

HAWKWORKS

V 6 / ISSUE 3

Hawkworks Racing Season Report

Commitment.

That's simply what it takes to run an endurance team over the course of the year. I didn't realize how much when I started this thing. At the end of the '97 season, I talked Phil White and Bruce Moore - both very fast guys who are used to quality equipment - into racing on my team in the CMRA Lightweight Superbike Endurance season. I had some grand plans. Some came out well, and some...didn't.

We race, we learn. But we were committed.

The plan at the start of the season was to have these two known fast guys on my Hawk. We'd build in horsepower and reliability to beat the perennial winners of the class, Faltless racing led by Eric Falt and Laroy Montgomery. Easy, right?

Well, as you might have guessed, that was all too easy. With the engine clean out of the bike just a couple weeks before the season start date, I was indeed scrambling to get my program together. It was possible to get it all done, if - and I do mean IF - every part came in on time and fit as it was supposed to. That has never happened to me in my life. So we stole the street stock motor out of my brother's Hawk. Poor Manny. He thought he'd get it back soon enough, but we started and ended the season with that motor installed. It needs a new clutch now...

The first race was going well - 'til I got to the track. In all my cockiness, I filled the 5 1/2 gallon carbon tank to the brim when we stopped for gas halfway to the track. Alas, I didn't turn the petcock off. So the gas pushed its way past the vacuum fuel pump and filled the front cylinder. Of course, we tried to start the damned thing anyway. It's a wonder I didn't bend a freakin' rod! I pulled out a spark plug and got an eyeful of Texaco's best. R&R the Mobil 1 and fix the fuel cap leak. We just barely started the race on time. No practice, just a hot lap, and Bruce was off. Six hours later we took a second. Not sure how. But we did it. Well then this IS easy. Sure it is. Should be even easier next time, right?

The next race, a long 8-hour event, should have been easier with the "hot" 60 hp motor we had intended to race all season. We barely made it again. You see, as usual, I was up all week before the race getting the motor together. I broke it in at a track school, and all seemed well. When I fired her up in the shop before the race, she made a noise. A not so good noise. I replaced the cam chain tensioners; and to cut the story short, when I re-installed the front cam, I was one tooth off. Of course I didn't notice that until I fired her up again. Not just tic tic...but TIC TIC TIC! The intake valves were hitting the piston dome. It was three in the morning, and I gave up. My commitment had dried up. I crawled into bed, utterly defeated. Snow called Phil, who was already at the track, and they made me pack up the bike and gear. Snow drove me to the track as I tried to catch up on some sleep.

Again with a major mechanical issue at the start of the day, we missed practice. Phil took charge of the pit and tore the front cylinder apart to fix my midnight mistake. Bruce jumped on, and we rolled onto the track one lap after the green flag. That's the race I crashed. Hard.

Earlier, the bike pumped oil out of the lower breather so bad that the rear tire was covered in oil. I dunno how Phil kept it upright. A couple sessions later I ran into the back of a much slower rider on an F2 in a fast corner. Lack of sleep and racing are not good teammates. I crushed the team when I rolled into the hot pit lane with a thoroughly thrashed bike and a couple screwed up ribs. I was ordered to sit and watch as Bruce, Phil, and crew member Richard patched the bike up.

Our buddy Brooks was sent out on a bike he had never ridden before. The last human words he heard were "Remember: reverse shift. One up, four down." Brooks spent his entire session chanting "one up, four down." Phil brought the bike in with an hour left in the race. It was making bad noises again. We pulled out and watched the rest of the field motor by. That race sucked. 7th place. Out of 7. Stretched stock con rod. Lesson learned. Carillos on order.

The third race, this one in Oklahoma, was a 6-hour one that FINALLY went as it was supposed to. The weather was beautiful. The bike was done on time, again with Manny's donor motor. We even got to practice. We actually had a chance to tune the suspension. Cool. We took a second place after four hours, half a lap back from Faltless. Dull, boring, eventless race. No crashes, no mechanicals, no major pit screw-ups. It was great. THIS is how we will run next season.

The fourth of five races brought us back to Texas World Speedway where the saying "anything can happen" proved true. Nope. Didn't win. Not even close. It was hot, and the bike ran hot all day. When it started to lose power, Phil thought perhaps we had boiled out the coolant. In the pits, I played daredevil and popped of the coolant cap expecting a rush of steam. Nope. Tons of water. Bruce got on for an hour. When Phil got back on, it started to lose power on the top again. This time we replaced the battery and that fixed the bike. In the final hour of the race, the upper fairing stay broke, and Phil made a lap with it in his left hand. Try that at home, kids. Later in the week I found our electrical gremlin. The plug from the stator came disconnected from the regulator. Anything can happen, and our misdiagnosis cost us a decent finish. Again we held the bottom of the ranks with a sixth.

Back to Hallett, Okla., for the last race of the season. Randy White took the reins of my Hawk when Phil had a family emergency and was unable to be at the race. Bruce was a rock - a fast rock. Randy did his best to scrape all the paint off the lowers, mercilessly throwing the bike onto it's footpegs mid-corner. I stayed off the bike. (Smartest thing I did all year!) We wouldn't beat Faltless in the season championship unless they didn't show up and gave us 50 points for an early Christmas gift. Fat chance. Again Faltless was ahead. But our real race was with Team WGAS (that's Who Gives A Shit for you acronym impaired) and the lanky brothers from Houston, Robin's Roost. The top four teams were on Hawks.

Well, Fate was on our side. WGAS blew up 45 minutes after the start. Robin's Roost puked out all its oil from the breather and was black flagged 45 minutes from the end of the race. Their motor got so hot it turned the cases gold. Manny's motor, this time with a horsepower supplement care of some cams, Advanced Motor Sports ported heads, and Phil's flatslides, churned ahead. Deja vu. We took a second, half a lap behind Faltless. Exciting stuff!

We beat the two teams we needed to beat. WGAS came into the last race in a strong second, with Robin's Roost in third and our team wallowing off the podium in fourth. When WGAS took a dump, we secured at least a third. When Robin's Roost flew the coop we took a second. By .14 of a point. After five races, 28 hours, 979 laps, more than 450 points earned, two motors, three crashes, untold credit damage, and our nerves stretched to the breaking point, we took second by .14 point. If Snow and Phil had let me quit, we wouldn't have made it. Thanks guys.

So next year we're aiming for the top spot again. Faltless will be back, and we have our work cut out. The new Suzuki 650 twin might make for some strong competition for our decade old bike. We now know where we're weak, and that will change. We know where we're strong, and that's as a team. Phil, Bruce, and Randy will be back. Again on my Hawk. Again with a hot motor but built with true reliability first. Next year we're ready to rock and roll. You see, despite all the adversity this year, and the huge challenge of endurance racing - we're committed.

1998 Hawkworks Racing Sponsors:

Mototek Imports (Jay Bernard)
Supplied the sexy Aprilia bodywork.
www.mototek.com (512)451-3960

Advanced Motor Sports (Jeff Nash)
Supplied a set of wonderfully ported heads.
www.advancedmotorsports.com (817)572-3109

Pit Bull Motorcycle Stands (Charlie VanValkenburgh)
Supplied rock steady bike stands.
www.pit-bull.com (256)533-1977

M4 Racing Exhausts (Laroy Montgomery/Richard Martin)
Supplied a killer exhaust system.

Hawkworks Pit Crew: Snow White, Emilia White, Angie Moore and family, Richard and Callie Jones, Manny Pandya, Ted Dohman, Brooks Alvord, Jonathan Davis, Larry Ortega, Bruce Parker, Bob Dickey (for the advice), and Erika Bennett.

A special thank you to our crew. Hawkworks Racing wouldn't exist without their help. Every good team has a good crew behind them, and we're no exception.

HAWKWORKS

hawk bits

Hawkworks Vol. 6, Issue 3

Robert Pandya - Editor

Melissa Shimmin - Art Director

Matt Lillemo (Banta Information Services)

Prepress Production and Printing

Callie Jones - Copy Editor

Contributing writers:

Selden Deemer

Ric Lieberman

Hawkworks is a bimonthly newsletter intended for fans of the Honda Hawk. Hawkworks is in no way endorsed by or representative of the Honda Motor Corporation. Their loss. Any modifications undertaken on your own bike should be done under the supervision of a qualified motorcycle mechanic.

US Subscription is \$15 for 6 issues.

Residents of the North American continent, besides US residents pay \$20. If you live elsewhere on this shrinking planet send \$30 US funds only. All inquiries, subscription checks, renewals, contributions, photographs and left over take-offs can be sent to:

Hawkworks
PO Box 8052,
Austin, TX
78713-8052 USA
photoguy@prismnet.com
hawkworks@hawkgt.com

IN THIS ISSUE

Hawkworks Racing	1
Hawk Bits	2
From Clumsy to Clubman for \$109	3
The Complete Front End Rebuild	4
Pit Bull Stands Rock!	6
Ad Hawk	6
323.5 cc's of Trouble	7
High Mileage Rebound	7

Andy Siu writes that an early model Nissan Sentra (appx 1989 to be vague) can provide a replacement fan switch if the sensor switch on you Hawk goes dead. Early model switches trigger a couple critical degrees before the newer ones - so make ure that's what you get when you visit your local Auto Partz Shack Zone. Alan notes that you need to make sure that the thread pitch is 16x1.5mm. That should be verifiable at the shop. It's way cheaper than the Honda motorcycle part equivalent. Slap a little teflon tape on the threads to help keep the coolant inside where it belongs.

New to Cyber Hawkdom and looking for web addresses? Here are a few to get you started:

- <http://www-hsc.usc.edu/~mdube/>
- <http://ourworld.compuserve.com/homepages/hmr/hawknL.htm>
- <http://cmr.sph.unc.edu/~calvin/Moto/HawkGT.html>
- <http://elmshorn.netsurf.de/~L.ketelaar/>
- <http://www.calweb.com/~jamesm/hawk.html>
- <http://www.thenet.co.uk/~beatty/MCycle.html>
- <http://userwww.service.emory.edu/~libssd/cyclography.html>
- <http://www.twobros.com/hawk916.html>
- <http://sites.gulf.net/riders/hawkpics.htm>
- <http://www.hawkconnection.com>
- <http://www.cs.wisc.edu/~richards/Bikes/bikes.html>
- <http://www.cs.wisc.edu/~richards/Bikes/bikes.html>
- <http://www.hiperform.com/>
- <http://members.tripod.com/~deathwishracing/>
- <http://www.ecom.net/~krash/Go9/>
- <http://www.hawkggt.com/archives/hawkggt-L.asp>
- <http://www.mindspring.com/~ahelton/>
- <http://weber.u.washington.edu/~seed/main/HawkGT/>
- <http://www.nornet.on.ca/~tharris/hawk-gt.html>
- <http://karel.troja.mff.cuni.cz/students/opsal/moto/hawkggt.htm>
- <http://www.sraxis.com/17-9.htm>
- <http://www.sojourn.com/~stratten/hawkggt.html>
- <http://members.aol.com/dkappeller/index.htm>
- <http://ourworld.compuserve.com/homepages/arend/>
- <http://members.nova.org/~kirk/jeff/jeff.htm>
- <http://www.geocities.com/Colosseum/3985/hawk/>
- <http://www.kgreer.rapfire.net/>
- <http://members.aol.com/madmax315/index.htm>
- <http://www.hawkggt.com>

Hey Bubba! Ready to sync those carbs? Ready to try and do it yourself? Bought/borrowed/stole a syncing tool and are ready to dial in the smooooth idle you know you deserve? You'll need Honda part number 166221-MA6-000. Go ahead and buy two - the Hawk IS a twin donchaknow. Thank Gary Beale for that tid bit.

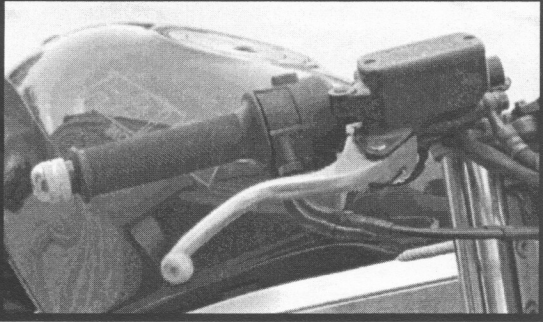
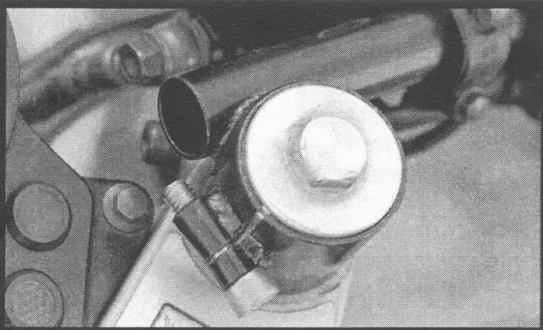
Hawkworks needs your help. You see, funds available for running a newsletter, much like Hawkworks, are pretty limited. And as much as I'd like to go out a buy everything you can bolt, strap, screw, glue and velcro to a Hawk, alas, that just ain't gonna happen. So, those of you who have wished for more street content, belly up to the keyboard and type up a review of the whiz bang new or old product you just got, the trip around the world you are planning, the effectiveness of your new fairing or how much that cheap battery ended up costing you in towing and motel fees. Those of you who race the Hawk and couldn't give a toss about saddlebag capacity send in your ideal suspension set-ups, your tire evaluations, bodywork mounting tips beginning race stories and your lists of effective mods. Give it up - share the love. And send pictures.

Hawkworks contributor Paul Ritter was involved in a serious accident at the Steamboat Springs, CO round of the AHRMA vintage race series in September. Paul apparently tried to avoid some fallen riders on the street course, and took a very hard hit. The impact was so violent that it ruptured his aorta. Chances for recovery for this type of accident are about 1 in 10. Paul made it. He also sustained significant damage to his spine, and is currently paralyzed from his waist down. You will remember Paul from the big steel/fiberglass tanks he built for Hawksters who enjoyed riding more than filling up. I've met Paul, and have to say I was honestly disappointed that I didn't get a chance to talk to him more when we were face to face. If you were in any way entertained by Paul's work, please send a note, or better yet a donation towards his therapy, c/o Shannon Kelley, 20000 NE Jaquith Rd, Newberg, OR 97132-6694. No amount is too small. An injury like this costs more than any insurance company will pay. A web site has been set-up for all of Paul's online friends to keep tabs on his progress at <http://www.micapeak.com/Ritter>

JW Raceparts has gone big time. It's now called JW RACEPART Power House M/C. JW has purchased the House of Power in Nyack, NY former Honda/Kaw dealer. Though now unaffiliated they say they are about to pick up Honda. A major asset is that Carl, the former part mgr. of Amol Precision, is now a principle. JW's phone # is (914)358-0300. Joel built many, many many race Hawks, and is known for cool parts and hop up bits for Hawks.

From Clumsy to Clubman for \$109

BY ROBERT PANDYA



Tim Barker of Barker's Bars sent a set of his 41mm chrome-moly handlebars to the spacious, air-conditioned, well-equipped and fully tooled Hawkworks shed for evaluation. This is a cool thing.

CMRA Vintage racer and multiclass champion Chris Fox let me borrow his street Hawk for our little project. The \$109 Barker's Bars are made with tough chrome-moly tubing. The inherent strength of this material allows the walls of the tubing to be surprisingly thin, saving weight and material costs.

Most aftermarket bars are cut from aluminum. Most aftermarket bars are also two-piece affairs, allowing for a quick removal and replacement of a crash-damaged handlebar. The problems with this arrangement are the cost of multiple machining runs and increased hardware and complexity.

Barker's are a one-piece type, welded together with an elliptical mating area for strength. Of course, the problem with a one-piece bar is that crash damage calls for buying another SET of bars to replace only one, right?

Not any more.

Barker's bars come with a lifetime warranty you will find on few products in ANY market. A 100 percent replacement warranty. Barker is so sure of the strength of his products that he will replace any handlebar that is bent or otherwise unusable. Free. Gratis. Sweet deal, bud.

Replacing the stock tall bars with clip-ons will actually make the bike handle better. The Hawk is light on the front wheel, causing the front end to go wide when you exit corners. Not noticeable when you are just commuting; but as soon as you hit the twisties or accelerate down the off ramp, you'll see what I mean.

Pulling your weight forward on the bike places more weight on your wrists and gets you more "into" the bike. It's easier to feel what is happening between the fork legs when you transfer weight from your butt to your hands. The windblast at highway speeds is enough to float your torso; but if you spend more time in the lower four gears, you might not care for the additional wrist strain.

The swap is fairly easy and can be done in an hour or so. Make sure your bike is on a stable surface, either on the centerstand or a quality rear wheel stand. It's tough to move the bike around when you have no handlebars!

Remove the mirrors to keep them from swinging about. Remove the master cylinder, right-side bar end weight, clutch perch, and loosen the two long screws from under the right-side switch housing. The throttle cables run through the housing and can be temperamental to deal with. You'll need enough slack to slip out the locating pin from the stock bar. Be very careful with those locating pins. They ARE needed to keep the switches from spinning on the bar. The screws will not clamp tight enough to stop the rotation.

Once you have double checked that the wires to the clutch and front brake light switches are clear and that there are no more interferences, loosen the bar clamp bolts. If your front end has never been apart before, you might still have the wire rings just under the fork caps. They slip off easily once you chase the ends down. You can just lift off the left-side bar, but you'll have to slide the right side out from the throttle tube as you lift it off.

The locating pin holes in the bars must be duplicated on the Barker's clip-ons. A little measuring and a drill will make quick work of this detail. Resist the temptation to make a bigger hole than is absolutely necessary. Too big, and the locating pin will move back and forth within the hole. Sloppy.

Chris found the bars to be too wide for his liking, so he hacked off about 3/4". I'll bet some of you do the

same. Measure twice and cut once. That was some good advice I got from a four-fingered shop teacher I once had.

The bars clamp to the fork tubes with a single allen bolt. That makes me a bit nervous because that is a single point of failure. Endurance racing teaches you to look out for stuff like this. If that bolt comes loose - and bolts have been known to loosen on bikes, folks - the bar will rotate forward. Probably under braking. Probably when you don't need that sort of thing to happen. So make sure the bolt is tight and apply some blue Loctite for insurance.

Double check that all wires and cables are reconnected and are not binding on anything. You might have to remove the wiring stays clamped to the top triple allen bolts and replace them with zip-ties.

As you align the bars, be sure that the switches don't contact the tank. The switches are different heights and sit different distances from the tank when the bike is at full lock. The bars don't LOOK perfectly aligned, but they should be.

The throttle cables might be a bit cantankerous. They are too long to really work properly. However, with a bit of coaxing, the throttle will snap shut the way it's supposed to. Work with it 'till it's right. A hanging throttle will scare the Slushie out of you when you enter a corner and the back wheel continues to push the bike forward. The clutch and choke cables seem to make the transition from stock to the Clubman look with much less fuss than the right side.

A finishing touch is a set of bar end weights. The stock heavy jobbies will work, but a set of Napoleon brand bar end mirrors make the bike look right British and quite spanky while adding vibration damping.

You can contact Tim at Barker's Bars by picking up the thing with numbers (the thing NEXT to the remote) and dialing (810) 658-0052. You can fax him at (810) 658-5719 or send mail and twinkies to 130 Harsen Rd, Lapeer MI, 48446.

If you are in need of any custom bracketry, from battery boxes to fairing stays, Tim will zap up what you need in chrome-moly, stainless, aluminum, or unobtainium. He's built Hawks in the past, so you won't be referring to a strange bird when you talk to him. Unless you are talking about me of course.

Honda stopped exporting Hawks in 1991. At minimum, your little Hawk is now seven years old, possibly going on ten. Assuming you actually ride it, rather than keep it in the garage or bedroom for viewing, its parts are all aging, some faster than others. Unless you ride on glass smooth asphalt and never, never pop wheelies (on a Hawk?), your front end has been absorbing shocks for however many miles are on your baby. If that number is 20,000 or more, or if one or both forks is starting to leak oil, or if the steering feels a little rough, it's time for a front end rebuild. This article is a cookbook for the novice, with options for doing the job at three different levels of cost: Basic - Replace fork seals and bushings (less than \$50); Intermediate - Seals, bushings, tapered roller bearing conversion (less than \$100); Full tilt - Replace above, plus springs and RaceTech Gold Valve emulators (less than \$300).

Tools and materials you will need:

- Basic Hawk tool kit
- Set of metric sockets
- Hammer (preferably a 4-pounder)
- One or more large screwdrivers
- Bicycle hook spanner, approximately 45 mm (Park Tool HCW-12, for example)
- 12" length of 1.25" I.D. galvanized pipe
- Waterproof (marine) grease
- Silicone spray lubricant (I like the STP brand)
- 2 quarts 10 weight fork oil (Use good stuff)
- Heat gun or hair dryer
- 8" carriage bolt, nut, and 2 large washers
- (Optional, but highly recommended): Hawk service manual
- (Optional): chisels or Dremel tool for cutting ball bearing race
- (Optional): dry ice
- (Required): Patience and bandaids
- 2-10 hours of time (depending on how much you tackle)

Getting Started

Assuming your Hawk still has a center stand, use it. If not use a high quality rear stand like the Pit Bull unit. Then place wood, bricks, or whatever you can find under the engine until you can prop the front wheel securely off the ground. This support needs to be very sturdy, as your baby is going to be without its front wheel for several hours, and at times you're going to be wrestling with parts—you don't want it to fall over. (ed. note: a steering stem type front stand is a necessary luxury sometimes. If you can throw some tie downs over some rafters that's cheap insurance too.)

With the front end securely hovering off the deck, carefully loosen (don't yet remove) the fork tube caps, then remove the front wheel and fender, then loosen the 14-mm pinch bolts on the lower triple clamp, the allen-head pinch bolts on the fork top bridge, and the 12-mm pinch bolts on the clip-on handlebars. Push the fork

tubes UP and remove the little external retainer rings from top of each tube. Then slide the fork tubes down and snap the retainer rings back in place so you don't lose them.

Remove the fork caps and pour out the old, yucky oil (you *did* loosen the caps before removing the fork tubes—right?) At the bottom of each fork slider is an allen screw. These will be **very** tight. Use an allen wrench, and a lever of some sort. You may need to use a hammer to break the screw loose. (ed note: Sears sells a hand impact that helps quite a bit. You might have to cu a long allen wrench to fit down the hole. That bolt goes into the damper rod so is free to spin, requiring a impact type hit to remove it.) You can stick the axle part way into the fork slider for more leverage. With a small screwdriver, pry the rubber dust cap off each fork slider. Inside you will see a snap ring, which can be pried loose with a small screwdriver. Be careful not to scratch the fork tube sliding surface.

Before further disassembling the forks, take a piece of 400-grit wet-or-dry sandpaper, and *lightly* sand the sliding surface, creating a crosshatch pattern similar to that used in a cylinder bore. A rubber expansion plug, with a bolt that fits into an electric drill, makes a handy way to turn the tubes quickly, creating even crosshatching, which serves two purposes: 1. Smooths out any nicks in the fork tube surface caused by pebbles, corrosion, etc. (Deep gouges call for replacement.); 2. The fine grooves will hold minute amounts of oil, helping to break in the new seals, and reducing sliding friction (stiction).

With the snap rings removed, move the fork tube in and out until the seals pop out (still more oil will be expelled, so have a container and towel handy). Keep the old oil seals - you will need them later. You will need the following parts (all parts numbers and prices are from Plaza Honda, which offers a cost plus 20% discount to Hawkworks subscribers):

Dust seal/oil seal	51490-MN8-305	\$11.22 x 2
Slider bushing	51414-MN5-003	\$ 5.00 (est)
Fork tube bushing	51415-MM8-003	\$ 5.40

Note the differences in descriptions between the parts and service manuals for the bushings. The fork tube bushing is coated with teflon on the **outside** and fits on the bottom of the fork tube, while what the service manual calls the slider bushing is coated with teflon on the **inside** and fits at the top of the aluminum slider. If your dealer claims he doesn't have the bushings in stock, ask if he has bushings for a CB600R F2 - same parts.

Honda recommends replacing the bushings if more than 25% of the teflon coating is worn. On the other hand, they don't cost all that much, and you've already invested a lot of time in this project, so why not replace both bushings while the forks are apart?

If you don't plan to install RaceTech Gold Valve cartridge emulators, polish the sliding surfaces of the fork tubes with chrome polish (such as Simichrome). Finally, clean the tubes thoroughly with solvent, rub some molybdenum grease on the sliding surfaces (including the inside lips of the oil seals) and reassemble. Be extra careful with the oil seals, as the soft rubber sealing surfaces can be nicked easily. The seals go on with the markings side up. Place the old seal upside down on the fork tube, and use it to drive the new one in place, then snap in the stop ring, spray a little STP silicon lube on the seal, and push the dust seal into the slider.

However if, having gone to this much trouble, you have decided to invest in RaceTechs, (about \$110) you need only drill some holes in the damper tubes before re-assembling. If you have a 1988 Hawk, its damper tubes already have two pairs of holes, and you only have to drill one new pair. If you have a later model, you will need to drill 2 sets of holes. RaceTech provides instructions on this; it's low-tolerance work, and doesn't need any special tools or skills. For street riding, try setting the gold valves at 2.5 turns in from full loose. For more aggressive riding 5-7 turns might be required. Thicker fork oil will increase the rebound damping. Not as neat as external adjusters, but much much cheaper.

Before inserting the springs, pour 500 cc of 10-wt fork oil in each tube. Then pump the tube in and out several times to bleed the air, and slowly add more oil until the level is 5.5" below the top of the fork tube at full compression. If you use RaceTechs, put them in place before adding oil. Finally, drop in the fork springs, tightly wound end up, the spacers, and screw in the fork caps.

The gold valves won't work to their full potential with the soft stock springs. (Trust me—I tried.) Another \$75 will get you a set of Progressive or RaceTech springs. I weigh about 150 pounds (more in riding gear), and find that Progressive springs #1126 preloaded to yield 1.375 inches static sag give a very compliant ride without excessive dive when braking. You will need to make new fork spring spacers, as the Progressive springs are longer than the Hawk springs. For about \$2 you can buy a length of 1-inch I.D. schedule 40 PVC tubing that will provide more sets of spacers than you will ever need. With the Progressive springs, the top of the spacer should be just below the top of the fork tube at full extension, so the spacers will need to be between 2.5 and 3 inches long—exact length depends on weight and riding style. A set of early model F2 fork caps can replace the stock Hawk fork caps, providing a handy external adjustment for preload.

If you're not going to replace the steering head bearings, you're done, except for reassembling everything. Before doing so, repack the front wheel bearings with fresh grease and check your brake pads for wear.

the Complete Front End Rebuild

Steering Head Bearings

If your Hawk has been ridden 20,000 miles or more (less if you like to pop wheelies), the standard ball bearings in the steering head have probably hammered small pits into the races, which makes for notchy steering. With the fork tubes out, you already have the front end halfway disassembled, so why not finish the job with new bearings? Better yet, why not replace those crappy ball bearings with roller bearings, which have a higher load capacity, smoother action, and last nearly forever? They don't cost much more, and installing them isn't any more (or less) difficult than replacing the ball bearings.

You will need an upper and a lower roller bearing assembly and a lower dust seal:

Steering Bearing CBR10 SSH-903 \$35.88
(lower bearing/race will be marked: 32006JR, upper race will be marked: 32005X)

Dust seal 53214-371-010 \$ 3.72

To replace the bearings, you have to disassemble just about everything associated with the steering head. First, unbolt everything you can from the headlight mounting assembly, leaving a mess of components hanging down by wiring harnesses and cables. Note that you will have to hang or lift the bike so the steering head is completely free to rotate, and the lower tree can be dropped out of the frame.

Next, unbolt the instrument panel, then unscrew the steering stem nut and remove the aluminum fork bridge. Under the bridge are a slotted lock nut, a lock washer, and a slotted adjustment nut. Pry loose the locking tabs of the lock washer, then unscrew the two nuts; chances are, they will be so loose, you won't even need a wrench. If you do need a wrench a pair of hook spanners (which can be found at any bicycle shop) will help greatly. In a pinch, you can use one spanner and a screwdriver. Remove the top dust seal (save for re-use), then push the steering stem down; if necessary, place a piece of wood on top of the steering stem, and tap on it until the steering stem drops out.

In the steering head of the frame rest two bearing races, rings of very hard, precision ground steel. Honda has thoughtfully cut notches in the steering head, so that you can use a hammer and a long screwdriver or drift to tap out the two bearing races. Work slowly and carefully, first a little on one side, then on the other until the race pops loose. The main thing is to avoid damaging the aluminum surfaces where the races fit. Clean the inside of the steering head thoroughly, then apply a light coat of molybdenum grease to the cups that hold the bearing races.

Let's continue with the easy stuff. Each roller bearing comes in two parts: bearing and race. The races go into the frame; the bearings fit on the steering stem. Place

the races in a freezer for at least 60 minutes. Better yet, buy a block of dry ice. Heat the end of the steering head with a heat gun or hair dryer (don't tell your wife/girl friend what you're doing with her hair dryer). Mum's the word about the freezer, too.

When you get the frame hot (but not hot enough to burn your skin), quickly pop the ice-cold race in place (this is where the dry ice is handy, since it can be right next to the bike—but wear gloves unless you enjoy frostbite). The race should slide most of the way, or all the way home. If it doesn't, don't worry. Repeat with the other race. Then put the roller bearings in place, and tighten an 8" carriage bolt with a couple of large fender washers to provide a nice, controlled amount of pressure to gradually push the races all the way home. Some people hammer the races home; I think slow pressure is safer, with less chance of cocking a race at an angle. Keep checking that races are going in straight.

Now comes the hard part. If you have any doubts about your tools or abilities, you might consider going to a dealer or a machine shop for this step. The lower ball bearing race is a "very" tight press fit around the steering stem. If you don't have a bearing puller, it's possible to beat it off using a screwdriver or punch, working gradually around the race. It may be possible to chisel a notch into the race, or grind off one side, but keep in mind that this is extremely hard, tough, chrome alloy steel. It's designed to withstand extreme pressures, and laughs pirate-like at ordinary tool steel.

I didn't have diamond-coated tools or a puller at my disposal, so I just pounded and pounded—for about an hour, until the damned thing popped off. There is no way to do this without destroying the lower dust seal, so don't worry about saving it. Unless you've been amazingly careful, or have really good tools, you will probably have gouged the steering stem in a few places. Don't worry; file down any raised bits, then tear off a half-inch strip of 400 wet-or-dry paper, and turn, turn, turn until the steering stem shaft is silky smooth. Taking off enough material to make the new roller bearing a slip fit is NOT needed, and would take hours of work anyway. If the upper part of the stem, where the upper race contacts, is rusty or rough, sand it lightly as well.

The new roller bearing is going to be just as tight a fit as the old ball bearing race. Unless you have a hydraulic press, you need to create a large temperature differential between the roller bearing and the steering stem to have any chance of getting it on easily. Apply a light coating of molybdenum grease to the steering stem, then place it in the freezer for an hour, or set the triple clamp on a piece of dry ice for ten minutes. The steering stem needs to get really cold. If at all possible, cut or grind a slit in the old ball bearing race, which you can use as a bearing driver to protect the new race.

Place the lower roller bearing in a 200-degree oven for

about 15 minutes. Working quickly, drop the lower dust seal on the steering stem, then drop the bearing in place, and hope the temperature differential induced enough clearance for it to slide all the way home. It probably won't. If not, drop the old ball bearing race over the steering stem, then place the 12" long iron pipe over the stem and pound until the bearing is seated. If you were able to cut a relief notch in the old ball bearing race, you should be able to slide it off easily when you're done. If you didn't, you're going to have to pound it off again.

You're almost done. Work plenty of waterproof marine grease into both bearings. Slide the steering stem in place. If the upper bearing is a tight fit, tap it into place. Then put the upper dust seal in place, and tighten the adjustment nut until the entire assembly is difficult to move. Turn the triple clamp assembly and forth from lock to lock several times. This is necessary to "set" the roller bearings.

Loosen the adjustment nut, then retorque, add the the lock washer and the lock nut, and jam the two nuts against each other until their slots line up with the lock washer tabs. (Use two bicycle hook spanners, or hold one nut with a spanner and tap the other one tight with a hammer and screwdriver.) Push the locking tabs in place. (ed. note; It is VERY easy to over tighten the tapered roller bearings. If they are too tight, you will have difficulty riding in a straight line.) The triple clamp assembly should turn smoothly, requiring between two and three pounds of force at the fork hole. Using the hook spanner, tighten or loosen the adjusting nut until you get the proper amount of resistance. (A spring fishing scale helps with this; otherwise guesstimate.) Although this may feel somewhat stiff, when you get the fork tubes back in, you will find that the entire front end actually turns very easily and smooooothly.

Apart from putting everything back together again, that's it. Doublecheck all nuts and bolts for tightness – there are approximately thirty, any one of which could cause serious safety problems if not tightened. It will take a hundred or so miles for the for seals to "bed in". You might see some slight residue on the tubes until that happens.

Congratulations. You have now performed a maintenance procedure that will make your bike turn, stop and handle better than ever. Tackling a project like this might seem quite intimidating. However, the steering and fork mechanisms of the Hawk are really quite simple. There is no better way to begin to understand the adjustability of your suspension than to take the thing apart and put it together. Replacing decade old grease and fork fluids with the bushings and seals that go with it can only make things better. Of course once you do the fork, you'll have to get a shock, then pump up the motor a bit, maybe lose some unsprung weight....

Thanks to members of the HawkGT listserv for advice on various aspects of this maintenance.

Pit Bull Stands ROCK!

BY ROBERT PANDYA

Actually, Pit Bull motorcycle stands don't rock. They are as solid AS a rock. That's the point. The Hawkworks Racing endurance Hawk will fall over without the stands (and I mean OFF the racing surface thank you very much) since the sidestand was removed per the rules.

As I've cruised the pits over the years, I've seen everything from chunks of wood, milk crates, stuffed animals, and tie downs hooked to rusty bumpers of clapped-out pickups holding a precious bike vertical(ish). For a couple years, I used a stand that I welded together myself.

"Frankenstand" sorta worked. A quick coat of spray paint made it look OK, but I knew it could be better.

Pit Bull stands are definitely better. And they look sooo cool. The most popular Hawk stand is the rear one.

Everybody but the hard-core tourer/commuter wants to lose the ugly and heavy centerstand. Most of you bought your bike used and might have never SEEN your Hawk with a centerstand. The Pit Bull rear stand lifts the bike via the hole in the cush drive. Whoopeedoo right? Ahhh, the beauty is in the details.

The spindle is machined to fit perfectly, with just enough clearance to make it a snug fit. The spindle is mounted through a set of bearings that allow the rear wheel to spin freely when the rear end is airborne so you can lube and adjust your chain in a snap. The thick steel tubing doesn't flex, even if you hop up on the bike after a Supersize Quarter-Pounder with cheese and an apple pie. The wide base has plastic wheels that are tall enough to roll over most surface imperfections, and the handle has just the right amount of leverage to lift the bike up. That solid stance helps to stabilize the bike for easier one-person operation. A Hawk on the Pit Bull is twice as stable as on the stock centerstand. 'Nuff said.

A novice stand operator should be warned though: One caution with the handle is that you can trap your digits between it and the ground when you pick the bike up. It only takes once to get in the habit of letting it go just before the handle hits the deck. I don't mind though because the stand just looks cool; and like I said, it's rock steady.

A benefit to the geometry of the stand is that it has just enough rake to push the bike around on a relatively smooth surface while it's held up by the stand. The wheels will roll and the handle will drag, but the bike will stay perpendicular to the ground - a big help when you have to move the bike with no rear wheel on it.

A matching front stand completes our set. Pit Bull sells a couple types. The front lift fork stands raise the bike via the bottom of the fork legs. Four strong pins with rubber sleeves support the weight of the bike without marring the forks like the more common stand that sticks a pin up the hole in the bottom of the fork leg. That even *sounds* painful.

We opted for the steering stem front stand. It picks up the complete front end assembly via a pin into the steering stem hole in the bottom tree. Again, a common solution to the problem addressed with attention to detail. The steering stem stand is a two-piece affair that makes lifting the bike simple. The lower portion is wide enough to allow the axle to be pulled out, and it's amazing how stable the bike can be - even with the fork legs pulled completely off. The single pipe design causes much less interference than the usual thin tube/braced construction.

One of the coolest things about both the steering stem front and single-sided rear stands is that the pins are interchangeable. You can order different sizes to fit different bikes. This will save you several Franklins when you add a 916, RC 30, or Speed Triple to the garage. Keep an eye out for the distinctive gold and red tinted (zinc plating) stands. You'll see them used by top racers and perfectionist street riders who do their own maintenance. You'll see them holding up the Hawkworks endurance bike too.

Charlie VanValkenburgh, owner of Full Spectrum Design, was kind enough to sponsor Hawkworks racing with a set. The truth is that I would have ordered them even if he had said "get the hell outta here" to our sponsorship request! But Charlie is a nice guy, selling a killer product that does everything it promises and more. Besides, he races a Hawk with a RZ350 motor stuffed into it. That sort of divine madness must be rewarded.

Check out the Pit Bull Web site at www.pit-bull.com. Call Pit Bull at (256) 533-1977. Fax Pit Bull at (256) 534-0447. E-mail Pit Bull at Pit Bull@traveller.com. Write Pit Bull c/o Full Spectrum Design, 1401 East Olive Dr., Huntsville, AL 35801. The rear stand runs \$140; the front fork lift stand (not pictured) is \$140; and the steering stem front stand will setcha back \$145. Every penny well spent in my opinion.

P.S. Charlie's company is also developing a full rear race tailsection for the Hawk. Send him a note if you are interested in that.

ad hawk

You can spend \$4k and build a race bike out of your street Hawk or buy this one today for \$3500 and be race ready this weekend! MOTOR 1) 1mm over pistons and polished stock rods 2) Joe Gilbert Porting Service cylinder heads 3) Megacycle X-1's slotted sprockets 4) 2.5mm oversize intake valves and stock exhaust valves 5) D&D thermal coated head pipes with aluminum canister 6) Barnett Kevlar clutch 7) Polished stock carbs with a Ti Factory Pro jet kit, spun aluminum velocity stacks and Uni-filter foam small-child-stoppers 8) Stock black box with a Factory Pro adjustable ignition advancer. CHASSIS 1) Stock forks with Progressive brand springs and Race Tech Cartridge Emulators 2) EBC floating rotor on Goof2 front wheel 1) Fox rear shock 2) Custom aluminum tube subframe from Henderson Racing that mounts the oil cooler and the Air Tech rear cowling with dzues fasteners 3) Sharkskinz fairing w/custom dzues mounting brackets, Gustafsson windscreen. 4) Michelin Slicks SPARES All available 520 sprockets, spare carbs, spare front (stock) and rear wheels, spare clip ons, spare tubes, endurance tank, more. Contact Bob Dickey at Panther City Racing in Ft Worth, TX. bdickey1@ix.netcom.com or 817-441-5013.

If you have a tweaked radiator, there is a service you might want to know about. Myler's Radiator Service 8414 McDowell Ct West Jordan, Utah 84088 (800)367-7699. Turn around time for a Hawk Rad is said to be quick due to it's rectangular shape. Expect a bill for \$35 - \$75. Cheap indeed. Ad a new plastic cover and nobody will know of your gravitational transgressions.

Our own Melissa Shimmin has partnered up with some other biking women and put her money where here leather is. They have opened up MOTA - motorbike gear for women. Shop will be located in Berkeley, CA. The address is 1477 San Pablo, just two blocks south of Gilman. That's just around the corner from the Berkeley Honda Yamaha and a block south of REI, on the opposite side of the street. Those of you burdened with male genitalia would do well to call MOTA when it comes time to buy your better half the protective gear she deserves. 510.527.6804 or toll free at 1.888.539.MOTA.

323.5cc's of Trouble

BY RIC LIEBERMAN

This one had me stumped for most of last winter. Thought I would share it and save you the grief I went through. My 88 Hawk has 13k miles is in excellent health, a willing starter but would occasionally (and I mean RANDOMLY) drop one cylinder under moderate load, 3/4 throttle. When this happened I would see the tach needle plunge to zero as if the key were switched off. Meantime I'd be motoring along (a bit less smoothly) on my now 323.5cc Hawk. After about 30 seconds all of a sudden, Whoosh! back on she would come, and all would be normal for sometimes 2 or 3 tanks of gas. Sometimes this would occur twice in one day and sometimes not at all for several hundreds of miles. Most peculiar!

One day weeks later I was blasting along in the high desert in central Oregon when I once again dropped a cylinder. This time it stayed out for about a mile at part throttle. I coasted to a stop in the middle of nowhere, one cylinder still out. I removed my glove and carefully felt the head pipes to compare them. I determined that the rear head pipe was the one with no fire (sometimes hard to tell on a water cooled engine) Things got very quiet on that road, Wednesday afternoon, no traffic, no services for about 75 miles.

I removed my water bottle from the tankbag and took a big mouthful. Kneeling down and using a piece of extra fuel line as a straw, I squirted the mouthful directly onto the rear coil (don't try this at home kids!) located to the right of the shock. I had seen this trick work with thermally failed ignition coils in cars and trucks. I thumbed the starter. Success! I knew that the tach took its signal from the rear coil so this confirmed my suspicions. The culprit had to be the rear coil and/or tach and/or wiring. Mercifully, the Hawk ran fine for the rest of that several hundred mile trip and all the way back. When I returned home I decided that the best diagnostic would be to swap the coils front to back, since they are the same part. This pleasant job only takes half a day. The Hawk started and ran just as it did before I swapped the coils (remember this was an INTERMITTENT problem). I decided to wait and see.

Several weeks later I dropped the rear cylinder again momentarily. The problem was NOT fixed and it was starting to look like it wasn't the coils either. I was stumped! This problem turned out to be pretty easy to ignore since it appeared to be almost entirely random and when present almost entirely momentary. Frustrating, yes. Disabling, No. Weeks later I left on a two week trip of about 3000 miles. The bike ran flawlessly, and I did a pretty good job of wearing out the rear tire. When I returned home I ordered a new rear hoop. The Hawk sat on its center stand in the back of my shop, with the wheel off, waiting for its tire.

Finally the day came when I decided to fire the Hawk up and enjoy being the first one to scrub in the new tire I had just fitted. The bike cranks fine but won't start! Check fuel, check kill switch, remove helmet, remove gloves, get mad! Remove plug leads and check for spark. (not easy, remember this is a Hawk!) I find no spark to the rear pot! She won't start on one cylinder. I pushed it back in the shop and tried to forget about it. I had other bikes to ride.

When I had calmed down I got out the volt meter and started checking things: Pulse coils, in spec for resistance values, not shorted, not open. Tach wiring, OK. Plug leads. Swapped front to back, no change. All that was left was the ignition module, and I no of no way to test these other than substitution. I live in a medium sized town and I just hadn't seen another Hawk around for years. Finally I heard of a fellow 50 miles away who had two racing Hawks. I phoned him up and told him of my situation. "No problem, he said, Just bring your module over and we'll swap it onto my race bike to test it out". Turned out that my ignition box wouldn't start his bike either. Four hundred bucks for a new one, I found a used one for one fifty. Fixed, end of story!

High Mileage Rebound

BY MELISSA SHIMMIN

90,000 miles has come and gone. The front-end has new forks, new Race-Tech springs, new Race-Tech emulators, fresh fluid. It's wonderful, but now I'm made aware of how soft the rear is. A new shock tops my revised list of replacements.

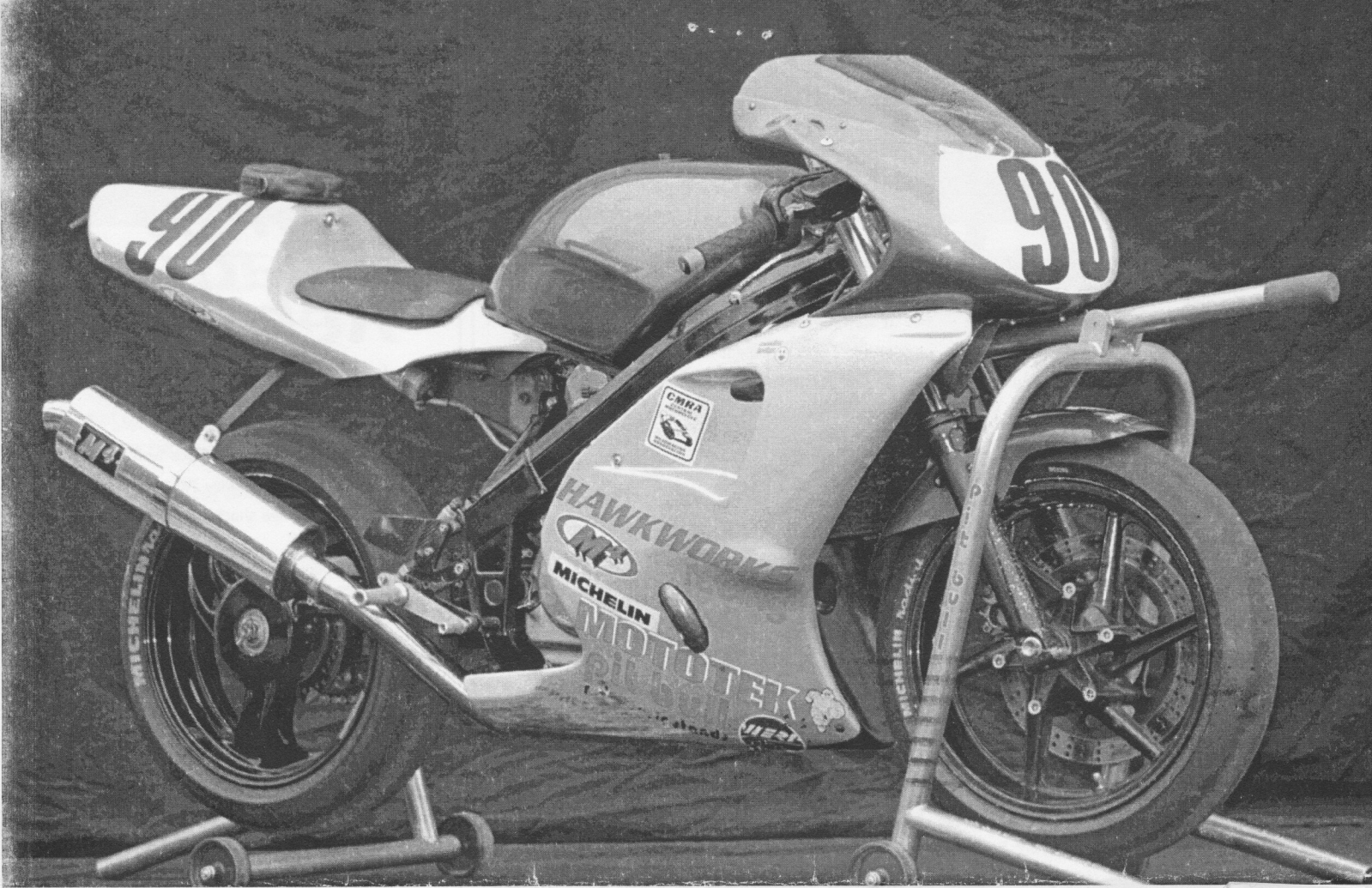
In the mean time, I'd like to share with you a letter I got from one of our readers after the publication of "85,000 miles and Still Flyin'." (*Hawkworks V6#1*) Paul Hobin of Spring Valley, CA had over 144,000 miles as of mid-April. He writes that he's still running the original shock, battery, all bearings and, amazingly, the rear sprocket! His '88 leads an easy life with lots of commuting and road trips, but no racing, wheelies or dirt! (Poor deprived bike.)

Paul has kept meticulous maintenance records. He changed the oil on average every 3,427 miles, using predominantly Mobil 1. Fork oil was changed at intervals between 7,900 and 40,900 miles, with an average of 27,500 miles between changings. The shortest interval between valve adjustments was 7,900 miles and the longest 21,400 miles. The average interval was 11,800 miles. Rear brake pads averaged 39,300 miles between replacements, yet the front pads were only replaced once, at 119,800 miles. Wow! My racebike goes through pads in as little as a weekend!

(I think it's time for Paul to work on that front brake technique - ed)

Paul's original chain lasted a spectacular 66,500 miles. Replacement chains lasted an average of 17,400 miles. The front sprocket has only been replaced once - at 66,500 miles! At 125,700 miles, Paul replaced all the cables. At 117,800 miles the thermostat gaskets were replaced, and at 66,500 miles the carb vacuum pistons were exchanged. Except for Progressive fork springs, the bike is entirely stock (sorry, Paul, I don't count tires). Paul reports that his clutch has an irritating slip and that the seat cowl was replaced after all the tabs broke off.

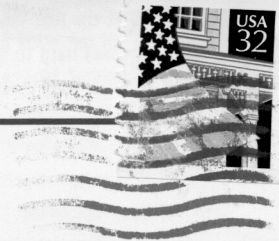
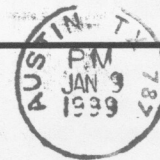
If your Hawk has over 100,000 miles and you'd like to share your maintenance experiences with all of Hawkdom, drop us a line here at Hawkworks. See page 2 for our assorted contact info.



HAWKWORKS

HAWKWORKS

P.O. Box 8052
Austin, TX 78713



Expres: 8250
Peter Schindler
6260 S. VEXFORD RD. RT 4
COLLEGE PARK, GA
30346