

HUSQVARNA 360cc TRAIL

The big Husky is aimed in earnest at the enthusiast who rides to win—in such events as the Greenhorn, Jack Pine, and ISDT. Steer clear, weekend duffers.

Husqvarna of Sweden takes great pains to promote a hand-crafted limited-production high-quality image for its corporate products, despite the fact that the firm no longer serves primarily as Royal Armorer for Sweden's rulers and militia. Husqvarna may still make prestigious weapons for hunting and competition, but today its bread and butter comes from such mass-produced consumer goods as stoves, dishwashers, furnaces, refrigerators, sewing machines and electric irons. Its engine-powered products division makes motorcycles, chain saws and utility power plants. Ask anyone outside of Sweden what Husqvarna is all about and he will immediately answer rifles or motocross bikes, depending on what circles he moves in. That's right, a sporting image, a quality image, to sell all those stoves and refrigerators.

While that may be a wise marketing policy, you may wonder what kind of motorcycles it generates. World Motocross Championships, fine, but what does it do for you at your friendly local dealer? The answer, if you're a championship-calibre rider, is that it does a lot. If you're a plain-man general-interest sporting rider, it results in a decidedly mixed-blessing. Certainly the Husqvarna motocross machines have scored highly in scrambles and motocross in this country. Certainly we have all been impressed by the extraordinary talent of the factory motocross team on their tours here. Now Husqvarna is introducing a new 360cc street-legal enduro machine, called the Husky 360 Trail. Your first thought might be that Husqvarna is aiming for a broader, more popular audience. But that would be mistaken: the Husqvarna 360 Trail is intended (remember that image)

for the serious, dead-earnest enduro enthusiast who rides to win in such events as the Greenhorn, Jack Pine and ISDT. Husqvarna did not have in mind and did not make a street-trail machine for your average weekend duffer.

The Husky 360 Trail is basically the same motorcycle as the 360 Motocross with changes to make it suitable for long-distance cross-country competition. It is a splendid piece of competition equipment: light, powerful, and tough. Enduro riding calls for a longer wheelbase, wider ratio gearbox, and milder tuning than motocross. Enduros also make a quick-detach rear wheel useful and a spark arrestor and speedometer necessary. Street-legality means lighting and a battery, larger brakes, and a muffled exhaust. Ah ha!, you say, a perfect bike for about-town riding as well as for trailing. Not so, it



PHOTOGRAPHY: PETER VANADIA

HUSQVARNA *Continued*

seems, for the expert enduro rider doesn't take street legality at all seriously. The rules require lighting (occasionally an enduro course *does* cross a public road) but all real competition takes place in the rough. Consequently muffling and lighting on most enduro bikes are casual at best and ludicrous at worst. The Husky 360 Trail has been unfortunately forged in this tradition.

In place of the Bosch (German) flywheel-magneto fitted to motocross bikes, the Trail has a Femsa (Spanish) flywheel-alternator-ET-system and CEV (Italian) lighting. As components, all are satisfactory, but in combination they will not fit the needs of the man who really wants to use his bike on the street. Ignition is neatly simplified for competition (no on-switch, no kill-button—possible sources of trouble on the trail), but wiring and connecting for the lights are poorly designed and poorly executed. Our test machine, once we filled and charged its tiny battery, promptly disclosed a dead short through the wiring loom. And the stoplight switch located outboard on the swingarm got knocked off within a few minutes running. We suppose the electricians on Husky Trails delivered (ours was the first U.S. demonstrator) will work better, but they certainly aren't up to the standards of many street-trail bikes on the market. They certainly aren't up to the quality of the rest of Husqvarna.

Which quality is generally excellent and well deserving of its prestigious reputation. Top quality materials and expensive assembly methods make the Husqvarna almost indestructible when ridden well. One set of rings will last a full competition season. A crankshaft assembly will last

indefinitely. The engine-gearbox unit weighs a mere 54 pounds and puts out well over 30 horsepower—for a machine that weighs only 245 pounds wet. Straight-forward and simple in design, the Husky engine is remarkably easy to work on. Factory motocross riders can pull the engine, take off the cylinder and split the cases, then reassemble and reinstall the lot—all between heats of a GP event. A typical GP consists of three races, each of either 30 or 45-minute duration, victory going to the rider who accumulates the most position points. Imagine riding such events every weekend in a 30-week season and needing only a ring job at the end!

The Trail, of course, is not the motocross machine, but the differences only tend to make it *more* durable. Compression ratio is down to 9.0:1 from 10.5:1 on the 360 Motocross. That drop, coupled with the new exhaust system, reduces peak power by about four bhp and considerably spreads out the torque curve, especially at lower rpm. Result: less load on crank, clutch and gearbox components. The gears are identical in material and width to those in the motocross machines, but come in different ratios for enduro riding. Peak power of the Trail machine occurs at 6300 rpm, yet the machine is so undergeared that it will pull 7700 rpm in fourth. That is 85 mph, about as fast as anyone would ever want to go on an enduro bike, and the ratios still leave plenty of power down in the 0-60 mph range where most enduro riding is done. We would rank this engine as moderately hard starting despite the low compression ratio, but it is quite smooth and clean running. As on most two-stroke dirt machines, you turn up the wick until the acceleration (and power) level off, then change up. There is always power enough to raise the front wheel off the ground. We

have been told that Husky's don't respond as happily to over revving as some makes. That's where the good riding comes in, a point stressed with somewhat ominous frequency by Husqvarna factory people.

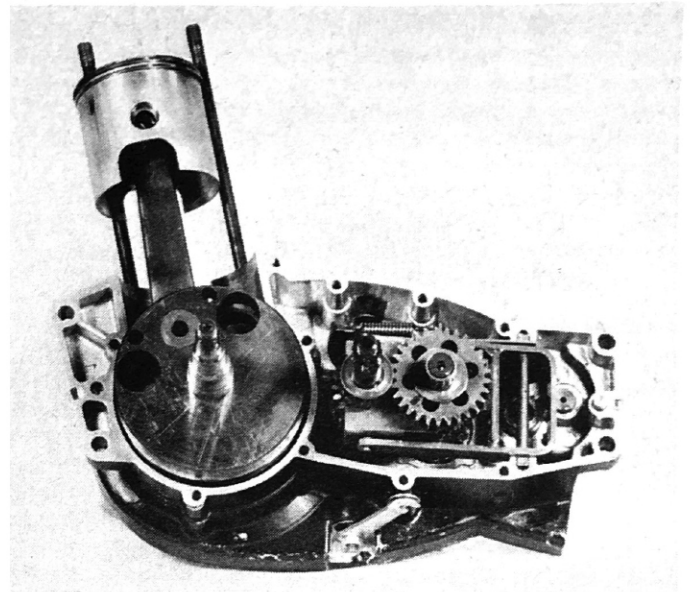
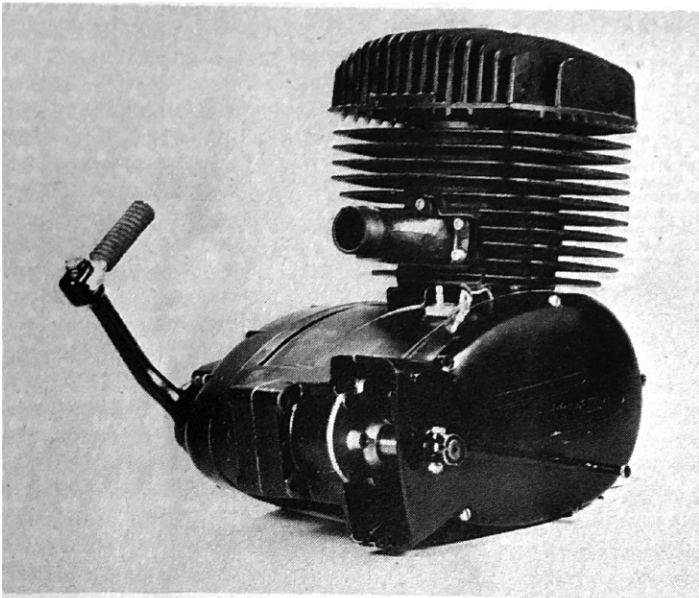
Using conventional adman language, you could say the Husky has four-port power. That is, there are three transfer ports and an exhaust port above the piston. Intake under the piston is split into a "Y" (a pattern once used by NSU and now common to MZs). The third transfer channel occupies the center space between the divided intake tract. Piston descent pressurizes the mixture in the crankcase, forcing it up through the three transfer channels into the combustion chamber. A hole in the piston on the intake side opens into that rear transfer channel and allows scavenging of the mixture up under the piston crown. This aids piston cooling as well as makes use of an otherwise trapped volume of mixture.

Matching the gearbox to an engine's output characteristics is also a trick Husqvarna's designers have well in hand. The factory produces some 2500 motorcycles a year and a fair share of these go to the Swedish army. Gearing on mildly tuned military machines is likely to be more like trials gearing than the close-ratio motocross gearing. A properly set up motocross bike has a low first gear ratio to get off the line, then three relatively closely spaced gears which provide a wide power overlap in the speeds likely to be run in a motocross event (say 25-60 mph). An enduro bike, on the other hand, may be faced with crawling speeds through streams, 20-40 mph through the woods and 80 mph on paved highway sections. A motocross rider in the heat of elbow-to-elbow competition doesn't want to think a lot about shifting and uses the overlap from gear to gear to avoid breakaway at the driving wheel because of sudden and radical changes of power. But the enduro rider keeps his own average, just wants to know he has the speed and power necessary to deal with whatever riding situations he may encounter. So the Husqvarna trials gets overall gearing of 18.65, 11.83, 8.58 and 7.12, compared with the Motocross 18.2, 12.3, 10.2, and 8.48. Those hard-core enduro riders just might make another request of Husqvarna: another gear-pair.

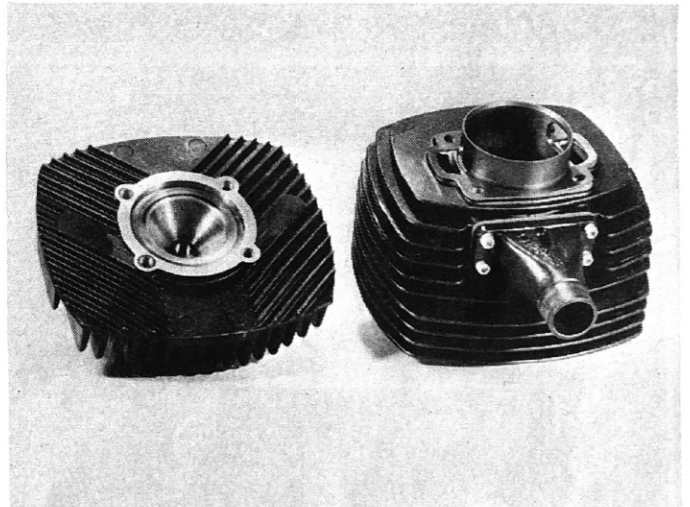
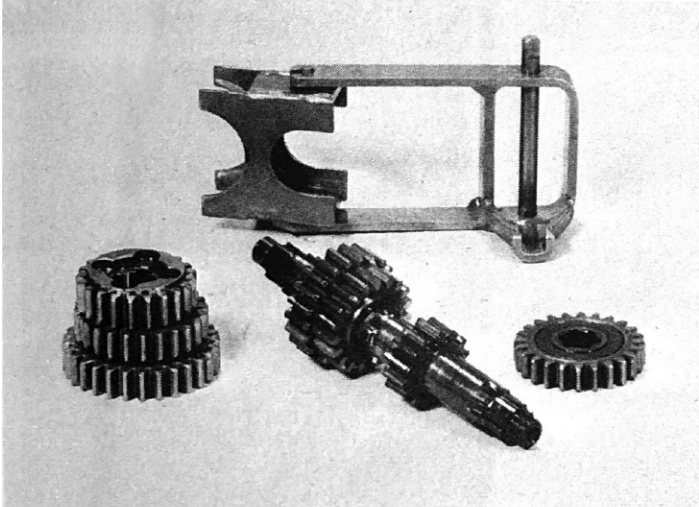
What puts Husqvarna motorcycles in a class by themselves is handling, that difficult combination of weight, power, frame, and suspension that makes a bike go where you want, when you want and the way you want. The Husky frames are of (surprise) two-piece construction: a very strong chrome-molybdenum loop from steering head to swingarm pivot and a bolt-on rear section to hold the seat and pick up the rear spring-and-shock-absorber units. Gunnar Lindstrom, the factory development engineer and former team rider who went testing with us, says most production motocross bikes are now switching to single-loop configuration *ala* Husqvarna and CZ.



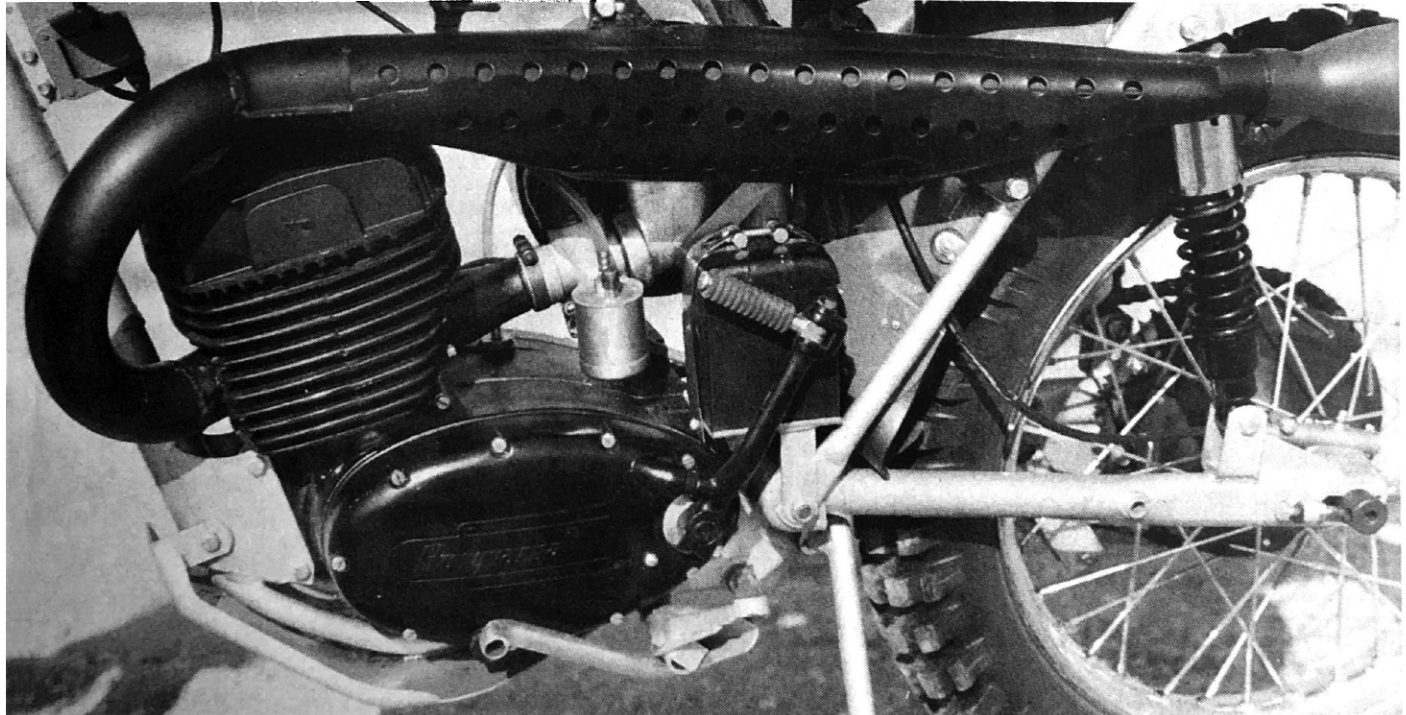
Swedish champ Gunnar Lindstrom makes the Husky happy on deep sand—at no less than 85 mph!



Black paint on engine and exhaust system provides for maximum heat radiation and thus better cooling. Electrics weren't equal to rest of machine.



Gearbox components look fragile, but aren't if the clutch shifting is used. Trail cylinderhead and barrel offer milder tuning than motocross unit.



Simple appearance of 360 Husky engine-gearbox unit belies the sophisticated metallurgy that makes it light, strong, and virtually unburstable.

HUSQVARNA *Continued*

Gunnar says that a little flex in the frame is a definite handling asset and if we measure his judgement by his riding ability he is right. In any case, the Husqvarna frame is light and almost unkinkable.

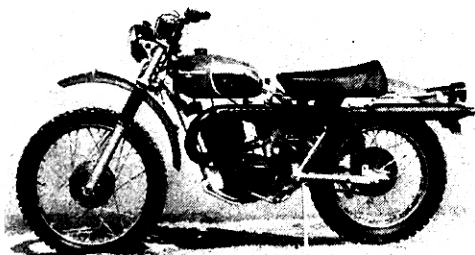
Up front are a pair of forks with a full 6½ inches of travel and an expensively produced, progressive damping system. A metering rod in the slider section is hour-glass shaped, tapering toward its midpoint. This rod passes through a round ring on the fixed tube. As the forks move, oil is forced through the clearance between rod and ring. Since the clearance between the rod and ring varies with fork compression or extension, so does the spring pressure required for recovery. This same damping concept is used in telescopic forks by BMW and Ceriani and it is a good one.

Husqvarna uses stock Girling suspension units at the rear, with low spring rates and soft damping characteristics. A vigorous downward shove on the seat will no-

ticeably jounce the suspension—not at all the oxcart rigidity so common to less well developed bikes. Take the Trail 360 off across a rutted pasture at 65 mph and it just floats across irregularities almost as if it weren't connected to the ground at all. The bike is light, but it feels lighter. We would judge it second to none for rough country handling.

The brakes on a trail bike have to be strong enough for the street but not so fierce that they offer no sensitivity in the dirt. Husqvarna has fitted the Swedish army rear hub to the Trail, which has a big brake and the added benefit of a quick detach coupling. The wheel can be removed without disturbing the chain and rear sprocket. Unfortunately, there is no shock cushion in the hub, nor any in the gearbox or clutch shell. Direct mechanical drive without a shock absorber means a hard life for chain and gearbox. This and the inadequate electrics were the only serious design flaws we found in the Husky Trail.

John Penton, nationally celebrated enduro rider, has become eastern distributor for Husqvarna in this country. John went testing with us, too, and while he isn't as flashy as the incredible Gunnar Lindstrom, he certainly knows a lot about enduro riding. He knows how to keep going and has all the stamina and resourcefulness that *Geländesport* demands. Ever since John began distributing motocross machines, he has been working with Husqvarna in developing the Trail bikes. He thinks the Trail 360 is fully competitive, and he should know. We think it is, too, but we hate to see such a beautiful motorcycle made for so few buyers. A well-made and reliable engine, low weight and superb handling are just what anyone wants in a trial bike—and most people are willing to pay for it. If Husqvarna would develop more streetable electrics and a tougher, more idiot-proof gearbox and drive train, its 360 Trail would be absolute top of the field. Even as it is, you'd be hard pressed to find a bike that's better. ●



HUSQVARNA 360 SPORTSMAN

Price, suggested retail	East coast, POE \$1080
Tire, front	4.00 in. x 18 in.
rear	3.00 in. x 21 in.
Brakes, front	Single leading shoe, 6.5 in. x 1.04 in.
rear	Single leading shoe, 5.8 in. x 1.04 in.
Brake swept area	40.1 sq. in.
Specific brake loading	10.6 lb/sq. in.
Engine type	Piston-port two-stroke single
Bore and stroke	3.10 in. x 2.84 in., 78.8 mm x 72.0 mm
Piston displacement	21.4 cu. in., 351 cc
Compression ratio	9.0:1
Carburetion	32 mm, Bing
Air filtration	Paper element
Ignition	Energy transfer
Bhp @ rpm	36 @ 6300
Mph/1000 rpm, top gear	11.0
Fuel capacity	3.1 gal.
Oil capacity	1.8 pt.
Lighting	Flywheel alternator 6v, 45 watts
Battery	6v, 6 ah
Gear ratios, overall	(1) 18.65 (2) 11.83 (3) 8.58 (4) 7.12
Wheelbase	54.5 in.
Seat height	30.1 in.
Ground clearance	8.0 in.
Curb weight	248 lb.
Test weight	423 lb.
Instruments	Speedometer, odometer, tripmeter
Top speed	85 mph

