



Volume 2 Issue 3 Published by Lee Thevenet May/June 2010

## **HORSELESS CARRIAGE REPLICAS NEWSLETTER**

**A Publication dedicated to the reporting of news, events, articles, photos, items for sale, etc, having to do with replica horseless carriages.**

**Newsletter published six times a year and special issues when needed.**

### **From the Editor**

Hello Builders,

It is almost time for the festival, car show & parade season to start here. I know this because the summer heat is already moving in. Normally, I try to associate the temperatures in my area of the country by the yearly events I attend. For example, it seems like yesterday, but it has already been a month since my yearly trip to the Pre War Swap Meet in Chickasha, OK. Usually on the first day of the meet it is still fairly cool during the morning hours & at least a light jacket is needed while shopping the outer areas surrounding the huge buildings of the complex. This year it was down right cold.

This is the time of year I look forward to the most, because I have my shopping list to fill and I know when I return home to Louisiana, the cool mornings will be perfect for starting a new build with the parts I have purchased at the meet.

These swap meet events are a builders dream. There, a builder can find that just right piece to create a starting point for a new build or the last item to finish one. That set of top bows for the new top you want to add to last years build, the wood spoke wheels you have been wanting, all these items & more can be found there at very reasonable prices.

These meets attract parts vendors from all over the US with an abundant array of parts by each. Do a web search for one of these events in or near your area & attend. You will be amazed beyond your wildest builders dreams.

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## Tool Time!

By  
Lee

A tool found & used in almost every shop project when we find ourselves working alone in the workshop. Regardless of the material we are working with, at some point, two pieces will have to be positioned against each other for a period of time. For tracing around the piece, cutting, shaping alike, glue together or even welding the pieces together, should the material be metal. The first instinct is to look for something to hold these pieces together & at the same time, free up our hands to perform yet another task.

The “Clamp” is the tool designed for just that purpose. Now depending on the particular application there is usually a clamp of the correct size & design to use, as shown at the top of the page. The “C” Clamps or sometimes referred to as “G” Clamps because of the “G” configuration & (believe it or not) the part of the country you find yourself in, is used widely in metal fabrication, but is also popular among woodworkers.

The most widely used name, the “C” clamp, can be found in many configurations & sizes to fit the task of holding things or some things together. They can be made of different materials. Some of quality cast metal, smaller cheaper quality for model making, could be of pot metal. Metal workers that use them as fixtures to hold pieces for welding prefer the “C” clamps with a coated screw that will resist being magnetized during the welding process & attracting smaller metal particles to it, making it difficult to adjust.

The other type of clamp, also found often in different shops, is the “Bar” clamp. This clamp will be found more often in woodworking than in metal fabrication. However occasionally, this is disproved. “Bar” clamps are relatively designed pretty much the same. The major difference is the “bar” fixture. This can range from a flat steel bar, with or without a finely notched edge that helps the end piece hold its adjusted position, to a simple piece of threaded pipe, usually  $\frac{3}{4}$ ” in diameter.

The latter (pipe) will usually have a cast fixture attached by threading on one end, while the tail piece simply slides onto the opposing end & is usually a binding type of adjustment where the total capacity of the clamp can be made. When clamping exceeds 24”, a pipe type bar clamp should be used to prevent flexing.



Bar clamps can also be used to square up large assemblies by placing in a correct diagonal angle to the work piece & tightening appropriately. These “pipe” bar clamps can be made to whatever length of pipe is chosen, thus the capacity is almost endless. In woodworking, protective pads or even wood scraps should be used to prevent marring of the clamped area.

No shop is complete without a few good clamps!

## Toon & Crossword

By  
Lee



Now Fred, I'm not that familiar with these HCR's, but I think it **might** be flooded

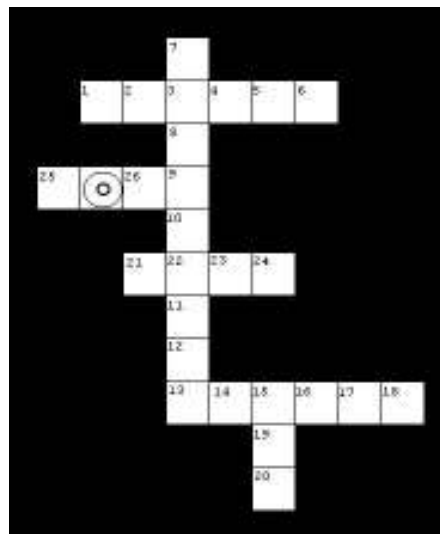
### Across

- 21. To \_\_\_\_\_ & to hold
- 1. Needed for stopping safely
- 25. This is \_\_\_\_\_ life
- 13. HCR's First Concern

### Down

- 15. Just \_\_\_\_\_ the good times
- 7. What we love to build

Make a sentence with these words  
Answers on Page 6



# **From the Workshop**

## **Notes On A Winter Project.**

by  
**Bob Kapela**

Last summer, I was looking for a Model T Ford running gear for a winter project. My Tree Farm activity slows down during the winter, but I try to keep busy, either in the woodlot or in the farm shop. I am partial to Model T's, having owned and worked on several, and have a good working knowledge of them, plus a lot of parts. I retired from Ford and spent many years working at the historic Rouge Complex in Dearborn, Michigan.

I finally located one in Indiana, about 200 miles from home. I purchased it, got it home, and put it in the machinery barn, until winter came. It was just the engine/transmission, the frame, with differential and wheels, but that was what I was looking for. My main relief was that the engine could still be cranked over and wasn't frozen. It had probably sat for decades.



In late November, I aired up the tires and pushed it into the shop. Opening the top oil level petcock showed that it was still full of oil, however when I removed the drain plug, nothing came out. Sitting for decades, the dirt in the oil settled to the lowest spot in the oil pan, and solidified. A hammer and screwdriver chiseled through this and the oil drained out. I have since flushed it out several times with oil changes.

Next I checked for compression. Looking through the 1/2" pipe thread spark plug holes revealed a couple of valves stuck open. Liberal use of a penetrating lubricant and positioning the camshaft correctly allows one to insert a thin punch through the spark plug hole and tap the stuck valves to the closed position.

Ten or twelve cycles of doing this freed up the valves and the engine had compression. Neither manifold had a gasket so I replaced those. I cleaned and readjusted the carburetor and installed a small gas tank from a Briggs & Stratton engine.

Next, new spark plugs, a complete new timer assembly, and new wiring were installed. I rebuilt a coil box, and four coils. I have a nice coil tester. A firewall from e-bay was installed, and a steering column from the spare parts on hand. The steering arm was bent and some parts were frozen. These items were all corrected. This all sounds like a lot of work, but I purchased the machine to keep busy in the winter, so I enjoyed all of it. Now it was time to see if the old jewel would run. I jacked up the rear wheels for safety, put some gas in the tank, hooked up a hotshot battery; set the spark timing lever and the hand throttle, and hand cranked it over.

Within a few minutes, the engine came back to life. Great news after many years of sitting in a barn somewhere! It sounded good with no knocks and little smoke, and the planetary transmission worked. I could only run it for about one minute at a time, as there was no radiator at this point. I found a halfway decent one on e-bay, did some re-soldering, and installed it, along with new hoses. A standard Model T has no water pump. It has a fan, which I rebuilt with a new shaft and bushings, and installed it along with a new belt.

As I was filling the radiator I noticed that two of the three freeze plugs, located under the manifolds needed replacing. One was missing, and one had a hole in it. I did not have a set of new ones on hand, but that is no problem on a Model T. Early ones had threaded freeze plugs, but after 1914 they were the same as now. I reached into my pocket and pulled out two nickels (5 cent coins), cupping them a bit by setting them on top of a  $\frac{3}{4}$ " socket and using a brass punch and hammer. They fit perfectly and then are flattened with the same punch enough to seal them watertight.

Model T's are fascinating to me. They put America on wheels. They are far advanced for their time (1908/1927), but the average farmer could do many of the repairs. I actually saw a "barn fresh" one with barbed wire fencing pieces being used for the spark plug wires.

I determined from the engine serial number that it is a 1926 model. In 1919, Ford first installed a self-starter. I installed a good starter in the engine and a new six-volt battery in the battery box near the rear wheels. It turned the engine over too slowly. When using a six volt system, the cables have to be heavy and the connections very secure.

The battery voltage read almost seven volts, but when the starter was engaged there was only 3.8 volts at the starter terminal. I found a poor (original) ground connection to the frame and replaced that by sanding the frame to get a nice shiny piece of steel and connected a new cable to it. I then took apart the 84-year-old push starter switch and found the copper connections badly corroded. I did some major cleaning to it and reassembled it. This cured the voltage drop problem and now the engine turns over reasonably well.

Next I had a local individual that repairs starters etc., out of his home shop for farmers, etc., rebuild the generator. It had been running with the output wire off, which is a no-no because doing this can burn out the armature. Lucky for me a brush was stuck open, preventing a burnout, and the generator was completely rebuilt for \$68.00. It is interesting on a Model T; the battery acts as the voltage regulator.

If you use the original six volt battery and set the third generator brush to output ten amps at nominal speed, by replacing the battery with a twelve volt one, everything will work the same, except the output will be five amps. It is too hard on the 1/2" starter shaft to use twelve volts though, in my opinion. Now I have a fairly good running platform that I can build up as a speedster or whatever design comes to mind. I am leaning towards a simple pickup and am building the seat platform as this is being written.

Bob Kapela

Next, replacing the transmission bands, relining the accessory rear brakes, building a seat and pickup box & applying for a new title in the State of Michigan...



Have Your Carriage Brakes For Safety

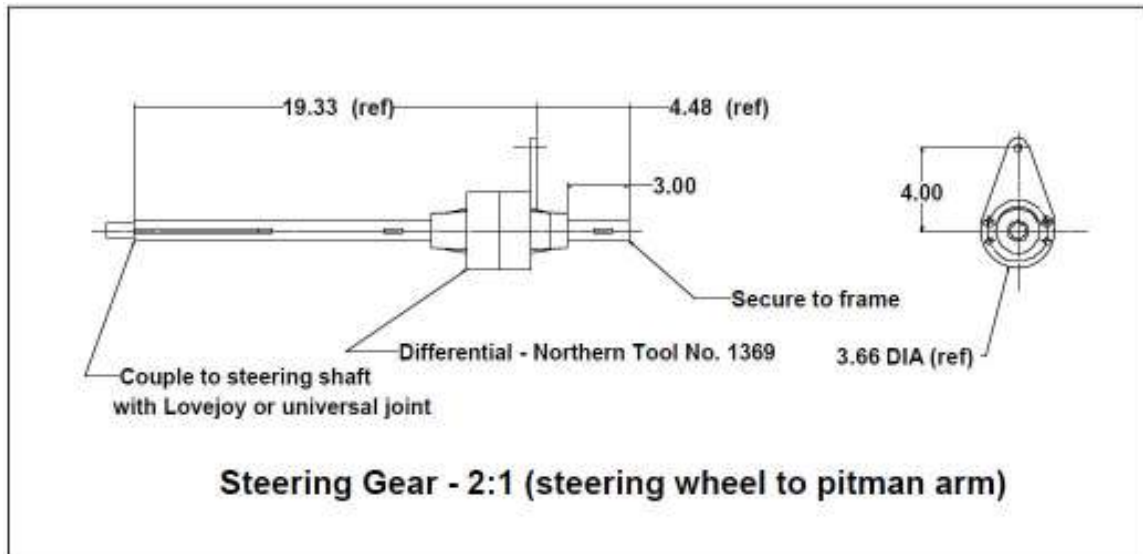
# Tech Talk

## Steering With A Differential How To Build A Unique Steering Box

By  
Everett Moore

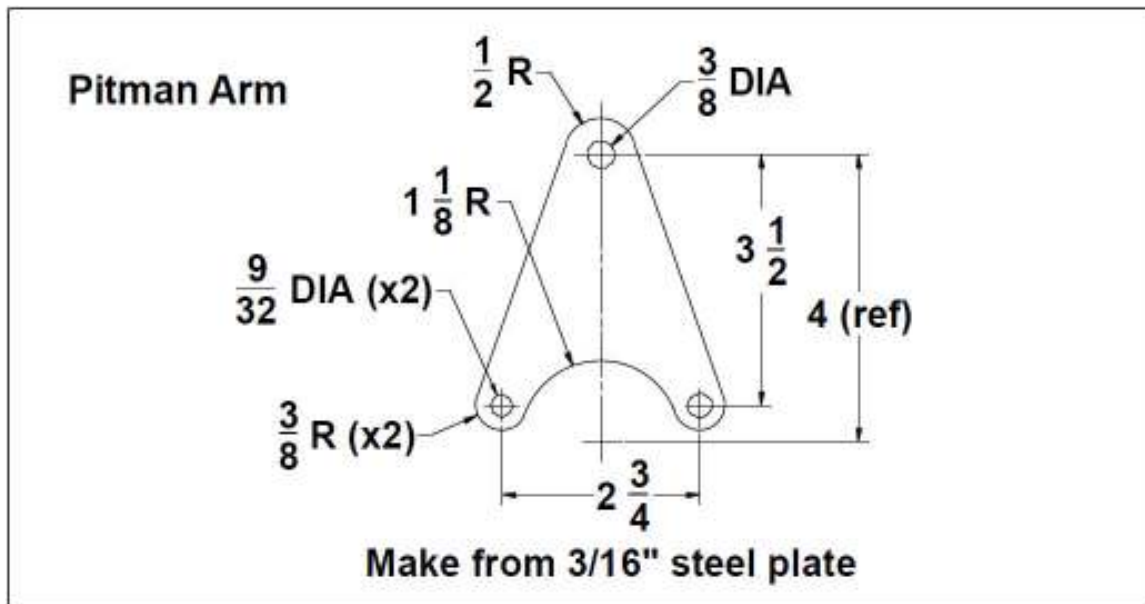
From its beginning, the Ford Model T had about the simplest and economical steering boxes made. Replica builders are beginning to deplete the junk yards of this item. From the early 30's, home-builders were adapting the Ford steering column to their sidewalk creations.

So compact was the Ford's little planetary gear-box, that the casual observer can be unaware that it is located directly below the steering wheel. It utilizes a planetary gear arrangement, providing a reduction. Still a bit "squirrely" to some, it is a far cry better than a straight, go-kart type, shaft/pitman arm with no mechanical advantage, except the length differences between the pitman arm and the spindle arms.



Model T men are quick to point out that, as the weight of the T increased, so did the ratio of the planetary gears. Through the life span of the Model T, the ratio went from 3:1 to 5:1.

Our design is based around a Peerless, go-kart differential, available from various suppliers. The area, where a sprocket would normally go, has a pitman arm attached. The drawing, accompanying this article, shows one such design. While the length is shown as 4", it should be as short as possible.



Although we're fixed with a 2:1 ratio, our differential steering box help's a lot. Try it — you'll like it!

Everett Moore

Reference: E&W Issue # 7

### Introduction of Another Builder & Plans Designer

Builders, I would like to introduce another builder & plans designer to you. His name is Bob Evans from Arkansas. Bob has been a Yahoo HCR Group member since April of 2008. Bob wrote to me recently and was interested as to how he could feature the plans of his two cars on the HCR Builders Site. My response was, "send me what you have", however, I don't know if I was quite ready to see all of his interesting creations.

Bob has his own site, that features his two cars, the "Puddle Jumper" & the "Youngmobile". Two very innovative cars that I think will interest some of our builders. I asked Bob to write a sort of story about himself, how he got involved in the small car hobby & a little about his background.

Bob has sent in the following article.....

## **Please Allow Me To Introduce Myself...**

**By  
Bob Evans**

**My name is Bob Evans. Lee has asked me to say some “stuff” about myself & the hobby. He has been kind enough to add me as a plans supplier on his website. I’m a 70-year-old retired auto & wood shop teacher from Southern California who retired to the Ozark Mountains of Harrison, Arkansas in 2000. My bride, Lynn & I have been married for almost 31 years & have 5 kids & 6 grandkids. My pension comes from 23 years of teaching but I’ve had many other jobs along the way. Mechanic, machinist, designer, fabricator, race car driver, service manager, service engineer for Renault, Inc, national training instructor for Shopsmith (the wood working tool people), taught high school & junior college automotive & wood working. Along the way I’ve owned several small businesses but my most favorite job of all was that of Cruise Director onboard the Mississippi Queen paddle wheel boat.**

**At about 14 years of age I built my first hot-rod. Since then I’ve lost tract. I’ve had rods, customs, sand buggies, dragsters & lots of show cars. I don’t tell you any of this to try & impress you but rather to show I’ve been blessed to be able to pursue what I considered my dreams, at least at the time. I’ve had a great life & I really appreciate that fact. I don’t think I would change very much even if I could.**

**Since I retired & moved to Arkansas, I built a 40’ x 60’ shop in the back yard, which is climate controlled, & pretty much became my second home. As most shops, mine certainly has way too much “stuff” & to many unfinished projects in it. I find that having someplace to go keeps my wife from killing me. I call it my “Toy Shop” & I spend a lot of time out there creating & building “stuff”. Along the way I take pictures & write up instructions on how you could build a certain project in your shop. At my age, I seem to have a very short attention span, so, I prefer to build something & move on to the next challenge or project. If you get a chance & would like to, please check out my two websites & look around to see some of the things I’ve done over the years as well as what I build today.**

**[www.bobs-toyshop.com](http://www.bobs-toyshop.com) and [www.puddlejumpercars.com](http://www.puddlejumpercars.com)**

**I want to thank Lee for this opportunity to be part of this group & if I can help any members out there, please don’t hesitate to ask. I’m not sure what that would be because I’m what I myself refer to as a “quick & dirty” guy, while some of you, are true perfectionists. I appreciate that but at my age, I don’t think I have enough time to perfect that trait.**

## **Items For Sale...**

With this HCR Newsletter Issue, we are adding something new. Items for sale will include only items related to the building of replica carriages, or in some instances, the whole carriage. The HCR Newsletter is only providing a format for builders to contact the sellers of such items & is not liable for items bought or sold through these ads...

Sellers reserve the right to sell items prior to HCR Newsletter being published...

Editor

## **HCR For Sale**

By Owner  
Warren Johnson



This is a special offer to the H/C builders who would really prefer to buy rather to build from scratch..... With that in mind then:

Left behind in the dust bin of time are a few examples of the Horseless Carriage. Among these, is this one of a kind hand crafted turn of the century carriage I call the 1903 "Warren". Not a replica of a FORD, but built to full scale in size and horsepower to the production 1903 Ford. The "Warren" Runabout was built using high quality birch, white and red oaks and other hard woods. Much of the brass is original to the period such as the bulb and reed horn, steering wheel, rein rail trim, driving lights { now electrified} and kerosene tail light an original from the 1909 Model T. At this 101st year, the tail light is in near original condition burning brightly.

This Horseless Carriage's motive power is a new 9 HP Tecumseh industrial engine with electric start mounted on a stiff under carriage using 1" by 2" steel box rails. Full range forward speed control from standing to about 10 MPH uses an industrial Hydrostat variable speed transmission driving to both rear wheels thru an intermediate differential transfer axle. Reverse is foot pedal operated producing a smooth secure stop. Front wheel alignment accommodates castor and camber adjustments. Final drive to both rear wheels is No. 50 stainless roller chain.

Driver control is provided by a steering wheel atop a solid brass column, hand lever throttle, two foot pedals and a hand operated Pullman lever parking /hill hold brake.

Chassis and wheels, with 22 quarter inch steel spokes are all powder coated, oven baked to a shiny hard finish. The 26 X 3 X 30 tires are the much appreciated Kendra brand.

The "Warren" has been a real head turner at local events.

This vehicle was not intended for general transportation on public roads and streets except for parade use.

### **Included...**

The purchase price includes a new single axle transport trailer especially set up for this Horseless Carriage with loading ramp and winch. Various photos are in the H/C photo album as "1903 Warren" & additional pictures / more info of the complete package available on request...

**TOTAL PRICE to HCR builders group only: \$6,500**

This sale will require the buyer to inspect the complete package prior to final payment and can be seen in Palmetto, Florida. Inspection will be by appointment only.

Direct questions to [cwjohnson73@hotmail.com](mailto:cwjohnson73@hotmail.com)

Thanks for looking,  
Warren Johnson



## **Gerry Hale "Pie Wagon" Wins Again...**

**"Best of Show" in Micanopy, Fl.**



### **\*\*CAR SHOWS, CAR SHOWS, CAR SHOWS\*\***

By  
Gerry Hale

**"If you builders aren't taking your "Pride and Joy's" to your local car shows, I think you are really missing out".**

**Since I finished my Pie Wagon in September of 2009 I will have been to a total of seven shows by the end of April and have had a great time at all of them.**

**The fun begins as soon as the people see me driving in with such a small trailer for a car transporter with the HCR decals on the sides. As soon as I drop the ramp, people come around to take a look and then the questions begin.**

**After I get set up, I have a display with a picture of an original Pie Wagon with some specifications and a picture of mine along with some pictures taken during construction. I wear my HCR hat and have HCR brochures for hand outs. Most of the people showing their cars are off sitting in the shade but I'm busy answering questions. Where did you buy this, how did you make that, what's this for ????? ... etc.**

**I have won an award of some kind at every show including "Best of Show" at the "Micanopy Classic Car Show" which is nice, but the most fun part is talking about my "Pride and Joy" Pie Wagon.**

**I may not always win Best of Show, BUT I think I always have the most photographed car.**

**So come on, dust of the carriage, polish up the brass and go have some fun.**

**At the Last Minute! Gerry took a top 20 in an AACA Show on April 17<sup>th</sup> ....**

**& "Best Antique" at another car show on April 24<sup>th</sup>...☺**

**CONGRATS on a GREAT JOB, Gerry !**

# **Building My First Car**

## **The 1903 Curved Dash Oldsmobile**

### **Part 4 Engine Selection**

**By: Terry Wright**

I remember reading some discussions on using a horizontal shaft engine in our build projects. I realize that most builders use a vertical shaft engine out of an old riding lawnmower. They are both plentiful and reasonably priced. I think using a horizontal shaft engine has many advantages.

I would like to both discuss how I came to the conclusion to use an unusual horizontal shaft engine, and what I think to be the pros and cons of this choice.

First of all, I do a few repairs for friends and neighbors in my shop. I had a neighbor bring in a 2002 Honda TRX 300 EX for some repairs. The rear axle assembly was totally shot. The parts alone for repair were over \$800.00. The Honda was otherwise in good condition. I ended up buying it for \$400.00. This engine is a 300cc and rated at 22.5HP.

I know some of you will say that is way to much power. It is indeed more than I need or will use. First, I adjusted the gearing to my needs. The rear sprocket had 37 teeth. I changed it to a 53 tooth. I live in North Georgia and it is quite hilly up here. I figured I needed the pulling power (torque), more than I needed speed. Also, I modified the throttle, so it limits only 1/3 power. I didn't want it to jump out from under me if I got on it a little quick. I also am using a peerless differential that is rated a max of 10hp. I should not be going over that with the limited throttle.

I have test driven the CDO before teardown for paint and I tell you it has plenty of go. It climbs the hills effortless. I got it into 3<sup>rd</sup> gear only once and that was fast enough for me. I drove it in a higher gear than needed because it allows the engine to really slow down and have a better sound while laboring. The test drive here at my home is either up or down hill. On level terrain, she should do quite well with less shifting.

## **Pro's & Con's**

The **Pro's** of using this type of engine / transmission set up:

1. The engine, 5 speed transmission, clutch, alternator, starter are all in one neat 100lb package. Eliminating the need to connect a clutch, transmission etc.
2. Connecting the drive sprocket from a horizontal shaft engine to the rear sprocket is a very neat and simple deal.



3. Most of the package weight is in the lower half. (Crankshaft, gears, clutch, alternator). The light part is at the top half (aluminum heads, piston). This helps give a lower center of gravity.
4. The engine is much taller than a vertical shaft engine, therefore it must be mounted lower in the frame to clear the body. At first I wanted to keep the engine as high as possible to try and hide as much from showing underneath. I looked at a lot of pictures of the original CDO and realized they also had a lot showing under the frame. A 20 ½ flywheel, large muffler and so forth. I lowered the engine down by about 3 inches more from my original location to lower the CG even more. It also helped in the alignment of the transmission sprocket with the rear end sprocket.

5. I used an idler sprocket to serve 2 purposes.

A... Keep slack out of the drive chain

B... To ensure the drive chain did not drag on the engine casting beneath the drive sprocket.

See photo below.



This is a view before adding the idler-tensioned. The lower part of the chain drags slightly on the chain guard.



This is after idler installation. The idler is on an arm with a spring connected to provide tension (barely visible)

6. If you purchase a used 3 or 4 wheeler, most likely you will be able to use the existing throttle and clutch cables as I did. Sure simplifies things.



Clutch and gas cables connected to the pedals.

The **Con's** of using this type of engine / transmission set up:

1. Harder to find used, sometimes more expensive
2. Carburetor is normally situated near the top of the engine, which makes a gravity flow fuel system harder to achieve. In some set ups an electric fuel pump may be required.
3. Fabricating the motor supports is a bit more challenging.
4. The engine I used mounted in 4 different locations, 2 lower and 2 upper. This is kind of the way it was mounted in the ATV supported below from 2 and hanging from above on 2. This method had to be used to give adequate clearance for the chain. I started with a regular type cross member support that came from the frame and under the engine, but it interfered with the chain. Note the hole in the center for draining oil from the engine.



5. I used 4 of these mounts from McMaster Carr. Part # 9376K65 they have 3/8" mounting bolts on both sides, 3/4" thick and 2" in Diameter. Cost is \$4.17 each. I am also using six for my body mounts.



Here you can see the chain-tensioning bolt. I just loosen 4 hex nuts (2 shown here 2 more in the rear) and turn the 3/8" bolt and it moves the engine forward to tighten the chain.



In the picture to the right, the low engine mounting is quite visible but provided certain advantages. After relocating the gas tank I was able to have a gravity fed fuel system & relocation of the fuel tank, to the left side of engine and not over the muffler. (Safer I think)



If you can find a used ATV at a reasonable price I would certainly recommend buying it and use all the parts you can in the build. The disc brakes you see above also came from the donor vehicle.

Enjoy the build!  
Terry

**Special PDF File**

As a final chapter (for now) on the fantastic builds coming out of Stu Martyn's shop in the land down under, we again have a supplementary PDF named "Building Of A Plague".

It can be found in the Newsletter Files as "Volume2issue3A"

**To All Readers...**

Don't hesitate, if you have an interesting bit of news for the other builders, send it in to the HCR News, so others can benefit from it...

Submit to [thev@centurytel.net](mailto:thev@centurytel.net)

My personal thanks, to the contributors of articles & pictures found in this Newsletter.

To the readers, we hope the information we present in the HCR Newsletter is beneficial, informative or enjoyable to you in some small way...

Keep on building...  
Lee Thevenet