

SPEED-FREAK. That's what they called me when I was a kid. Prob'ly 'cause I used to get kinda squirrely sometimes. But things are different now. I'm grown up. Learned it's not just goin' that counts. It's how ya' go. That's why I got me one of them new KZ750 Twins.

Real style, that bike. Four-stroke DOHC mill. Constant-mesh five-speed trans. Discs front and rear. In high school never woulda thought about things like the sensitivity of the brakes. Spacin' of the gear ratios—the fine points. I was too busy gettin' off, gettin' it on.

Yeah, I've changed a lot. Like last weekend...I was ridin' easy and lookin' good when all of a sudden the bike starts to actin' bored, tellin' me it wants to get up an' go, and before I knew it my eyes were gettin' wide and the road was gettin' narrow.

Bein' the big boy that I am, I said, "Slow down, bike." But the bike wanted its head. All I could do was stay cool, give it some rein and keep an eye on the speedometer.

I was havin' myself a good ol' time before I spotted those flashin' lights. Looked like Smokey had the bubble machine goin' again. But it wasn't like the old days. This time they were ahead of me. Said, "Whoa, bike," and we pulled up to have a look. And while I was sittin' there, kicked-back with my cheese sandwich, I remembered when I wouldn't give the police the time of day. But, this time I even offered to lend a hand. Too bad I only had metrics.

Kawasaki
lets the good times roll.

How To Build The Ultimate Street Z1

CYCLE WORLD

MARCH 1976
ONE DOLLAR | UK 35P

1CD/08250

America's
Leading
Motorcycle
Enthusiasts'
Publication

**Yamaha
RD400C:**
You Can't
Help But
Love It

**Bultaco's
350
Sherpa T**

**He...
W...
20...
An...
Tr...
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KONI - WORLD'S FASTEST CYCLE SHOCK!

The KONI internally adjustable shock absorber is an engineering triumph that represents proven principles of hydraulics. The same quality is employed in the manufacture of these shocks as that used by the world's motorcycle speed record holder.* A simple adjustment eliminates the need for installation of costly parts or the time-consuming operation of changing oil to another viscosity. Winning bikes in road races, moto-cross and enduros substantiate the stamina and performance of KONIs!



KONI adjustability is standard not an optional "extra."

All moving parts machined from solid stock.

Consistently close clearance of piston to cylinder insures trouble-free performance.

Guide is intricately drilled for maximum flow and circulation of fluid before final finish.

To guarantee precision roundness and strength inner cylinder is drawn from seamless tubing.

Also available in finned aluminum models.

Internal adjustability — rebound forces can be set to meet riders' preference for all types of terrain without adding parts or changing oil.

All KONI shocks are dyno tested.

Rebound forces controlled by unique system of orifices and spring-loaded by-pass valve no need to depend on oil viscosity.

360° heliarc welded eyes for maximum strength have sleeved bushings to accept different mounting studs.

High quality induction hardened steel piston rod chrome plated to an ultra hard finish.

Individually calibrated foot valve controls "bump" force (damping).

Adjustable lower spring platform.

*Don Vesco and crew with the KONI-equipped twin-engined Yamaha Streamliner that set AMA land speed record of 303.812 mph and FIM mark of 302.928 mph at Bonneville Salt Flats, September 28, 1975.



Photo: Dave Friedman

For free descriptive literature, decals and list of distributors write:

BIKONI LIMITED • 150 GREEN STREET • HACKENSACK, NEW JERSEY 07601

CYCLE WORLD

MARCH 1976 VOLUME 15 NUMBER 3

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COVER

Fernando Belair caught the Yamaha RD400 swooping a curve in California's Modjeska Canyon.



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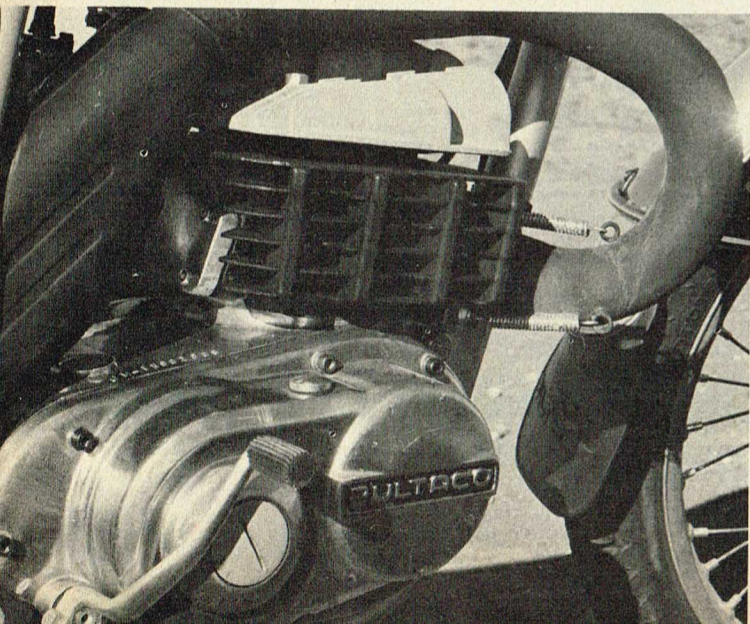
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BULTACO SHERPA T 350

A Remarkable Series Of Improvements Keeps The T At The Front Of The Trials Bike Brigade.



■ IT'S OFTEN VERY HARD for us to imagine how certain motorcycles can be improved upon from year to year. So impressive are they the first time around and in subsequent model years, that creating a superior version seems an impossible task. One such machine effects us this way year after year. It's Bultaco's Sherpa T trialer. We keep saying, "How are they ever going to top this?" And sure enough, pretty soon there's a new T and we're left standing there saying, "How are they ever going to top this?"

For 1976 we face the same situation again, because the new Bul trialer simply defies all odds of being improved upon. Styling, of course, is a matter of individual taste, but we doubt that we'd get much opposition if we declared the T a real beauty. The look is sculptured, with *narrow* as the theme. The frame is entirely chrome-moly and finished in Bultaco's traditional silver. Fuel capacity has been increased to 1.7 U.S. gal., yet the fiberglass tank retains an ultra-slim profile. Painted in high-gloss red with a silver accent band that matches the frame's color, the tank features a new, easy-grasp, vented plastic cap and an improved fuel petcock. No crossover tube is used, allowing tank removal with less hassle.

The front portion secures with a single 13mm bolt running through the gusset portion of the steering head, and is rubber-cushioned. The rear is held in place by the tiny seat assembly that snugs under a frame bracket and is tightened up at the rear with two 10mm bolts and self-locking aircraft-type nuts. In fact, self-locking nuts are used nearly throughout the machine.

Side panels are fiberglass and finished in red to match the tank. To help prevent scuffing from the rider's boots, the panels are indented and form fit to the frame rails, which have been narrowed this year. The left panel is actually an integral part of the new airbox assembly, while the right one removes with a single large screw to allow air filter servicing.

Made from fiberglass and drawing air from up high under the seat, the airbox is designed to be virtually watertight. A wire mesh screen keeps large debris from entering the chamber, over the top of which fits a thin foam element that is held in place by an aluminum bracket, which is pressure loaded by a spring that tightens down when the outer cover goes in place. A rubber lip seals the removable cover portion. Someone would have to work hard at drowning out this one in a water hazard.

As we mentioned before, the frame is new and manufactured from chrome-moly tubing. . .including the swinging arm. Tubing is smaller in diameter than what is normally found on Bultaco motocrossers and enduro machinery, because strength is less important and the weight factor is more critical. The frame, like before, is designed around a single toptube and downtube assembly. The downtube splits into an engine cradle where the tubing curls upward to form the rear triangulation sections that support the swinging arm, shock mounting points and bracketing for the seat and rear fender. Welded between the two lower frame rails is a perforated bash plate, providing a token amount of protection at best. A few companies make after-market skid plates for the T, Bultaco's own Miura Products being one. The Miura Products plate protects both left and right side engine cases, as well as the expensive-to-repair chrome-moly lower frame tubes. It's slippery plastic and super strong, cheap insurance at \$14.95.

There is ample gusseting in the stress areas in the steering

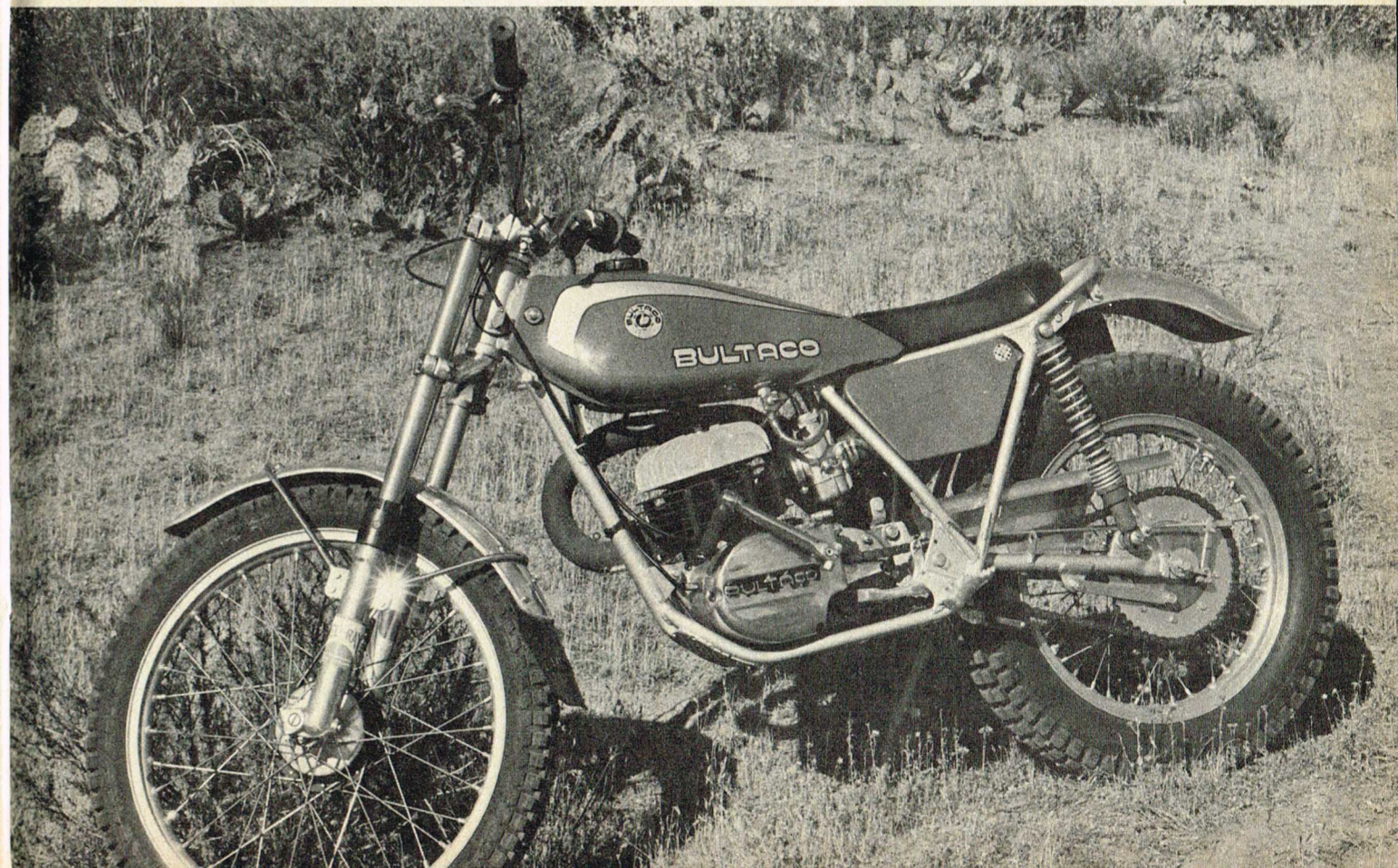
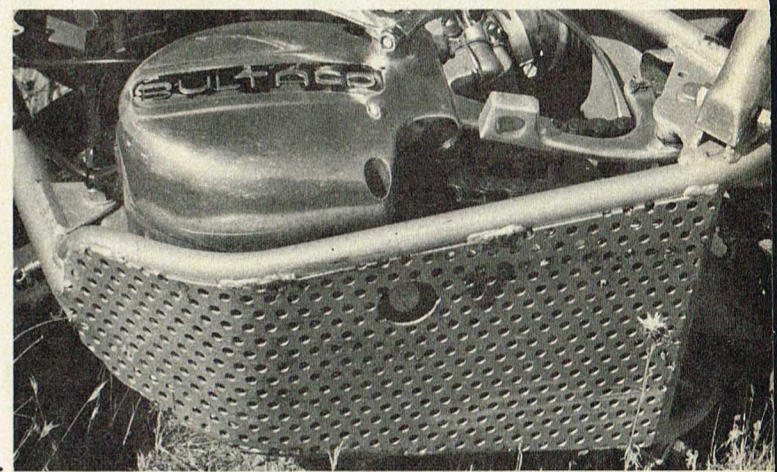
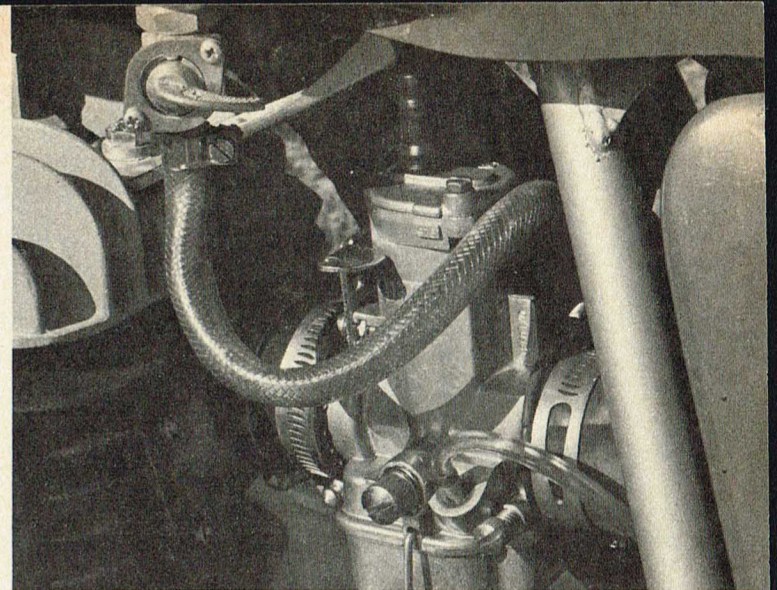
Cycle
World
Trials
Test

head and pivot point for the swinging arm; the tucked-in footpegs are also amply braced. Bultaco has succeeded in producing a lightweight, yet strong and efficient, frame for the purpose intended: observed trials competition. The steering head angle remains at 27 degrees, with 3 in. of front wheel trail.

Over the years there has been plenty of talk about proper tires for the serious trials competitor. And across the board, the most popular have been the British Dunlop two-plys with their flexible sidewalls and good gripping compound. But the tires have usually been hard to find for many, and some have even been fooled into purchasing the Japanese Dunlops, which are about as similar to the British versions as "Adam-12" is to *The Choirboys*. And then here comes Pirelli with its new two-ply nylon MT 13 Mototrial. We think it's every bit as good as the British Dunlop. . .and it's standard equipment on the new Sherpa T to boot!

The plastic injection-molding industry in Spain has much progress yet to make, and for this reason many of the Bultacos come with the long-familiar polished aluminum fenders. We all know that sooner or later the aluminum gets to looking pretty shabby from assorted prangs in the wilderness, yet we prefer them to the more brittle fiberglass pieces we sometimes see. The answer, of course, is an accessory fender by any one of many after-market companies. . .Preston Petty being about the best and most popular. With reasonable care (and luck) the aluminum fenders will last a while, but at replacement time plastic would be the way to go.

Both stock fenders keep a fair amount of goop off the rider. The front unit, which mounts close to the tire in normal trials fashion, has a rubber mud flap on the bottom to help keep the slop down. The low-mounted fender allows the rider to watch the placement of his tire in trials sections, which would be all but impossible with a motocross-type fender mounting. One problem that can crop up with the low fender, >



SHERPA T 350



however, is the jamming of the tire by rocks or thick mud that find their way between the tire and fender.

Aluminum non-clogging rims are by Akront; they're not the heftiest around, but certainly strong enough for trials work and definitely light in weight. Tiny-gauge spokes connect up to a pair of beautiful Dural alloy hubs that are perhaps lighter than *any* and quite strong. The rear hub is new this year and is essentially the same diameter as the front unit.

Though braking force is adequate for trials sections and low-speed applications, it leaves something to be desired when traversing ground between sections at higher speeds. Again, their resistance to dousings in deep water is negligible, and recovery time to dry is far too long. We've found after-market brake linings that do a better job in Bultaco hubs, but due to the unusual sprayed-on braking surface inside the hub, care must be used in selection of lining materials. Some linings can destroy the surface, so caution should be used. It's best to deal with a reputable outfit that specializes in brake work and has Bultaco experience. Rear brake actuation is via a rod, while the front uses a cable.

Our Bul came set up with the brake on the left and shift on the right, which we prefer; but the owner can have it either way when ordering the machine. This is one of the bikes still imported with a right-side shifter.

Small-diameter axles are found front and rear, in the interest of weight-saving, yet the importance of strength is not overlooked. The front axle will be most appreciated by regular trials competitors because it is recessed into the fork assemblies on both sides. The left side of the axle is slotted for a large screwdriver, and a 15mm socket will loosen the axle nut on the right. The recessed ends can't be snagged on obstacles and cost the rider points, nor can the ends of the axle itself be damaged.

At the rear, snail-type chain adjusters are fitted, as is true of other Bultaco models. It's a system we find easy to use, strong and hassle-free. Along with these, a chain tensioner is standard equipment, a must on any type of trials machine. But we'd like to see Bultaco make the tensioner block reversible so that when one side wore out, a simple switch could be made to the fresh side, eliminating the need for a trip to the dealer, who never seems to stock the rubber blocks anyway.

Suspension has been given a going over for 1976. The Betor trials shocks are new and now mounted farther forward, increasing rear wheel travel to 4.75 in.; and compression damping has been softened. This means that the shocks will bottom out far more frequently—in any of the three available preload settings—particularly on faster trails. Bultaco says that's the way it should be, to insure full use of all available shock travel in trials sections. That may very well be, and we like the way the units work in slow sections, but the pronounced "thud" when the shocks bottom along the trail is annoying and a bit disconcerting to the rider. A switch from the standard 55-lb. springs to the optional 70-lb. Miura springs would help.

The shafts on the Betors are also prone to bending without too much provocation, which is why, were the machine our own, we'd make a switch to the special gas/oil Girlings now so popular with many trials riders. But the stock shocks do attach to the machine with lightweight screws instead of the customary bolts; every little ounce pared helps.

Up front we have little to complain about. The Betor forks with the offset front axle work superbly and are no trouble to maintain. The leading axle setup makes for far less steering inertia. But right off we switched to accessory fork springs (that don't sack out nearly as quickly as the stockers), and 10W Bel-Ray fork oil. Bultaco has also improved fork seals;

ours didn't leak a drop. Based on the experience two of our staff members have had in rugged two-day endurance trials, the standard seals are good for about 1000 miles of rough going before leakage begins. Fork travel is 7.0.

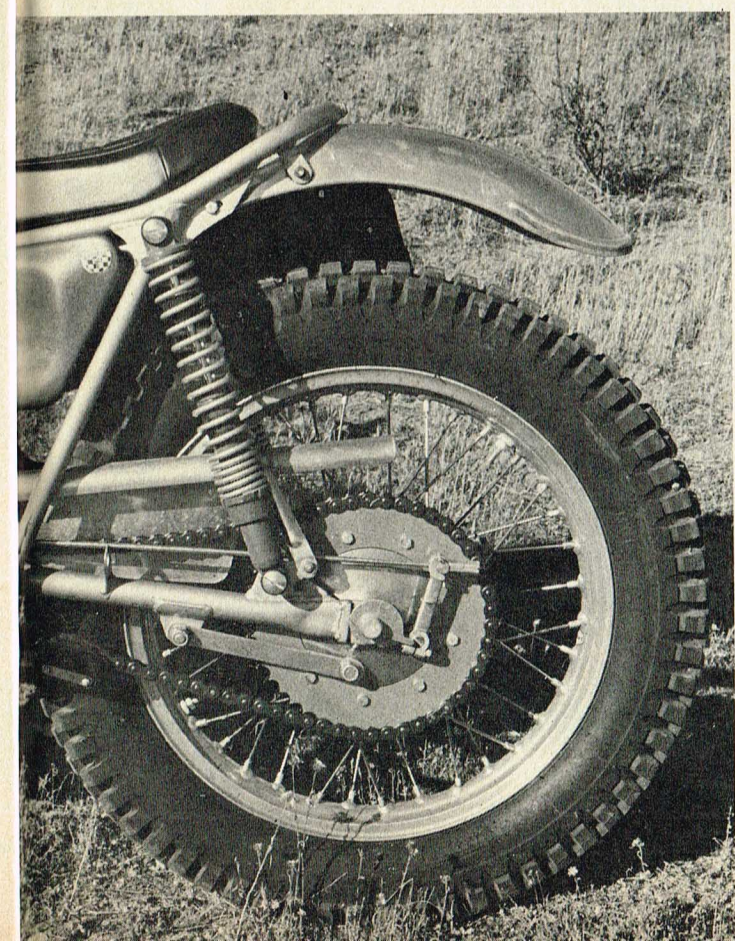
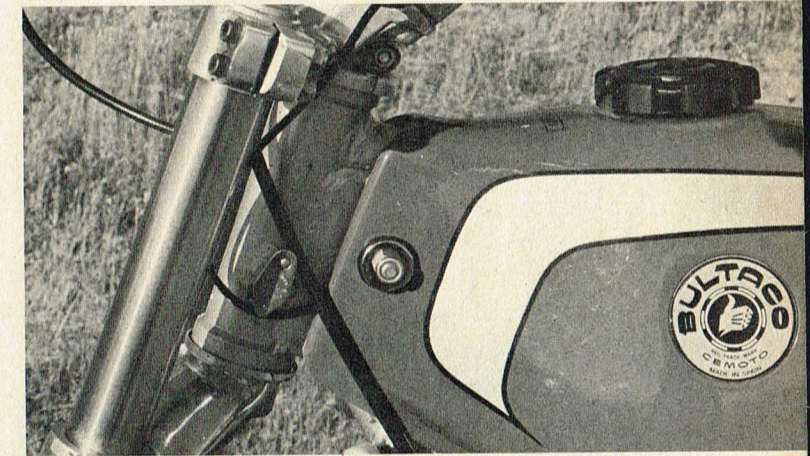
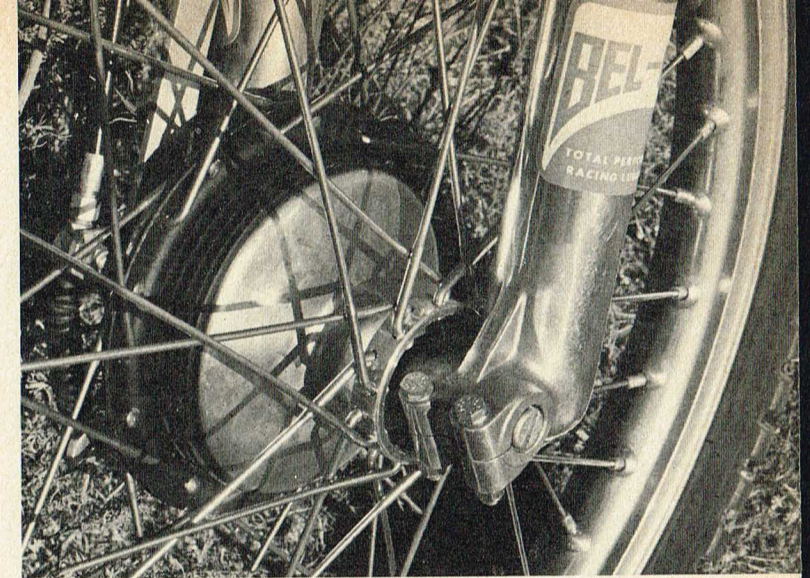
Triple clamps are polished and forged of aluminum; Allen bolts clamp the fork tubes in place. Adjustability up and down is possible with the fork tubes, since the handlebar mounts are swept rearward and don't interfere with the top of the tubes. Handlebars fit our staff riders quite well, but we suspect that many owners will switch to the popular Renthal aluminum models that are available in many different bends. Clutch and brake levers are malleable alloy; rubber grit covers protect the hinge point from assorted mung. We don't much care for the grips, but we'll leave that decision up to you.

The heart of the package is, of course, the super-smooth two-stroke Single, displacing 326cc. By varying deep engine components, Bultaco puts its basic engine to work in an extraordinary number of applications, from street to observed trials and just about everything in between.

The crankcase splits vertically, housing a large, three-piece crank assembly that turns in two ball-bearing main bearings. Primary drive is via a single-row chain to the multi-disc clutch. Most Bultacos use a double-row-chain primary, but the larger flywheel assembly required for the T's low-speed grunt and smoothness takes up enough space inside the primary case to eliminate the double-thickness chain. The transmission and primary oil reservoirs each require different amounts and viscosities of oil that can be easily changed in a short amount of time.

Porting is basically as before, with an intake, two main transfer ports, two "finger" transfer ports and a lonely exhaust port. The aluminum piston holds two rings.

Engine mounting is provided by two 19mm bolts at the rear where they connect to a new sandcast aluminum mounting bracket that fits to the swinging arm pivot bolt. This replaces the rear backbone tube that once served as a rear engine >



mounting point. Use of a longer swinging arm is thus allowed, weight is saved, and available space between the carburetor and rear fender is increased.

Up front, a single 19mm bolt holds the engine to the downtube of the frame. For additional support a headstay bracket is used to connect two of the cylinder head bolts to the frame's toptube assembly. Bultaco recommends that a cracked headstay bracket be replaced as soon as possible to prevent additional stress that might fatigue and crack other mounting brackets.

Cylinder and head finning are ample, though many of the fins on the head are cut away to make room for the swept-up exhaust pipe that curls over the top of the engine. The two-piece exhaust system is new and weighs just under 10 pounds. It is secured with three junction springs to the exhaust manifold, a 13mm bolt and bracket to the upper rear engine mount bolt and at the rear by a 10mm bolt. The two joined pipes are held together with yet another spring. And, surprise of surprises, the rear spark arrester portion is actually stamped, "Spark Arrester," which is bound to make somebody happy if they are checking for legality. The new system looks to be very similar to last year's Alpina setup; it's certainly just as quiet. . . wonderfully quiet, we think.

There's a new carburetor this year to replace the former model's 27mm Amal. The rubber-mounted 28mm Bing does its part in adding to the engine's smooth power impulses; it's the smoothest of any trialer we've ever sampled or owned. The carb has an enriching lever so there's no need for messy tickling either. It's the first Bing we've seen with one. Our test

machine was virtually a one-kick starter nearly every time; never more than two kicks were ever required, a trait made to seem even more attractive by the lack of primary kickstarting and an awkward-to-use left-side kicklever.

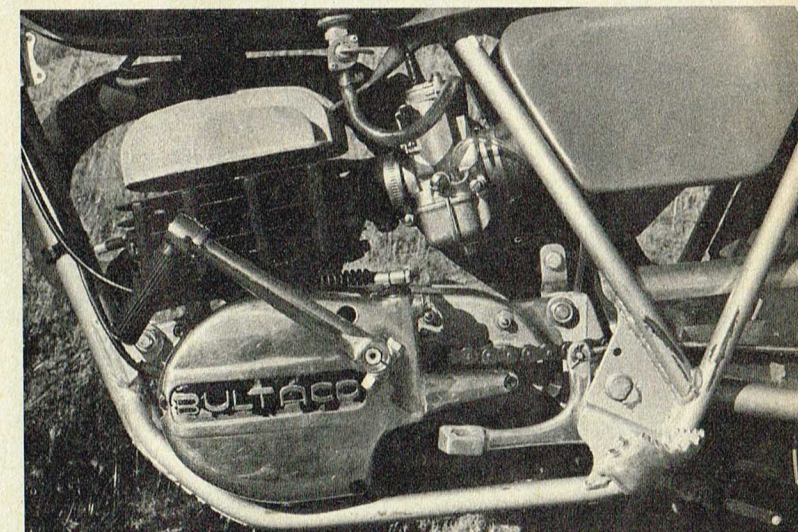
Once underway there are many features of the Bul that make themselves quickly known. The machine seems exceptionally well-balanced and fell right into place under our test riders. All of us were duly impressed by the throttle response and broad power available. First gear is extremely low and seldom used; most sections are second and third-gear propositions. Fourth is a handy hillclimbing gear, and fifth, of course, is for point-to-point cruising. Shifting is typically Bultaco—that is, there's a fairly long throw of the shift lever with a very positive engagement. The clutch worked in fine fashion and held well in circumstances where slipping was required. Clutch pull is on the light side, as well.

Steering geometry is largely a matter of preference, as are bars and grips and helmet styles. Certain riders just can't seem to feel comfortable or get along well on particular brands or types of motorcycles. So there are no doubt those out there who don't like the steering characteristics of a Bul trialer, just as there are those who wouldn't have anything but. We will say that this is definitely a bike on which the very best of trials riders can do business. . . and it can handle beginners just as comfortably.

Though the Bultaco has had the large-bore trials market all to itself the past few years, that will be changing by the time you read this. Montesa is due on these shores any day with its new 310 Cota, and Ossa will follow closely on its heels with

the big-bore MAR. How they will fare against this beauty is pure conjecture at this point, but they'll have their work cut out for them, that's a bet.

Bultaco is still producing the 250 version of this machine at \$200 less than the 350's \$1498 price tag, and a scaled-down 125cc T will be along soon at \$998. Coming from a company that has remained at the top of the trials heap for several years and survived the Japanese onslaught without much trouble, we can't help but think this most recent model will hold its own. With the basics down absolutely pat and the infinite details attended to, the beautifully styled '76 T had us all saying, "How are they ever going to top this?"



SHERPA T 350

SPECIFICATIONS

| | | |
|----------------------------------|-------|--------------------------------|
| List price | ..... | \$1498 |
| Suspension, front | ..... | telescopic fork |
| Suspension, rear | ..... | swinging arm |
| Tire, front | ..... | 2.75-21 Pirelli |
| Tire, rear | ..... | 4.00-18 Pirelli |
| Engine, type | ..... | two-stroke, piston-port Single |
| Bore x stroke, in., mm | ..... | 3.27 x 2.36; 83.2 x 60 |
| Piston displacement, cu. in., cc | ..... | 19.9; 326 |
| Compression ratio | ..... | 9.0:1 (uncorrected) |
| Claimed bhp @ rpm | ..... | 18.5 @ 6000 |
| Claimed torque @ rpm lb.-ft. | ..... | 18.8 @ 4000 |
| Piston speed @ rpm ft./min. | ..... | 2360 @ 6000 |
| Carburetion | ..... | Femsa flywheel magneto |
| Oil system | ..... | pre-mix |
| Oil capacity, pt. | ..... | oil in fuel |
| Fuel capacity, U.S. gal. | ..... | 1.7 |
| Recommended fuel | ..... | premium |
| Starting system | ..... | kick, folding crank |
| Air filtration | ..... | oil-wetted foam |

POWER TRANSMISSION

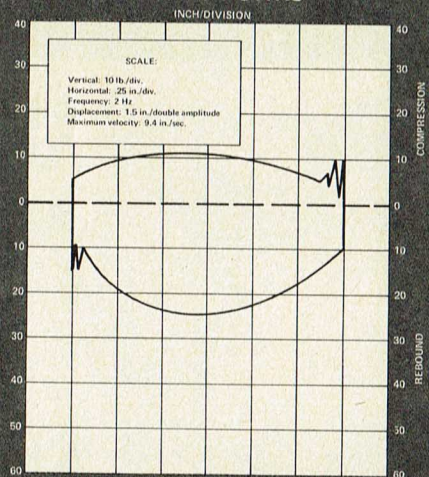
| | | |
|------------------------|-------|------------------|
| Clutch | ..... | wet, multi-plate |
| Primary drive | ..... | single-row chain |
| Final drive | ..... | single-row chain |
| Gear ratios, overall:1 | | |
| 5th | ..... | 9.9 |
| 4th | ..... | 13.7 |
| 3rd | ..... | 22.5 |
| 2nd | ..... | 29.0 |
| 1st | ..... | 37.7 |

DIMENSIONS

| | | |
|-------------------------------------|-------|-------|
| Wheelbase, in. | ..... | 52.5 |
| Seat height, in. | ..... | 31.5 |
| Seat width, in. | ..... | 7.0 |
| Handlebar width, in. | ..... | 32.5 |
| Footpeg height, in. | ..... | 14.5 |
| Ground clearance, in. | ..... | 12.5 |
| Front fork rake angle, degrees | ..... | 27 |
| Trail, in. | ..... | 3.0 |
| Curb weight (w/half-tank fuel), lb. | ..... | 200 |
| Weight bias, front/rear, percent | ..... | 44/56 |

SUSPENSION DYNO TEST

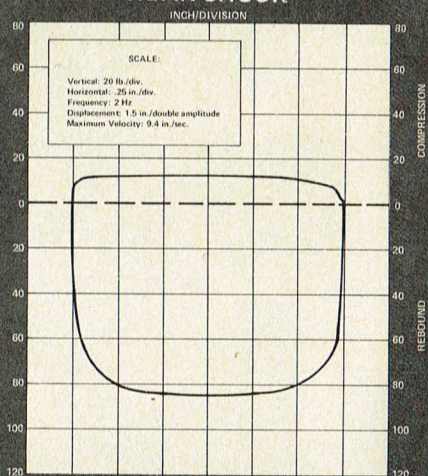
FRONT FORKS



Description: Betor fork with HD 315 oil
Fork travel, in.: 7.0
Engagement, in.: 3.9
Spring rate, lb./in.: 15
Compression damping force, lb.: 11
Rebound damping force, lb.: 24
Static seal friction, lb.: 17

Remarks: Compression damping is good. Rebound damping is heavy in relation to the spring. This is necessary for trials riding because of the slow speed involved and because it is essential to prevent the machine from reacting quickly to major terrain obstacles. The only change we would recommend is fork seals. A set of Universal seals will cut seal friction in half. This will allow the forks to respond more readily to the terrain.

REAR SHOCK



Description: Betor trials shock
Shock travel, in.: 3.75
Wheel travel, in.: 4.75
Spring rate, lb./in.: 47/58 progressive
Compression damping force, lb.: 12
Rebound damping force, lb.: 85

Remarks: These shocks were designed for trials use only. They are extremely light and fragile, especially when a side load is placed on them. Like the front forks, compression damping is light; rebound damping is extremely heavy for the spring. We suggest no alterations. Optional springs are available.

Tests performed at Number One Products

PARTS PRICING

| | | |
|------------------------------|-------|---------|
| Warranty | ..... | 60 days |
| Piston assy. | ..... | \$39.66 |
| Rings, ea. | ..... | 5.90 |
| Rear Shocks (each) | ..... | 29.76 |
| Wheel Rims (bare each) | | |
| front | ..... | 30.60 |
| rear | ..... | 39.80 |
| Drive Chain (standard) | ..... | 14.34 |
| Front Fender | ..... | 21.18 |
| Rear Fender | ..... | 22.65 |
| Clutch & Brake Levers (each) | ..... | 6.68 |
| Clutch Cable | ..... | 5.96 |
| Throttle Cable | ..... | 5.30 |
| Brake Cables | ..... | 5.96 |
| Ignition Parts | | |
| Coil | ..... | 17.25 |
| Points | ..... | 4.80 |
| Magneto Assembly | ..... | 114.00 |
| Air Filter Element | ..... | 3.96 |
| Rear Tire (standard) | ..... | N.A. |