

# The Single Track Cat Story

## The Problem

The Single Track Cat is a utility motorcycle created by Ken Wiklund of Kelowna, BC and now produced by Nordic Manufacturing Ltd. As a mountain biker and an active member of a local trail stewardship group, Wiklund coordinated many trail days. It soon became apparent that getting people, tools, and supplies to the project location was often more work than the project itself. Wiklund said, "I tried all the usual ways: walking and carrying tools, strapping tools to a mountain bike, towing a bike trailer loaded with tools, and using a UTV. Walking took a lot of time and you are limited in how much you can carry. Adding tools to a bike or towing a trailer added a considerable amount of weight which meant a very slow climb and a limited range. By the time I got to the project location, I was half worn out. The UTV worked well but you are limited to wide trails which still meant a lot of tool carrying and hiking when working on single track trails."

## The Solution

The solution for increased efficiency and production for single track trail construction and maintenance was to create a utility motorcycle that had the key features needed by trail builders. One of the design goals was a low seat height which allows for more control through technical trail sections. The tool deck holds a lot of tools and is mounted as low as possible to enhance stability. The transmission is an automatic continuously variable speed type so there is no gear shifting. Rear wheel torque is increased by the 4:1 gear reduction transmission that has forward-neutral-reverse gears. Having a

reverse gear is a key feature not normally found on typical motorcycles but is great for a heavily loaded utility motorcycle operating on steep trails.

## Models

There are two Single Track Cat models available: the Standard Model and the Pro Model. The main difference between them is that the Pro Model has electric start, a 50-watt generator, a headlight, a rear LED warning beacon, a standard horn and a pulsing warning horn. The Pro Model also has a lithium battery and a wiring center that has fuses and related items. The Pro Model also has a combination gauge that includes a speedometer, tachometer, engine temperature and run-time meter. There is also a handlebar mounted dual USB charger and a socket type power outlet.

## Tool Deck & Storage

The tool holders can be placed on the tool deck to suit the operator preferences. The tool holders include a chain saw press, gas can holders and long tool holders (for shovels, picks, rakes, brush saws, etc). All the holders feature a quick release system for easy tool placement and removal from the tool deck. The tool deck is covered with a durable urethane coating of the same type used for truck bed liners. Under the tool deck at the back, there is a tool and supplies drawer. The drawer is used hold chainsaw tools and other items. The tool drawer is also where the 12-volt electric air compressor is stored. The air compressor makes tire air pressure adjustment and repair of flat tires much easier. The top storage box is great for light weight items such as food, clothing, first aid kit, cell phone, etc.

## **Motor**

The engine is a Honda GX200 which has a 200cc displacement and is rated at 5.5 hp at 3,600 rpm. The engine speed is governor controlled which limits the maximum rpm to 3,600. The GX200 is fan cooled so it can be run a full load even when stationary without over heating. It has an oil alert system that will shut off the motor if the oil level become too low. The GX200 is designed by Honda to have a high torque at low rpm and to have a long service life. The Single Track Cat uses an industry standard engine mounting system so it is possible to install motors made by numerous other engine manufacturers without the need for any significant modifications if an owner wanted to install a different motor at some future point.

## **Trailer Towing**

The Single Track Cat is designed to tow trailers. It has three different hitch options: a ball hitch, a BOB hitch, and a multilink hitch. The ball hitch can be used on wider low slope trails. The BOB hitch allows for the use of BOB brand trailers. The multilink hitch provides for maximum articulation between the motorcycle and trailer.

## **Multifunction Trailer**

A trailer is available that has been specially designed for use with the Single Track Cat. The trailer wheels can be set in three different positions. When carrying heavier loads on wider trails, the wheels can be set to the dual or dual-wide mode. When set this way, the trailer follows the trail camber independently of the motorcycle. For instance, leaning the motorcycle to right or left does not affect the trailer. When the trailer is set to the single wheel position, the trailer is no longer free to

swivel independently and the trailer balance is controlled by the motorcycle. In this manner, if the motorcycle was leaned to the right or left then the trailer would lean the same amount. The single wheel setting provides the best access for narrow trails, but the motorcycle operator must now balance the weight of motorcycle and the trailer. For this reason, the carrying capacity of the trailer when set in single wheel mode is less than the dual or wide dual mode. A removable tool rack converts the trailer into a flat deck trailer. This is useful when hauling lumber or larger motorized equipment such as walk behind brush cutters, rototillers, etc.

## **Suspension, Seat & Brakes**

The front suspension is a 120mm travel air spring fork with compression and rebound adjustments. The wheel and tire are fat-bike specific parts. The front brake is a hydraulic brake with a 208mm rotor. All the front suspension, steering, and front braking components are mountain bike standard items so there is wide range of parts available if a user wants to customize these components to suit their preferences. The seat is also a mountain bike standard item and there is also a wide range of seat options available to suit user preferences. The seat height adjustment, tilt and other adjustments are also to mountain bike standards. The rear wheel and tire are ATV standard items. The rear wheel is bolted to a flange on the rear axle. By removing the rear axle through bolt, the entire assembly is easily removed from the frame. The rear hydraulic brake and rotor are motorcycle specific parts.

## **Adjustable Wheelbase**

The Single Track Cat has three mounting positions for the rear axle. This provides the option of having

a short, medium or long wheelbase. A short wheelbase is helpful for trails with short radius turns while a long wheelbase provides better stability for climbing, descending, or towing a trailer. Switching between the different axle positions can be done quickly.

### **Tandem Drive**

There is an optional tandem rear wheel drive system available. This system has two driving wheels which rotate via an axle mounted between the wheels. This arrangement creates a “push-pull” traction system. For instance, when the front tire encounters a log, the rear tire will help push it up and over the log. When the rear tire comes to the log, the front tire will help to pull it over the log. This rear wheel drive system has improved traction and climbing ability, however, this gain in traction is offset somewhat by the increased steering effort required.

### **Track Kit**

A track kit is available that fits onto the tandem drive system. The track kit is intended for the grooming and packing of snow-covered winter trails. The track has steel cleats designed to pack the snow while providing traction grooves for mountain bike tires. The steel cleats are also designed to break up thin ice formations (crud) that can occur when winter trails are subjected to thawing and refreezing conditions. The track width of 12 inches fits single track trails. The front wheel is replaced by a single ski that is part of the track kit. By comparison, a snowmobile is designed to float on snow whereas the Single Track Cat with the track kit installed is designed to have a much larger weight loading for the track footprint.

### **Safety**

Another benefit created by the Single Track Cat is increased safety for trail workers. Wiklund said, “If you’re out in the bush working with a chainsaw and an injury occurs, a band-aid is probably not going to help.” What is needed is a large and comprehensive first aid kit that would otherwise be too bulky or heavy to carry without motorized transportation. If an accident does occur, the affected individual has much better chance of getting to the location where medical care can be provided if the physical effort required is less as is provided by the Single Track Cat.

### **Future**

In addition to the ability to enhance transportation, the future plans include the creation of a pull-behind trail groomer used to “float” a trail. A typical trail develops a concave shape that collects water which can further increase trail deterioration by water erosion. The trail groomer will be designed to scrape off the berm and use it to create a 5% outsloped trail surface. An outsloped trail allows the sheet water flow to cross the trail with little or no water erosion.

### **Summary**

Wiklund stated. “The goal for creating the Single Track Cat was to provide a means to have higher quality trails at a lower cost.” For organizations that have employees or contractors performing trail work, the increased efficiency resulting from being able to get to the project location quickly with less physical effort required and having more tools and supplies on-hand means that the payback period for purchasing a Single Track Cat is very good. For volunteer based groups, enabling individuals with the ability to get projects done faster with less

effort encourages a higher participation level.  
Making an investment in the right equipment will  
lead to better results in the long run.