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bars and forks to each cylinder firing. Like the British twins, the Yamaha pistons rise and fall together, while firing on alternate strokes.

Moving out into the streets and onto the freeway, the biggest Yamaha is a joy to ride. The gears are quite close so you can really keep the engine revs in the top part of the power range when you get on the trigger good and hard. The mufflers are loud. And the note is a hollow, flat sound: much like a BSA 40-incher with Bates or MCM flat baffled reverse-cones.

Our test bike vibrated quite a bit for the first 850 miles. A 70 mph jaunt from L.A. to San Diego produced numb hands and tired shoulders. The farther the bike went, though, the smoother it got—but with noticeable shaking remaining in the bars and footrests.

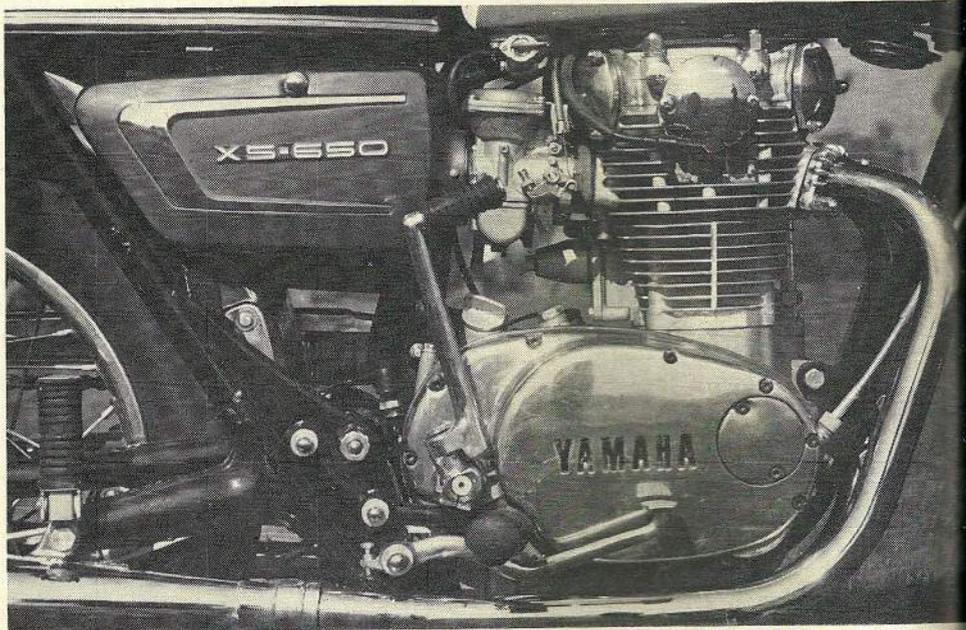
High speed handling was erratic and the bike tended to oscillate and hunt along the center stripe, so we stopped to check the forks. Sure enough, they were loose. A trip back to Yamaha's headquarters in Montebello showed the top bracket to be defective. A new assembly was quickly put on and the whole high speed feel of the bike was changed. Then the machine was stabile and tracked perfectly. On hard, sweeping turns the rear end tended to pogo quite a bit, which seemed to be caused by inadequate damping in the rear shocks. Too, the tires were the K-70 Dunlop pattern. We would have vastly preferred the K-87 rear and F-3 front Dunlops for fast street riding. The front forks were quite stabile and showed little tendency to wobble on high speed bumps, but the smaller road irregularities and bumps went straight to the rider's arms.

The seat is very comfortable, even on longer trips, and there's plenty of room for a passenger without crowding the rider forward. A tubular rail at the rear of the seat gives the passenger a good place to grab if the rider has to brake hard.

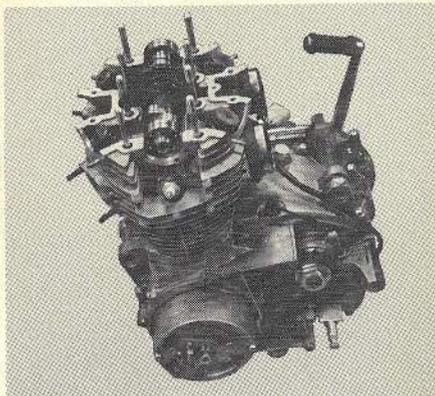
3.3 gallons fills the tank and takes the rider an average of 130 miles before having to turn on the reserve valves. Mileage averaged 46 mpg around town and freeway travel. The engine used almost no oil during the whole test.

Seating position was comfortable for our six-foot test rider, but the handlebars are a little too far back and too wide. At high speed, wind pressure pushes against the rider quite hard. If the seating position is too upright, you have to pull on the handlebars pretty hard, and the pectoral muscles get tired.

The tach and speedometer are tilted back far enough for a tall rider to read

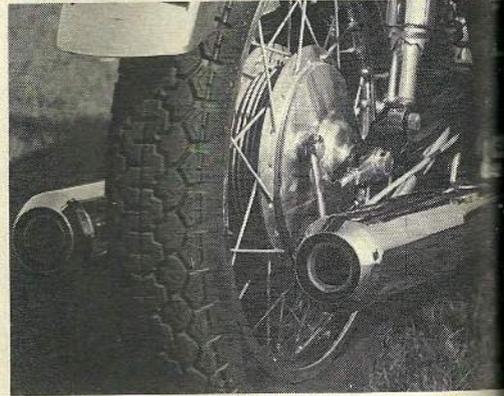


Yamaha's biggest looks sort of like the Honda 350, acts sort of like the BSA and Triumph 650 twins.

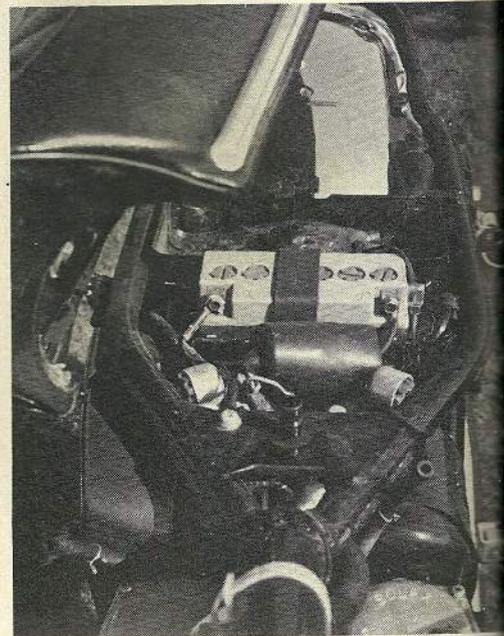


Overhead camshaft rotates in ball bearings.

easily, but a shorter person could use a bit more angle. Illumination in both instruments is diffused over the dials so that they are easy to read at night. The headlight works pretty well, too. On low beam the lens facets throw a couple of bright circles about 10 feet out front, about three feet to either side. In the center, about 25 feet out, a softer beam is aimed slightly to the left and makes a 10-foot-wide splash. Switching to high beam leaves some of the side splashes, but mainly shoots a brilliant spot on the pavement about 65 feet out front. A spring-loaded screw allows lateral headlight adjustment. Loosening a bolt directly under the light shell will free the vertical headlight fixing point for lowering or raising. The taillight/stoplight is plenty bright to let cars know you're there at night. A switch on the front brake lever activates the spotlight, as does a conventional hook-up on the rear brake pedal. Because the alternator is activated according to demand,



The XS-1 sounds like a BSA with reverse-cone megaphones.



Battery and toolkit are located under the seat.