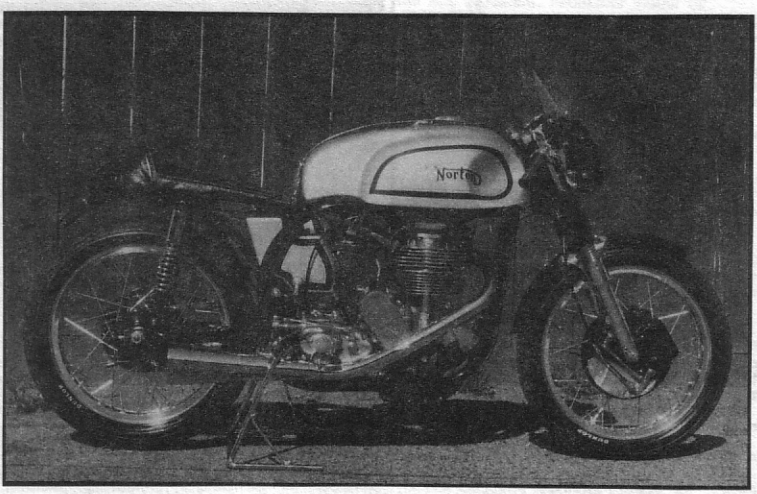
# Norton Notice

THE NEWSLETTER OF THE NORTHERN CALIFORNIA BRANCH

NO. 109 MAY, 1987

**Deep inside the Tower of London lies the world's single most valuable object.**




NORTON OWNERS CLUB

# Norton Notice

is published by the Northern California Branch of the Norton Owners Club. Its purpose is to inform and entertain members regarding all aspects of the Norton motorcycle, including history, technical advice, and preservation of the marque.

NORTON NOTICE is a reflection of its readership, who are encouraged to submit any article, technical tip, photograph (original or otherwise) as long as it is in good taste, so that other Norton enthusiasts may enjoy it. For Branch members who cannot attend club meetings or club rides, the NORTON NOTICE affords an opportunity to share experiences and information with the membership of the Branch, and to bring the Branch members closer together.

The deadline for items to be submitted for publication is the 15th of each month.

Membership in the Northern California Branch of the Norton Owners Club is available for $25.00 per year.

Membership dues are payable to the Branch Secretary/Treasurer.

Renewal dues are payable at the end of the individual's membership year, that month being designated by the last number of the individual's membership number as located on the mailing label of the NORTON NOTICE or the membership card. For example, 745/2 denotes member 745 with dues expiring on the 1st of February.

All changes of address should go to the Branch Secretary/Treasurer, not the NOTICE Editor.

Subscription to the NORTON NOTICE only is available for $15.00 per year. This does not include membership in the Northern California Branch of the Norton Owners Club, nor does it afford any of the rights or privileges of membership in the NOC.

Membership in the Northern California Branch of the Norton Owners Club entitles a member to monthly issues of the NORTON NOTICE and bi-monthly issues of ROADHOLDER magazine, which is sent directly from England, keeping members informed of Norton owners' activities worldwide. Membership provides voting privileges at all NOC and Branch meetings, and allows one to purchase Norton spares directly from England, at significant savings, through the NOC Spares Program.

**THE NORTON NEVER BREAKS VALVES.**

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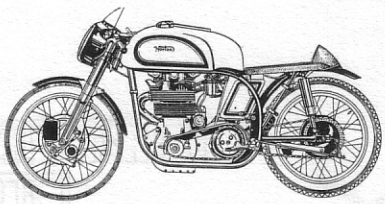
## NORTON OWNERS CLUB

**Important!**

(Please take note of the following fine print.)

The object of the Northern California Branch of the Norton Owners Club is to promote, encourage and develop all motorcycling activities. The Club's members are owners of Norton motorcycles, and they often submit for publication in the Norton Notice technical tips pertaining to motorcycles of the Norton marque. Technical tips so published have been reviewed for technical content and are believed to be both acceptable and workable, but no guarantee is made or implied that they will work correctly, nor is any liability assumed by either the Norton Owners Club or the authors for any problems resulting from use of these technical tips. The Club also assumes no responsibility for the acts or omissions of its members in connection with Club activities. Norton Notice articles or other material express the authors' views only and not necessarily the official policy of the Norton Owners Club or its Northern California Branch. The editor reserves the right to accept, reject or alter all editorial and advertising material submitted for publication. Advertising published does not imply endorsement of products, goods or services. Now you know.



1963 catalog drawing of Manx 30M and 40M

# UPCOMING EVENTS

NOTICE: IN THE EVENT OF RAIN ON THE DAY OF A CLUB RIDE, THE RIDE IS AUTOMATICALLY POSTPONED ONE WEEK. ALSO, RIDERS SHOULD HAVE PLENTY OF OIL AND GASOLINE BY THE SCHEDULED DEPARTURE TIME AND ALL PERSONAL PROBLEMS TAKEN OF. IN OTHER WORDS . . . FULL TANKS AND EMPTY BLADDERS!

| DATE | DAY | EVENT |
|---|---|---|
| **May 2-3 | Sat., Sun. | *Branch overnighter at Jerry Kaplan's. See details in last issue. Jerry is at (916) 787-3993 in Woodland. |
| **May 3 | Sun. | *San Jose Mile, Santa Clara Frgds., 344 Tully Rd., S.J. |
| **May 9-10 | Sat., Sun. | *AFM New Riders School and races (Sun.), Sears Point. |
| **May 14 | Thurs. | *Branch meeting at Margie's, 625 Fairmount Ave., Oakland., 7:30 P.M. |
| **May 30-31 | Sat., Sun. | *Morro Bay Branch Ride. Meet at the Summit Inn, north of Scotts Valley on 17, at 10:00 A. M. See Editor's Notes. |
| **June 11 | Thurs. | *Branch meeting, Prince of Wales Pub, 106 E. 25th Ave., San Mateo, 7:30 P.M. |
| **June 21 | Sun. | *Branch Ride--through the North Bay with Don. |

**MAY**

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| 24 31 | 25 | 26 | 27 | 28 | 29 | 30 |

**JUNE**

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| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | | | | |

Down the Road:
July 4,5: Fourth of July Picnic and Beer Bust on the Santa Cruz beaches.
July 11,12: Laguna Seca.
July 21-26: INOA Rally, Durango, CO.
August: Annual Club Rally, Grover Hot Springs.

Also appearing: Speedway racing at Baylands every Thurs. night, 8:00 P.M.

# TWISTGRIP TWADDLE

The chief topic this month on the presidential desk is club finances and the ramifications for club viability. Here's the situation in brief: Of your annual dues of $25, some 9.50 pounds sterling ($15.39 at the current exchange rate + a bank service charge for an international draft) goes to England as dues to the mother club, to pay for your bimonthly **Roadholder** plus some intangibles. The approximately $9 remaining is all this branch keeps to cover the monthly **Norton Notice** and incidental expenses (e.g., postage, telephone calls) of running a club. The **Notice** is by far the largest cost item and, in fact, paid membership currently of about 190 doesn't quite pay all the expenses (as the dollar continues sinking against the pound), and we consequently have begun to dip into our small reserve cushion a bit. Not a healthy trend.

After conferring with the **N.N.** Editor and the Secretary-Treasurer, I have written to the mother club in England to spell out the deteriorating financial picture because, faced with a choice of reducing service to the branch membership or renegotiating the branch's relationship with the parent organization, the former alternative is unacceptable. (It should be noted, incidentally, that club officers receive no compensation for their duties and rarely recover their miscellaneous out-of-pocket expenses.)

Even if the slow, long-term decline in membership should be reversed, the problem is unlikely to go away; and outright direct fundraising events don't seem to be in the character make-up of the branch. I therefore discussed three possibilities in my letter to England. One is to reduce the English dues by letting the **Roadholder** subscription be an extra-cost individual option, since most members I have talked to don't place much value on receiving it (over $15 a year for six issues containing mainly idle chat). Branch dues could be lowered and still leave enough to cover our local costs, even allow a few improvements (such as an expanded **Notice** with LARGER TYPE).

A second choice might be to take on the status of an "associated club," such as the San Diego club currently is. I have requested details on that.

Third, and least palatable, would be to sever the connection with the N.O.C. and affiliate instead with the USNOA, as the Los Angeles club has done. If we did this, we'd be saying goodbye to a long club history and our link with the Norton company.

I have asked the mother club, through Peter Thistle, Secretary, for their thoughts and ideas on this subject, lest we overlook anything. But the most important input we need is YOURS. What do you think we should do? Not for the last time, we say: It's your club. We need your opinion.

Please write directly to me, or to any other club officer. Our addresses are in the masthead on page 2 of the **Notice**. Don't underestimate your influence--write!

* * *

Have a look at the Calendar: There are lots of good branch events in the offing, including numerous rides, overnighters, meetings and other fixtures. I hope to see you all at one or another of these. Don't be shy, come say hello.

Nort'nly yours,



Prez.

## MARCH 12 MEETING AT THE CLASS REUNION
### MINUTES

Well, it was another dark and stormy night, but our March 12th meeting at the Class Reunion was a success for those 12 or 15 stalwarts who braved the elements.

John Covell went through the calendar of upcoming events, noting that the April meeting might feature a new location in San Francisco, Zuka's, if he could get over and check it out. For those who don't remember, neither the Edingurgh Castle nor the Hotel Utah are ideal for meetings, due to parking and noise problems respectively. It would be nice to have a regular S.F. location again.

John also mentioned that the person to write to in Sacramento regarding the proposed helmet law is Hon. Richard Katz; he's in charge of the committee involved with this bill.

Art Sirota offered a tech tip on replacement of the disk brake pistons: "use stainless steel" as the regular steel pistons eventually rust and cause unreliable braking and jamming. Art claims that the actual replacement is easy in spite of the manual's claims to the contrary.

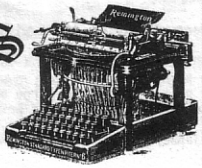
Various reports and rumors about the sale of Norton Motors and the death of Dennis Poore prior to the sale have come out in the British Press; also, that the new owner, Norton-Villiers, wants to get the Rotary into production for civilian use within a year or so. Time will tell, stay tuned to this station.

A number of members, Art, Claude, Louis, and myself mentioned that we've reached an age where it's getting real difficult to read the print in the Norton Notice. Some of us have to use a magnifying glass. Isn't there anything we can do, Lou?

Alan Goldwater gave a brief secretary-treasurer's report and asked for permission to reprint/xerox some more copies of the Service Notes. We gave him permission, but suggested he call England first, at N.O.C. expense, to see if they could send us more copies. Alan also wanted some more of the posters we had printed up a few years ago. If anybody knows where the original artwork is let him know.

Tim Coburn

# EDITOR'S NOTES



Hi folks,

As a result of a review of the demographics of Bay Area Norton Club members the following meeting rotation has been set: S.F. (Zuka's), Oakland (Margie's), San Mateo (Prince of Wales Pub), Palo Alto (Class Reunion). We may, due to the outside space at the Class Reunion, weight the summer meetings in favor of Palo Alto. At the moment all of the meeting places seem to be attracting about the same number of members and it's nice to see some new faces. The schedule of events looks full, with long trips, short trips, overnighters, and one day stands. Pick one or more and join in!

The Morro Bay ride aims for the Cerro Alto Campground on rt. 41, about 3 miles east of Morro Bay. There's a large number of motels in the area but you're on your own if you choose that route. The Galley Restaurant on the Embarcadero will most likely be the meeting place for dinner on Saturday. No specific route from the Summit Inn has been set: if you have a favorite road get there early and start lobbying for it. Our Prez personally extended an invitation to the southern clubs but we have no guarantees that they'll be there. It'll be a good weekend to get away from it all and do some serious riding with friends.

Welcome new members Ken McKelvy, Rick Nagle, Tom Pettit, and Dan Gilman. Hope to see or hear from you fellas.

At the last meeting John, Alan, and I decided to try and cut back the number of copies of the NOTICE that we have printed in order to try and save some bucks. With a little bit of luck we'll get a slight overrun from the printer and be able to handle our membership mailing without having to resort to Xeroxing for the additional copies needed. This means that there will be no extra copies, so hang on to yours. I occassionally drop a bunch at local shops and events to let people know we're here. Without these extra "teasers" it's up to you to tell friends to join. Anyone who is interested in making posters to place in shops give me a buzz and I'll give you some tips on what we need. Our Prez, by the way, has received a reply from England regarding NOC posters but they don't have anything we can use.

The issue of our relationship to the "mother" club is most likely going to come up in the near future. John has been active in pursuing clarifications of services offered and obligations owed. I for one appreciate John's aggressiveness in trying to sort out what benefits aside from the ROADHOLDER we can expect. And I appreciate Alan's efforts to project our future financial health given the changing exchange rate. Stay tuned to branch meetings for the (lively) debate.

Those of you who missed Marshall's ride missed the Easter bunny. There we were, well over a hundred (150?) Brit and European enthusiasts freezing our tails off on top of Mt. Tam and who should arrive complete with a basket of chocolate eggs-- you guessed it! That Bunny arrived in a sidehack made it all the more appropriate. The group in Berkeley has grown steadily for the past couple of years and it was truly a gas to ride down Ashby to the freeway in the middle of such a large group. Marshall topped off breakfast with a touch of champagne for all, proof positive that the civility of the British has had a profoundly positive effect on the man. Then too, he rode his Triumph Executive, the one with hard bags. Next year, who knows-- maybe he'll finally get the right hat, something perhaps in silk. Let's see, when's Easter next year? I'm going to mark it NOW.

And then there were the JPNs-- eight of them at Alice's on the 12th. Make that ten. Dave and Dave (Sorry guys, I didn't get your last names.) arrived about 30 minutes after the group paraded down 35 with two more bikes in a pickup, mumbling something about a party the night before. They set off down 35 just as the first of the returning JPNs made its appearance back at Alice's. One of these days they'll all be at the same place at the same time ....

At Alice's several of us talked about some way to fascilitate meetings between members who are rebuilding Nortons. We didn't arrive at any conclusions save that the club could provide a real service to its members by either publishing who is working on what or trying to get garage space for hands on tech sessions. Anybody got any ideas?

Daniel Sui spoke at the April 9 meeting in S.F. and was most responsive to members' questions and comments. The baseline in insurance seems to be 'shop around' as an alert agent can get you a deal, and perhaps more importantly, match your needs with a decent policy.

Have fun with this issue's installment of TECH TALK.

Lou

**SEND RENEWALS TO ALAN**

PARAPHERNALIA

1. "My success is due to my unapproachable Norton" T-shirt, black with gold print. Large only. $8.00
2. NOC classic "N" T-shirt, dark blue with white print. Large and X-large only. 8.00
3. " " " " , black with white print. Large only. 8.00
4. " " " " , white with black print. Medium and large only. 8.00
5. Northern California Branch logo T-shirt, white with blue and red print. Small, medium and large. 8.00
6. Northern California Branch logo baseball jersey, white with blue and red print. X-large only. 9.50

NOTE: All T-shirts are $1.50 postage.

7. Commando Service Notes, 45 pages compiled and printed in England by NOC. 5.00
8. 3"x 3" NOC machine badge. 6.00
9. 4 1/2" red NOC sticker 1.00
10. 2" " " " .50
11. 2 1/2" x 3 1/2" red, white, and blue NOC sticker .75
12. 2" red, silver, and black NOC sticker .75
13. 4" red and white embroidered cloth NOC patch 2.50
14. 2" " " " " " " " 1.50
15. red enamel NOC lapel pin 1.25
16. " " " key fob 1.50
17. red, white, and blue enamel John Player Norton lapel pin 1.50
18. " " " " " " " " key fob 1.75

Send orders to:

Suran Meissner
5300 Tie Gulch Rd.
Santa Cruz, CA 95065
(408)426-6526

Call or write for details concerning availability and postage of items.

NORTHERN CALIFORNIA BRANCH
TOOL LOAN-OUT PROGRAM

Get in touch with Harry Bunting if you need one or more of the following tools for working on your Commando. A refundable deposit equal to the replacement cost of the tool is required at the time you pick it up.

| TOOL | DEPOSIT |
|---|---|
| exhaust lock ring tool | $10 |
| timing cover oil seal guide | 5 |
| clutch spring compressor | 12 |
| clutch locking tool | 18 |
| valve spring compressor | 22 |
| rocker spindle puller | 25 |
| crankshaft sprocket puller | 12 |
| timing pinion puller | 20 |
| gearbox layshaft bearing extractor | 15 |

Harry Bunting (415) 968-2020
1401 Gilmore St.
Mountain View, CA 94040

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ADVERTISING RATES

| | 1/4 pg | 1/2 pg | Full pg |
|---|---|---|---|
| 6 mos | $35 | $70 | $140 |
| 1 yr | $60 | $120 | $240 |

Send ad copy and check to the Editor

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# $ WANT ADS

ALL ADS WILL RUN FOR TWO MONTHS UNLESS YOU RESUBMIT THEM IN WRITING TO THE EDITOR.

New parts for sale:

1. Commando oil filters, $4 each
2. Commando cam chain, $5
3. Commando steel clutch plates, set of four, $20
4. Commando shift lever with rubber, $12
5. Commando Ferodo disc brake pad set, $7
6. Commando warning light assimilator, #062054, $5
7. Commando primary chain, $30
8. forged aluminum clip-ons for Roadholder or other 35mm fork tubes, $50
9. 20 tooth Commando countershaft sprocket, $15
10. Atlas/Dommie fork top nuts (chromed steel), $12 pair
11. Early Commando chrome fork slider extensions, #060350 (2 3/4" long), $20 pr.
12. Lucas tail light lens and base assembly for Atlas/Dommie, $15

Used parts for sale:

1. '69-'74 Commando rectifiers, $4 each
2. Commando 750 swing arm, $15
3. bronze tach drive gearbox for Chronometric instruments (pre-Commando), $20
-. two early Commando? or pre-Commando front fender stays, painted black, not bent, good condition, 13" center height, $5 pair
5. two pairs Commando Roadster pipes, free
6. pair of Atlas 1 3/8" O.D. exhaust pipes with 1 5/8" sleeves where mufflers attach, a few small dents but the chrome is good, $15
7. Atlas rear fender in excellent shape (no cracks, no dents, no extra holes), good chrome, $40

Shipping is not included in any of the above prices.

Gene Austin
985 E. Grant Pl.
San Mateo, CA 94402

## * SERVICE NOTES AVAILABLE *

The Commando Service Notes are once again part of the club paraphernalia. Alan had a bunch printed up and they are of excellent quality. Send your order to Suran and add to your collection of Norton essentials.

FOR SALE

1972 Norton Commando. One owner, '69 Fastback 4 gal. tank, seat, and fender set, R.T. Quaife 5-speed gearbox. Needle bearing swingarm, Koni's, ported, polished, balanced big valves, light pushrods and rockers, Webco springs, alloy collars and keepers, production racer (isolastic) top motor mount, rearsets, alloy rims, quartz headlight, many, many spares. Excellent cond. Best reasonable offer.

Mike Hersh
(408)338-4021 (home)
(408)438-2100 Ext 2100 (work)
or
Wayne Seymour
(408)458-9069

**WE NEED YOUR BIKES**

## RENEWING THE NOTICE

A typical address label

A.B. Cush 136/7
24 Honeyhill Way
San Anselmo, CA 94523

7 (July) is the month of expiration

Send your dues in when you receive the renewal form. If you forget, we send you two more issues ("Final Notice" and "Expired") and then wish you well. If you renew after the "Expired" issue you may miss an issue or two. If you want these issues send $.50/ea to cover costs. Better yet, check your renewal month and save us stamping reminders on your copy. Renewals to Alan for $25.00 payable to Norton Owners Club. Thanks.

# LETTERS

Dear Editor,

I enjoyed the quasi-technical session that you put together in the last NORTON NOTICE. It must have been a lot of fun to attend as the humor did come across in the article. Unfortunately, there were some errors that were not caught by the participants during their reviews of the transcript presented to each participant by yourself.

The first major error has to do with the use of a basic handtool, ie., a torque wrench. Confusion existed over whether or not to recompute a torque value when using an adapter at a right angle to a torque wrench. Scot stated it correctly when in the article he said, "As long as you're at a right angle it doesn't matter." The subject got muddled from there on, but in fact the torque value does not need to be recomputed as long as the adapter is at exactly a 90 degree angle to the length of the torque wrench -- no matter how long the adapter. Of course if the adapter is installed in line with the torque wrench handle, either as an extension or in the reverse direction so as to shorten the effective length of the torque wrench, the torque value must be refigured using simple formulas. Scot had it right and I know Phil Radford knows this basic mechanical practice, so we'll blame the error on the use of alcohol during the original session. Why it wasn't caught during the review, I don't know.

If when a cylinder head is retorqued any of the head bolts tighten further, the valves on a pushrod engine should be checked for proper clearance. If the headbolts turn, it indicates that the distance between the head of the bolt and the material that the bolts are screwed into (in this case the cylinder block) has decreased and/or that the bolts are stretching. This may seem like an odd statement regarding bolt stretch, but the most accurate way of determining bolt tension is to measure its stretch with a micrometer. As this is usually not practical, a torque wrench is used to indicate tension. At any rate, the valve clearances should be checked. Note that this does not apply to a flathead or overhead cam engine.

Regarding valve rotation during operation, I know that they can rotate. I remember seeing some Commando intake valves in a Combat 750 engine that were well worn by contact from the valve adjusting screws. The ends of the valves had pockets in perfect circles that involved approximately 90% of the ends of the valves. The only way the worn area on the valve end could be larger than the contact area of the adjusting screw is if the valves rotated. I once marked a couple of valve ends in a Commando engine I had with an indelible marker and the valves did indeed rotate over a period of time. I don't know whether or not the Norton engineers wanted them to rotate, but they can. I also recall Oldsmobile having an advertising campaign in the very early '70's in which they trumpeted their Positive Valve Rotators or some such hype. It was to ensure that the valves did rotate for some theoretical reason. As valves on most engines do not rotate and Oldsmobile no longer makes a big deal about this, I guess valve rotation is of dubious worth.

I also noticed a statement in the article regarding using Loctite on aluminum threads. If the wrong grade of Loctite was used (and there are dozens of grades) you could sure cause some major damage during disassembly. I personally wouldn't use Loctite on any aluminum threads as I feel it would only be covering up a problem that correct assembly and basic workmanship could correct.

I'm looking forward to the next installment because of the humor and the opinions involved.

Gene Austin
inveterate tinkerer

# TECH TALK, PART 2

We continue in this issue our discussion of the mysteries of the universe, with particular reference to the Norton motorcycle. An alert reader spotted the initials MR added after some of the comments printed in the first installment and, after initially concluding that this was a phantom which had crawled into the type, I remembered that I had given the manuscript to Mike Rettie who reviewed it. Mike joins us at some point in the future (when the second taped session begins) but is with us in spirit for what appears in this issue of the NOTICE. That alert reader, Gene Austin, adds HIS initials on occasion as he was kind enough to review what follows (see also his letter to the Editor). Gene lives by the Good Book, the Factory Workshop Manual that is, and would, I sense, caution anyone who reads the "quasi-technical session" to double check any of the opinions presented.

On to the discussion . . . .

Scot: Two things I'd like to bring up about the Megacycle cam. During the early part, probably five years ago, they had problems with the materials they were using to build up the cams. They would get old cams and hot spray [weld on hard face--LS] new material on them and regrind them. Jeff Hempel, who was a welding supply distributor here before he moved back to L.A., was called by Megacycle who called and said they were having a problem with the material they were spraying [welding] on their cams. They said the cam lobes were going flat on them. He got them straightened out and by the end of it spraying lobes that would stay on. So if you have an early Megacycle cam you want to make sure that you have a hard one and a good way to do that is to talk to someone like Alloy Hard Surfacing and have them test it for you. Another thing about the Megacycle cam is that they require you to radius the lifters, the bottom end of the lifters that rub on the cam, and they achieve low acceleration rates Harvey was talking about by radiusing that lifter just in a small hemicircle. It's plainly visible if you've got a flat one or one from the factory that's been raduised. When I got my Megacycle cam I had to send my old cam and my lifters off to them and they came back radiused and my old cam came back to me with new hard surfacing on it.

Lou: Who else does grinding cams around here who knows what they're doing?

Scot: Well, I think Axtell is still grinding cams for Norton.

Harvey: Norris makes good cams. And Dunleavy makes good ones. I put one in the 940 Norton and it worked out real well.

Scot: I still cleaned his clock with my stock 750.

Harvey: You fell off the first time we took a ride on that 940 as I recall. We went two-up.

Some people did have trouble but the 940 is a thing of the past. I don't think anyone builds 940s anymore except the Australians who are doing sidehack motocrossing with Nortons.

Scot: Yeah, that's a big thing in England too. They get the Wasp conversions, put a big Norton engine in with kind of a modified motocrosser with a sidehack thing with dual pipes and a platform . . . .

Phil: That's grasstracking.

Scot: It's mud and hills and jumps and everything. It looks like motocross, maybe they call it grasstracking over there.

Phil: Grasstracking is racing on grass on an oval.

Burton: Boy, that must be fun!

Phil: It's hairy.

Harvey: Is HPI still alive? But those are pretty exciting bikes.

[An unusual odor permeates the room and Scot points a finger at Phil and says, "Goddammit, Phil, you did it again."]

Lou: Okay, can we move on to primary drive and clutch?

Harvey: We haven't talked about pistons and cylinders. You guys find any problems with the standard pistons?

[General agreement that there were no problems]

Harvey: How about rings? Do you use the cast iron, some of the chrome plated, or the stainless ones?

Scot: I've never had any luck reusing rings. You put new rings in, they get seated to the barrel, and you have to pull the barrel for some reason . . . it seems like once you put the barrel back on, even if you break the glaze in there with those old rings they just never seem to seat as well again as new ones do.

Lee: It depends on how many miles you have on them.

Scot: Well, 10,000 miles . . . .

Lee: 10,000 miles is time to replace the rings. But if you're talking about 300 or 400 miles I'd try and reuse them.

Harvey: How about the oil ring? There are several different kinds of oil rings and springs and retainers . . . .

**Send renewals to Alan**

**NORTON OWNERS CLUB**

Lee: Well after 10,000 miles I'd replace the rings.
Harvey: Do you guys have any type of oil rings or scrapers that you like to use?
Scot: The ones that come in the package with the other two?
Harvey: There are different kinds.
Scot: I know if you bend either or both of those upper and lower rings -- the oil control rings -- they will not seal anymore. Your oil consumption will go up. And it's also very important to pay attention to the directions and orient the gap on the spacers in the oil control rings themselves like they say in the directions. That will make a difference in oil consumption.
Harvey: You know some of the early pistons have a slot that goes between those two little holes....
Phil: Split skirt ones. Throw them away.
Harvey: And some of them have little holes drilled in-- the Combat type we used to call them-- you guys have any trouble with the skirts falling off?
Phil: I've heard of it happening. Never happened to me.
Scot: I always sold those bikes before I used them too much.
Harvey: Nobody has experienced it? I think this is a myth. I've never seen one that's broken off but always heard that it was a problem.
Scot: Well stop to think a minute that back in those days Norton was the hot bike and if you had the hot bike you had to be out proving it all the time. And if you had those pistons in there and you missed a gear really getting on it hard you could encounter rpms that were high enough to cause the top of the piston to come off.
Harvey: But have you ever known of it personally?
Scot: I was never around during those times.
Lee: I haven't. Of course I haven't seen too many of those pistons either.
Harvey: They're in a lot of the old bikes. I think 72 or earlier had them. How about clearance? You know there are some cutouts for the valves heads. Have you ever had trouble with Combat or Megacycle cams not having enough clearance with the flat top Commando pistons?
Scot: I put a Megacycle on my 850 and I put Plasticine on the top of the pistons like they tell you and there was still a sixteenth of an inch from the bottom of the dent in the Plasticine to the piston.
Harvey: Lee, did you have to cut yours out some?
Lee: Well, I put oversize valves in it and I had to have special cams made up for me because the valves were running into each other. With the standard Megacycle cam or the Combat cam or Norris D cam. I think for everything but a stock cam the valves were running into each other so he ground up the cam special with wide lobe centers so there was very little overlap and a lot of lift with a very short duration. That's how I overcame that. But I didn't have to pocket the pistons any more to get by that. I'm running Powermax pistons and a Combat head.
Harvey: How much do you have to take off a head to get a full point increase in compression? Do you have a rule of thumb on that? 0.075?
Lee: Yeah, that's how I figured it. I measured the difference between the Combat head and the standard head, from the surface to the bottom of the combustion chamber and it came out to about 0.075--0.080.
Harvey: That's kind of useful. That's a good number if you want to mill your heads; 0.075" gives you about a full point increase in compression.
Lee: There's also something in one of the factory bulletins about eliminating the base gasket if you want to raise your compression ratio and I think that takes off about 0.030-0.040. [The Commando gasket is only .020' thick before installation-- slightly less after. GA]
Harvey: Do you put a base gasket on when you put your cylinders on?
Lee: I don't use base gaskets.
Harvey: I don't either.
Phil: They can blow out on the 750s.
Scot: What sealant do you use instead of a base gasket?
Lee: I use the Loctite plastic gasket, the purple, grape-jelly type stuff. I tried to use a base gasket on the racer and it pounded out.
Harvey: There's a lot of movement between the cylinder and the crankcase.
Lee: Especially with a high compression motor. But I've never had any problems with a base gasket on a stock motor.
Harvey: Maybe we could talk about the most common leaks on a Norton and how to fix them.
Phil: From your back panniers. They don't hold water at all.
Scot: That's the only way you can tell where the beer went though.
Phil: Where was that highway up there?
Scot: We stopped at, not Mono Hot Springs but....
Phil: Grover?
Scot: Where's the hot springs at?
Phil: Markleeville. And Harvey, I don't know where you came from, but there was water draining out of his panniers. It's a dry, beautiful sunny day and there's water draining out of his panniers.
Harvey: They were full of fucking beer and ice. We stopped by the road and picked some of it up, remember?
Phil: Yeah, that was fantastic! That was Harvey's bar!

(Cont. p. 11)

Scot: We went into the parking lot by the hot springs, we're in the shade, and Harvey opens up the top of his pannier and says, "Hey, the bar is open!"

Harvey: That's the great thing about top-loading fiberglass panniers. I turned them around backwards to clear the upswept muflers and so they aren't mounted in the normal sort of way. That's why they look a little weird.

Phil: They looked fine to me when you opened them up.

Scot: One thing I could add, though, about restoring an old Norton-- one thing you'd always want to do if you pull the engine apart is to break the crank apart and check that sump trap-- the sludge trap in the middle-- because I don't know how many I've taken apart and found that thing almost packed full. And the drillings in the crank journal are almost full.

Phil: I think that with modern oils you won't get that so much. They keep an engine cleaner. On this subject of oil I think all 750's should have the cartridge type spin on oil filter that came stock on the 850's. It's just a matter of bolting on the filter head to the transmission cradle and piping it in.

Harvey: All that crap changes the balance too. You clean it out and your bike runs a little smoother.

Scot: That stuff is mostly steel. It's steel filings that wear off inside your engine and the centrifugal force throws it out against the inside of the sludge trap. And there it stays for ever and ever.

Burton: Ever wonder about that shit? You drain the oil in your bike and stuck to the magnetic plug are these little pieces of stuff. You wonder where they came from! Bike still runs good....

Scot: That's it! As long as it still runs good I know that stuff now is on my rag instead of going around inside my engine.

Phil: As long as it's pieces. When it's chunks....

Burton: The head of a bolt or something....

Harvey: That really fine talcum powder stuff, that's normal. It's just like rings scraping against the cylinders. And your cylinders do wear, right? They go out of round, they taper and all that stuff. Well, where does that go to? It doesn't go out the exhaust, it goes into the oil.

Alan: As a rule of thumb 0.002" wear in the cylinder produces one cubic centimeter of iron filings. So if you figure 50% dilution in the sludge with the oil solids that's a lot of stuff stuck to your sump plug. And with not a whole lot of wear.

Harvey: So we go to the bottom end now?

Phil: Well actually I was thinking I got a lot of information from Les when I talked to him. He uses on his race bikes stock pistons, one because you can't get Powermax anymore--they're discontinued-- and he gets his compression by skimming the head and the cylinder. He takes up to 0.090" off and then shortens the pushrods the same amount.

Scot: How do you shorten a pushrod, Phil?

Phil: You pull the end off. Then you turn....

Harvey: You pull the cap off and you turn or saw off the end of the aluminum. I just used a hacksaw.

Phil: You would! It's a wonder you didn't use a chisel!

Scot: How about just grinding it on the driveway?

Phil: And that's it. He says you gain because a high compression piston is going to be heavier. ...He also says that the stock pistons are lighter and therefore less reciprocating weight on your rod ends. So it makes your engine last longer by using the stock pistons and you just gain your compression by skimming. Another interesting thing he told me is that he pockets the valves. I always thought that was a big sin. He says what you lose in gas flow you gain in flame burn-- you get a better shaped combustion chamber.

Harvey: He pockets the valves? So he grinds the seats down deep? That's weird.

Phil: Every book I've ever read on that says you have sticking out valves and raised seats. But he has it more rounded. So what you lose on....

Harvey: Volumetric efficiency....

Phil: Yeah, what you lose on that you gain on flame burn. And also on a flat piston you get better flame burn too. And the pressure acts downwards on the piston instead of sideways against the raised part of the piston. So if you have a domed piston the flame force is actually acting more on the side of it than directly down over the piston. So it kind of shoots a few holes in some theories I've held myself.

Burton: For the flat top piston ... I figure there's no reason for Norton to use anything but what they did, and they had the choice of pistons obviously.

Phil: Well they also had dished pistons.

Lee: Well they had a shallow combustion chamber. It isn't like a Triumph that's a full hemi. So you don't have to run a high dome or a dome at all to get your compression.

Scot: The production racer had a very slight conical shape to the top of the piston. It was just very slight. The only way you could notice it was by looking at the machining....

Phil: Well Harvey fitted those pistons before he bought it. They were warped....

Phil: Rod end shells. Don't fit the two with the holes in together on one rod.

Scot: That's a good idea.

[Tape obscured by mantle clock striking the hour which sounds to tape transcriber like Big Ben from one foot away. All sounds other than gongs are masked.]

(Cont. p. 12)

Harvey: Get your pistons in right. I once bought a '73 750 Combat for $200.00 because the guy rebuilt the engine himself and he put the rings in, he had the pistons off, and he got the pistons backwards, the valves kissed them, and he had problems with bent valves. He rebuilt it again very, very carefully, checked everything, read his manual, put the pistons in backward again and drove it about five miles and it started missing, running badly again, and he drove it all the way home and he holed a piston. But it's easy to get confused is the moral of the story. Be careful about putting your pistons in, front to back and left to right. Get 'em right.

Phil: I had a friend way back in my teenage days who called me one day and said,"I've been trying to put new rings on my bike. I keep breaking them." I figured out he wasn't slipping it over the piston, he was trying to open it up wide and then push it around the piston.

Burton: Oh God!

Scot: Something else that you want to do is check the endgap on the rings that you're going to put in.

Phil: Yes, even new ones.

Scot: Even from the factory they come too tight.

Harvey: That's a cheap way to test the taper in your cylinders. Take a ring and put it in there, kind of make it square with the piston that doesn't have any rings on it and check the gap. And then push it down and check the gap, push it down and check the gap at maybe five different places as you go down and then divide the change in the gap by three, which is close enough and that'll give you your taper. So you don't need these fancy telescoping mikes and stuff to check the piston taper.

Scot: Oh, man, it was such a pretty excuse to buy that....

Phil: That just happened to me. That bike I've got in my truck, I put new pistons in it, Hepolite pistons, and I checked all the rings and they were fine. But the expander ring-- behind the two skinny ones on the oil-- was too big. Wouldn't go down the cylinder on its own. And it was straight out of the box. So even what you think should be right, check it. That's probably about the best thing you can write in this tech tip session. Don't take anything for granted.

Burton: I agree with Phil relative to any parts. Scot, was it you who mentioned that the oil filter body wasn't drilled?

Scot: No, that was Art.

Burton: Well I've found all sorts of odd little things that when you check them out they're not right.

Lou: Let's go to primary drive and clutch.

Phil: Didn't you experiment with different combinations of plates and such, Scot. What did you find was the best setup?

Scot: I've got what I think is a pretty nice clutch in my 850 finally. It started out with the thin pressure plate and the larger number-- I can't remember how many--[5--LS].

[Lou reads the tech tip on the clutch written by Willy Sanford which appeared in the February NOTICE]

Burton: I don't know. My personal experience has been, with the MKIII is staying with the stock plates. I don't have any problems with them provided you do about three things: 1- you've got to have a hardened center hub because the hub's softer than the bronze plates and gets a groove in it, then the plates don't separate properly and they drag on the center hub.

Harvey: Well you do have a hardened hub ever since about 73.

Burton: You can get a still harder hub if you-- I know John Gallivan has them, I don't know who else does....

Alan: Hubs of Hell, Incorporated.

Burton: I replaced what was supposed to be a factory hardened hub with this harder version I got from John Gallivan and it hasn't notched at all.

Scot: My comment on the hardened hub is that it will last longer but by the time that hub notches the teeth on the clutch plates will be worn to points. So instead of replacing the plates twice to one hub you just replace everything at once and it lasts twice as long.

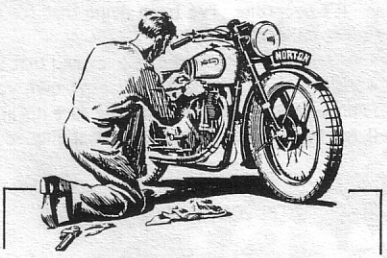
Burton: When I replaced the last center hub I also put in a new set of plates in the bike but that combination has lasted a long way and for a lot of hard work. But the other thing is that I find in terms of the deglazing what you really need to do is get them really clean. I have them bead blasted. For some reason T.T. only bead blasts the steel plates. Marshall's policy is he bead blasts the steel and the bronze plates and that combination I find works really good. I've tried all of the combinations that you can put in the primary case. I find the factory's recommendations are about as good as anything. ATF really shortens the life of the bearing in the outer hub. [Not to mention the primary chain.--GA]

Phil: We use MTF. [Motorcycle Transmission Fluid, manufactured by Torco Oil Co.] ATF's not a good lubricant.

Burton: The MTF seems to get the plates glazed about as quickly as anything. I don't think it much matters what you put in there if you change it frequently. Which is my next point.

Phil: You get oil contamination like you were saying from the tranny through the center of the mainshaft if it's overfilled.

Harvey: Also, every Norton I've known has leaked through the seal to the crankcase too. *(Cont. p.13)*



# TECH TIPS

Phil: And the crankcase seal, when I had my belt drive, used to leak through there all the time. I put new crank seals on it and . . . .

Lee: My only one that doesn't is my Mark III. It just doesn't leak there.

Phil: A hairline scratch on the crank maybe; it's just getting through it, but when you think about it, the pistons are coming
down together and create positive pressure in the crankcase. There ain't no way the stock breathers can handle that.

Harvey: About everybody I've known who has belt drives has had oil leaking in through the crank seal.

Phil: If it's just a small leak it's no problem-- about two teaspoonsful after a ride. You can soon get rid of that.

Harvey: But there are enough leaks in that it may change your level.

Phil: And it contaminates and raises the level all the time. If you've ever let your engine wet sump-- fill up with oil-- it fills up your primary as well. It comes through. It does on mine anyway. I've got to drain the primary as well as drain the sump to get the oil out.

Scot: I've had bad experience using ATF in primaries. It doesn't seem to lubricate as well. I've actually shed rollers off my primary chains from lack of lubrication.

Phil: The main reason for your oil is to lubricate your chain.

Burton: Well that and to lubricate that bearing behind the outer basket. That bearing has about half, say two thirds the life of anything else . . . .

Scot: But that bearing gets very little lubrication anyway . . .

Lee: It gets very little use. It's only being used when the clutch is disengaged.

Burton: Yeah, I don't know, that bearing, I seem to have replaced two or three times.

Alan: Do you hold your clutch in at a stoplight?

Burton: Not usually. I can always find neutral at a stoplight. Everybody else I know who rides a Norton says they can't get neutral unless they come to a dead stop but I don't know why that's a problem.

Phil: If you're going to run a belt drive run it slack. I've found that out.

Scot: If you're going to run a belt drive, also, never let it get hot.

Phil: Well, you should vent it.

Scot: It has to be ventilated, right.

Phil: The aluminum expands quite a bit.

Lee: And when they get hot the belt gets tighter. When its cold you've got to have a little bit of freeplay. I've found with my racer that when it's cold I'll have quite a bit of freeplay but after going out and running it I come in and the belt's tight.

Phil: Well the aluminum hubs in your clutch and engine expand.

Lee: Actually the engine sprocket is aluminum also.

[Tape runs out at this point. Fresh tape installed]

Lee: . . . to hold the sleeve gear on the outside to keep it from getting pulled back and forth by either the belt tightening or the tranny pulling back on it.

Alan: Just an endstop, you mean?

Lee: No, it's a bearing. It sits parallel with the high gear bearing, right next to it, and the chain runs between them.

Phil: That's what Norton did when they had their problems.

Lee: On the John Players?

Phil: Yeah, they had so much mainshaft flex that the gears were going out of mesh.

Lee: And they were blowing up a lot of trannies?

Phil: Yeah, so they put an outrigger bearing on it.

Harvey: Yeah, on the outer . . . .

Phil: On the countershaft. That's what he's done. It's not what the average guy is going to do because he doesn't have that problem , but racing . . . .

Lee: I'm not sure how well it worked; I haven't taken it apart yet.

Harvey: How about leaks in your primary? Around the cover area. How do you guys stop that?

Burton: I made some notes on that point. I tampered around with this for a long time because I pride myself on my bike being leakfree. And the one place I couldn't get to stop was the bottom of the primary, the bottom of the outer cover. So I finally took the cover off for the 800th time and made it as smooth as I could on a plate of sheet glass with emery paper and then I put it back on with Master Gasket, it's one of Loctite's products. I put it on with that with no gasket and it didn't leak at all excepting that what I didn't think of when I put the allen caps back in that hold the case on I didn't do anything about keeping

that gasket material from getting on the caps as they were screwed in. So the next time I needed to get the primary off I twisted the head off of one of those and it was a bitch to get it out. Since then I've been using that material again but I just put grease, like wheel bearing grease or white cup grease, whatever, on the screws as I put them in and then when they pass through the gasket it doesn't harden up and they're easy to get out. But I've found that combination made the case absolutely tight. The trick with getting the outer cover tight seems to a great extent to be to have it aligned properly from the back with that adjustment screw. If it's loose at all it's not flat relative to the front cover. It does a lot of other nasty stuff and you can usually spot that when you take the cover off. If the chain's been dragging on the case on the inside where the case kind of ramps up on the bottom you can see that the case alignment isn't right.

Harvey: What usually happens there is that people forget to put the spacer washers on that central stud that comes through there on the back. They're not always even right from the factory. What I usually do is on the front between the inner primary cover and the engine I leave out the paper gasket that Norton supplies and just put a little RTV in there. And then go ahead and bolt that tight. I bolt it up dry first then I go in and measure the distance without any washers on that long hex piece that comes through the case. I measure what the distance is and record that and then I go back and put some washers on, just maybe 0.005" thicker or so, than whatever I measured, and go and bolt the inner cover on tight and then come back and then it's not distorted. Then put the outer cover on making sure they're both clean and smooth and put that rubber seal on with no gasket sealer or anything. And it stays tight and doesn't leak.

Alan: The MKIII doesn't have the groove for the rubber. It's got a flat paper gasket.

Scot: I think with a pre-MKIII I've never had problems with the outer cover O-ring leaking. It's always been the felt seal on the inner cover where the tranny mainshaft comes through. I don't want to change my bike now but the last time I changed my primary oil the felt seal was laying there and it's such a bitch to get in there and try and work a new seal in I just said, "It leaks everywhere else, what's one more?"

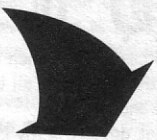
Alan: You know how to fix that? Take the seal out, throw it away. Get a piece of 1/8" vacuum hose, soft rubber vacuum hose, slit it in half, jam it down in the groove where the felt was so that the cut edge is facing out-- it makes a double lip seal-- right on the mainshaft.

Scot: What keeps the vacuum line from softening up with the oil exposure?

Alan: It's neoprene. I've been doing that for years; it's never failed on me yet.

Burton: I use basically Harvey's trick and that seems to work real well. The factory doesn't give you any good procedure. It basically says be sure it's aligned. Well, how're we supposed to know what aligned is?

TO BE CONTINUED NEXT ISSUE



## MEMO FROM MARGIE

**REPORT FROM DOWN UNDER:**

Spent two weeks sampling the roads of New South Wales, Australia, including several days as the guest of Peter White and Melodee, of the Sydney Norton Club. Wonderful hosts, they were, and I got to go to a meeting of the club. Nortons are less popular there than here (the Aussie Eurobike fanatic rides Ducati) and there are about eighty people in the club. However, twenty-seven showed up for the branch meeting!

Colin Pitcher, club member and Norton racer, will be showing up in September. If anyone can put him up or find him a ride (any brand appreciated) please let him know. He is especially interested in meeting with the club racers (Lee? Mark? Eric?) and is on the lookout for go-faster bits.

Address:

Colin Pitcher
45 Nullaburra Road
Newport Beach, 2106
New South Wales, Australia

Whitey (Peter White) and Melodee are getting married at the beginning of October and I think it would be nice to send them a club present, possibly a piece of the Commie she is restoring.

Once again we need people to lead rides this Fall. All you need is a working knowledge of neat roads we haven't been on lately. If you don't call me and volunteer, I might call you anyway, so save the time and harassment and call me first.

Margie