

Cycle

OCTOBER 1980 75P

● Fast And Snappy
Kawasaki KZ550

● Suzuki's Get-Around
SP400T Four-Stroke

THE \$20,000 KAWASAKI FACE-OFF AMERICA'S MYSTERY SHIP MEETS ITALY'S BIMOTA KBI



● Comparison: Nine Tank Bags

● Yamaha's Plucky IT175G Enduro

● Two Tales Of 500 Grand Prix Motocross
Carlsbad Burn-Down And Canadian GP





p.52



p.52



p.52

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Road Tests

- 42 Suzuki SP400T
Hear the call of the trail from the open road?
- 67 Kawasaki KZ550-E 1
The perfect 1980 candidate: honesty, integrity, and moxie
- 88 Yamaha IT175G
It's the two-stroke enduro version of Yama-pluck

Special Feature

- 52 The Gold Dust Twins
Craig Vetter's Mystery Ship and the Bimota KB1: Can \$20,000 buy happiness—or just showy surroundings for KZ1000 power?

Features

- 28 Software For The Hard-Travelin' Man
Nine tank bags in a zipper-by-zipper comparison. By Bill Stermer

Competition

- 33 Loudon
Down-east victory at last for a Connecticut Yankee. By Kevin Cameron
- 36 Full Measure At Elkhart Lake
The AMA at work encouraging competition and puzzlement. By Kevin Cameron
- 59 The Awakening
Two 500cc Grands Prix, Carlsbad and St. Gabriel. What a difference! By Dave Hawkins

Departments

- 8 Editorial / *Character, Defects And All / Phil Schilling*
- 10 Letters / *Dial MZ For Memories, Ziggie*
- 14 Pipeline / *So This Is Progress? / Jim Greening*
- 16 The Duct Tapes / *Motorcycles 10, Automobiles 0 / Ed Hertfelder*
- 18 Head On / *What You Don't See . . . / Dave Hawkins*
- 20 TDC / *Of Octane Ratings And Detonation / Tom Collins*
- 22 Checkers / *US News And World Report / Ken Lee*
- 24 Bits / *The Pope? In Cycle Magazine? / Don Phillipson*

This Month's Cover: Yes, Virginia, these are street bikes. Both the Bimota Kawasaki KB1 and Craig Vetter's Mystery Ship may look a little spacey and a lot racey, but mere ordinary folks with \$10,000 loose change in their knickers might buy one or the other for a street tooter. Please refer to page 52 for the answer to the question: Can \$20,000 buy happiness? Robin Riggs charged only slightly less to shoot this cover with his Magic Brownie and 147 birthday candles with backing mirrors.

● THERE'S AN OLD MAXIM THAT SAYS THE more things change, the more they stay the same. Dual-purpose motorcycles once contradicted this; now they confirm it. Dual-purpose bikes did change, radically, back in the early 1970s. That was when four-strokes virtually disappeared, and two-stroke engines ruled the dual-purpose roost. But now the situation has turned full-circle, and it's four-stroke time again . . . with a difference. Today's dual-purpose models benefit from a decade of technological progress and the 1980

street-and-trail thumper is like its ancestors only in having poppet valves.

The original 1978 SP and DR370s were modest motorcycles, obviously not state-of-the-art but simple, functional, fun bikes. The SP and DR represented Suzuki's first effort at building a four-stroke dirt bike, and they pointed the way toward the future for that company, just as the XT and TT and the XL and XR intimated the future for Yamaha and Honda. We concluded in 1978 that the SP370 was a good place for Suzuki to start, but

plenty of room existed for improvement.

Suzuki's 1980 SP arrives resplendent in a new shade of orange-red paint and with a new sticker on the side cover; it's now the SP400. Suzuki punched out the SP's cylinder from 85 to 88mm to gain the extra displacement. They did not alter the 65.2-millimeter stroke, so the increase amounts to 27 cubic centimeters. The extra displacement doesn't allow the 400 to develop more power than the 370; rather, it helps the new SP avoid being hurt by '80's EPA standards.

SUZUKI SP400T

As a single-cylinder chugger the SP400T is strong enough to leave the highway and battle its way into the foothills. Trailbiking comes easier for its stablemate, the DR400T, which—lacking street-legal gear—must be trucked to the action. Besides, how do you think these guys got that cooler and tent and insta-fire logs to their campsite?



The engine remains a relatively simple wet sump unit which is easy to maintain. A single, chain-driven overhead camshaft actuates the two valves, and you can still adjust the valves without a feeler gauge. A capacitor-discharge ignition system replaces the 370's breaker-points setup, further reducing maintenance. The CDI comes by way of standardization; all street-legal Suzukis now utilize CDI. Trying to maintain decent performance while meeting the latest EPA emissions standards, Suzuki made a major change in

carburetion: they've replaced the original SP's standard 32mm Mikuni with a 36mm constant-vacuum unit.

Starting the big single proves to be easier than ever, thanks to a handy new decompression lever located on the left handlebar. When you pull the lever, a cable routed to the right front corner of the cylinder head actuates a notched shaft above the exhaust valve rocker arm. The ramped notch depresses the exhaust valve via the rocker arm approximately one millimeter, making it easy to kick the

engine gently past top dead center. When the piston moves past TDC, the exhaust cam lobe releases the decompression lever with a snap, letting the rider know the engine's ready to start. One or two healthy kicks usually fires the engine, except after a fall when it often takes several jabs at the lever.

Remember, though, that the decompression lever does not function in the traditional sense. The SP400 manual and Suzuki's technical-assistance personnel warn not to use the lever as an engine

PHOTOGRAPHY: DAVE HAWKINS, ROBIN RIGGS



SUZUKI SP400T TEST

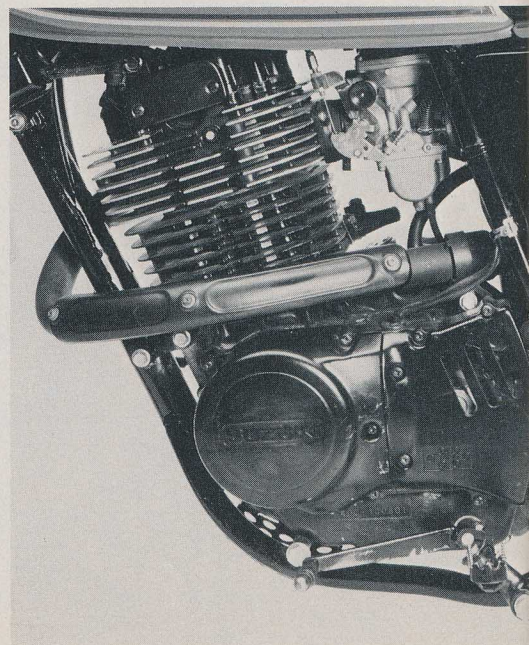
brake or kill switch. The notched shaft and rocker arm might be damaged.

Functionally, all the changes have affected the SP400's performance very little. The Suzuki carries a solo rider about town nicely, developing enough power to keep up with the flow of traffic along the boulevard. On the highway, though, you

must strain the engine to avoid being rear-ended by anyone flouting the national speed limit. Negotiating hills at high speed often requires a downshift. The 400's lack of high-rpm power might pose a problem for two-up riding if the bike were equipped to carry a passenger, but that's no hassle because the SP doesn't have passenger pegs.

For dirt riding, the engine produces

adequate but not spectacular power. A quick read of the dyno figures reveals why the SP400 feels a trifle underpowered. It develops a maximum of 19.4 horsepower at 7000 rpm; as you'd expect that's between the 17.20-horsepower Honda XL250S and the 29.22-horsepower Yamaha XT500G, but it's closer to the 250 than to the 500. Thankfully, the SP has an even torque spread



through most of its powerband, which makes the machine easy to ride. When you're plonking along slow trails or up switchback hills the SP pulls strongly from the rpm basement. Its tires lose traction long before the thumper runs out of power, and they're the factor limiting where you may ride. In any kind of nasty terrain, the SP rewards aggressiveness: get a run at a hill and you stand an infinitely better chance of climbing it.

Vibration mars the SP's otherwise comfortable ride. When cruising the 400 on the street at most speeds, you can feel the pegs, seat and handlebar buzz lightly. At highway speeds the 400 vibrates more than moderately; even though the engine spins only 4500 rpm at 55 mph, vibration at that speed wears you down quickly. After 30 miles on the freeway during one particular ride, our tester noticed that the tach cable had vibrated out and the resettable odometer jumped digits—indications that things are shaking more than they ought to.

The SP's constant-vacuum carb has some good and some bad points. Although the engine starts easily when you adhere to the starting drill (choke, kick past TDC, kick vigorously), you must use the choke (which is actually an enriching jet) until the engine thoroughly warms up. Trying to ride off without the choke on rewards the rider with a series of lurches. Even after the engine warms up, it doesn't run smoothly. When you hold the throttle steady, the bike surges gently back and forth. Neither does the 400 accelerate evenly; unlike a bike with a properly jetted constant-vacuum carb, the SP hesitates when you snap the throttle open from low rpm.

Suzuki has altered the SP's gear ratios slightly, raising first and second and lowering the primary ratio and fourth gear. Still, the 400's ratios, like most dual-purpose bikes', offer a compromise. It is geared a little low for the street and a little tall for the dirt. Although the transmission shifts readily up or down with or without the clutch, and missed shifts rarely occur, shifts feel notchy and driveline snatch mars the action. The driveline snatch proves especially noticeable in town during low-speed maneuvers like U-turns. A bright spot in the SP's transmission is its clutch: it requires only an average pull at the lever and engages broadly enough to perform well in tight situations in the dirt.

Though the SP370's suspension did not utilize the latest suspension technology in 1978, Suzuki has updated it very little for 1980. The fork still provides 7.2 inches of travel and uses the same damping. However, Suzuki has softened the secondary and tertiary windings in an effort to reduce harshness; they did not change the primary rate of spring compression. Under the screw-in fork caps a 42mm spacer preloads each spring.

Like the 370, the 400 uses gas-filled

SUZUKI DR400

● Suzuki's two 400s, the DR and the SP, are like twin brothers who have parted ways. One has gone on to fame and glory; the other has remained mired in anonymity. Of course that's stretching the analogy: the DR doesn't rank as a consummate log-jumping woods bike, and the SP does merit attention as a fine novice's machine. But the point is valid. The original, 1978 DR and SP had very much in common, and both fulfilled their respective roles adequately but not sensationally.

Circumstances have changed for 1980. Both bikes still use essentially the same engine and chassis, but Suzuki has refined the DR enough so it performs its function much better than the SP does its job. For various reasons the DR does not suffer from excessive vibration, lean carburetion or inadequate suspension, which are the SP's principal weak points.

Though the DR vibrates just as much as the SP, its shakin' and rattlin' does not overtly intrude on the rider's comfort. Typically, you wear thick-soled boots when you ride a dirt bike, and they absorb much of the footpeg buzz. Because a dirt ride consists of an amalgam of motions—standing on the pegs, sliding on the seat, alternately clenching the handlebar and holding it loosely—the DR's vibration barely enters the rider's consciousness. You must ride for hours on end before the DR becomes uncomfortable; when it does, you'll notice that your fingers are tingling or your foot has gone to sleep.

Thanks to less severe EPA restrictions on dirt bikes, Suzuki has jetted the DR's 32mm Mikuni richer—and closer to spot-on—than they have the SP's 36mm constant-vacuum carb. As does the street-legal bike, the DR starts easily; but the dirt bike also cruises smoothly at a steady throttle setting and pulls from low-rpm running without hesitation.

Suzuki has modified the DR's suspension significantly since 1978, while they've not substantially altered the SP's. Predictably, those updates produce better off-road handling. They've increased the DR's fork travel from 195 to 230mm (7.6 to 9.0 inches), and installed longer KYB gas-charged shocks to increase rear-wheel travel from 150 to 210mm (5.9 to 8.2 inches). The new shocks raise the rear of the bike and consequently decrease the steering rake. Suzuki has altered the chassis geometry further by substituting a longer box-section, mild-steel arm, which lengthens the wheelbase from 55.9 to 56.7 inches.

The suspension and chassis modifications help the DR's handling in every way. When you're riding over rough ground the 400 uses all of its available wheel travel much less frequently than do the SP or the 1978 DR. One-hundred-sixty-pound amateur or expert Sunday riders bottom the fork and shocks readily when they're charging hard and over rough whoops, but the DR resists side-hopping in those conditions. Though the fork does not



SUZUKI SP400T TEST

KYB shocks; the new bike's shocks, though, have softer compression and rebound damping, about eight per cent and 10 per cent respectively. The 400's shocks' springs have the same overall spring rate as the 370's, but they incorporate a stiffer primary rate and a softer secondary rate. Rear suspension travel remains at 5.2 inches.

You'll notice several problems with the SP's suspension when you're out for a dirt ride. The shocks' damping fades noticeably when you ride at even moderately high speed over rough ground, such as whoop-de-dos. Also, intermediate to expert riders of average weight (160 pounds) will find the front and rear suspension bottoming frequently. However, simply stiffening the spring rates at both ends would only exacerbate another problem, as both ends are already underdamped.

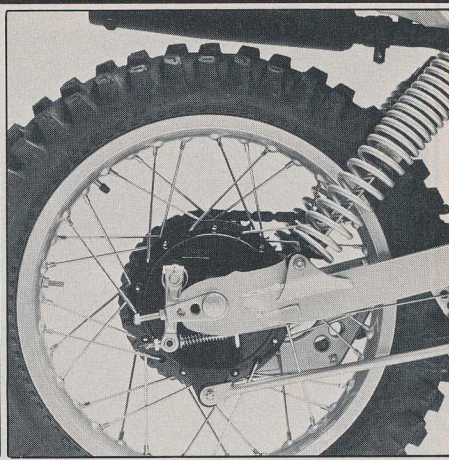
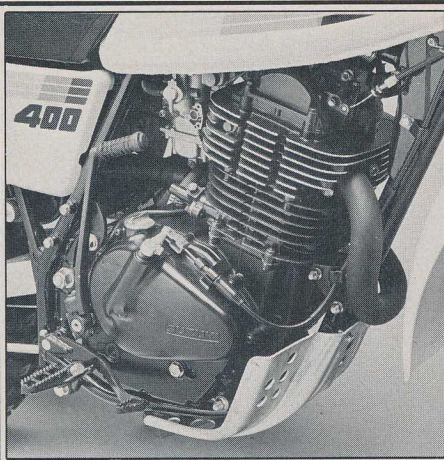
Predictably, the suspension bothers you less on the street. But the fork, while having only a minimal amount of stiction, does not respond to small pavement bumps readily. The shocks react less obligingly to ripples, and the firm seat doesn't help absorb the sharp kicks in the rear.

Suzuki has graced the SP with unusual chassis geometry, which produces a fairly well-balanced set of handling characteristics for both dirt and street. Its short, 55.9-inch wheelbase and shallow, 32-degree rake combine to make it manageable on easy trails. Thanks primarily to its rake, the SP runs very stable in a straight line, even over fairly rough cross-country terrain. On tight trails, though, the 400's slow steering makes it a handful; you *can* whip it around, but you have to concentrate and muscle the bike a bit to do it.

It's much easier to handle the SP on the street. There you are never forced to work against the bike. It steers lightly, especially if you use some body English and abundant countersteering.

For what most people would classify an open-class dirt bike, the 400 sits low. Its seat stands 33 inches off the ground, so whether you're sitting at a street light or paddling up a rock-strewn trail, you should be able to reach the ground easily. On the other hand, its low-slung posture may worry you on the trail when your feet scrape on some rocks. The footpegs mount only 12.5 inches above the trail-nasties.

The 298-pound 400 weighs eight pounds more than the 370. Three items contribute to its added weight: the larger cylinder head, bigger piston, and an extra exhaust muffler, which Suzuki added in 1979. (The extra muffler—a round canister—rests perpendicular to the frame backbone. Hidden under the air-box and behind the side panels, it only deadens sound and does not purify exhaust emissions.) That makes the 400



SUZUKI DR400 continued

have progressive coil or air springing, it performs well at low speeds. Neither it nor the rear suspension has much stiction, and their spring rates are light enough to allow easy movement through the first few inches of travel, producing a comfortable ride when you're cruising along two-track lanes.

Because the DR's wheelbase is longer than the SP's and its head angle steeper (31.3 degrees rather than 32), the DR retains its straight-line stability yet steers quicker. At high speed over rough terrain the front wheel tracks straight and true. But, despite its extended wheelbase, it twitches during fireroad slides. Its rear end swings out too abruptly for perfectly secure broad slides. To its credit, the DR makes good of the trade-off, ranking high on nimbleness. On tight trails you can sling the 286-pound 400 around like a lightweight. It reacts quickly to body English or steering inputs. It responds poorly only to throttle-assisted turns; it is sluggish when you try to break the rear wheel loose and pivot it around the front wheel at low speed.

Unless your trail-riding buddies all own high-powered two-strokes, you won't notice the DR's rather deficient peak horsepower output. On tight trails its wide torque spread and reasonable

peak power allow you to maneuver at just about any speed you care to go. It chugs up steep hills or rocky switchbacks with ease; if you get into trouble a little clutch work helps immensely.

If you travel with fast company, though, you'll find yourself losing ground on every straightaway. The DR revs slowly and develops little more power than the 19-horsepower SP. Keep the DR in the 5000 to 8000 rpm range and you should be able to keep up with all but the best riders on competition enduro bikes.

The DR's PE/RM styling motif makes it look very different from the SP. In a nuts-and-bolts way, it's not. Properly adjust the carburetor on the SP and modify its suspension and it'd be as close to the DR as the 1978 SP and DR were to each other. But performance-wise, the 1980 machines are very different. The DR's many minor modifications combine to make the DR perform as a trail bike much better than the SP performs as a dual-purpose bike. The DR satisfies anyone who's looking for a good time in the dirt. It's mildly underpowered, but its handling never surprises you—indeed, you can count on its agility—and it's fabulously reliable. The SP and DR may be closely related, but Suzuki's attention to the DR has made it the standout. ●



relatively light for its displacement category. It's 20 pounds heavier than the Honda XL250S and 27 pounds lighter than the Yamaha XT500; as it is in power, it's closer to a 250 than to a 500 in weight. If you stick to two-track lanes or fireroads, the SP indeed feels like a lightweight. Get into the rough, though, and there's no mistaking that it's about 50 pounds heavier than a typical mid-size enduro bike. On the street, the SP feels like a genuine lightweight commuter.

Both front and rear brakes work very well, providing a progressive feel at the

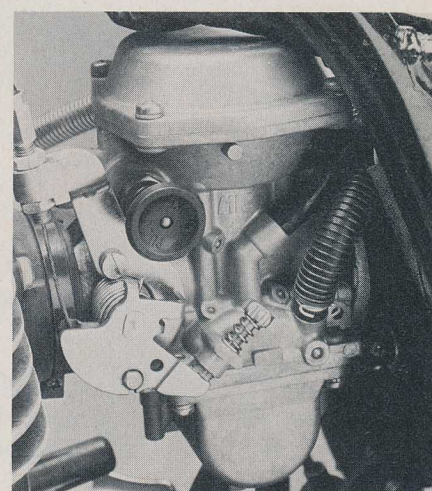
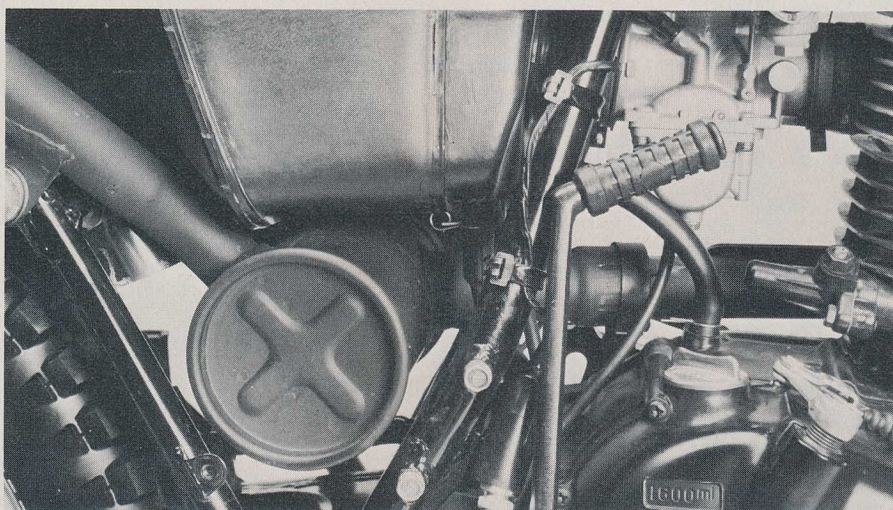
lever. They're powerful enough to lock up on the street at speed, and the point at which they lock comes predictably.

Dual-purpose bike owners accept the fact that their machines' tires compromise their bikes' usefulness. Granted—but it's still necessary to describe the nature of the compromise. Even at low pressure, the block-style universal tires provide little traction in the dirt, skittering freely. During commuting, the rear tire squirms on rain grooves and the front tire wanders. The motorcycle oscillates gently and the handlebar wags slowly, which

disconcerts you but does not truly affect the bike's handling.

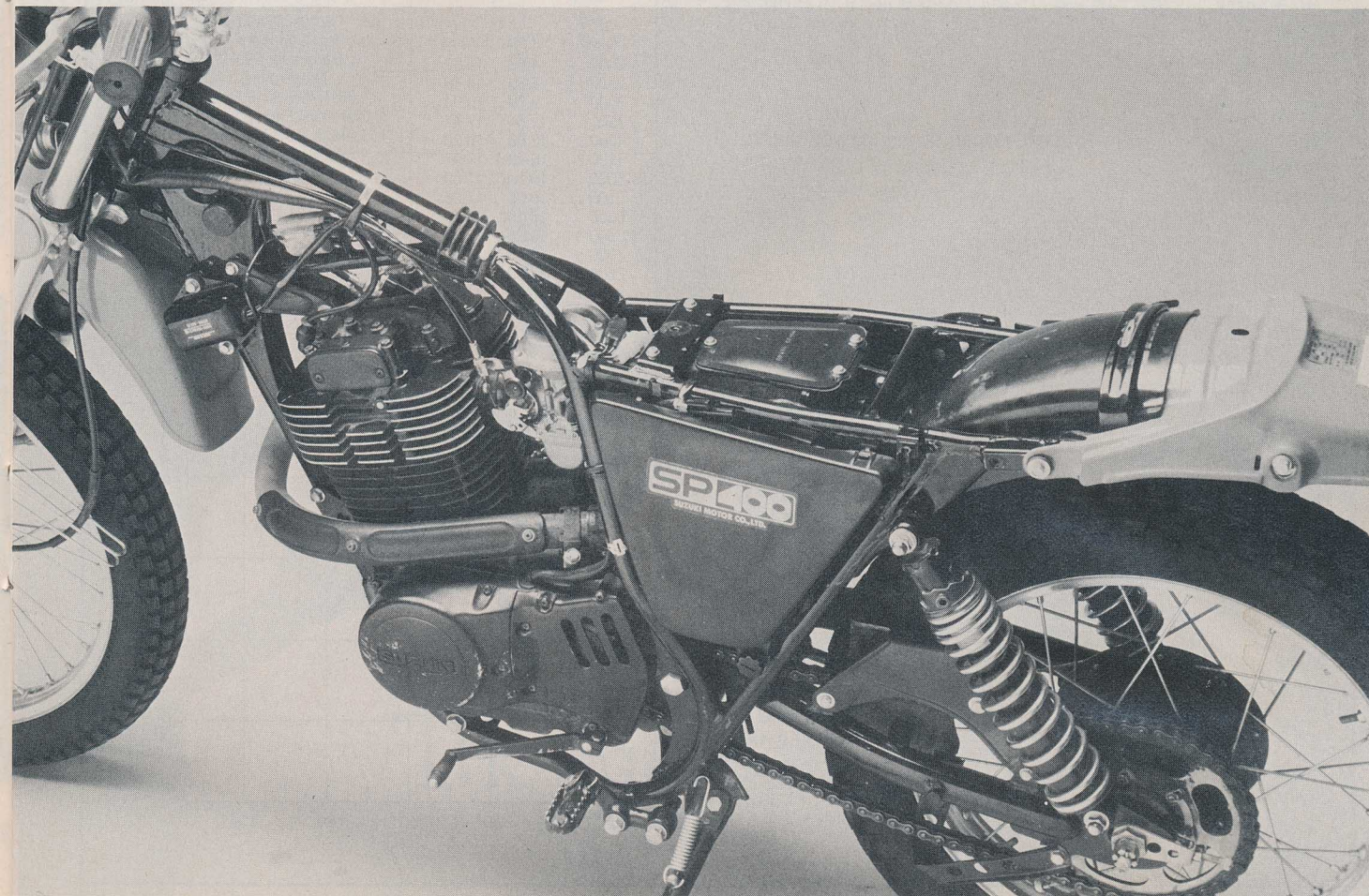
Three safety-related points deserve special note. The 35-watt headlight and the electrical system that powers it are sorely deficient. Headlight intensity relates directly to engine speed, but even redlining the engine doesn't generate enough light. Seeing behind you during the day is as difficult as seeing ahead of you during the night. At all but the slowest speeds, the mirrors reflect fuzzy images, forcing you to exercise your neck con-

(Continued on page 48)



Suzuki replaced the 32mm Mikuni with a 36mm c-v carb; it's jetted lean to reduce emissions.

Under the seat, a waterproof plastic airbox houses the foam air filter. Below that rests the large first muffler.



SUZUKI SP400T TEST

stantly. Finally, after you switch the petcock from Main to Reserve, it takes between five to 10 seconds for the engine to begin firing again. If there's some hard-charger in a Buick barreling down on you from behind while you switch to Reserve, be ready to switch lanes.

A novice who chooses the SP400 to learn to ride on will most likely be satisfied—not because it ranks as the dual-purpose king but because it does the

kinds of things that beginners need. It starts easily, the controls work smoothly, maintenance doesn't require an engineering degree and the powerband won't overwhelm a novice. And as more people see motorcycles as a transportation alternative in the fuel-short '80s, the SP won't embarrass you: it averages over 50 miles to the gallon in hard use. The SP performs adequately on pavement, and that's where most dual-purpose bikes spend the majority of their time.

More experienced riders and those

who favor the dirt may demand more of the SP than it's capable of giving. They'll note the 400's excessive vibration, imperfect carburetion and marginal suspension and wonder if things couldn't be better. They can be—and you don't have to turn to a race bike to find superior performance. Honda's and Yamaha's dual-purpose thumpers offer better performance in precisely those areas in which the SP is deficient. Even though Suzuki has improved the 1980 SP400, it is still a motorcycle with untapped potential. ●

Make and model Suzuki SP400T
Price, suggested retail as of 8/08/80 \$1639

PERFORMANCE

Average fuel consumption rate 54.8 mpg
Cruising range, main/reserve 107/14 miles

ENGINE

Type Four-stroke single-cylinder, air cooled with one overhead camshaft, chain-driven
Bore and stroke 88.0 x 65.2mm (3.465 x 2.567 in.)
Piston displacement 396cc (24.2 cu. in.)
Compression ratio 8.9:1
Carburetion (1) Mikuni 36mm constant-vacuum
Exhaust system Upswept pipe with silencer and USFS-approved spark arrestor
Ignition CDI; external-roter magneto
Air filtration Oiled foam
Oil filtration Wire strainer
Oil capacity 1.8 liters (1.9 qts.)
Bhp @ rpm 19.47 @ 7000
Torque @ rpm 18.20 @ 4000

TRANSMISSION

Type Five-speed, constant-mesh, wet clutch
Primary drive Helical-cut gear, 71/23; 3.084
Final drive #520 chain; 42/15; 2.800:1
Gear ratios, at transmission (1) 2.333 (2) 1.687 (3) 1.294 (4) 1.052 (5) 0.818

CHASSIS

Type Single-downtube, full-cradle, mild-steel frame with tubular mild-steel swing arm
Suspension, front Leading-axle, coil-spring fork; 185mm travel
rear KYB gas-filled shocks producing 133mm of rear-wheel travel
Wheelbase 1420mm (55.9 in.)
Rake/trail 32° / 146mm (5.75 in.)
Brake, front Semi-conical drum; 150 x 28mm (5.9 x 1.1 in.) shoes
rear Semi-conical drum; 150 x 28mm (5.9 x 1.1 in.) shoes
Wheel, front Takasago 21 x 1.60 aluminum rim
rear Takasago 18 x 1.85 aluminum rim
Tire, front IRC trials SP 3.00 x 21
rear IRC trials SP 4.00 x 18
Seat height 838mm (33.0 in.)
Ground clearance 241mm (9.5 in.)
Footpeg ground clearance 317mm (12.5 in.)

Fuel capacity, main/reserve 7.4/1.1 liters (1.95/0.25 gal.)

Curb weight, full tank 298 lbs.
Test weight 458 lbs.

INSTRUMENTS

Includes Speedometer, tachometer, odometer, tripmeter, indicator lights for turn signals, high beam and neutral

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