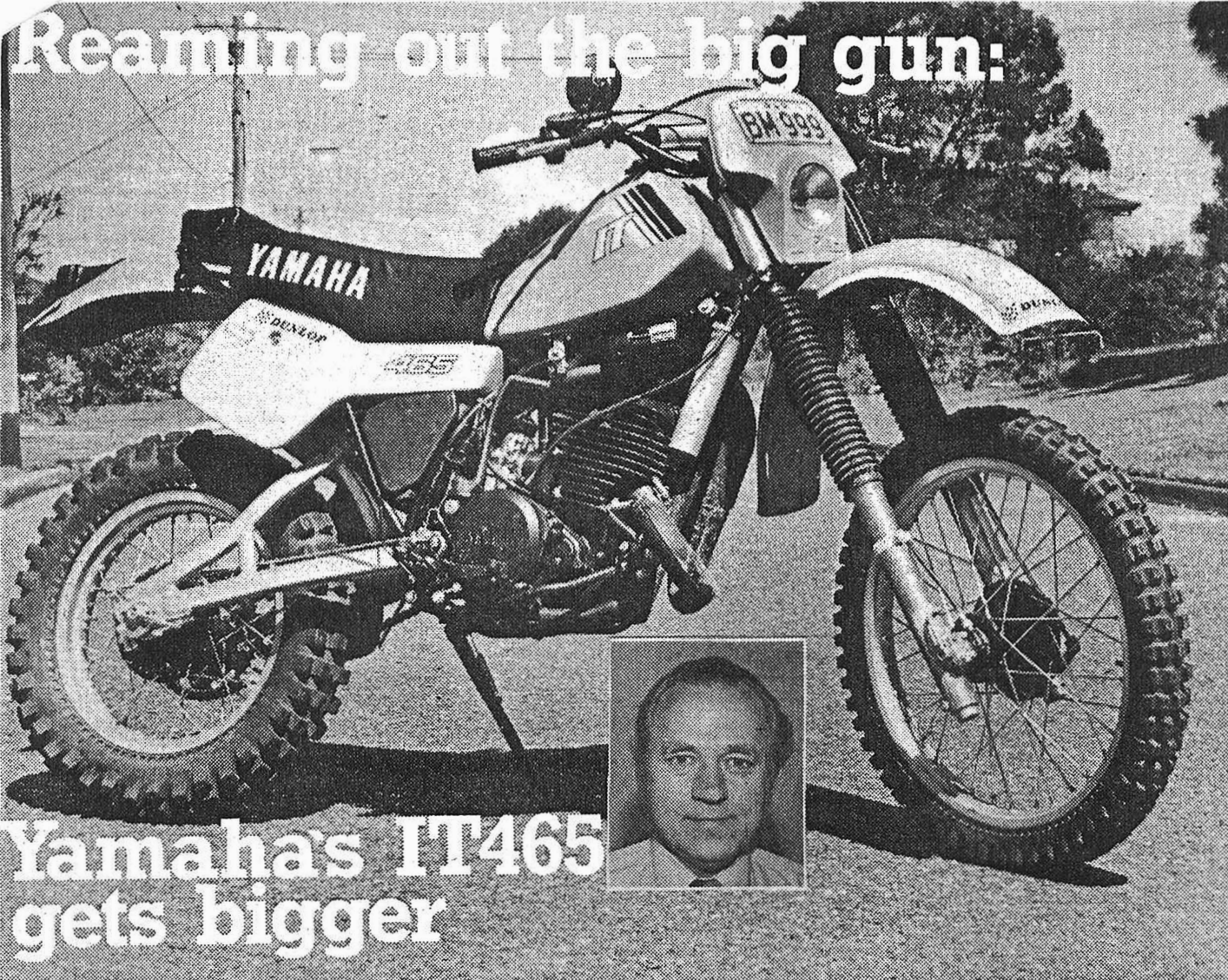


Reaming out the big gun:



Yamaha's IT465 gets bigger

During talks recently with visiting Yamaha development engineer Mr. Nobuaki Oshiro ('Nobby' for short) we discussed many possible changes to forthcoming Yamaha models to suit Australian needs, wants and conditions. However the question/answer session, in which AMCN was asked to contribute opinions about the Australian market, was not just a one-way street.

Several innovations quite unique to Australia were shown to Nobby, and clearly he was impressed that such quality items had evolved in Oz. There was even a subdued hint of surprise that two themes countries apart (ours and his) could resemble each other so closely.

One such example was a heavily modified XT550 street-trail currently performing quite well in open motocross, and the other was our own AMCN IT490-BM project bike.

Both these conversions were performed by Annand and Thompson's Joe Klawitter, so their soundness was

automatically acknowledged by Nobby. Now we're not necessarily suggesting that these local projects are next year's production IT490, or the long awaited 600cc TT version of Yamaha's XT550. However it was obvious that Nobby, whose job it is to scrutinise such off-road development, was very impressed with the Oz variations and left the country with photographic and detailed descriptions of both. Based on recent Yamaha performances you don't have to be very bright to notice that this year's IT enduro model is last year's YZ motocrosser, and features of this year's YZ are almost certain to surface on next year's IT.

The trend has continued for years, but many serious enduro riders seeking that slight edge in competition are thereby enticed to illegally convert the current motocrosser (without compliance plates) for registered road use. It is of course only a matter of time before Main Roads Department computers in all states catch on to the non-compliance of certain engine numbers with the master list.

Owners will then have their registration cancelled, or worse still, place a massive liability claim because their il-

The 'IT490-BM' and creator Joe Klawitter.

legal machine did not actually have third party insurance at the time of an accident. Because of such complications we tackled the problem from the opposite direction, but whether our one-off IT490 sets the trend for next year's big bore enduro model, only time and Nobuaki Oshiro can tell.

When the YZ490J rolled off the production line it seemed to be a logical basis for an enduro mount, but there were several problems, other than the registration requirements, which shelved that train of thought. The four-speed gearbox, the fitting of proper lighting, smallish ten-litre fuel capacity, and nowhere to carry tools were just some of the obvious difficulties.

A larger IT tank would solve the fuel problem and allow the fitting of a tank-mounted tool-bag, but would also necessitate a replacement seat, and notwithstanding the all up cost involved, you might as well forget it once you've lost the old Stephen Gall red seat image. The YZ490J was fifty bucks more than the IT465J, you were stuck with the four-speeder no matter how you looked at it, plus the cost of tank, seat and

lights and the ever looming rego worry were just not worth the anxiety.

Attacking the problem from the reverse direction it would seem just as workable to begin with a J-model IT465 and convert it to 490cc. In our case, with Joe Klawitter's help, we swapped components while the 465 was brand new so that the process could be reversed if it failed to go as planned. However for an IT465 owner wishing to do the conversion on the cheap it may also be done by converting much of the existing gear.

For reasons of expediency we swapped over the barrel, piston, head, carby and pipe, but working to a budget one need only buy a piston kit and rebore the existing barrel. The head and carby can be modified, and the pipe is an optional change depending just how far it's desired to take the conversion.

The first stage of the swap (barrel, piston, head and gaskets) was somewhat anticlimatic, taking only 20 minutes including intermediate pauses to compare measurements and photograph the parts. It all travelled so smoothly you'd have missed it if you'd stepped out of the room to visit the loo. With the two barrels side by side it's difficult to tell them apart. The 2mm difference in bore size is not obvious at a glance, the parts look the same, and the only apparent difference is the better casting finish on the IT465 Barrel. The heads are even more alike in appearance, but the pistons differ by the addition of two large ports in the lower skirt of the IT piston, whereas the YZ carby was fitted in toto. Unfortunately the YZ490 is seldom jetted properly from new and we tried numerous combinations before being satisfied.

The exhaust systems were so close to identical the standard pipe was retained at first in the interest of quietness. The bike of course ran way too rich, but instantly became a flier when the standard carby was re-fitted. It naturally performed like a bored-out IT465 with the standard pipe and carburation, and if that's where the bank balance runs dry, then the conversion should terminate there. Still displaying the IT465's inherently flat performance characteristics the project bike was considerably improved over the standard machine, but fell well short of the YZ490's 53 arm-jerking horses. There just had to be more within easy reach.

Although both pipes are basically identical Yamaha have made the male-female joint between the muffler and expansion chamber different on the two models, so portions of one exhaust cannot be interchanged with another. Also, because of frame differences between the two entirely different monoshock systems, the muffler mounting points won't allow the entire YZ490 exhaust pipe to bolt onto the IT465 frame.

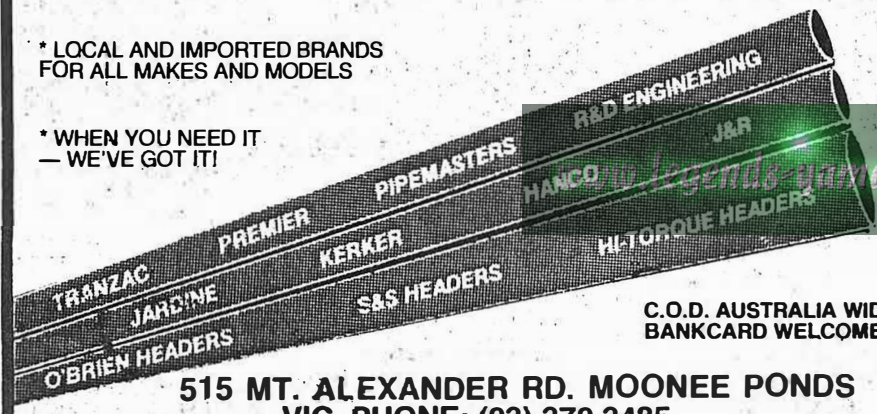
At this stage the conversion can take one of two routes, both of which we

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tried and both with alarming results. The forward position of the IT pipe is in fact a properly designed expansion chamber, as on the YZ, but the bulky 2.5kg muffler severely inhibits performance. By replacing the standard muffler with an after-market production, such as the Answer pipe, the wolf suddenly emerges from its sheep's clothing, but better check on the jetting before going too hard too soon. The vast improvement of exhaust gas extraction will cause the motor to be very lean.

Already very happy with the results but wondering if there was more, we fitted the YZ carburettor and front pipe, and mated it to a muffler from the earlier H-model YZ465. As the mating ends of both pipes are female, and the YZ expansion chamber is shorter than the IT's, a 100mm length of thin-walled exhaust tube was used to sleeve the pipes together, and two of the normal rubber sealing cuffs used on both joints.

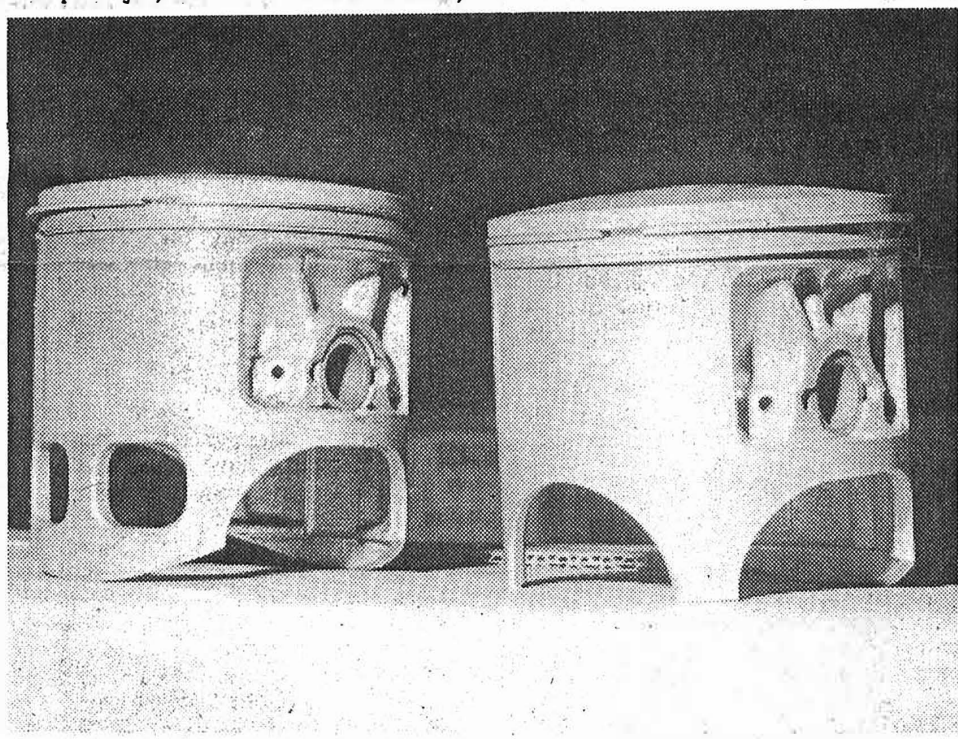
At first there didn't seem much improvement over the standard pipe/Answer muffler combination, but the YZ carburettor needed fine tuning. Rob Assink, racing manager for the Gaythorne Yamaha Dealer Team, told us of this early frustrations when tuning the first YZ490, and having opened his big mouth out loud, we gladly handed the problem over to him.

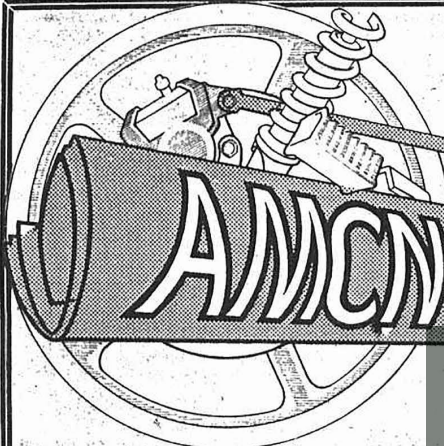
As can be seen by the Mikuni comparison chart below there's a vast internal difference between the outwardly identical IT465 and YZ490 carbys, and Rob's changes to the YZ490 Mikuni made those differences even greater. The YZ490 is initially richer on the main jet and pilot jet, but leaner on the needle,



Above: the bulky and restrictive standard muffler dwarfs the YZ465H replacement.

Left: pistons — IT465J left, YZ490J right.





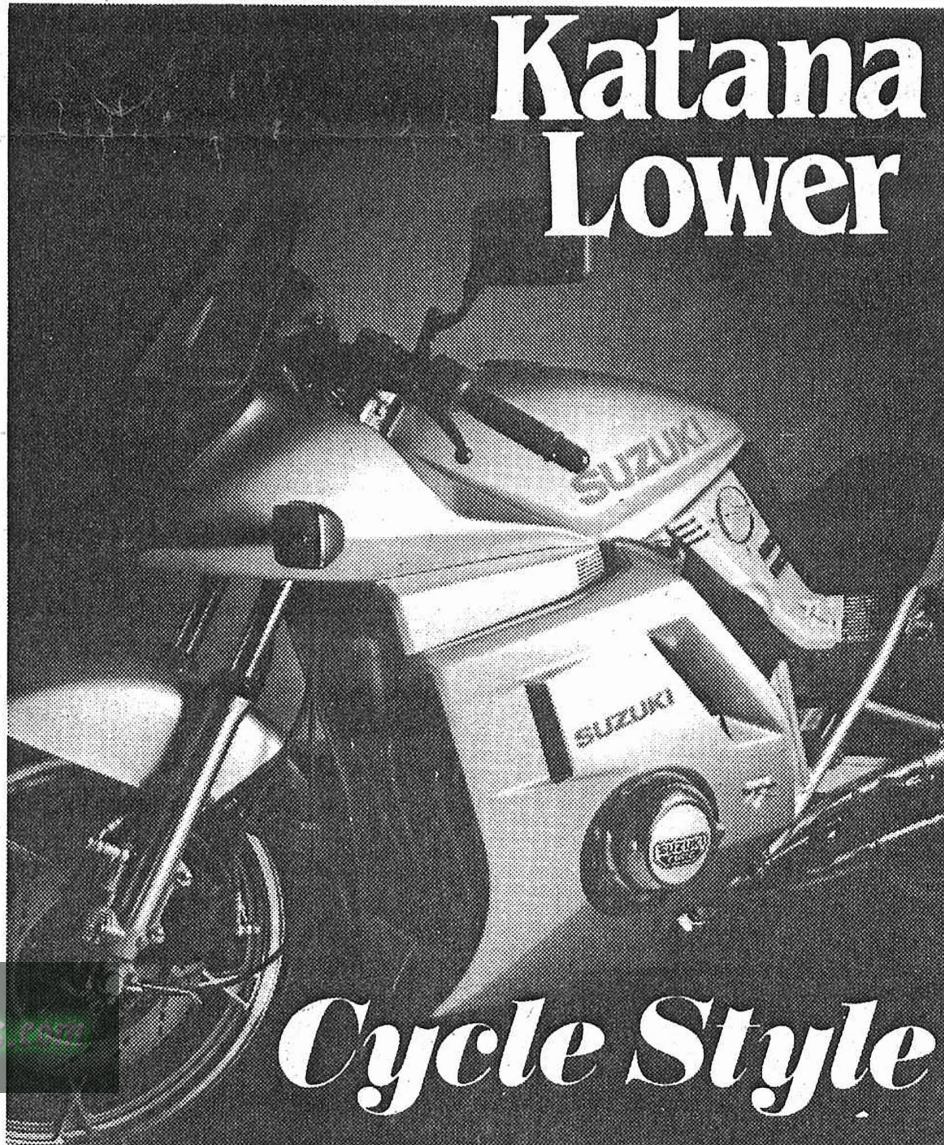
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air mixture and side cutaway. Rob filed an extra one millimetre off the side cutaway, changed the pilot jet from a 50 to a 45, and then further to a 40, and shifted the needle circlip two notches from the middle to the top of five pistons.

The float level was carefully set at 27mm but measured with the thick gasket removed, which is a vital point many overlook. If the existing 465 carby is to be used in the swap-over, all the internals must be changed to suit the chart just to get it to square one for tuning.

Rob grinned knowingly as he assembled and fitted the carby, and immediately the machine began to feel what a YZ490 was all about. It pulsed power with every stroke even while it sat ticking over on the side stand, and as we nudged it into first and gassed it off the mark it literally made your knees tremble. It responds instantly and savagely to throttle and makes flat stick riding so precise. However it may prove a handful for many enduro riders as few have the ability to extend the performance potential of even the standard IT465.

We'll undoubtedly get numerous letters over the next bold statement but we decided to discard the O-ring chain. When Yamaha fitted the more expensive O-ring chain to the IT465J the enduro buffs applauded, but the loss of power due to the tightness of its O-ring seals is astonishing. It's bike riding with the rear brake partially grabbing. Try propping your machine up off the ground and spin the back wheel by hand — the free spinning difference between the O-ring product and a normal chain would make many purists rethink their values.

Another conversion to bring the project bike into YZ trim was the switch



from a seventeen to eighteen inch rear wheel. Intent on the change for desirable wheel size and a wider range of rubber, we went all the way with a Sun Rim — reputedly the strongest in the business. This was no easy task as no standard set of Yamaha spokes would fit. In Brisbane when you have a problem involving rims, spokes or tyres you go see Keith Novak at Tyres for Bikes. Matching up the left-half of one set with the right-half of a longer batch of spokes Keith completed the picture with a Dunlop K138 to match the front K139.

Having already been very pleased with the Dunlop K88HT on the rear, the new K138 proved even better and worked perfectly as a mate for the superb K139 up front.

The one major drawback with basing the conversion on the IT465 was its older Monocross suspension design, compared to the YZ's rising rate suspension.

However this was overcome to a large degree by extensively modifying the monoshock and spring rates to increase the unit's travel by an extra 40mm. Boosted to 320mm of travel it then equals the mobility of the YZ's unit, and with two separate weight springs it goes a long way to matching the progressive bounce of the elaborate rising rate design.

As an overall unit to full YZ490 conversion is a mind blower, and if the terrain in your area needs ploughing it will have deep furrows everywhere the rear wheel touches the ground.

Rob Assink fine tuning the carby slide cutaway using the old flat bastard....



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