

## 1977 Honda ATC 90



Honda's ubiquitous three-wheeled All Terrain Cycle. If the configuration of this machine looks familiar, it should, as this design without a doubt significantly changed the course of the motorsports industry.

Prior to Honda's introduction of their first ATC in 1970, there were in fact other, "multi-surface" products available, such as the six and eight-wheeled, skid-steer, Amphibious All Terrain Vehicles (AATV's), produced by companies such as Attex and Amphi-Cat. These machines first appeared in the early 1960's, and are well known for their ability to perform not only on soft surfaces, but also their capacity to traverse bodies of water. Yes, they were watertight, would float, and their paddle-type tires provided modest forward-thrust. Given some amount of patience, they could indeed carry their passengers across water.



But, other than a few odd machines such as these, there was nothing to bridge the gap between motorcycles and full-sized, four-wheeled off-road machines, such as Jeeps and dune buggies. By the mid-1960's however, the Japanese manufacturers were broadening their product lineups, and continually looking for ways to expand the motorcycling market. One obvious gap was the considerable slump in motorcycle sales during the winter months – particularly in the northern portion of the United States.

Honda in particular, was experimenting with various design configurations, which differed from the conventional, two-wheel, narrow-track motorcycle layout. The man charged with heading up this effort for Honda was engineer Osamu Takeuchi. Working outside the box, Osamu created and tested a series of products, each with multiple wheels – with the idea of developing a stable platform, which would provide ease of operation, and practicality, on surfaces such as mud, sand, and snow. With all performance considerations factored in, Osamu settled on a triangular footprint, with two wheels in the back, and one in front. This general arrangement appeared to provide for Honda's basic intentions, but in testing, conventional motorcycle wheels and tires, even in various sizes, were not bringing satisfactory results.

Looking at alternatives, Osamu took note of the flotation properties and minimal footprint afforded by the big, balloon tires used on Attex and Amphicat products. A set of such tires were adapted to the fledgling Honda design, and in testing, traction, handling, and overall performance proved quite satisfactory. Honda had finally found the combination they needed for their new product.

Final design elements came together, with power provided by Honda's existing, tried and true, 7hp, OHC, 90cc four-stroke single, borrowed from their Trail 90 series. That engine, with its automatic clutch and four-speed transmission, was deemed appropriate for what Honda intended from the start to be a small, unintimidating machine, which could be ridden and enjoyed by just about anyone. The CT90's dual-range primary drive was retained, and with the very low speeds the new machine was capable of, Honda elected to dispense with suspension of any kind, front or rear, depending instead on the low-pressure tires to provide for comfort and control. One drum brake on the rear axle was deemed sufficient as well, operated both by a conventional brake pedal adjacent to the right footpeg, as well as a handlebar lever on the left side of the bars – same as on the Trail 90. A linkage tied everything together, enabling brake actuation by either/or means. Final drive was by conventional chain and sprockets, fully enclosed, to minimize wear and reduce maintenance.

In addition to these more or less conventional components, a few unique elements found their way into the new design. A lawn mower-type pull starter was fitted, necessary possibly to fit within the engine/chassis layout. Also, and entirely different from anything seen before – a thumb-actuated throttle. It has been indicated that in testing, Honda found this arrangement to be most practical for maintaining steady, even throttle application while hanging off the machine during turns or on uneven surfaces.

With a planned release date coinciding with the 1970 new-model introductions, Honda showed off the new machine, designated the US90, to its North American dealers in late '69. Impressions varied, with many dealers expressing doubt about this totally different product's sales potential. Nonetheless, the brand new ATC90, as it became officially known, was rolled into showrooms for 1970, with a suggested retail price of \$595.



# What is it?

## Where's the exhaust system?

Under the frame to guard against leg burns. High enough to keep you going even when crossing shallow streams. And the spark arrestor/muffler is USDA-approved—nice to your ears and the environment.

## Could that be the throttle?

Sure could. Very handy to operate. And, it's spring loaded. Just push when you want more power. Release when you want to slow down.



## What...no clutch lever?

Right, automatic. Posi-Torque dual range, four-speed trans. Low for rough riding and climbing. High for speeding through sand or snow.

## How powerful's the engine?

Plenty powerful. An overhead camshaft four-stroke that packs 7.0 horses @ 8,500 rpm. And, of course, it's a Honda engine—the best, most dependable motorcycle engine ever designed.

## Why are the tires so big and soft?

For good reasons. Fantastic traction on snow or sand. The ability to roll over almost any terrain in your path. They replace the suspension by absorbing the shocks.

Honda launched an extensive advertising campaign to introduce their unique new product to the market. In practice, the little machines performed extremely well in the way for which they were intended, and as a result, Honda dealers found considerable success with the new model. Dealers serving rural markets in particular reported their customers appreciated the three-wheeler's stability and ease of use in low-traction conditions, and it did not take long for Honda to conclude they had successfully filled a gap in their product line, and in effect created a new segment of recreational riding.

Neither sand,

nor snow,

nor streams,

nor surf,

nor rocks,

nor car trunks,  
can keep you  
from having fun on  
the incredible  
**Honda ATC 90.**

The Honda ATC 90 is designed for off-road use only. For safety, no operator should exceed what a helmet allows protection, and check the local laws before you ride. For a full label description, consult American Honda Motor Co., Inc., Dept. 90, One 40, Torrance, California 90501. ATC is a trademark. © 1977 HBS.

In typical Honda fashion, advertising focused on accessibility, fun, and ease of operation. Note the disassembled one stuffed into the trunk of a car. Heck, you didn't even need a truck or trailer to haul one of these little machines out to a favorite riding spot. Honda also of course highlighted the conditions in which their ATC functioned well, as compared to a conventional, narrow-tired, motorcycle. And, at the heart of it all, they were fun! Great fun, and untimidating, not to mention quiet, totally reliable, and virtually maintenance free – all the attributes for which Honda products had become well known.



In no time at all, these quirky little machines were popping up all over the place. They weren't a motorcycle to be sure, and the absence of any suspension, plus those low-pressure, balloon tires, meant that an entirely new riding technique had to be applied. Regardless of their inherent limitations however, multi-wheeled recreational vehicles were here to stay.



**The ATC90 was introduced to millions of non-motorcyclists when several was included in a chase scene in the 1971 James Bond movie, *Diamonds Are Forever*. The grimace on actor Shawn Connery's face in this famous image no doubt reflects how it felt to attempt to ride an early ATC at speed.**

Honda officially marketed their new machine as the ATC90, and trademarked the term All Terrain Cycle. As a result, all similar products which followed from the other Japanese manufacturers had to adopt an alternative description, such as Yamaha's "Tri-Moto", while Kawasaki and Suzuki simply assigned model numbers – KLT and ALT, respectively.

Interestingly, despite Honda's general success with the ATC90 – they sold more than 150,000 of them during the model's eight-year run, Yamaha, Kawasaki, and Suzuki versions did not appear until the early '80's, just ahead of the move to four-wheelers, beginning with Suzuki's first Quadrunner, in 1982.

The ATC90 changed very little from its release in 1970, right up to introduction of the updated ATC110 in 1979. Such in fact was the popularity of their initial ATC model, that in 1973 Honda introduced the ATC70, so that younger riders could get in on the three-wheel action.



Neither Bob or I had ever been involved with three-wheelers, and other than a utility quad out at The Vintage Movement shop, and Bob's own personal side-by-side, we had no experience with ATC's. However, I was perusing TVM inventory one day, looking for something "different" to rebuild, and came across a first-generation Honda ATC90, which was languished in one of the open-air storage areas. I talked to Bob about the little machine as a project, and together we decided to take a shot at it.



Initial evaluation revealed we had a '77 model on our hands, which varied only slightly from the first versions back in 1970. Overall, this one appeared complete and intact, and not in all that bad of condition – compared to some of the stuff we start out with. In fact, once I cleaned the points and cleaned out the carb, the little fart fired up and ran! So, time to take 'er apart.



Space constraints in the service area of TVM facilities led me to opt to work on the ATC at my home shop, so I pushed it into the LWT and took it back to my place. This is how it looked before I laid a finger on it.







**It was all there! Note the little, tubular toolbox, just inside the right rear tire. Right after this picture was taken, I had it fired up. Smoked like a you-know-what, but it ran – and shifted through the gears!**



**All was not cheese and crackers, though. In addition to a bunch of mouse nesting material, disassembly revealed the frame had rusted fully in two, and had been “repaired”, via some pretty crude welding. Amazing that the little machine had held together.**





The welds were truly a sight to behold. Some inspired work, to be sure, but left no doubt that a replacement frame was in order.



Fortunately, the huge number of ATC90's originally produced meant that a replacement frame was not at all difficult to secure. A bit of searching on eBay, and in no time at all things were coming together.

Other than the need for replacement of the frame, rebuilding the bike held no real surprises. Some things were new to me, as I'd not previously done an ATC/ATV from the ground up. There were a few challenges of course, typical of old, off-road machines, mostly involving rusted and/or mangled parts and fasteners. The rear brake assembly in particular was a real pisser. It was all frozen up, and as such disassembly of those components involved was quite difficult.

Engine work was basic. Freshened the top end, and performed a valve job, with new valves installed, while the clutch and gearbox and associate parts and pieces all checked out ok.



**Interestingly, the rear seat base/rear fender assembly turned out not to be molded in color, but rather was painted at the factory. Stripping of that old paint was a real chore. Lots and lots and lots of scrubbing and careful removal without harming the plastic was quite time consuming.**

As with our other projects, time and patience eventually brought generally satisfactory results. And, as I tend to do, there was some over-restoration, with certain finishes going beyond what the factory originally applied. Generally speaking, the results are not bad, with a reasonable compromise between originality and a bit of "shinin' up".





Replacement parts utilized were almost without exception, oem replacements, or original-matched reproductions. The popularity of ATC90's when new, and now, provide for very strong product support.

Rims may appear chrome, but are in fact powder coated in a high-gloss silver. Paint is color-matched to original. Bars, grips, levers, cables, controls, headlight, footpeg rubbers, mudflaps, graphics, tires, etc, are all readily available via aftermarket suppliers.







Beyond some paint-enhancement and an extra bit of shine here and there, only a couple of details are either missing, or deviate from original.

Missing is the exhaust system's spark arrestor. Try as I might, I have not been able to locate a replacement, even in another entire exhaust system. Tank graphics from another model year were applied, as I felt they are a bit jazzier than the originals. And then there is the seat cover. Rebuild work on the bike called for new seat foam, and the only source I could locate featured only a kit – both foam and a cover. It's by Saddlemen, and is quite a quality, well-fitting piece. The right thing to do would have been to use Saddlemen's foam, then add a original-style cover. However, all projects feature budget limitations, and so for now at least, this one will have to do. Not perfect-to-original, but not bad.



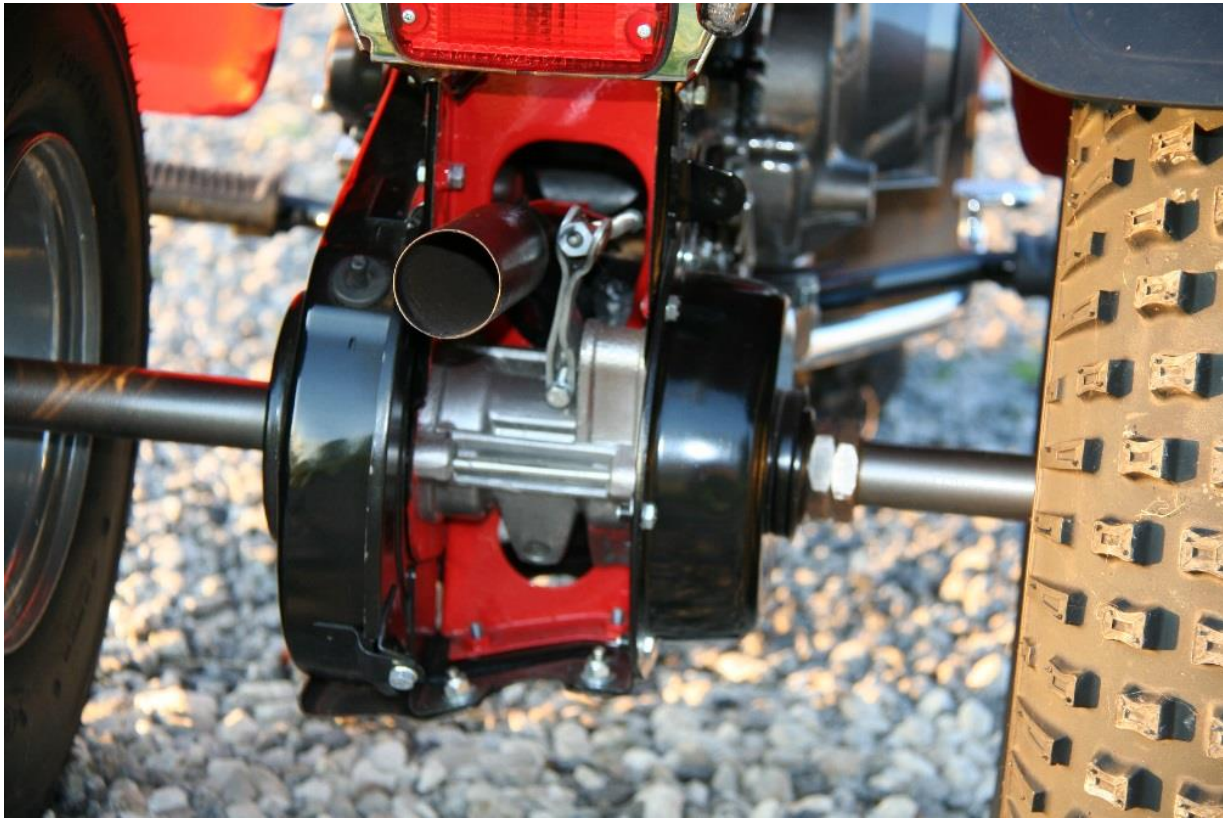




I've got a thing for that darker metallic gray, which appears on the side cases. Provides for a nice contrast against the natural alloy of the center cases and head. Clear coat topped it off.

Fasteners are mostly just hardware store stuff, but I did apply correct case screws and replated a few other key nut and bolts. Note the Honda-logo'd mudflap. It, along with some other specialty pieces, were sourced through these good folks: <http://www.vintagemotorsports.net/index.htm>. As is usual with Japanese parts, the bike's original, alloy components polished up quite well, and the few chrome pieces were either replaced or rechromed.

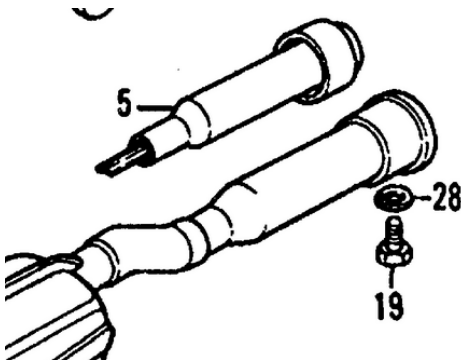




Honda's enclosed final drive is extremely effective, After 40+ years, it had protected the chain and sprockets so well that they did not truly require replacement. While it is true the ATC's little 90cc powerplant only produces 7hp, and as such is not hard on drive train components, that is still a remarkable lifespan. As it was, I did replace the countershaft sprocket and the chain, but opted to re-use the rear sprocket.

The inside of the stamped steel frame was not of course, painted red from the factory. That was just something I did to highlight and contrast the associated parts and pieces.

Sure wish I could find a spark arrestor for this machine. It is not just an insert, but in fact terminates with a cap and the end, which represents a specific cosmetic feature at the exhaust termination.







The finished product is far from perfect, as I am nothing more than an amateur hack, playing around with stuff I know nothing about. Plus, there are always budgetary limitations. In the end, however, it shows well, and makes a nice display out at The Vintage Movement shop. Big drawback – much too clean and shiny to ever get dirty.



This view exemplifies just how short and stubby these first ATC's were. It is certainly a teeny-tiny little thing. But of course that was the whole idea. Big enough to be ridden by adults, but unintimidating for kids or beginners.



**So, have a hankerin' to relive the 1970's glory days of three-wheeled fun? If so, go get one of these. There's plenty of them around, they're easy to restore, parts are plentiful and cheap, and they make great pit bikes, or for ridin' around the yard fun machines, are great in the snow, and on and on. Everything that made them effective and popular back in the day is still true.**

**- Ted Guthrie**