BANGER

Cross-country competition — recovering from a sharp hairpin turn out of a sandwash onto a rocky dirt road. The Typhoon is fit for such antics right off the showroom floor; the only concession made here was removal of headlight, a mere 30-second job.

Bangers — single cylinder engines in cycle jargon — have been traditional since the first motorized two-wheeler breathed fire about the turn of the century. Like the four-bangers at Indy, the classic 30 cubic inch singles have successfully stood ground against more elaborate multi-cylinder layouts by virtue of their exceptionally good low rpm torque, tractive qualities and ease of maintenance.

During sixty years of motorcycle production, Matchless of London, England, has relied heavily on the single; it did a job for them in 1907 by winning the first of the now internationally famous Isle of Man TT road races and has been bringing home the mutton ever since. In more recent years, with the invasion of increasing numbers of high rpm sports twins of considerably more displacement, Matchless, in addition to building several twins of their own, concentrated on putting more bang in their banger simultaneous with further refinements in handling and ride. Then came news that Matchless had made a bold concession to the likes of you and I — they "poked and stroked" their single to a whoppin' 37 inches! The gesture touched our hot roddin' heart — here's our report on the '61 Matchless "Typhoon."

While 37 cubic inches may sound pretty tame to the modern motoring American, remember that this is roughly the equivalent of one barrel of a fair size V8. Compared to its 30-inch predecessor of 86 mm x 85.5 mm bore and stroke, the 37-inch Typhoon mill boasts a bore and stroke of 89 mm x 96 mm with 8.7:1 compression ratio. So basically it's a stroker, and it runs like one. The engine is completely mod-

The Matchless "Typhoon" is a giant among single cylinder motorcycles with its brutish thirty-seven cubic inches

By BOB GREENE

ern with hemispherical combustion chamber, pushrod-operated overhead valves of large dimensions (1¾ inch inlet, 1 9/16 exhaust), hairpin valve springs, forged steel connecting rod with pressed-in hardened bearing race, and single-row roller big end bearing in a Duralumin cage. The built-up crankshaft is carried in a double row ball bearing journal on the drive side of the engine and plain bronze and roller bearings on the timing chest side. The complete works are aluminum cased; its tremendously finned barrel fitted with an iron liner and integral pushrod tubes.

Dry sump lubrication is effectively managed by a reciprocating duplex plunger driven by a spiral gear integral with the timing side end of the crankshaft. The pump drive spiral gear, incidentally, is considerably beefed-up for '61; the spiral being of increased length to provide, in effect, an extra tooth and closer engagement for greater durability and longer life. Oil is pressure-fed directly from the pump to the connecting rod big end bearing, also to the overhead valve mechanism via an outside pipe where it returns down the pushrod tubes to tappet guides and timing gear, then is picked up by the return side of the oil pump and fed back to the remote oil tank. Two filters are incorporated; a magnetic trap in the crankcase and a gauze filter in the oil tank.

Ignition is by Lucas magneto, chain-driven from a special sprocket fitted to a tapered extension of the exhaust camshaft. Waterproofing is competently provided for by a clamp-tight rubber fitting over the spark plug lead and a lengthy air vent pipe extending from the magneto cover to well above the engine to ensure a bon voyage in the event of deep water crossings as might be encountered in occasional backwoods touring. Electrical current for the lights is managed by a Lucas alternator generator in the primary chain case supplying a very compact battery and rectifier on the right side of the machine. Illumination is bright and proved trouble-free throughout the test with the exception of the taillight socket which fractured in short order; the ground strap is flimsy and the wire terminals are much too delicate for their purpose. An appreciated feature on this machine is the quickly detachable headlight which is disconnected from the electrical system by a single master plug; it comes off in 30 seconds flat. The dimmer switch is incorporated in the back of the headlight shell.

An Amal Grand Prix carburetor with 1⅜-inch bore feeds the Typhoon; each charge of air being filtered most efficiently through a tubular element made of flannel-like mate-

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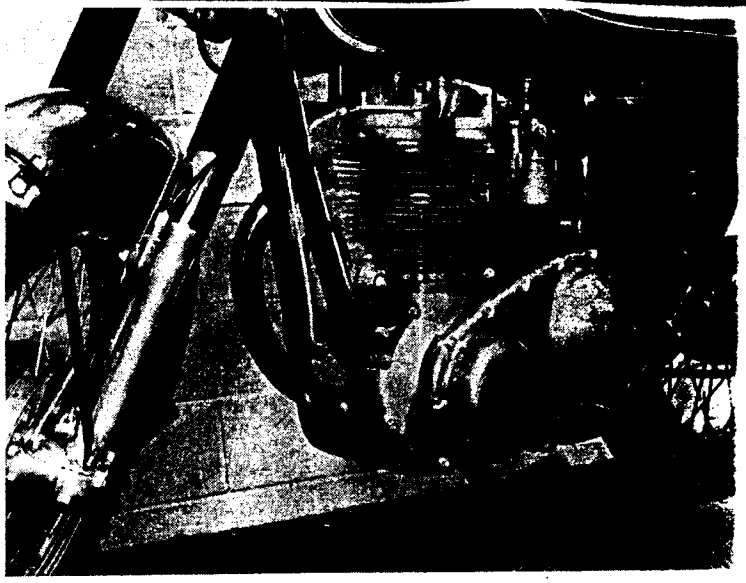
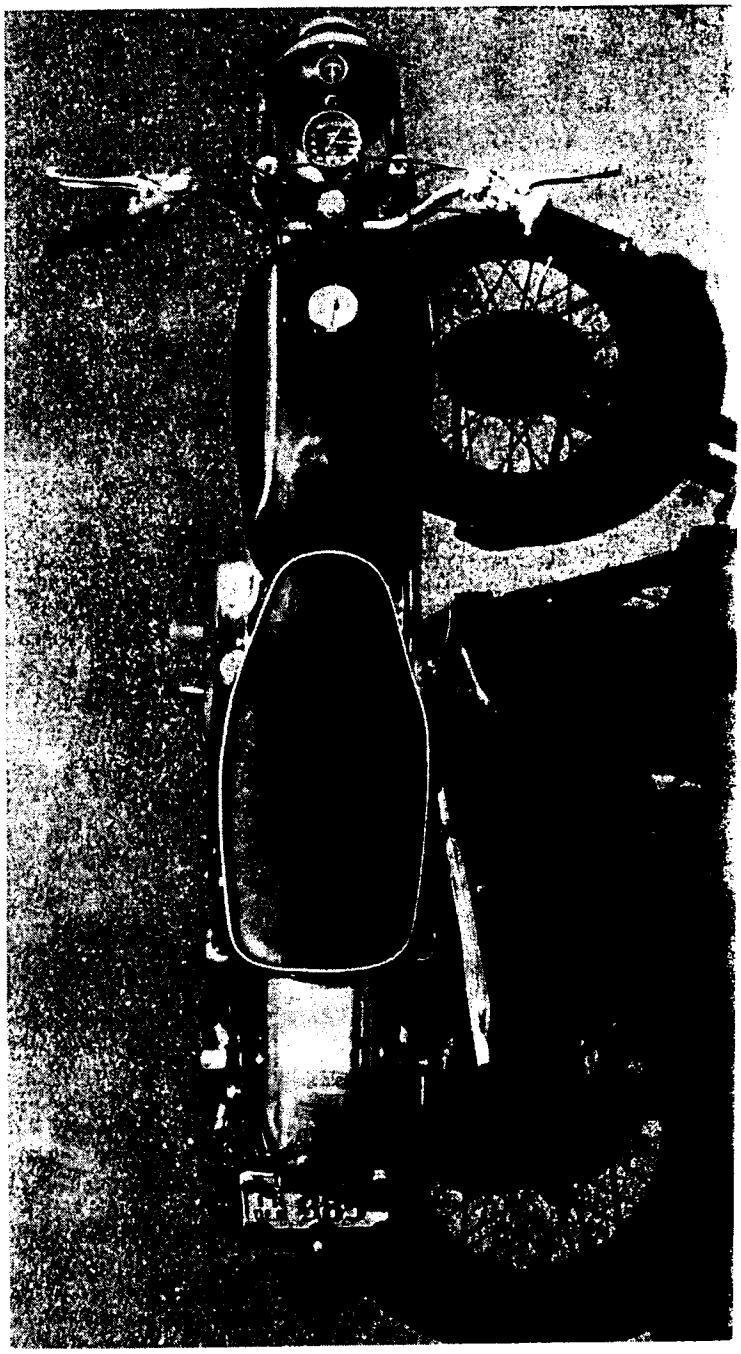
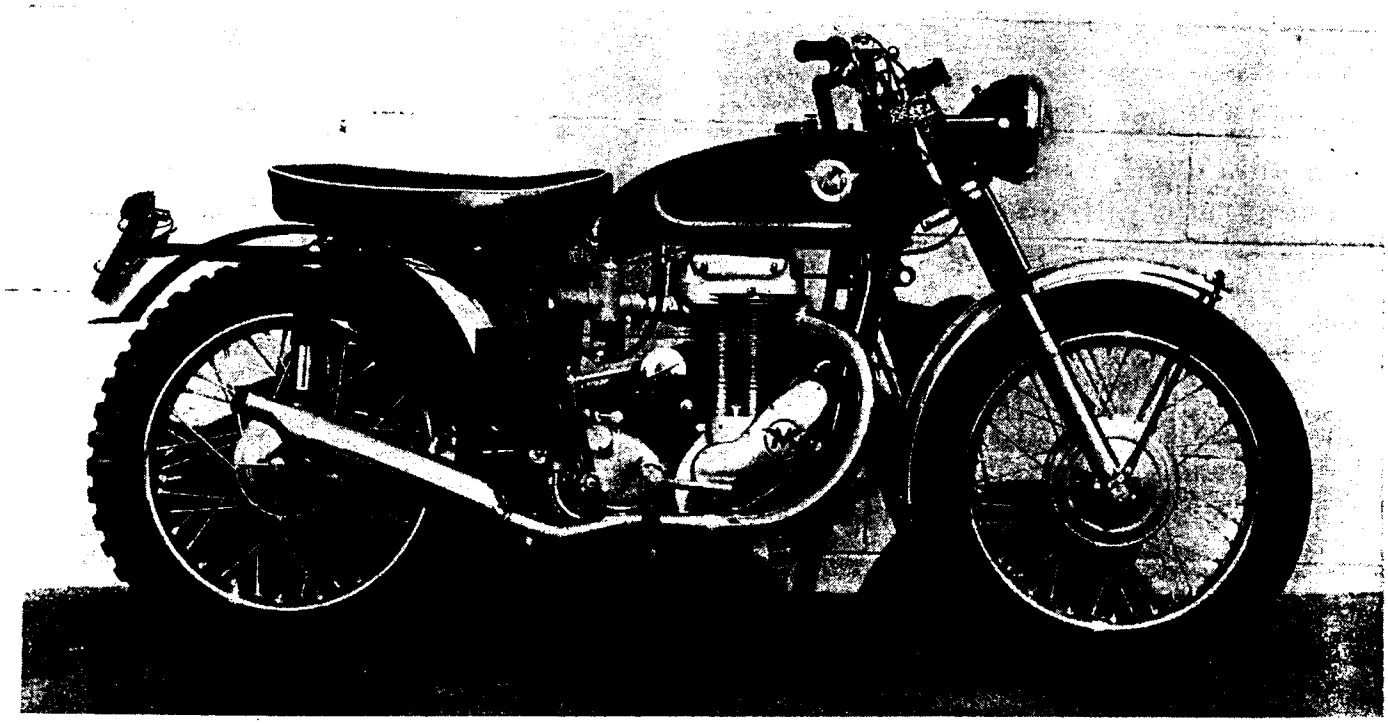




ABOVE—New in '60, Typhoon's double loop frame is proven tough. Alloy fork legs and hub make for minimum of unsprung weight and an easy ride. High mag position and breather pipe from same permit water crossings without fear of wetting out. Note hand-adjustable front brake cable and rear brake rod; both can be reached from saddle while riding, if necessary, in competition. Huge finned cylinder keeps engine ever cool.

RIGHT—Comfortable seat and sensible bars show in top plan.

Photos by Randy Holt and Fred Gibson



Exceptionally good looking, the big banger has very clean, flowing lines. Despite its displacement, the Typhoon is easy to start, thanks to compression release mechanism which permits the piston to be eased past compression stroke before kicking. Frame is two piece; the rear section bolts on just ahead of rear wheel. Rear shock mounts are fully boxed and very strong. Notice that spokes in wheels are designed for straight line pull between rim and hub for maximum strength in competition.

BIG BANGER continued

rial reinforced with fine wire. The material is 9 by 12 inches in size but accordion pleated and rolled to fit within the 9-inch long by 3-inch diameter cannister that has a baffled opening along the bottom side for air entry and is connected at its forward end by a rubber hose to the carburetor. The element is oil-moistened to stop fine particles and does the best job of filtration against desert dust and sand I have yet seen, including the paper pack filters. No matter how filthy the outside of the element became after a long run in an extremely dusty race, later inspection showed the inside to be sanitary. Gasoline is used to clean the cloth; "Baby Oil" (very light) to replenish it.

Power delivery from engine to gearbox is made through a single row primary chain, into a four-speed box and multi-plate clutch incorporating a rubber vane shock absorber to damp engine impulses, and on to the rear wheel via another single row chain. Primary chain and AC lighting unit are contained in an oil bath aluminum case, with primary chain adjustment being made by movement of the pivot-mounted gearbox which is held in position by two husky adjustment bolts, one on each side of the gearbox, anchored to adjacent frame plates.

Upon first receiving the king-size banger from The Indian Company, Western Division Office at Burbank, California, we were delighted by the bold, clean lines of the machine, the excellent black enamel finish and the attractive as well as functional use of aluminum in abundance. Vitally important to a sports motorcycle is the frame; the new Matchless chassis appears to be — and is — most rugged. It withstood two months of real punishment during my tour aboard, and identical models have been pounded unmercifully by the top cross-country racers; I personally don't know of one that has come apart. Take the rubber cushioned gas tank off and you'll see one reason why they are rugged. Behind the long-sleeved head forging that carries the upper ends of the two front frame tubes is a meaty gusset to withstand strong impacts at this critical point. The single crossbar (hidden by the gas tank) is strengthened at its midpoint by the fact that the top of the engine bolts here, the union thereby doubling as an engine mount and brace. The rear section of the frame is the popular triangulated bolt-on type mounting Girling adjustable coil spring suspension units with integral oil damping. Matchless is so proud of their two-way damped front fork suspension (and rightfully so) that they have given it a name of its own: "Teledraulic." For years I have heard nothing but praise for the action of the Teledraulic fork; every word of it was well founded. I have yet to find a smoother riding, less tiring front fork — the effect is fabulous. Enhancing the ride even more is the rearward seating position; with the rider's weight shifted just a little farther toward the back as it is on this bike, a very light front end is maintained at high speeds over rough ground. As a result, axle-deep ditches and choppy sections of washboard that might 'unhorse' a rider on a lesser mount were taken with renewed courage and momentum on the Matchless Typhoon. This grand, effortless ride is the most distinguishing feature of the motorcycle. Fork geometry, spring rate and damping are superbly matched to make easy work of any type terrain; extreme stability encourages full confidence. Let's hope that Matchless never sees fit to disturb this marvelous combination!

How did we go about finding the inside story on the Matchless? How many miles were logged, and what nature were they? Well, we'll have to take a guess on the total mileage since the Smiths speedometer (fitted to most British motorcycles) went berserk before the first tank of gas had been emptied. These speedo's, while extremely accurate in mph calibration, seem to have a weak odometer design which often renders them defunct within a short period of time. A close guess at the test mileage would be around 3000, but with a telling effect of many times that number due to the fierce activity the Typhoon was subjected to: Four cross-country races averaging 75 miles each, a three-day backwoods excursion, a 400-mile highway trip, and many

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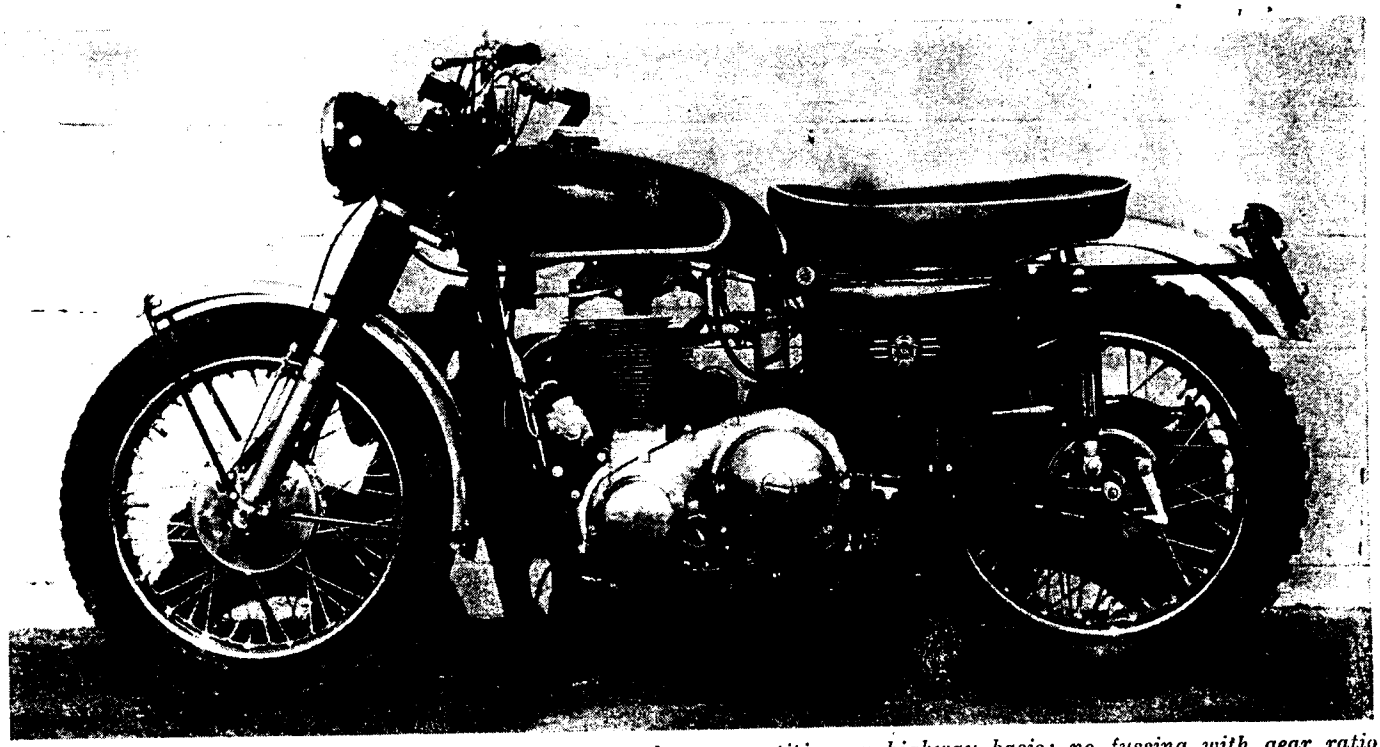
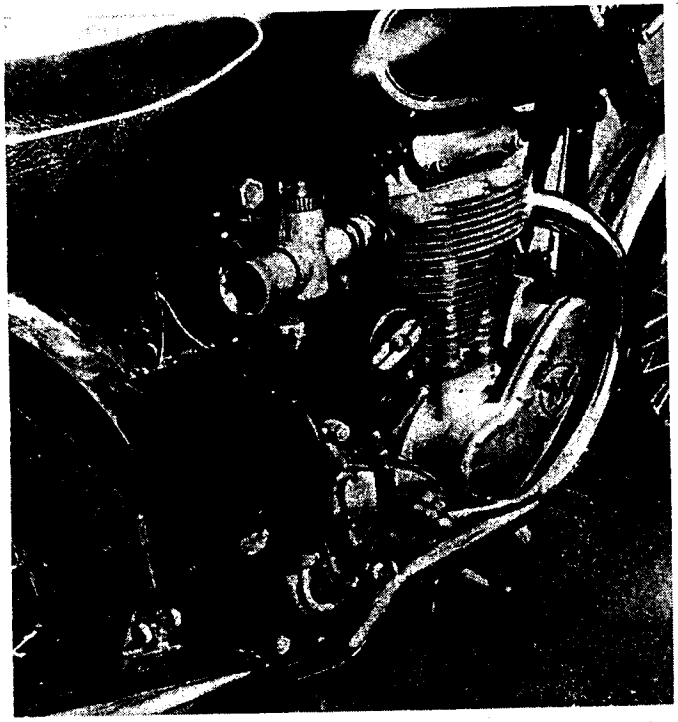


382 pounds (dry) of tractor-like torque ready to go to work on competition or highway basis; no fussing with gear ratio changes, air filter, foot pegs, etc. Despite appearance, that knobby rear tire isn't rough riding. Slim-line oil tank sits just below saddle, has built-in froth tower to prevent cap seepage when bike is ridden fast over rough ground. A minor suggestion to manufacturer about gas tank design: Round off front inner edge of the tank to prevent kinked control cables.



ABOVE—Air cleaner, removed when picture was taken, bolts above battery box shown. Battery is new small type, little bigger than half the size of older models, and held in place by quick-detach rubber strap. Cylindrical tool box rests in back of engine, has easy-to-operate wing nut cover. The rear fork bearing, seen below battery, is lubricated by small oil reservoir in tube, replenished through screw-capped orifice.

RIGHT—The desert chase, although limited almost entirely to West Coast area, provides a fiendishly perfect "rack" for testing strength, durability and performance in short time.

BIG BANGER

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days of commuting. The versatility of the miles covered brings to mind one shining fact, the really rare compatibility of gearing and engine torque. With slightly lower than highway gearing (5.80:1) and pulling a 4.00 x 19 knobby Dunlop tire the big banger ambles leisurely down the road at 70 to 75 in fourth or will slog up the deepest sandwash with its most impressive third cog. The brute power of this big stroker is exhilarating and, strangely enough, will bring forth the best efforts from a novice rider in rough going since gear changes can be made at leisure or even neglected in a pinch. An overdelayed shift down at a critical spot up a steep hill, for example, doesn't mean a 'flame-out'—just grab low and it comes on like Dennis the Menace. Cross-country riding over broken ground is much easier than usual on the Typhoon since its tall gearing and resultant lower rpm mean less wheelspin and therefore reduced reaction and fight at the front end of the bike.

Here, then, is the reward of the extra seven cubic inches; notably more torque at lower rpm's. It was my experience that the stroker will not accelerate appreciably faster than a really sharp 30-incher, but it will do heavier work easier, with fewer revolutions. It is not necessary to lower gearing for strenuous chores; the engine is strong enough to pull sidecar or solo, highway or river bottom, as is. Top speed is just a shade over 80 with standard competition sprockets and muffler, but you should be able to read 85 mph on the meter with the removal of the muffler. Most encouraging was the fact that engine vibration was especially low throughout the full range. Gas mileage was estimated at 35 mpg in cross-country competition, just under 50 on the highway.

In backwoods races and trail scouting over snow covered 8000-foot mountain passes and virgin desert land, the Typhoon proved to have flawless control by nature of its slow, deliberate reaction to violent ground irregularities in addition to instant acceleration and braking through throttle control alone. The brakes, too, are good; progressive and easy to apply. Seating position in relation to handlebar and foot peg location was the best ever, making for a relaxed ride under the most trying course conditions. Too much cannot be said about the comfort of this machine in competition.

Rigors of the race did, however, point up a couple of annoying circumstances that need attention. The vertical routing of the speedometer cable alongside the rear shock caused it to flex on deep recoil of the wheel to the extent that it was grabbed by the tire tread and wedged between fender and air cleaner, nearly ruining the cable. The gas cap failed to seal a full tank when riding rough ground, resulting in a highly inflammable rider on several occasions —unfortunately one who likes to smoke. However, as the gas cap neoprene seal took on a seat with further use its sealing ability improved considerably. The plastic tank nameplate badges cracked and bounced off due to poor design which permits them to be forced out of shape when the screws are snugged up at the factory — a minor detail but still worth mentioning. Of greater magnitude but not a direct fault of the Matchless Company was the poorly machined Amal throttle; the groove in its cable reel was not cut deeply enough, causing the stranded wire of the throttle cable to bend excessively through continuous action and start to break. A bit of delicate file work remedied the situation, with only the expense of a new throttle cable involved. The tool kit, although of relatively high quality and otherwise generously stocked, failed to include an Allen wrench for the intake manifold screws.

Other than these minor irregularities mainly on the part of Matchless suppliers, maintenance over the two months consisted of topping up with meager quantities of oil and cleaning the air filter between races. Here is a motorcycle that is care-free and robust, always ready to romp. Because of its good combustion chamber design, cam action and generous cylinder finning, the engine is a veritable ice cube even when subjected to hours of pulling through deep Mojave sand and heat. At no time was there a sign of high engine temperature or detonation. Clutch action was easy and not once was it necessary to adjust the unit other than taking up normal slack in the control cable housing after initial bedding down. Gear changes were always smooth, positive and without incident — the gearbox gets top rating.

Although the Typhoon's fully equipped dry weight of exactly 382 pounds (about 407 with gas and oil) doesn't qualify it as a lightweight, this rider was never conscious of its heft when under way — quite the opposite. As a matter of fact, if there was one thing we really did learn from the test it was this: Never settle for anything less than what the Typhoon offers in handling and ride — it just wouldn't seem right anymore.

Next Month:
DUNE BUGGIES
Zaniest of the hot rods