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RACE REPORTS

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NORTON'S WILD ROADSTER
THE 750 COMMANDO, BRITAIN'S MOST POWERFUL TWIN



OTHER TESTS

TRIUMPH 650 TR-6
A RELIABLE TOURER

KAWASAKI'S 125E
THE BIG THINKERS THINK SMALL





NORTON COMMANDO 750

**Norton shows a new way of dealing with vibration:
if you can't cure it, keep it out of touch.**

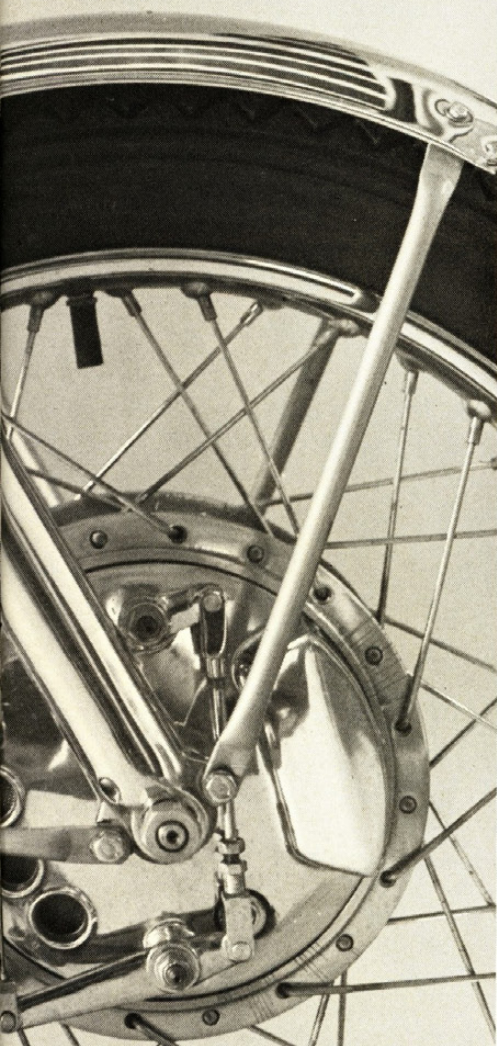
■ It's amazing what fresh thinking or a different point of view can do. Back in 1967, just prior to the explosion of the superbike craze, the Norton company and Villiers in England became one, a marriage that would significantly change things at Norton. A direct result of this union was the introduction of a new model for Norton, the Commando 750. Also contributing to the re-designing of the 750 Atlas was, undoubtedly, the financial capabilities which the merger also provided to transform the ideas into reality.

This is not to suggest that the engineers at Norton were retarding change; they did have new ideas, many of which actually made it to the production line, but they never seemed to make it as financial successes. In 1965 they introduced a 400 cc twin called the Electra, Britain's answer to the super-successful Superhawk. But, as bad luck had it, the response on these shores to the Electra was anything but what its name implied. If there was any electricity in America's reaction, it could have easily been surpassed by a pair of waning flashlight batteries. A few years later, not being discouraged by the Electra's dismal failure, they brought out the Norton Atlas Scrambler and later a much more praiseworthy successor, the P-11 Ranger which boasted many improvements including a new, lighter frame. But both models were still plagued by the same Atlas ills: sure, they had plenty of power, but the main problem was trying to keep them in one piece. The last new design the Norton people produced was a new prototype 800 cc D.O.H.C. twin to replace the 750's, but intriguing and innovative as the exotic powerplant was, it never made it into production. Per-

haps that was just about the time when the company was running low on funds for R & D. Understandably, the Norton dealers here were getting a bit distressed.

At the time of the merger I would have bet you dollars to donuts that, indeed, if they were going to revamp the Atlas, the first to receive attention would be the engine; the "Roadholder" forks were nothing short of legendary and the "Featherbed" frame as well (the fact that names were given to these frame components alone suggests superiority). Then there was the fact that the old 750 twin was not of the more popular unit construction and it did leak oil and vibrate quite a bit. Surprisingly (to me at least), the first things scrapped were the frame and forks. True, the engine did receive a new ignition system, better carburetion, higher compression and new camshafts (thanks for the guiding light, Paul), but basically it's the same Atlas powerplant.

The fact that the Commando's designers were willing to part with the frame and suspension shows, I think, a desire for function even at the cost of discarding tradition and slow, pragmatic evolution. That's not to say that they haven't retained much of the Atlas's running gear, but the Commando seems to have been born from a total-concept approach. Suspicions that the "Roadholder" forks and "Featherbed" frame in concert with a new, perhaps multi-cylinder engine might have been a better tack should be immediately discarded; the new Commandos surpass the Atlas in every respect. So much for history. Regardless of how the Commandos got here, they've been upon us now for about three years and we're



THE 750 COMMANDO ROADSTER

much better for it. This year's models are the best yet; evidently they're still head-scratching a bit.

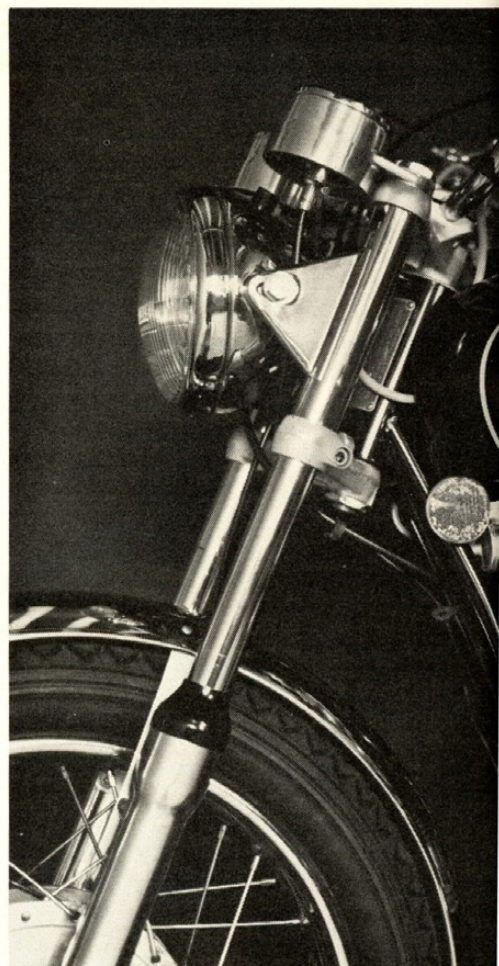
The object of this test is the 750 model Norton designates as the "Roadster." In all, there are five different Commando models this year, all varying in styling only; all share the same engine, frame and suspension. We selected the "Roadster" because it is the one we would be most likely to buy. Besides, this particular color scheme, black with gold pinstripes (see cover), was irresistible. Yes, the Hi. rider was tempting and I'm sure that particular model, because of its very heavy chopper styling, will receive much attention this year but somehow we knew better.

Once astride the machine, arms extended clutching the meaty grips, you can feel the bike throbbing underneath you, even though it's up on the centerstand with the engine off. It's that type of experience. Starting up presents little difficulty thanks to a ballast resistor for hotter spark regardless of battery condition. At idle the entire vehicle shudders in response to the powerful pulses of the four-stroke engine. After bumping-off the stand you pull in the clutch and experience a delightfully light lever effort. Bottom gear having been selected, the clutch releases as easily as it was engaged, and you're off. As the revs climb above 2,000 rpm the shuddering disappears. Can it be true? No vibration. Fantastic. Shifting up reveals an amazingly responsive motor with the tractability of a Harley flathead. As traffic clears, not resisting the urge, you drop a gear and nail it. Not bad. This bus really moves out. After repeating that several times you're hit by another urge. Hmm . . . I wonder what would happen if . . . This time you drop *two* gears to second. Wham! The Commando almost rips from your grasp as you and machine bolt ahead with the front wheel clawing skyward. Being taken by surprise, you instinctively yank in the clutch and the front wheel comes back to mother earth where it belongs. As you coast along at about 50 mph, clutch still in, (somehow your death grip on the bars isn't quite willing to give up just yet), the engine settles back to a lumpy idle but your heart beat is still enough to give an attending physician artillery deafness. And then, after selecting a

few higher gears to maintain leisurely cruising speed you keep remembering and mentally re-enacting what had just happened. You begin realizing what the 750 Commando is all about, or at least half of it.

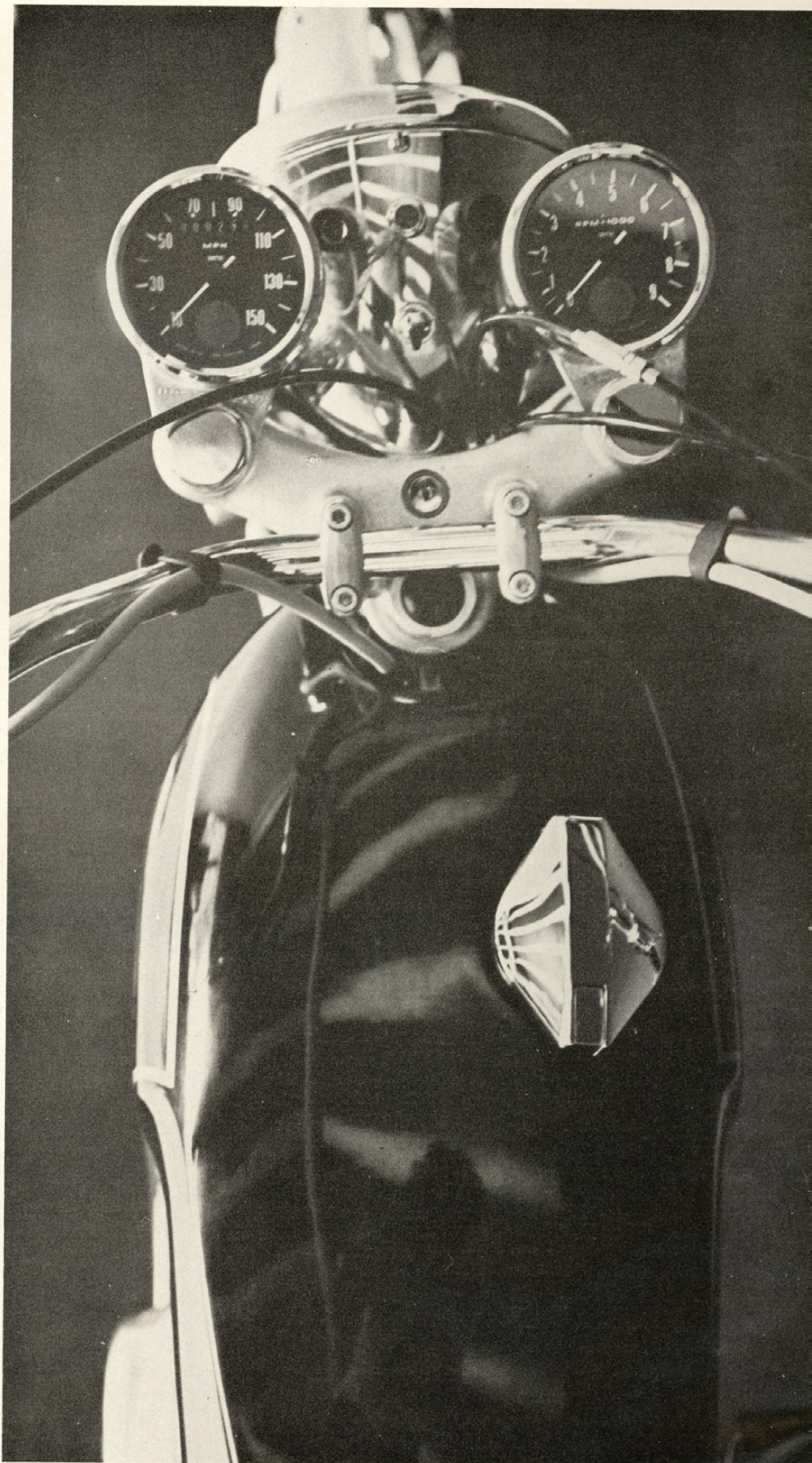
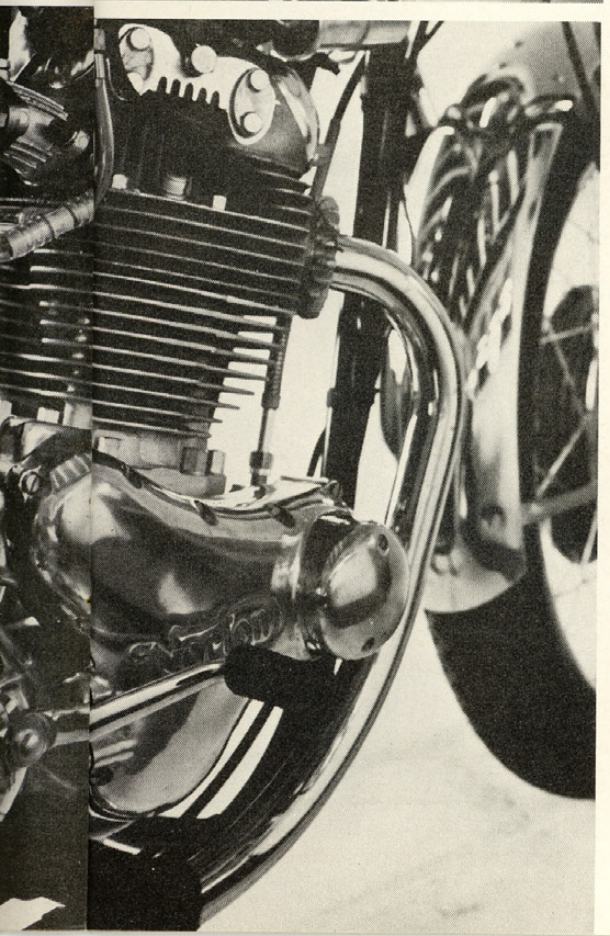
The heart of every Commando, the source of this brutal power, is an overhead valve 750 cc twin fed by a pair of 30mm Amal concentrics which produces a healthy 60 bhp at 6,800 rpm. To anyone who has been with the cycle scene for very long the Norton 750 twin is a familiar piece of hardware that was born back in the early sixties when the old Dominator 600 received a severe stroking, upping its displacement to 750 cc. Its bore and stroke alone should date it; it's very much undersquare at 73mm for the bore with a stroke of 89 mm. Now a lot has been said about how long stroke engines produce much more low rpm power than the stroke configurations. If this is so, it's strictly coincidence that heretofore the long strokers also have had very mild camshafts which alone are the real determinants of power characteristics. I say "heretofore" because the 750 Commando is a case in point that should lay those wives' tales to rest; this engine really comes on at 4,000 rpm and pulls like a freight train well over its power peak just under 7,000 rpm. It's also interesting to note that its power characteristics are much like those of the Yamaha 650 O. H. C. twin we tested last issue and the Yamaha is slightly oversquare.

To help you take advantage of all this power, Norton, as always, provides an efficient, smooth and dependable four-speed gearbox to keep the revs up and the power to the ground. Operating in conjunction with shifting, the diaphragm clutch is a marvel of endurance and light actuation. Transmitting the power back to the clutch is a tough triple-row chain that should have a long life and only need adjustment infrequently. Drag race enthusiasts will be interested to know that the 750 Commando will easily rip off ¼-mile times in the low 13's with terminal speeds in excess of 100 mph, and that's with a four-speed box. With the aid of an additional fifth speed, an option we hope Norton-Villiers will soon make available, ¼-mile times in the 12 second bracket would be commonplace.



It's the same old engine in a new frame, called "Isolastic," with new forks, which retain the name "Roadholder." Norton may have surprised us with us with their choice of things to change, but the new package is really a great improvement.



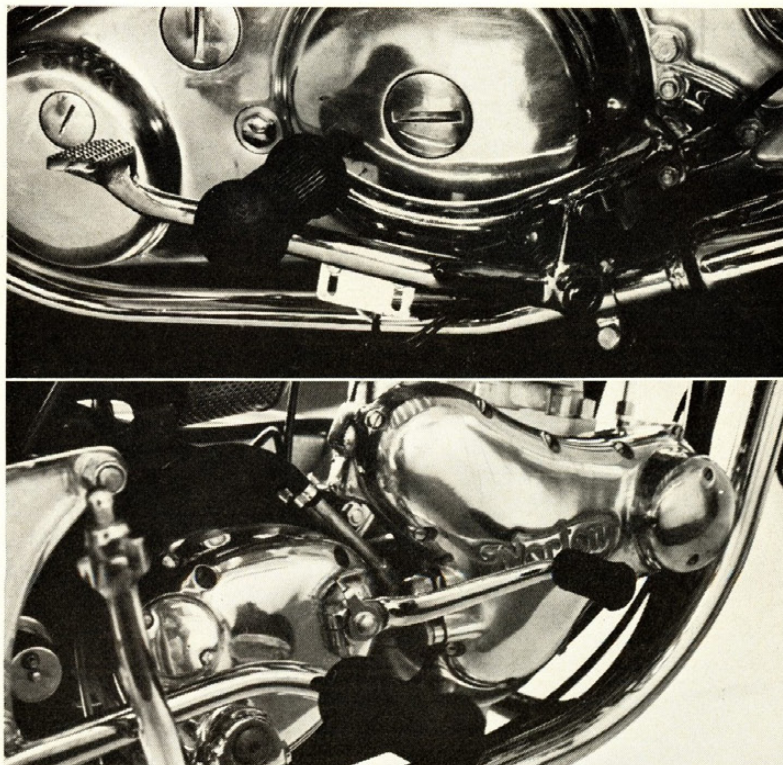


THE 750 COMMANDO ROADSTER

More important, though, than the magnitude of power or its characteristics (to this tester anyway) is the fact that the Commando is so free from vibration that one can fully enjoy all that the engine has to offer, as well as the passing scenery or whatever else one's senses desire. Vibration has always been a painful shortcoming of motorcycle touring. To overcome this, many manufacturers have adopted expensive and complicated multicylinder engines, and understandably so. However, these new engines, even though they are admittedly more technically advanced, are not without their drawbacks; increased engine width, increased fuel consumption, more weight and difficulty of maintenance. Norton, on the other hand has a different idea; bolt the engine and transmission package solidly to the rear swing arm and then isolate those from the rest of the motorcycle with elastic mounts. Logically (everything about the Commando is highly logical) they named their brainstorm the "Isolastic" system.

Happily, the Commando's Isolastic system is much more than an interesting piece of thinking coupled with a fancy name, because it works. Another point to keep in mind is that this system insures that virtually all units will be equally vibration-free since the smoothness of each individual unit is not so critically dependent on the accuracy of engine balance or the tricky business of selecting a balance factor that compatibly matches the frame. In the past we've had the experience of two identical, new motorcycles and experienced two completely different levels of vibration and in different rpm ranges.

Those die-hards who resent the passing of the famous Featherbed frame which supposedly accounted for the legendary handling of the highly successful Manx road racers will be happy to learn that little has been lost in the transition to the Isolastic system. In fact the new frame allows a better, lower mounting of the engine as well as a forward slant which makes for better weight distribution, easier repairs and probably aids cooling somewhat. The passing of the Roadholder forks has also left no ill effects, most certainly due to the retention of the Roadholder's very effective two-way damping system. What *has* changed is the stanchion



tube length, a switch from external springs to the internal type and the implementation of external rubber seals to catch any oil that happens to get by the upper bushing. The factory still calls them Roadholders, but, the way I see it, they're different.

At this point in a road test the tester usually goes on about describing the handling characteristics in relation to the steering geometry and why the handling feels a certain way. But to my mind, there are so many other factors involved that to fully explain certain handling characteristics simply by pointing to either the rake or trail is foolhardy.

It's not like that you'll get much argument on the subject of the Roadster's styling. It's handsome, elegant, sophisticated and the very thick chrome plating should last a decade.

Where is the Commando lacking, you ask? Well, even though it doesn't have a new, super-sophisticated powerplant for reasons of vibration, in the interests of longevity and reliability a new engine would not be unwelcomed. Perhaps that D.O.H.C. 800 cc twin they were toying with a while back, now that would be a dandy. But even with its present motor it's certainly a match for anything else on the road today and its long string of production road race wins is a testament to that fact. ●

