

HORSEPOWER FACTORY HONDAS

FOUR STROKE FANTASY

Evolution of the Thumper

By Tom Webb

Competitive four-strokes? Don't laugh. If you have a few thousand laying around—about 5 g's and some change would be a little closer—then you can have a race-ready four-stroke that will work as well as any two-banger around.

The Horsepower Factory, located in Encinitas, California, can take a normally mild-mannered XR500, breathe on the engine, install a new frame and swingarm, put on the latest zoot suspension and end up with a fire-breathing, super handling, four-stroke that will give any two-stroke lover fits.

Malcolm McCassy is the head honcho behind HPF. He's been designing, testing and racing four-strokes for the last six years. The final result of all his labors is one of the most exotic machines ever. Weighing in at a competitive 246 pounds, the machine sports the latest in technology.

The frame is designed by HPF, then built by C&J. Front forks are 44mm Fox units, while at the rear you have your choice of either piggyback Ohlins

or Fox. The swingarm is aluminum, designed by HPF and built by Thorwaldson. Front and rear wheels are hybrid XR-CR Honda units. The tank and seat are CR and head pipe assembly is stock XR.

Usable horsepower

HPF starts with a stock XR500 motor. The head is bench flowed and mercury tested to make it as efficient as possible. Stock valve springs are shelved in favor of high-quality S&W units. A 36 Mikuni handles the carburetion chores. While this may seem a tad small, considering it's a 500, it works out perfectly for the torque requirements of the motor. The cam is a special unit made for HPF. It's ground by one of the leading race car specialists. Lastly, while the stock clutches are the good fiber units, HPF beefs up the springs; early testing showed the increase in horsepower would cause the clutch to slip.

A stock XR500 engine puts out 35.9 horsepower to the rear wheel. On the dyno, the HPF Honda put out an

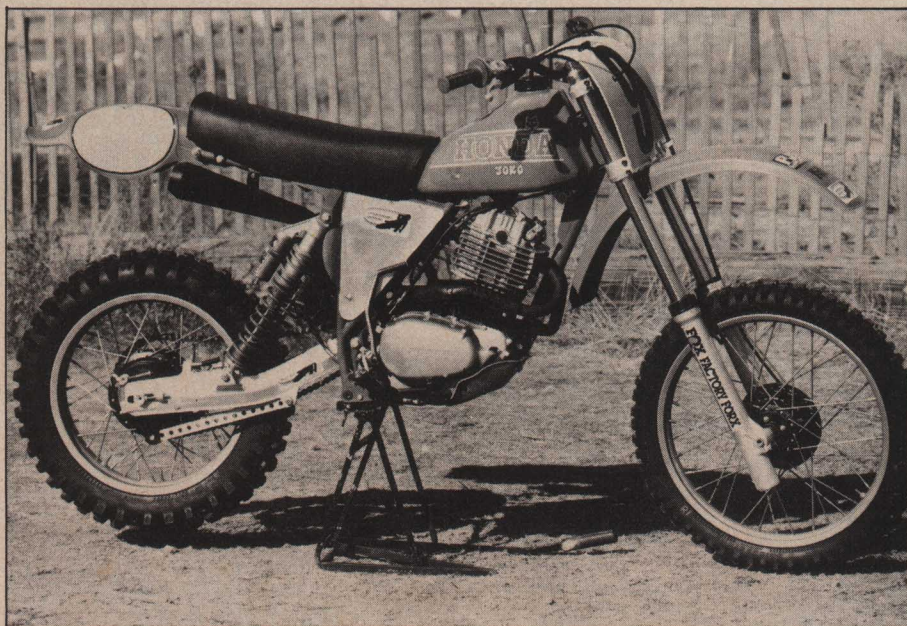
amazing 45.8 horsepower. Ten horses were gained throughout the whole rpm range. Amazing! When we questioned them on reliability, the answer was: Jim O'Neal has over 20 motos on his personal bike and an untold amount of practice and trail riding, without one mechanical failure.

Framed and suspended

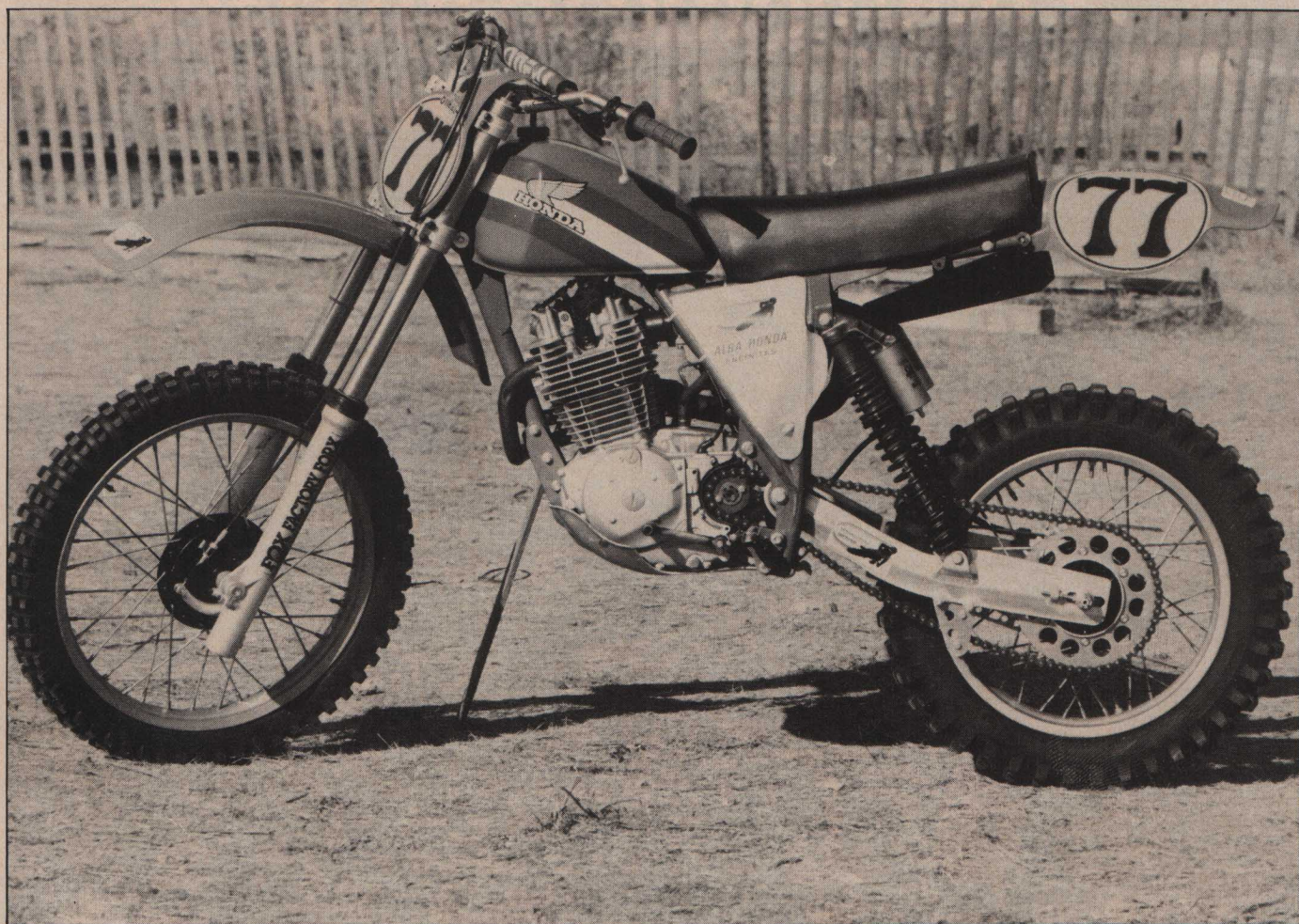
The frame, a 4130 chromoly unit built by C&J, was designed, ground up, by HPF. Featuring a 58½-inch wheelbase, the bike is very stable. Stability means nothing if it won't corner, though, so they utilize a 28.9-degree rake. The end result is that the bike turns well but is still controllable at high speeds.

An aluminum swingarm accents the rear of the bike. It's a very beefy looking unit and virtually no flex was detected while riding. Again, designed by HPF, it's banana style in configuration.

Front suspension chores are handled by the latest Fox Forx. They are 44mm in diameter, as good or better than



With almost 14 inches of travel in the rear, the HPF Honda would soak even the toughest terrain.



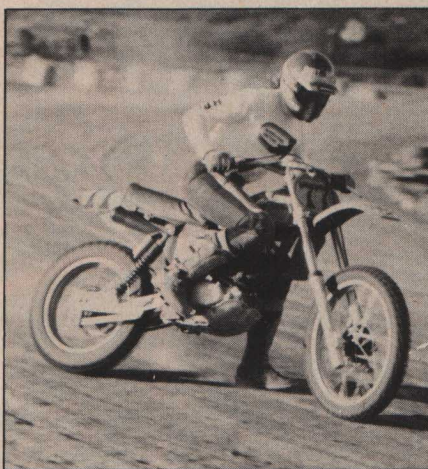
anything available and absolutely inflexible. Travel is 13 inches and damping quality is excellent.

Travel at the rear end is a whopping 13½ inches. Here you have your choice of suspenders. Piggyback Ohlins or the latest piggyback Fox Shox. This area is all a matter of personal preference. The Ohlins are proven, quality shocks. Fox units are lighter and more easily adjustable.

Bits and pieces

Seat height on the HPF 500 is a very reasonable 37¼ inches. Considering the bike's suspension is over 13 inches at both ends, the low seat height is incredible. In checking the underside of both fenders, we found that the tires just scuffed them with the suspension completely compressed. All allowable space is used.

As mentioned earlier, the weight is 246 pounds with one gallon of gas. This is accomplished through liberal use of aluminum, drilling in the right places and many hours of machining. Considering that a stock XR weighs in



Sideways, the HPF worked excellent—mostly from controllable power.

close to the 280 range, and the big-bore two-strokes are almost 240 pounds, this weight is totally competitive.

Hubs and backing plates are stock XR-CR combinations. Braking is good, and so is reliability. These are laced to Sun Rims with very strong eight-gauge spokes. Metzeler tires are

stock; only the best. A zoot M Robert numberplate/combination fender adorns the rear. This is another place where weight is saved.

Riding with valves

Starting the beast took quite a knack. It wasn't as hard as we expected, but it definitely was a refined process. It was a little hard to ride at first, because of all the compression. When entering a turn, you would keep shutting off too early. After we got dialed in, we found out how nice that motor really was. Controllable power, tons of power, from idle on. It steered flawlessly; knife to the inside line, or take the berm. Either way, it felt just as comfortable.

Probably the most amazing thing was the plush ride. With all the travel offered, even the most gnarly bump was merely an afterthought.

All in all, four-strokes are a thing of the future, not the past. HPF just proves that you can make one competitive in a two-stroke world, even if it has to retail for \$5195. □