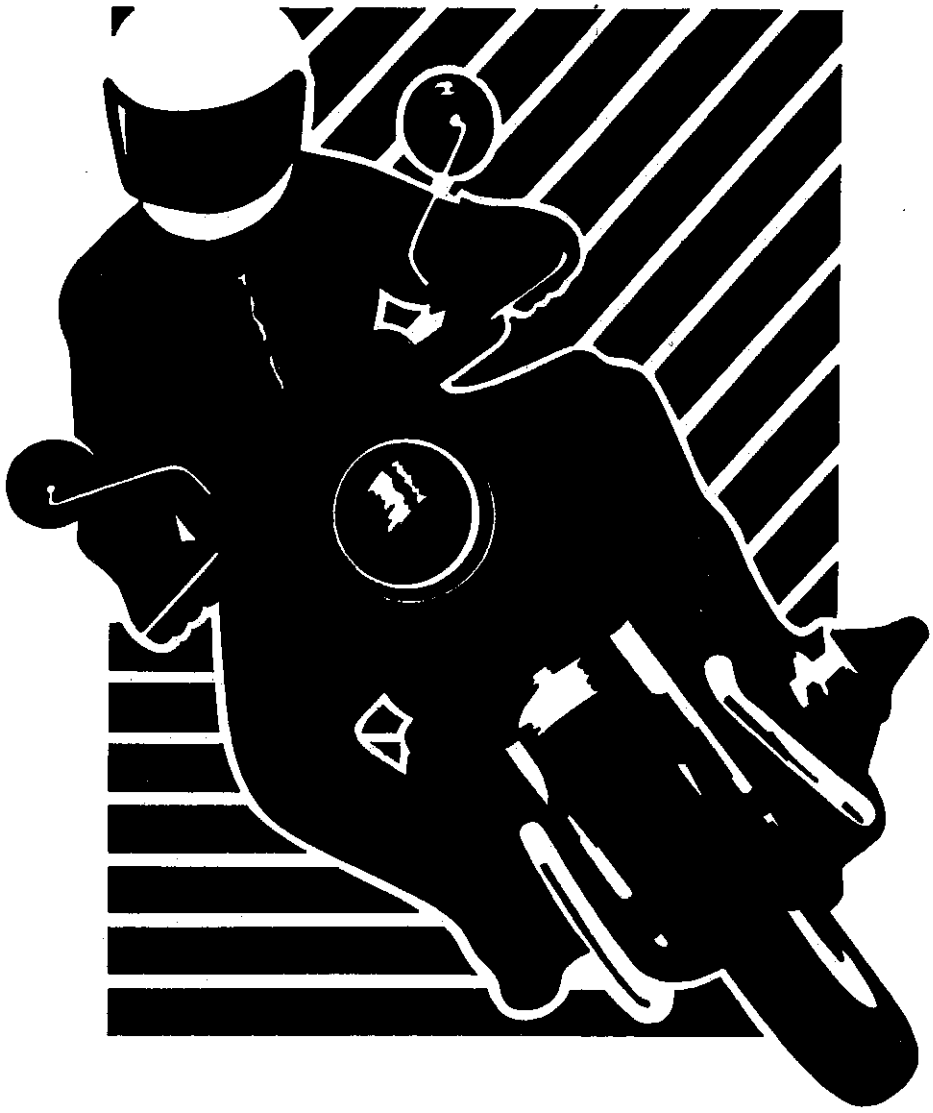
NOV 93

Good Vibrations



MOTORCYCLE TOURING CLUB OF VICTORIA INC
P.O. Box 453, Richmond 3121, Victoria

ITINERARY NOV. 1993

SUNDAY 7th.	REEFTON & BLACK SPURS. 9.30 KBCP. 10.30 Yarra Glen Ben Warden leading.	This annual event gives us a chance to try and equalize the tyre wear on the bikes. Usual good roads on this "Ben's Twisties" type of ride.
SUNDAY 14th.	BULGA NATIONAL PARK. 9.30 KBCP. 10.15 Hallam. Jack Youdan leading.	Down to Drouin, Yarragon,Loy Yang and Balook. A look around this piece of Gippsland "Rainforest" then home via Loy Yang and south of the highway to Narre Warren.
THURSDAY 18th.	SOCIAL SIP. 6.30PM Onwards.	As usual at the ANCHOR & HOPE TAVERN 481 Church st. Richmond.
SATURDAY 20th.	LADIES RIDE. 9.30 Yarra Glen. Andrea Sirninger leading.	Another annual event but this time for the ladies. The event has also been advertised in AMCN, So don't miss it!
SUNDAY 21st.	WILHELMINA FALLS. 9.30 KBCP. 10.30 Yarra Glen, Mark Dennis leading.	Up to Yea via Seymor for lunch then across to Glenburn and the falls. Some good dirt roads will be traversed. Dueto a City "FUN RUN" its best to park on Flinders st and not in KBCP.
SUNDAY 28th.	GREAT OCEAN ROAD. Odometer Calibration 9.30 KBCP. 10.00 Laverton. Ben Warden leading.	This event combines some good roads with a means of checking the accuracy of your bike's speedo by checking it against the roadside mileage markers to find it's level of inaccuracy.
DECEMBER.		
THURSDAY 2nd.	GENERAL MEETING and XMAS SUPPER. Please Bring s plste 8.15 pm Club Hall.	This social evening is not such a drain ON Club funds as we don't supply the usual food etc, therefore members are requested to BYO food for sharing.
SUNDAY 5th.	POLLY McQUINNS WATERHOLE. 9.30 KBCP. 10.15 Whittlesea Michael Chan leading	This small weir up in the Strathbogie Ranges is seldon stopped at by the club, therefore this ride is a good opportunit to come and play "silly-buggers" along the dam wall.

Sunday 10 October 1993. Snake Valley, Linton.

Riders:

Tony Schrader	CBR 1000	Martin Thompson	#!	GPX 750
John Van Dorp	VF 1000	Andrew Smith		GT 750
Steve Leyland	XL 600	Peter Philferan	L$	GT 750
		Ben Warden		ZX 10
Craig Morley	@ FZR 1000	Gary Clifton	R	ZZR 1100
Geoff Jones	RZ 50			
		Michael Chan		GSXR 1100

Legend:

L Leader	@ Puncture	#!%# Never go out with him on a
R Rear rider	$ Toppled over	Saturday night.

Route:

KBCP, Rockbank, Mt. Wallace, Meredith, Elaine, Buninyong, Linton, Snake Valley, cemetary, Ballarat, Creswick, Dean, Gordon, Ballan, Bacchus Marsh, Melton.

My prospect of riding on a day forecasted with rain and the possibility of thunderstorms saw no objection when comparing any possible riding dangers with the experience of the night before. I made the mistake of going out with some Club members for a couple of quiet drinks.

Suffice it to say that the evenings activities included; a lot of burnt rubber, a nun and a dog, hand brake turns in dead-end sts., maxing out the rev. limiter, making sure the health insurance was up to date, Lisa J having twins, Marty putting his tongue in Paul the bouncer's ear, the aforementioned then kissing me, a few rounds of pool, seeing a band at the Collingwood Town Hall, stage-diving, six hotdogs, roaming down Punt Rd. at midnight, squeezing five into a cab, Marty coming home with lipstick on cheek (not Georgia's) and getting to bed by 3.00am. How I made it to the carpark the next morning, let alone the others from the preceding night, I do not know.

Thankfully, Sundays affair was of a more leisurely nature. By 9.30am Peter P's spiel was delivered, machines were scrutinised for roadworthiness, intended route provided, watches synchronised because Steve is always a few minutes behind, Gary volunteered as rear rider and we (11 riders and bikes) were on the road. By now you will know who did the write-up duty. The weather was cool, there was little sun and looming dark, grey clouds sat on the horizon.

We headed down Footscray Rd. and back blocks of Laverton to reach the Western Highway and proceeded to Exford and Rowsley. By now the roads became somewhat bumpy, as they do in these parts, and this seemed to set the road standard for the ride. The rain had set in too. Hereafter, we tackled windy and slightly gravelly Mt. Wallace, where there was a notable drop in temperature, and continued to Meredith for morning tea just as the hail came. Some of you will remember the snow on Mt. Wallace (and Egerton) on the Avoca weekend in June. Again, we surprised yet another shopkeeper by our sudden and plentiful arrival. There was a less lengthy delay than that of when we were here last. We enjoyed the most expensive pies in Victoria and drank good coffee with cream. Someone keeps telling me the coffee is free here or am I imagining it?

With the rain temporarily abating we departed content and warmer though before long, nearing Ballarat proper, drizzly rain, sleet and light snow were upon us. We now battled a very wet and slippery, windy and bumpy ride. In some sections leading bikes listed a good 10-15 degrees. The planned Linton lunch stop was only 80 kms. away and the dismal conditions were endured until then. Once more, just as we arrived, the rain followed. It wasn't too bad - it only rained when we had our helmets on.

On arrival at the Linton 'corner store' Peter P's very tired GT decided to have an afternoon nap in the car park. Not one scratch marred the 250,000 km. old bike thanks to his investment in a set of $30 crash bars. Good value for money before visiting crashville. They saved my (our - Ben) GPz on one, two ... occasions.
Lunch saw more pies and coffee and we huddled under an octagonally shaped bus shelter? which was also large enough to house a ZZR and GPX from the blustering gale outside.

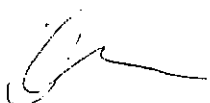
It was at about this time that John discovered a hissing sound emanating from the rear tyre of the FZR. Closer inspection revealed a small puncture and 55+ psi. (max. load is 42 psi. cold). Craig swears that he only put in 40 something psi. the day before despite his meter hitting its limit. Whilst the group attempted to remember who was last to replace the plug-kit from the 1st aid kit (Steve swears there must have been at least 10 people since he last used it), Craig deflated the tyre to a more respectable pressure and without the use of a plug decided to continue with the ride carefully. Earlier he had wondered why the Fizzer was a little bouncier than normal.

It was a short hop from Linton to Snake Valley where we finally arrived at the rides intended destination - the cemetary. Before proceeding any further Marty warned us that there were to be no 'dead' jokes as this was a grave, deadly serious matter.
We walked among the graves and tombstones in search of the oldest plot. This was no easy task given that most of the epitaphs were semi-eroded and covered with moss. One source advised the oldest grave was dated 1852?, though the majority were from the 1920's onward. Steve appeared a little apprehensive and warned the light-hearted of eternal damnation. We left shortly after.

We travelled back to Ballarat, then Creswick, Dean, Gordon then Ballan for afternoon tea. This was a welcome stop as the wind and rain continued unrelenting. We parked, as we always do, under a verandah on the footpath. Pie number three and just as many coffees were had by some. Ben and I regarded the full rack of magazines in the shop and contemplated the pros and cons of censorship. Escaping the immediate realms of wet Ballarat we encountered slightly more pleasant weather for our return trip. It improved the closer we neared Melbourne.

From here Peter lead us to the Western Highway again and onto Melton for the break-up. Peter advised that due to the poor weather he had cut the ride short thus omitting some dirt sections - a good thing in my eyes. We travelled approximately 300 kms.
Briefly we lingered behind McDonalds before Geoff kindly invited all to his house for coffee and and the ever-appreciated hospitality that often accompanies the closure of a ride to the West.

Thanks Peter for a ride well done, one with no accidents and under such conditions. I am pleased to see that one of Peters respectable age is still enjoying his motorcycling in such an energetic and enthusiastic manner. Thanks also to Gary for doing the rear rider chore.



Michael Chan GSXR 1100M.

CITY EXHIBITION

Put Your Finger on the World 93

Map Week

If you have ever been intrigued by the world of maps and travel, come and *Browse and Buy* at **The Biggest Map Shop In The World.**

The Australian Map Industry Association (AMIA) is holding the Third Australian Map Fair at the **Lower Melbourne Town Hall**, from Thursday November 11 to Saturday November 13, 1993. Maps and associated products from all over Australia and around the world will be exhibited and available for purchase, along with many special and discount coupon offers.

Entry to both the Map Fair and Map Exhibition is **FREE.**

Some of the other exciting events happening are:-

- City Square - Information Booth and site of HUGE "Walk On" Map of Australia.
- Map Exhibition by Australia's major map producers.
- State Library - Historic Map Display tracing the development of Melbourne from its beginnings.
- Schools Competition - Locating features on a World Map inserted in the Herald Sun.
- Treasure Hunt - through historic City of Melbourne.
- Rogaining Competition - special event organised.

With your support and participation we look forward to making Australian Map Week / Map Fair '93 a great success!!

For further details please contact either Simon Spivak (03) 651 2691 or Iven Mackay (03) 572 2991. □

SOCIAL SIP - 21/10/93

Ian & Kerrie	Daryl Cole	Mark Dennis	Martin Bastock	Peter.P
Jon & Helen	Pat Tayeh	Craig Morely	Steve Leyland	Tony Schrader
Pam & Andrew	John Barta	Michael Chan	Danny Kosinski	Andrew Platt
Kylie & Ferdie	Ross King	Dot Schwarze	Ben Warden	Jennifer Burns
Tom & Andi	Marty & Georgia		Andrew Douglas	Andrew Kennedy
Terry & Elaine	Bear & Justine		Rob Langer & mate	Alec Brown

32 members and 5 visitors.

BEECHWORTH / WINTON WEEKEND.

Full details in December newsletter but suffice to say a very successful weekend with thanks to all who came along.

Over 1100Klms travelled for the weekend, including trips up to Hotham Heights, Falls Creek and Mt Buffalo. Goodweather on the first 3 days although recent rains had wreaked havoc on the Tolmie/Whitfield road with the bitumen very chopped up and one section of road completely gone after a landslide.

Winton Sports day was also a success with 60 entries making it a profitable event for the club. All manner of bikes from a 250 Spada to a Suzuki Superbike mixed it up on the track, plenty of sports bikes with Fireblades being the flavour of the month. Vince Genova (Nova Honda) and Mick Smith (Honda Aust) provided a BBQ for all in attendance.

P.S.

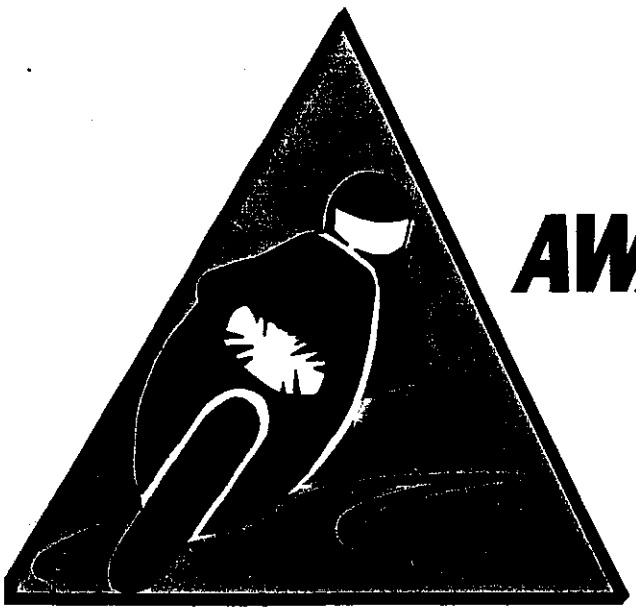
Found in Benalla - left in Pub, one leather jacket. Owner to contact Ian Payne.

SATURDAY, OCTOBER 16th - VIDEO NIGHT.

This proved to be quite a successfull night and after the BBQ we retired to the lounge where a large selection of motorcycle videos were shown. Including the HAVOC series and PARIS TO DAKAR.

Thanks to Les and Jane for the great night.

Attendees:- Les & Jane, Sam & Rita, Ian & Kerrie, Daryl Cole, Jon Riddett, Jennifer Burns, Andrew & Kim Kennedy, Mark, Frank and the 3 boys.



vicroads

RIDER TRAINING AWARENESS DAY 1993

November 20th
10.30am – 4.30pm

AEROSPACE TECHNOLOGIES (Car Park)
WHARF ROAD, FISHERMANS BEND, MELBOURNE.
Melways Ref: Map 42, E 12.

➥ **Special prize for best presented rider male and female**

See the MTCV does cater for "ALL" types!

Rushworth

Sunday 24th Oct. '93

Route: KBCP 9.30 am, city blocked for road-works, Punt Road, Plenty Road, South Morang, Doreen, (dirt section now made), St Andrews, Kinglake, Flowerdale, Strath Creek, Broadford (morning tea), Seymour, Nagambie, Kirwans Bridge, Murchison, Rushworth (lunch), Heathcote, Mia Mia, Lancefield, Romsey, Wallan, Whittlesea via the 13 corners backroad. Excellent route offering wide variety of roads from tight twisty sections to fast sweeping corners. Much of the country was in flood, the rivers still high. Home to home for Ben: 510 km.

Weather: Gale force winds, occasional showers, 19 degrees. We managed to avoid most of the showers though the roads were wet and dry early, and then again later in the day. The wind blew from the north being a head or cross wind for most of the day.

John Adams: Member from yesteryear back from 3 years working overseas riding his BMW K75 which had travelled around the world with him. Clutch/gearbox failed catastrophically near Nagambie. Could only find neutral and pulling the clutch lever in produced horrible grinding noises. Left bike in farm machinery shed. Pillioned with Ben for the rest of the day. Bike to be retrieved at a later date.

Michael Chan : Resplendent as usual on his new GSXR-M. Seen riding in Dry Rider and wet weather pants. Special leave pass granted for the day. Latest mechanical escapades include running amok with the drill in the carbies, changing the rear wheel for a smaller one, and eight hours changing the fork oil and installing drain plugs. Still hasn't figured out how to fit a rack so he can carry chain lube, Mr Sheen and Emergency kit when required. Got motivated a couple of times.

Andrew "Sid" Douglas: Recently joined member riding Suzuki GR650 stayed at crash site until ambulance arrived. Followed ambulance back to Austin. Probably didn't have a very good day, though his bike felt better with a new chain, a loose bolt replaced and the rear brake lever bent back into shape.

Rod East: Tail rider for the day on his CBR1000 had a very interesting ride, getting to see all the day's dramas.

John Hill: First Club ride on Honda CX500: crashed 3 km out of St Andrews. Andi witnessed accident and Ben arrived seconds later. Car driver went back for ambulance, Ben rode bike (forks, tank, cosmetics) back to St Andrew's Fire Brigade for storage. Steve pillioned Ben back to crash site. Fire brigade and police also attended scene. Rest of ride continued. Ben, John v D and Steve caught up at Broadford at 12 noon. Andrew Douglas stayed with John, his friend. Injuries sustained included broken collar bone, suspected fractured pelvis and broken bone in back.

Geoff Jones: A sweet smelling two stroke. His latest engine modifications include a set of RD400 carburretors for the venerable RZ350. Always looking for more power, I suspect it won't be long before Geoff does the environmentally correct thing and buys a CBR600 or equivalent weapon and hangs up his last crank. Enjoyed the conditions, leaving at Romsey, taking the direct route home.

Andrew Kennedy: Giving the Dominator hell, he maintained a hectic pace all day. After blasting around on Saturday with another club, he was well in the groove. His bike was particularly suited to some of the bumpier sections around Mia Mia and Romsey. But I bet he wished he had the Fire Blade for the fast sweepers into Strath Creek.

Danny Kosinski: Thrashed his poor GPz750 mercilessly all day, getting better all the time. The warped front disk does worry me, though.

Robert Langer: Riding his immaculate VFR750, still searching for the best suspension compromise. The new throaty exhaust system was likened to a vee-eight and swayed many heads. His European

approach to riding down Rushworth's main street was watched with bemusement. Ben twice forgot to help lower the VFR's rear brake lever to a more practical location. Sorry Rob.

Steve Leyland: Riding GPX very carefully, coming to grips with the power and the difficult riding conditions. Helped at accident. Left at Broadford to start work at 3 pm.

Craig Morley: First time leader riding his FZR1000, lead what turned out to be an epic ride. Planning and a pre-ride paid dividends. A quick pit stop at his house in Bundoora was averted when Ben produced a second pair of waterproof pants. It was drizzling heavily leaving the city. It was only the weather and drama behind the leader that conspired to reshape the ride. Nevertheless, the route was completed and nearly everyone enjoyed themselves. We travelled on a few seldom seen roads. Kirwans single lane, wooden bridge was particularly interesting with its give way areas. Thanks Craig.

New Rider: Riding KR250, friend of Danny's, left for Bendigo at Broadford. Seemed to cope okay. Apologies for no name.

Ian Payne: Riding his GSX750, looking a little worse for wear, joined us at Rushworth via Heathcote at about 2 pm for lunch and the ride home. House renovating is dominating his weekends. Pillioned John Adams back to South Melbourne from Whittlesea.

Tom Saville: Riding the R100GS, was everywhere in Craig's mirrors going up the St Andrew's to Kinglake tight twisties. Waxed lyrical about the calibre of machinery on the Saturday's ride: four or five CBR900Rs all with steering dampers (!), and various personalised suspension goodies such as White Power shocks - front and rear, after-market exhaust systems, tuning kits etc. Left at Broadford for a prior engagement.

Tony Schrader: The invisible man. Bopped along on the CBR, keeping out of trouble. Was there at the end.

Andi Sirninger: Today's chosen mount was the TDR250 stroker, one of three two strokes on the ride. Left at Broadford for another engagement.

John van Dorp: Helped at the accident scene, then accompanied Steve to Broadford and back home.

Ben Warden: Spent Saturday fixing Corolla for trip to Newcastle including repairing leaky radiator (thanks Patrick for coming over with the welsh plugs), rebuilding the distributor (thanks Marty for the baseplate), and doing the valves. Found time to fit another front tyre (24th) to the ZX and do a bit of work on the Andrew Douglas' beast. I was looking forward to a nice, peaceful ride on Sunday.

I should have seen it as an omen when I rolled up to KBCP, having completely forgotten that I had just hit reserve and needed petrol. I scurried off, embarrassingly, as the ride was leaving the city, to fill up, and somehow managed to find the Club again on Punt Road. The rest is history.

Ben Warden (ZX10)

05 October 1993.

Dold International,
17 Perclo Place,
PO Box 10-393,
Hamilton,
New Zealand.

Michael Chan.
7 Prentice Street,
Elsternwick,
Victoria, 3185,
Australia.

To whom it may concern.

Dear Sir,

Re: Ventura Light Guard (VP 039) for Suzuki GSXR 1100M .

I am disappointed to have to write to advise that having purchased and fitted the above mentioned unit on 1st October 1993, it fell from my motorcycle whilst riding and after only three days and 157 kms. after fitting. (I draw from my detailed service history of motorcycle regarding the dates and km. reading). I bought the unit from Peter Stevens motorcycles Melbourne (city branch).

Unfortunately, I have been unable to retrieve the unit as it was lost during busy morning peak-hour traffic along Melbourne's St. Kilda Road in Sth. Melbourne. The velcro pads became unstuck from my headlight lense as not one remained on my motorcycle.

Whilst fitting the unit, I followed the enclosed instructions exactly and carefully. I enclose a copy of the instructions and receipt of purchase.
Whilst waiting for 'the' 24 hours to pass it rained overnight.
On fitting the lense section the next afternoon, I attempted to 'finger' the adhesive pads as little as possible and only noticed play between the velcro to velcro contact.

I would appreciate any comments you may have regarding the above and kindly request that you consider replacing the lost unit. If you require any further information I can be contacted on my BH telephone number of 61. 3. 697 0390. I look forward to your response.

Yours faithfully,

Michael Chan.

PS On 1st October I completed the enclosed survey detailing some comments and my personal details and mailed it using the supplied reply paid envelope.

17 PERCLO PLACE
P.O. BOX 10-393
HAMILTON
NEW ZEALAND

DOLD

Incorporating: Dold Industries Ltd

TELEPHONE:
LOCAL 0-7-849 4392
INT. +64-7-849 4392
FAX:
LOCAL 0-7-849 4114
INT. +64-7-849 4114

18 October 1993

Michael Chan
7 Prentice Street
Elsternwick
Victoria 3185
AUSTRALIA

Hello Michael,

I am sorry for this inconvenience re your Light Guard, please accept my apologies.

We did experience a problem with the adhesive on the earlier Velcoins, this has now been sorted out, and you can use the enclosed replacements with confidence.

I have contacted our distributor in Australia, they will send you a replacement Light Guard F.O.C.

Again, I apologise and should you have any further problems, please contact me or our agents.

KENMA AGENCIES (N.S.W.) PTY. LTD.
19 Clearview Place.
P O Box 739.
Brookvale.
N.S.W. 2100.
AUSTRALIA.

Kind regards,

Paul

Paul Dold,
Dold International.

'Dangerously unroadworthy and unsafe bikes beware.' Captain speaks out.

Directly as a result of some recent *and not so recent* accidents the October General Meeting saw discussion of an a bike roadworthiness scheme. Since this time, the Committe has implemented a system whereby at the commencement of a Club ride all participating bikes will be briefly checked for roadworthiness and any bikes found to be dangerously unsafe will not be permitted to ride with the Club. Sunday 10th October was the first ride where bikes underwent *inspection*, and I am pleased to report that no bikes were found to be of a dangerously unsafe condition. To my knowledge the Club has only rejected one or two bikes from riding due to poor condition since the Club's inception in 1955/56.

The idea of *scrutinising* bikes before Club rides may appear to be obvious, however I feel it important and essential to spell out the reasons why it has become necessary. It is not intended to be an intrusion of privacy or freedom but for the benefit of all Members and in particular - *YOU*.

Firstly, the riding of a dangerously unroadworthy/unsafe bike has and may again result in an accident causing not only serious injury to rider but also damage to machine (a costly experience in both accounts).
Accidents involving perfectly roadworthy vehicles, under good conditions, occur all too frequently and the risks of riding an unsafe bike greatly increase any chance of mishap. Imagine what might happen when you also consider other accident-contributing factors such as; poor weather and road condition, lower rider skill level, higher speed, other driver/rider error, fatigue, the unexpected, etc... Most of us have experienced an accident or at least had a 'moment' - an unsafe bike can and has led a rider into trouble.

Secondly, if one rides a dangerously unsafe bike it is not only to the risk of that rider's safety but also to the safety of those with whom he/she rides. This rider shows poor judgement. There is nothing worse than finding yourself 'down the road' due to no fault of your own, particularly if it could have easily been prevented. Post-crash hassles (*injury, retrieval of bike, time off work, quotes, liability, insurance claim, medical expenses...*) are not something anyone looks forward to dealing with. As a Club, we ride for enjoyment and a part of that enjoyment stems from knowing who you ride with and that not only your bike but others' are in the safest possible condition.

Thirdly, it is compulsory for all vehicles to be of a roadworthy condition according to Victorian road laws. Vehicles found by Authorities to be of an unroadworthy nature are instructed to have the relevant problem/s repaired within a given time-frame otherwise the vehicle is forced from riding/driving on the the road.

From my experience, most motorcyclists frequently service and maintain their vehicles keeping them in a constantly roadworthy condition. This responsible attitude is easily demonstrated by the safe condition of bikes that regularly attend Club rides. *However, do note that if anyone is to join a ride with a dangerously*

unsafe bike there will be no hesitation in advising the relevant party that they will not be permitted to continue with the ride. This point applies equally to Members and non-members alike. Safety is the key issue here.

There may be times where one person may consider a bike to be roadworthy while another doesn't. The Committee combined has been involved with motorcycling for many years, ridden enough kilometres and has seen what can and does happen to those who continue to ride an unsafe bike. We have all seen it. If you are told that your bike is dangerously unsafe, accept it and fix it. There is no compromise for safety.

Attention to the following areas will greatly attribute to *OUR* safety on rides. The following, however, is only a guideline and does not constitute every aspect to ensure a roadworthy vehicle. I have included some personal recommendations and suggestions too.

Tyres - Ensure that tyres have sufficient depth of tread all round - this ensures water dispersency whilst riding in the wet *and* assists with grip. Make sure that tyres are not too old or hardened with age. Check tyres regularly, maintain correct pressures, remove bedded-in stones and objects and check for punctures. Run the correct tyre sizes or recommended equivalents. *I run softer compound tyres and usually find no problem with grip and handling until they wear down to a millimetre or two.*

Brakes - Pads should have sufficient 'meat' whilst brake fluid should be filled to the correct level and not be spongy from over-expanding brakelines or from any air in lines. Brakelights must be operable upon activation of a brake lever - there is no use in having brakelights if they do not work or if they only work under hard braking. *I carry a spare set of front and rear pads with my tools.*

Lights - Visibility is critical. Bikes are small, fast accellerating machines that are often not seen nor expected. There are occasions when it is best to have lights on and times when best to have them off. This is an individual choice for those with pre-1992 machines but when you put your lights on you want them to work. Ensure your light/s and switches work and that globes have not blown. Angling lights to the optimum height can make a bike with a poor light even more visible. *I run slightly higher watted globes (2 of them) and still find, on occasion, driver visibility of the resplendid, blue/white combination of bike and leathers a problem. The brighter globes help significantly with night riding, though.*

Chain and sprockets (my favourite) - Whilst there is no accurate method to gauge the safety of a chain simply by looking at it, there are signs to indicate a chain is on the way out. Symtoms such as kinks, significant tight spots, broken rollers, cracked or stressed pins, running out of adjustment, rusting and noises are sure signs for worry and should be addressed. Frequently clean and lubricate the chain *(I use kerosine and PJ's chain lube for limited fling off)*, check that the tension is correct, ensure the split link clip, if any, is secure and facing the correct direction *(I recommend peening over the protruding ends of the link down over the clip. Ask*

me, I'll show you), check sprocket wear, both, and make sure the front sprocket main nut and safety bolt/s, if any are secure. *I suggest carrying a spare split link and clip for your chain just in case.*

Mirrors - Just as it is important to see what is ahead of you, it is equally as important to be able to see behind. Whilst the Club maintains the 'No passing of the left' rule it is still important to be able to see who or what is to the rear left of you. This rule emphasises one having a right side mounted mirror at least to see what may be overtaking you. Clean your mirrors. More importantly use them - especially when preparing to overtake as you may be pulling out into the path of a passing vehicle. This continues to occur.

Indicators - Just like brakelights. Ensure they *all* work and again, more importantly, use them for what they are supposed to be - an indicator/indication that you are about to change your path of direction. Give ample warning of intention to turn, pass, pull out or stop. How many times do you see someone change lanes then flash once mid-manouever? Sound familiar?

General - No one knows your bike like you do. It doesn't take long to adjust that lever or change that globe. Set aside some time to fix those things you've been meaning to and make sure that everything is in an operable, lasting and safe state. Lubricate and tighten those cables, nuts and bolts, pins, switches, bearings, axles, etc at regular intervals. In other words service your bike. The more kilometres you travel the more servicing is required. Develop a service history to track when things were replaced and when they will need replacement in future. This will maintain your safety and also prevent premature wear and the unecessay expense of costly replacement parts. *For me my time with the Club has given me enjoyment, improved my riding, made me more innovative and educated me mechanically. It is more than a means of transport.*

The Club's Maintenance Day was created to help pass on tips and methods of maintenance from who know to those who did not know so much about their machines. You don't need to spend a fortune to simply service your bike either. If you want an opinion of your bike's state or want to simply ask questions, there is no shortage of experienced riders within our Club who are prepared to give advice, just ask.

Please carefully consider the above and demonstrate good judgement, safe riding and a respect to all road users. This will ensure that not only our rides will be safer but also *your* riding in general will enjoy that safety too.

Michael Chan GSXR 1100M
Club Captain.

SPRINGS

Springs, usually of steel wire but sometimes air (or both: air-assisted), are the usual medium by which the designer encourages his vehicle to insulate its occupants from bumps. A coil spring is simply a very long torsion rod, wound into a spiral for convenience. For this reason shortening a spring by cutting it *increases* its rate — in the same way that a long length of wire is easier to twist than a short one.

The stiffer the spring(s), the greater the energy they will put into the sprung mass of the vehicle — and its rider. As a general rule, therefore, the ideal is to have the softest possible springs consistent with rare bottoming-out. Unfortunately it is an inescapable truth that the shorter the available suspension travel, the higher the spring rate must be.

Incidentally, progressive spring rates (including air springs) are a mixed blessing on road bikes: cornering loads will use up the soft initial portion of travel, leaving the hard rate to cope with any bumps. The same true of heavily-laden tourers, en upright. This is why the rising rate engineered into road and racing bike monoshock linkages is generally small.

What springs actually do is store energy. A 100lb/in spring will store the same amount of energy in compressing by two inches as a 50lb/in spring will in compressing by four inches. Once the bump is passed, the spring's natural tendency is to give back more-or-less the same amount of energy in extending again. In practice, it will do this by oscillating, in much the same way as a rubber ball thrown onto a hard surface will bounce for some time before finally coming to rest. In fact, left to its own devices a bike would behave pretty much like a rubber ball. This is where damping comes in.

When had got ha... spring... down to th...

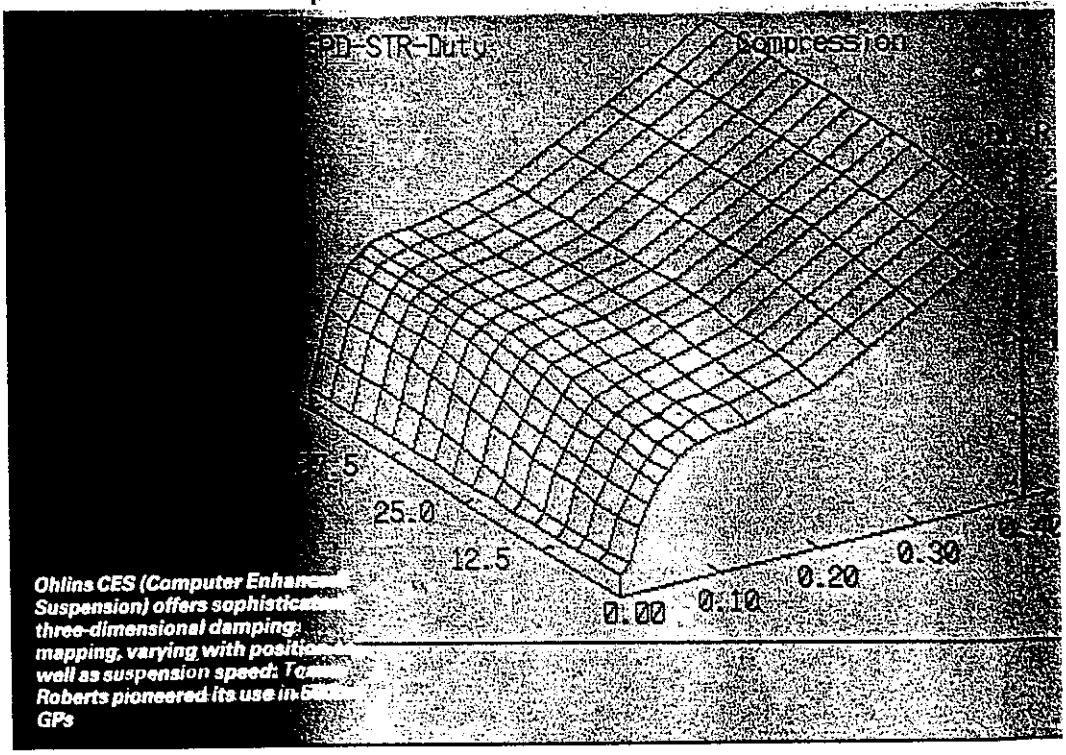
DAMPING

Imagine a suspension spring at full compression: left to its own devices it will give back the energy stored in it. If we don't want that to affect the chassis, we need a method of using up that energy.

Hydraulic shock absorbers use the spring's energy to pump oil through a system of orifices and valves which offer a resistance. This resistance controls the spring movement, converting the stored energy to heat, which is then dispersed into the atmosphere. (In other words, shocks are implicitly *designed* to get hot, so there's no excuse when one 'goes off' in normal use.)

Although springs compress in proportion to the *amount* of load on them, hydraulic damping varies with the *speed* with which those loads act. (Actually, with the square of the speed, so that a four times increase in suspension speed gives a 16 times increase in damping force). This is why it is largely futile to judge the action of a bike's suspension by bouncing it up and down in the paddock.

The more sophisticated shocks feature staged valving, which works differentially depending on the speed at which the wheel is moving.



Öhlins CES (Computer Enhanced Suspension) offers sophisticated three-dimensional damping mapping, varying with position as well as suspension speed. Ta... Roberts pioneered its use in ... GPs

COMPRESSION (OR BUMP) DAMPING

Compression damping, as the name suggests, resists the movement of the spring during the compression part of the stroke. It is the least important of the two types of damping, and is often absent altogether on some cheap shock absorbers (Ducati's 900SS, much vaunted as a great handler ten year ago, had no rear compression damping).

Well-matched compression damping, however, can offer a great benefit in spring choice, particularly at the front. The 'ideal' soft spring we might like to use will probably result in too much bottoming-out. However, taking advantage of the phenomenon that damping force is related to *speed* of suspension travel, it is possible to have staged compression damping which has little effect most of the time but comes into play at precisely the times when bottoming is likely — when the shock moves quickly. In other words you can have the soft spring you want, without the penalty of bottoming.

REBOUND DAMPING

Rebound damping acts *against* the spring's recoil, preventing its natural tendency to continue oscillating. Thus a common test for its absence (on an old car, for instance) is to put all your weight on one wing and jump off. The suspension *should* return to its normal height and stay there; if clapped, it will oscillate two or three times before coming to rest. The same phenomenon on

This is not what is meant by ride height. Generally speaking, clouds do not offer good traction

the move — car or bike — is wallow.

Now consider pumping down and pumping up.

Pumping down is when the suspension progressively 'jacks' itself down over bumps — and it's due to excessive rebound damping. It was also a common phenomenon under braking with hydraulic anti-dive forks, particularly big Kwackers. Pumping down at the rear is a common cause of 'Flying Ws' in motocross over a succession of bumps.

Pumping up — excessive compression damping — is less undesirable, and may even be advantageous in offering a soft ride on desert racers.

There are two opposite approaches to damping/spring combinations: stiff springs, little or no compression damping and lots of rebound damping, at one extreme; and soft springs, light rebound damping and heavy compression damping, at the other. In addition to pumping-up and-down effects, the former results in suspension which is very harsh at low speeds. The latter suffers because motorcycle suspensions must not only deal with bumps, but with g-forces acting in the plane of the suspension, too. On long, fast corners, bikes with too-soft springing can progressively settle down on their suspension, substantially reducing ground clearance and ultimately bottoming-out. The ideal is somewhere between the two.

PRE-LOAD & RIDE HEIGHT

Adding pre-load does *not* make the springs stiffer, it simply increases the loading required to make the suspension begin to compress, and in the process raises the effective ride height. After that, a 50lb/in spring will compress at the rate of one inch every 50lb, whether it is pre-loaded or not.

It was often true that dialling-in more pre-load improved handling — but only because it limited the movement of an incompetent shock absorber. The real answer, of course, was to fit a better shock. Besides, adding pre-load, especially to the forks, often results in undesirable topping-out.

RIDE HEIGHT-FRONT

Ride height is most readily altered by adjusting the pre-load (by screw, if fitted, or by means of spacers), and also by dropping or raising the yokes on the fork legs (providing the legs are long enough to be fully clamped). Lowering the front end (lifting the fork legs) reduces rake and trail, also quickening the steering by placing the bike's centre of mass nearer the road. Unfortunately it also reduces ground clearance. Raising the ride height will have the opposite effects.

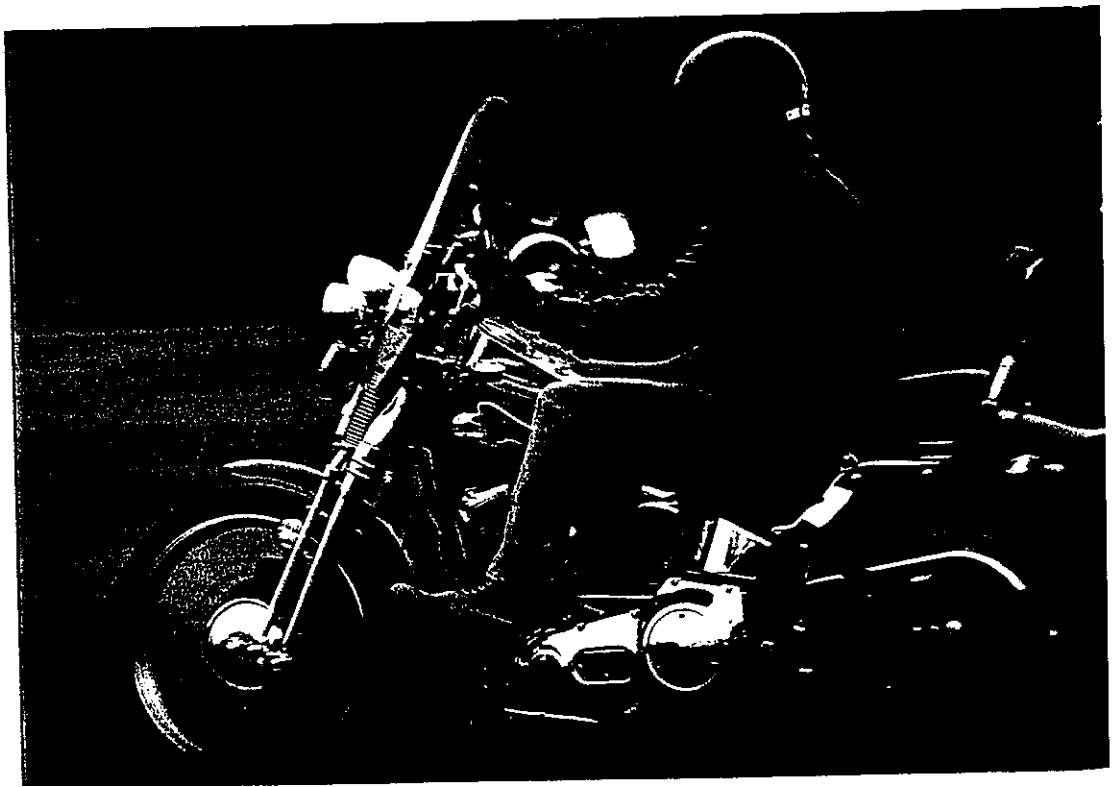
RIDE HEIGHT - REAR

Rear ride height is altered by means of a pre-load collar or, rarely, by means of adjustable linkages (eg Ducati 851). Shock absorbers of different length of a different height also have an effect. Raising or lowering either end by one inch will change the head angle by about one degree.

Raising the rear end makes for a quick-turning bike with reduced braking stability. Lowering the rear end can cause high speed instability and head shaking (despite the fact that it also slightly increases rake). On road bikes extra pre-load is most commonly used to maintain the stock geometry when carrying a passenger or heavy load.

By raising the rear ride height, you are also altering the relationship between the gearbox sprocket, swing-arm pivot and rear wheel spindle. The spindle should always be *below* a line drawn between the other two, by an amount which is often critical (typically 20-30mm on road bikes). See section on anti-squat.

Harleys, especially Softails, have an almost complete absence of rear ride height



CHASSIS TUNING

In terms of twiddly bits, the adjustability of motorcycle suspension ranges from none to infinity. But even bikes with no built-in adjustability can be significantly altered. Some alterations, like lowering or raising the fork stanchions, are free; some, like changing the fork oil or adding pre-load, cost a few pounds or even pence. Even fitting different springs isn't particularly expensive. Only when it comes to wholesale replacement of suspension units do you get into three figures.

Most riders have altered their chassis and suspension settings at some time or another, either knowingly or unknowingly. Dialling-in more pre-load is an obvious (if not always easy) adjustment, but adding a passenger, fitting different tyres, even raising the gearing, all have real effects on the way a bike behaves.

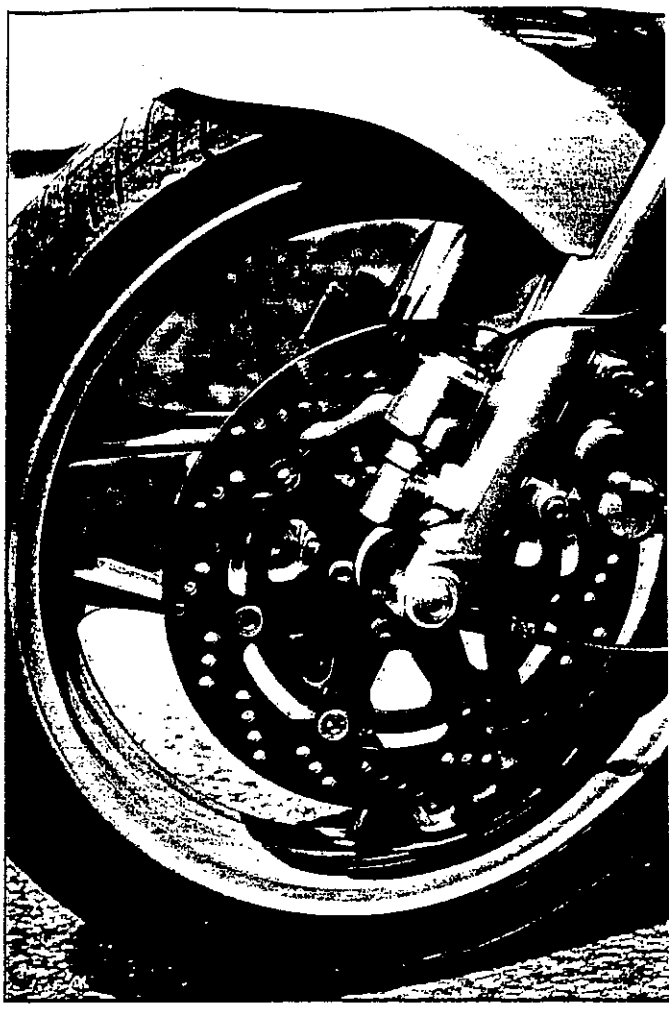
But, of road riders who have fiddled with their settings, one thing is sure: less than 10% will have done so in an informed, methodical fashion. Even amongst racers — who should know better — the figure isn't much higher. Yet there *is* a method. It's straightforward, logical, and it works. It offers road riders added margins of handling, safety and security. To racers it can afford a reduction in lap times far cheaper to acquire than throwing money at engine tuning.

Rule One of suspension tuning is that the vast majority of problems felt through the steering have their cause in the *rear* suspension. It is surprising how many top-class racers have failed to pick up this simple but crucial fact, and how much futile fiddling with the (usually blameless) forks results.

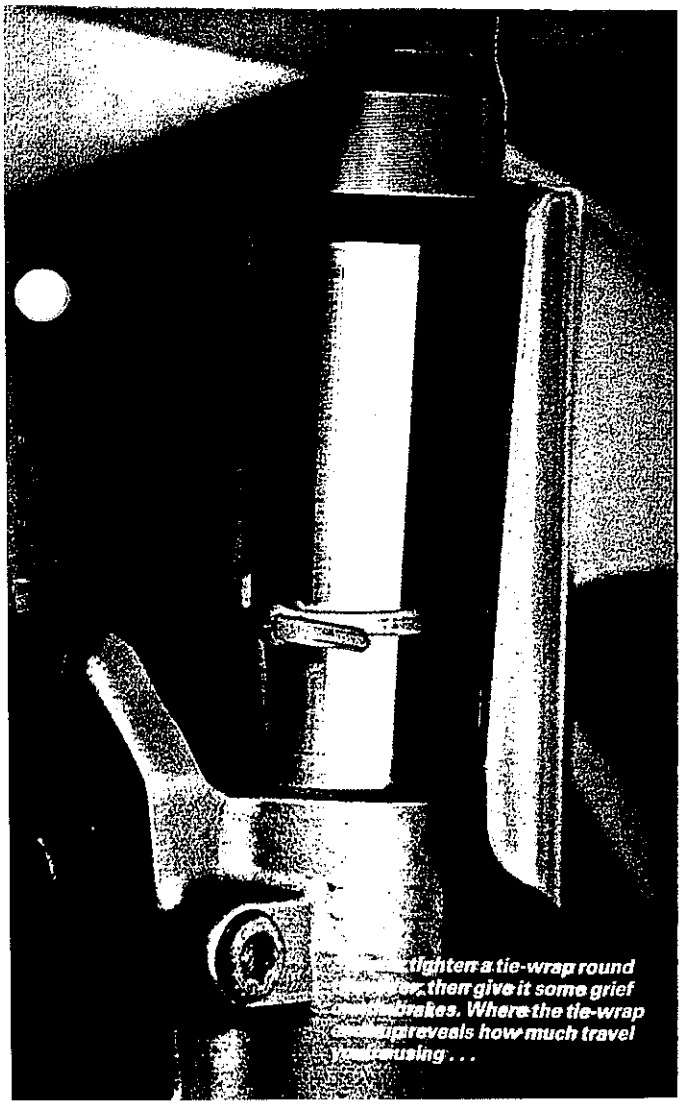
Important Rule Two, at least for road bikes, is that the range of suspension adjustment is usually quite small: 32 alternative settings doesn't necessarily mean that there's a great difference between any of them. Thus it is often possible to get the settings wrong, but hard to get them *very* wrong. It also means that it may not be possible to get them dead right (because publicity brochures don't have to handle).

On almost all roadsters, the suspension is under-damped, even on the maximum setting. Naturally there are exceptions to this: the front forks of the Suzuki GSXR1100K, for example, are seriously over-damped and under-sprung. Kawasakis often tend to be over-damped at the front and sometimes hugely over-damped at the back.

As to springing, most road bikes are under-sprung at the front, but about right at the rear. Again, though, there are expectations: for instance some models of Yamaha FZ750 are *over*-sprung at the front. And we all know about the rear over-springing of the ZXR750.



GSX-R1100 front end: notoriously over-damped



...tighten a tie-wrap round ... then give it some grief ... brakes. Where the tie-wrap ... reveals how much travel ... using ...

THE METHOD

First of all, ensure that the chassis and suspension are in good mechanical order, with wheels in line, tyres in good condition and to the recommended pressures, head races and swinging arm bushes in correct adjustment. Then back all available suspension settings off to minimum (including any steering damper, which would otherwise mask much of the feedback you are looking for). And, as you go through the setting-up process, only make one adjustment at a time.

FRONT SUSPENSION

The first thing to get right is the front end, specifically the fork springs.

FRONT SPRING RATE

The aim here is the largest amount of useful travel with the softest springs, without bottoming. First, determine the full extent of the forks' travel. You do this by removing both top nuts and letting the forks bottom under the bike's weight. Make a note of the distance between the top of the sliders (or their dust seals) and the bottom yoke. Reassemble the forks.

Then, with pre-load on minimum, fasten a zip-tie around the fork stanchion. If you generally ride one-up with no luggage and fancy yourself as a scratcher, get on the bike, get up to speed on a quiet, grippy stretch of road and brake hard. Repeat the process several times. (Racers can do this by simply doing a couple of laps at normal race speeds).

If you're more of a tourer, load the bike up with the usual weight of luggage (and pillion) and go for a spin. (It doesn't matter if you leave the tie-wrap on for a week; in fact the greater the variety of going you can include, the better). With either approach, you will find that the forks have pushed the zip-tie up to record the maximum amount of travel used.

Racers should seek fork travel about 5mm less than bottoming-out. If less than 5mm remains, a stiffer spring is required; if more than 5mm, try a softer one, until you arrive at the right value. On a road bike, aim for something like 8mm of unused travel, to allow for the more diverse conditions. Forks prone to bottoming-out in normal riding will usually require stronger springs.

Fork spring selection is just one area in which two expert riders may prefer totally different settings. For instance, a rider who brakes hard in a straight line and then drops the bike sharply into a turn will generally need harder springs than one who brakes deep *into* the turn (who would be in danger of losing the front end with harder springs). This is all very well in racing, but makes the road bike designers' job harder — another reason why it is worth trying to set your bike up for you, personally, and the way you ride.

FORK AIR GAP

All the forks you're likely to come across contain oil. The viscosity of the oil affects damping; the volume of oil (or, rather, of the air-gap above it), affects springing. Handbooks prescribe how much oil to use, but this is only a guide. It is possible to vary the amount to achieve a desired effect.

Air gap is the distance between the surface of the oil in a fork leg and the top of the fork leg itself, typically 120 to 170mm. It is always measured with the spring removed and the forks bled (pump them gently up and down a few times). In the case of cartridge-type or upside-down forks, let the damper rod fall as far down the leg as it will go before measuring.

Reducing the air gap (by adding more oil) effectively makes the forks air-sprung: the more the forks compress, the higher the pressure of the air in them, and the more it resists further compression. The effect is progressive, only significantly stiffening the final 25mm or so of travel. It can thus be used to fine-tune the amount the forks dive under braking.

Simply add 10mm of oil at a time (to both legs), and then try your rushing into a corner and braking routine with the zip tie. (10cc of oil conveniently equals about 10mm of height in a 43mm fork leg). At first you'll be able to detect no difference, but eventually the amount of dive will be reduced. Continue the process until you achieve the desired value. You'll soon notice if you put in too much oil: the forks go almost solid.

Racers can use this *after* selecting the correct fork spring to fine-tune their forks to suit a particular circuit where braking conditions might be different. Road riders, for whom changing fork springs might be impracticable or too much trouble, can use it to get their overall fork springing approximately right in cases where the existing springs are slightly too soft. You don't even need to be a scratcher: heavily-laden tourers which occasionally crash down onto their suspension stops often profit from less air-gap. If the springs are too stiff, on the other hand, there's little you can do except change them.

FRONT PRE-LOAD

A reminder: adjusting this *does not* make the suspension stiffer, although it can cause topping-out: it simply alters the ride height. Extra pre-load is mainly used to preserve ground clearance, or to alter the steering geometry. Compared with their normal free length, most forks have a built-in pre-load of about 15mm (which is why it's sometimes a struggle to get the top nut back on).

Because more pre-load makes the forks begin their stroke from a higher position, it can also help prevent forks bottoming, although stiffening the spring rate is a far better solution. If there is no facility for pre-load adjustment, spacers — short lengths of tube, shims, even coins — are usually inserted between the spring and the top nut instead. A road bike which is regularly heavily laden may benefit from extra front pre-load.

Forks topping out — usually with an audible 'clunk' — are usually due to too much pre-load. The minimum pre-load setting usually offers the best straight-line stability.

FORK DAMPING

Many forks have no specific damping adjustment. Where only one adjuster (per leg) is present, it will usually be for rebound damping. But even where no adjustment is offered, damping can usually be increased by substituting a fork oil of higher viscosity (higher SAE number), or decreased v. lower viscosity oil. This will affect both rebound and compression damping. Beyond a certain point, thicker oils do not increase damping, because at high fork speeds the oil simply cannot move quickly enough through the orifices, and a partial vacuum results. Very thick oils — above SAE20 or so — can also blow fork seals.

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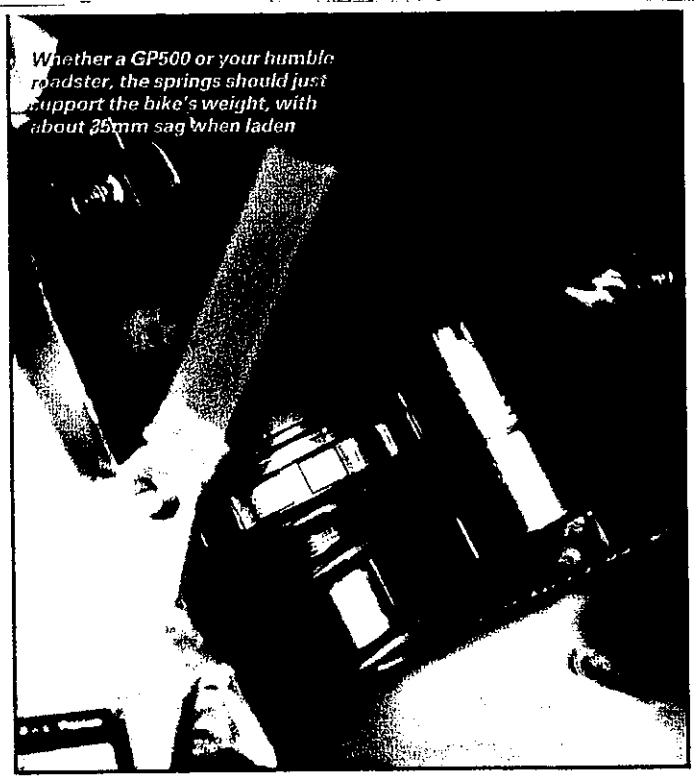
REBOUND DAMPING

The primary symptom of insufficient fork rebound damping is front-end patter during cornering (*NOT* under braking). Again, start testing with damping on the minimum setting. If judder is present, increase the damping until it goes. If you can't get rid of it, there isn't enough damping available, so choose a thicker oil. (If the oil is already so thick that it is cavitating yet judder persists, then the forks may be faulty or require expert reworking. Many forks can be modified internally to increase damping, often cheaply, but it's not a job for the unwary.)

More rebound damping also helps prevent the forks from returning too rapidly when the brakes are released into a turn — such as on almost any BMW. Unless it is really excessive, rebound damping has little effect on straight-line stability.

COMPRESSION DAMPING

The effect of adjustments in compression damping is felt most of all under braking. Excessive compression damping will make the forks feel too stiff on the brakes, giving judder *into* turns — very like the feel of too-stiff hydraulic anti-dive. The forks may feel fine when bounced up and down at rest, but solid under hard braking. The forks may also kick off bumps, possibly causing tank-slappers.



Whether a GP500 or your humble roadster, the springs should just support the bike's weight, with about 25mm sag when laden

Too little compression damping is harder to define. The aim is to have the damping assisting the spring, so that the spring can be as light as practicable. The ideal, therefore, is as much compression damping as the forks will stand without judder. Note that fork judder is also caused by disc run-out, by deposits on disc rotors or wheels out-of-balance.

REAR SUSPENSION

SPRING RATES

Although fork spring rate is selected by trial and error to suit a particular rider, rear shock springs are usually calculated by reference to the weight of bike plus rider and the linkage ratios of the suspension system.

Roadsters, which have to carry one or two people, with or without luggage, usually have to settle for a compromise. There may thus be particular benefits in tailoring the suspension to suit your particular needs — if, for example, you usually ride solo without luggage.

Too-soft springs can cause weave; too-hard ones, rear-end judder in turns or harshness over

bumps (viz ZXR750). Unfortunately, these symptoms often arise from other, unrelated factors.

The best advice is to consult a recognised shock absorber specialist (or, for racers, to walk around a racing paddock and see what works on the same type of bike as yours). Incidentally, it isn't always correct to install a softer spring for racing on road circuits, because of adverse effects on the bike's attitude and geometry.

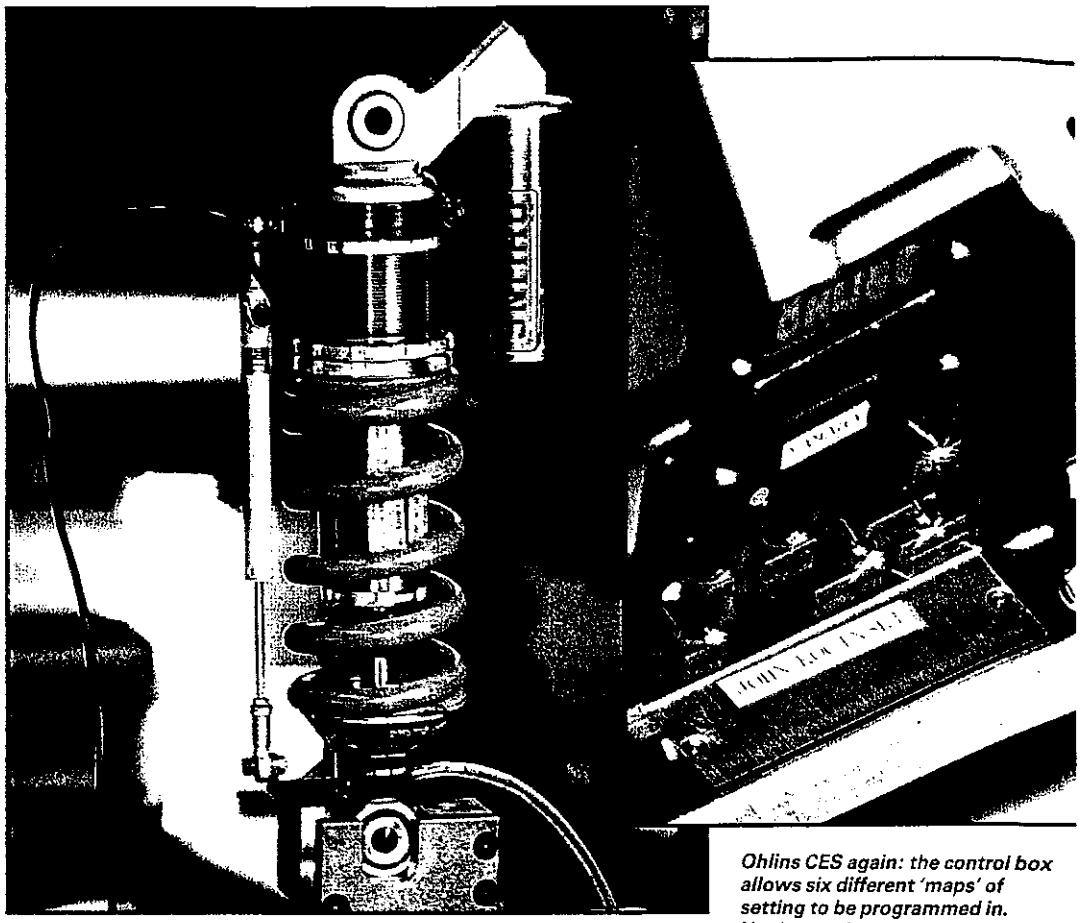
PRE-LOAD

On a typical big four-stroke multi, the pre-load should be set so that the spring just supports the unladen bike at full travel (maximum height), but sags 30 to 35mm with the rider aboard. A lightweight such as a 250cc two-stroke should have the same amount of laden 'sag', but so that it tops out slightly with no rider aboard (in other words so that *slight* downward pressure on the saddle causes no suspension movement).

If you have to alter the pre-load by a large amount to achieve this amount of sag, note that this will also alter the bike's attitude and steering geometry. Markedly raising the rear end may make the bike steer quicker, weave in a straight line, be less stable on the brakes, or all three.

On the other hand, lowering the rear ride height may cause high speed instability and head shaking. If this happens, you should return the ride height to the previous level if there is any means other than pre-load of adjusting this. Unfortunately, on roadsters there often won't be unless you go to the expense of fitting a rear shock of different length.

Again, a road bike regularly carrying a heavy payload will generally require extra pre-load to maintain ground clearance and geometry.



Ohlins CES again: the control box allows six different 'maps' of setting to be programmed in. You've got just one, so you'd better make sure it's right

REBOUND DAMPING

Rear rebound damping problems are probably the single most common cause of poor handling on production motorcycles. Rebound damping which is too soft shows up in three ways.

The most common result of inadequate rebound damping on road bikes is wallow, particularly through fast corners. On older bikes, wallow — especially under power — is often caused, at least in part, by frame flex (or worn swing-arm bushes). However, the frames on most modern superbikes have largely made this a thing of the past.

Racing bikes shouldn't wallow — if they do, they're miles out. Racers are more likely to suffer from rear end judder through turns, or from a rear end that rises too quickly under braking, hopping and skipping as the brakes are applied hard. The answer is progressively to increase the damping until braking stability improves, and the judder or wallow goes.

Rebound damping also has a less easily defined effect on the 'feel' of the bike under power. Correct rebound adjustment increases traction, gives more control under braking and reduces reaction to on/off throttle in corners.

At its worst, too little rebound damping can cause those dreaded tank-slappers — but so can too much. Too little leads to inadequate spring control, too much leads to pumping down over bumps (with loss of travel and unhelpful changes in geometry). If this sort of instability appears at the end of a long thrash, it's likely that the damping is too soft; if it's worst when the suspension is cold, the damping is probably too stiff.

Sometimes, the shock absorber fitted to a road bike simply does not have the required range of adjustment. The only effective solution may be a complete new shock-absorber.

COMPRESSION DAMPING

Rear compression damping is the setting demanding the greatest sensitivity from the rider. Small adjustments can make a big difference.

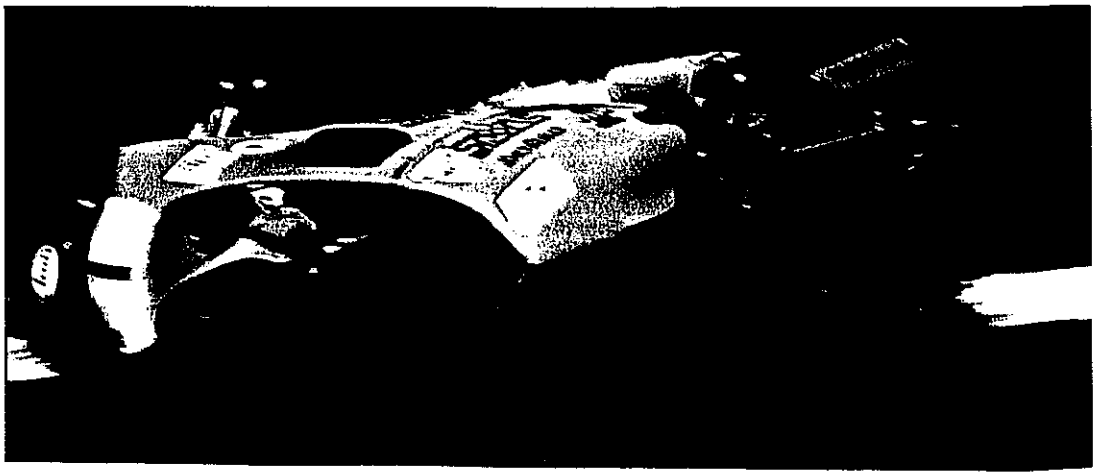
Much will also depend on the degree of anti-squat a bike possesses. Start with minimum compression damping, gradually dialling-in more until the drive improves out of corners. You should be able to feel the bike sink under power, finding extra grip as it does so. With too little compression damping, the bike will sink but not find as much grip. With too much, the rear wheel judders, finding *less* grip.

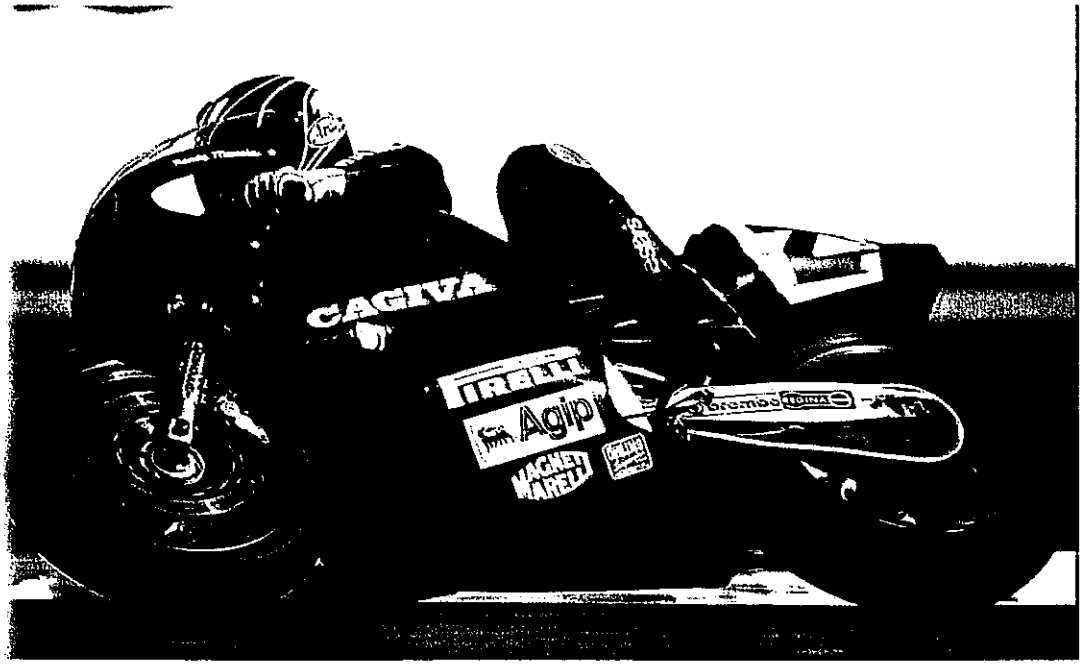
Because this bonus of grip is only there as the rear suspension is actually sinking, it's of no significance on long corners or on most road circuits, where the same degree of damping can make the rear end feel harsh and unstable.

If you've followed this system methodically, you should now have a bike that handles appreciably better than before. But that, inevitably, will have its own penalties: you may be riding harder, braking more fiercely, hitting the gas harder out of turns. So you may find, for instance, that the forks have started bottoming once again, because the bike is stabler on the anchors and you're using them harder.

If so, you may have to fine-tune the front spring rate again . . . or the air gap . . . or the damping . . . For the perfectionist, the only solution is to repeat the same step-by-step process until you are satisfied the bike is handling as well as it can be made to do so.

Sir Alan Cathcart bites the dust! This could have been the result of too much compression damping . . . but it wasn't. It was the result of too much compression of the front brake to avoid running over the bloke who'd fallen off in front





There are riding styles and there are riding styles. And then there's Randy Mamola . . .

RIDING STYLE

Before you get too carried away with your new-found diagnostic ability, it's important to remember that the single most telling variable on a motorcycle has nothing to do with Messrs. Honda, Öhlins, Dunlop or whoever: it's the rider.

There are two ways to steer a motorcycle, and both at first seem opposite to the desired effect. Using bodyweight actually obliges us to shift part of our bulk *away from the turn*. The bike reacts by banking into the turn, at which point gyroscopic precession takes over, helping to steer the front wheel into the turn. (You probably think that you shift into the turn and pull the bike after you, but since the only thing you have to push against is the bike — which would go the other way — this defies physics.)

Counter-steering also involves opposites — in this case moving the 'handlebars' left to initiate a right-hand turn. This causes the bike to topple right — you're effectively trying to negotiate a left-hander whilst leaning outwards — causing all those lovely gyroscopic and castor effects again to come into play. (You might think this simple stuff, but even in 1991 at least one 115mph TT lapper hadn't the slightest notion about counter-steering.) In practice these steering inputs are usually very subtle and their use in combination becomes second nature.

These two modes of steering sometimes give different results. Counter-steering is the same thing as applying a torque to the front wheel. This torque is resisted in part by castor effects, and in part by the tyre's grip on the road.

Let's imagine that at the precise moment you counter-steer, the front wheel hits a bump. The tyre recoil (your suspension not being state-of-the-art) has a marked effect. Result: same torque applied, less grip to resist it: the wheel will turn too far. Castor effects will bring it back, but probably over-centre: a tank-slapper in the making.

A similar phenomenon occurs where excessive trail gives a tendency to oversteer (page 3), which obliges the rider to press the bars outwards during a turn. Hit a bump, particularly under power when the front is lighter anyway, and the rider's steady pressure becomes an actual steering movement. So again we have a situation where the wheel is pointing one way and the bike another, inviting the bike to over-correct, and possibly tank-slap.

The inverse of this is bikes with very short trail which try to tuck in, and/or initiate a similar wobble. The difference is that the large castor effect of long-trailed machines will probably damp out the wobble fairly quickly (hard-ridden Ducatis used to do this all the time). But by the time something with inadequate trail has sorted itself out, you might be on your backside.

If the bike's designer didn't get it right, and you lack the means to do it for him, the only solution is to be mindful of these dynamics as you ride.

FAULT-FINDING

SYMPTOM	CAUSE
Forks top out:	Fork springs too stiff/too much pre-load.
Forks bottom out.	Fork springs too soft/too little pre-load/air gap too small/compression damping too soft.
Front-end judder in turns.	Insufficient fork rebound damping.
Front end judder on brakes.	Too much fork compression damping.
Bike tends to sit up in corners.	Trail too short: reduce yoke offset in 5mm stages.
Bike tends to drop into corners.	Trail too long: increase yoke offset.
Rear wheel skips on brakes.	Insufficient rear rebound damping (also caused by too-low tick-over or changing down too soon, esp. on four-strokes).
Bike weaves when braking hard.	Rear ride height too high/steering damper too stiff/wheels out of line.
Front end kicks off bumps (can become tank-slapper).	Fork springs too stiff/front compression damping too hard.
Bike wallows or judders through turns.	Insufficient rear rebound damping.
High-speed straight-line weave.	Rear spring rate too soft/rear rebound damping too soft/steering damper too stiff/head races too stiff/rear ride height too low.
Bike unstable at speed, prone to tank-slappers.	Rear rebound damping too soft or too stiff/trail too short.
Rear wheel judders under power	Rear compression damping too stiff/ rear spring rate too high.

Wobble, Wallow & Weave (A Complete Guide to Good Handling) was originally attached to the April 1992 issue of *SuperBike*.

It was edited by John Cutts and written by Mac McDiarmid.