustment screws (for later model
lifters)

Push rods '36 - '42 (not for '36 - '37
ball type rocker)

Head bolts and washers

Cylinder base nuts

1/4 / 28 X 3/8 nuts for pan and exhaust
manifold.

Valve collars for taper keepers

Fiber disc for magneto drive

All Parts Are New Remanufacture

3

For Sale - 1937 Indian Sport Scout.
Disassembled with all metal sandblasted
and primed. Engine clean and rebuilt.
All sheet metal in excellent shape.
Set of Diamond Tred tires.
Has original Indian dash with Indian
scrip Ammeter \$650.

Write or call Steve Rauch
R D 2 Box 484
Fulton, New York 13069

Call collect - 315-598-1776

2

For Sale - 1939 (DC 1139) Indian Four
3638 miles since restoration
\$2900 cash
Might take good Triumph as part
payment

Write - Allen D Fowler
4615 Varsity St
Ventura, Calif. 93003
Phone 805-642-2775

3

Paulette Manufactures the Following

For all makes and models of Indian of Indian Four Cylinders. If, what you need is not listed, he will make it on special order.

Brake pedal's - brake rods
clutch pedals - clutch rods
shifter rods
tail pipes - muffler & tail pipes
manifold guards - chain guards
tool boxes - battery cradles
ammeters - oil gauges

These and other special parts are made to specifications from original Indian factory blue prints. Drill rod is used for all brake, clutch and shifter rods. All parts are tempered at stress points.

Specializing in rebuilding the complete engine - pouring main bearings - rebuilding rods - semi dry clutch.

Send list of your needs for quote. Information gladly given to help you restore your four to original.
Write - R.W. Paulette, P O Box 401
Midway, Kentucky 40347

Indian Motorcycles

A list of 30 dealers, parts and supplies for 1 - 2 - 4 cylinder machines, also 3 clubs.

Send \$1.00 and self addressed envelope to INDIANS

Box 8084

Kentwood, Michigan 49508

2

DECALS DECALS DECALS DECALS

We have the FINEST Decals for Cycles from 1907 to 1939. Most decals - \$5.50 a pair, plus 50 cents for postage and handling.

Please send self addressed stamped envelope for inquiries. Money Orders only for decals.

Our decals are the finest.

Bob Speck - The Decal Man
1353 Sagers Rd Unit 38
Valpariso, Indiana 46383

DECALS DECALS DECALS DECALS

Request for Roster of Henderson Machines

Mr. Cliff Pease of Virginia Beach, Virginia requested that we print in the Winter Issue of the Four News a request for owners of Henderson Cycles fill out a small questionnaire to compile of all known Henderson Motorcycles. As the list grows it will be published in the Antique Motorcycle Magazine and the Indian Four News.

Although the Henderson machines make the owner eligible for membership in the Indian Four Club we believe singling out the owners of the Henderson machines is a fine idea to know how many of these fabulous machines that were the forerunner of the fabulous Indian Four, are still in existence, restored or unrestored.

So you Henderson owners wherever you are - write to Cliff Pease at Virginia Beach, Virginia and give him the following information for his list of Henderson bikes

Model designation

Engine Number

Year of Manufacture

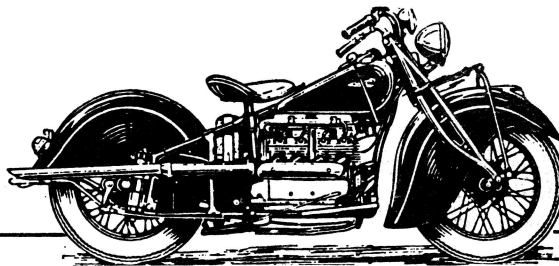
3

Henderson parts for sale or trade (yes or no)

Owner's name and address

Send this information to Cliff Pease - 4164 Ewell Rd - Virginia Beach, Virginia 23455

Our thanks to Cliff for asking us to cooperate in this survey and printing the list in the Four News.



The Indian Four Cylinder Motorcycle Club, Inc. was organized

. to help members and owners of the Indian Four and other American made fours to maintain and restore these famous machines.

. to help as much as possible to locate parts to keep the Indian Four and other American made fours - the Pierce - Henderson - Ace, from becoming obsolete.

. that the Indian Four Cylinder Club shall by no means be exploited in any way or fall into unscrupulous hands to be ruled or run for the benefit of any one individual or group of individuals. It shall remain as was origionally organized in purpose for the benefit of owners of the Indian, Pierce, Henderson, or Ace, or such American made four cylinder motorcycles as the members of the Indian Four Cylinder Club deem acceptable in the club.

. to promote good fellowship and trust among members.

. to encourage all members to take active part in helping the club grow.

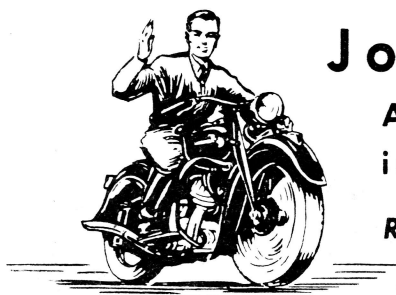
Officers, Indian Four Cylinder Club, Inc.

1976 - 1977

President - - - - -	Herman G. Metzger Jr.
Vice President - - - - -	William E. Newhouse
Secretary - - - - -	Dr. Claude Walters
Treasurer - - - - -	James L. Cook
Trustee for 3 years - - - - -	Carl J. Reichenbaugh
Trustee for 2 years - - - - -	Dave Sloan
Trustee for 1 year - - - - -	Ed Wolski
Sergeant-at-arms - - - - -	Ed Wolski
Referee - - - - -	Bob Aldrich
A M A Reporter - - - - -	Dave Sloan
Librarian - - - - -	Cliff Oglesby

INDIAN FOUR CYLINDER NEWS

EDITOR, 1966 - 1967	CECIL HASSER
EDITOR, 1968 - 1970	JOHN E. WICKHAM
EDITOR, 1970 -	THOMAS J. MILES
ASSISTANT EDITOR	AL FELDMAN



Join the fun —

**Attend the next motorcycle activity
in your locality**

RIDE AN *Indian* MOTORCYCLE

