

DIY Peddle Tractor

Introduction

I myself have worked on numerous projects, but like most of you here, I did it for my own pleasure and for the people I was doing the work for. But unlike some others, I never really documented my projects - or so I thought.

When I saw this contest this past week, I thought I'd share one of my plywood projects. Because like a lot of projects I did, documentation can be rather sparse so I worked on these a bit, to make it all more presentable here. I'll lay out the situation.

This happened a while back. Being single with a good job, good wages, and lots of nephews and nieces, some of them who I was sponsor (godfather) for, I always bought the kids something extra or special for Christmas. But it seemed that Christmas had become too commercialized. The kids open their presents, put the batteries in, press a button, and call it play - for that day and that's it. They probably got very little use out of it after.

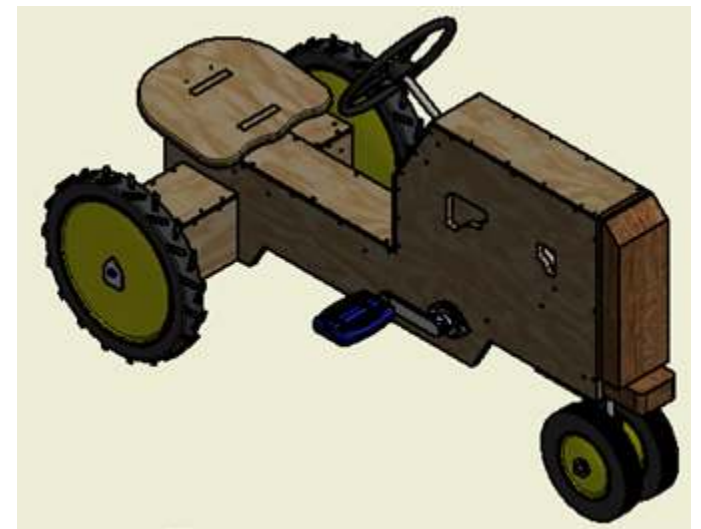
So I looked back and thought, "What did I have fun with?" As it turned out, it wasn't even a gift I received but one that was passed down from my oldest brother. An Allis Chalmers WD Peddle Tractor (made from cast aluminum), just like my Dad's AC WD-45. But now they were made from plastic, and you could only get John Deere. Those were not the type of tractors my Dad had.

I decided to make a tractor from plywood. My Dad thought it was a good gesture, but he didn't think the kids would play with it since it wasn't store-bought. I talked to my brother and he said that he would like one for his son. I thought, "What the heck. I'll make three."

At the time, I had access to a CNC router to cut this, but since I had to adjust the design to make this out of hand tools in stead of CNC equipment I'd design it that way.

At the time, I had a time of it obtaining parts, but now they're easily accessible on a web search. When it came time to assemble I had injured myself, fortunately my brother pick up and he did have a time because of an issue I had with the console and steering mechanism, he had the hard part. I since corrected it.

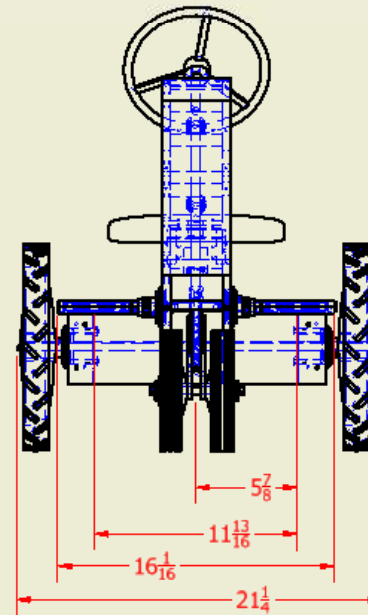
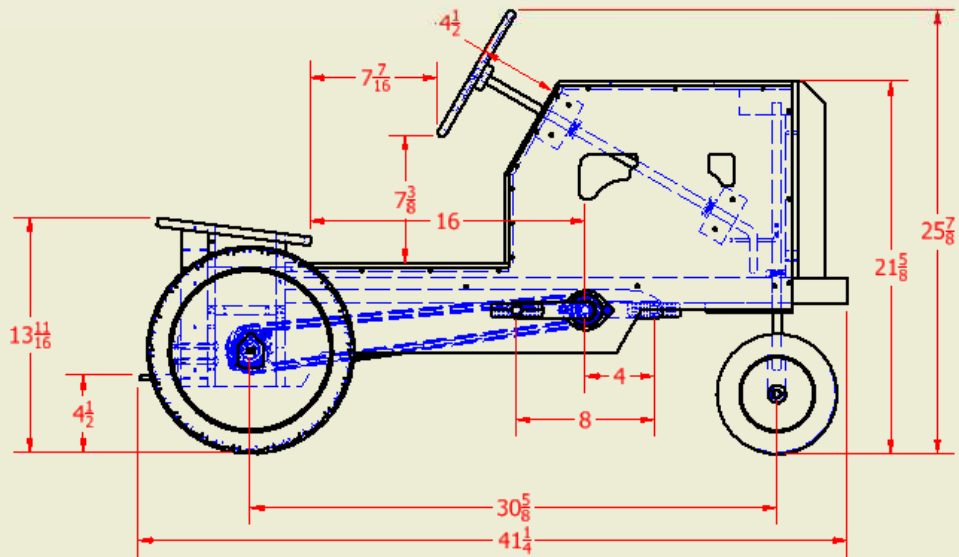
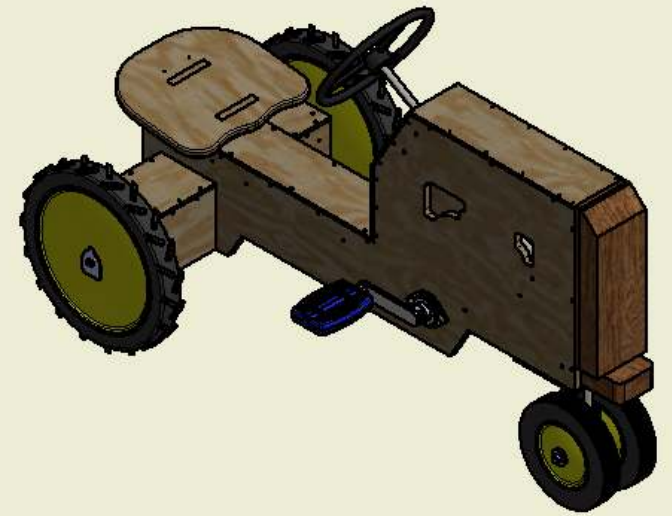
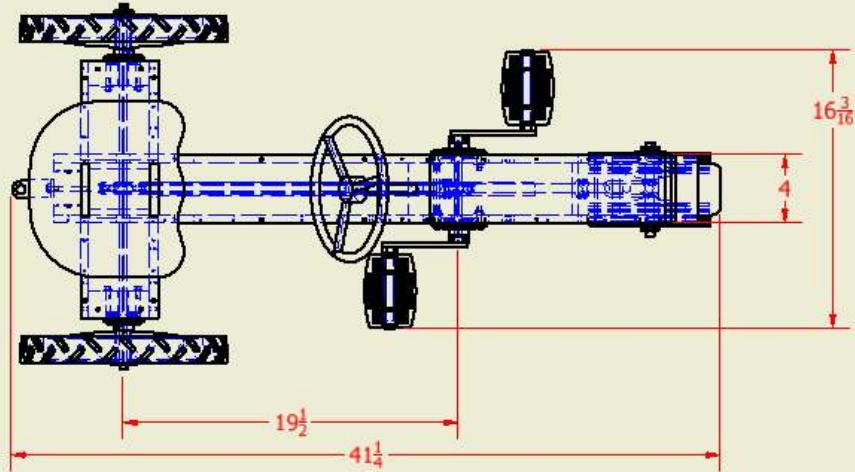
Here's the CAD model I made so at least you have a little more to go by, considering I didn't document my work much with pictures. Fortunately though there were pictures taken.



Tools Required

Tool	Size
Acetylene Torch	
Allen Wrench	9/64"
Angle Grinder	
Bandsaw	
Coping Saw or Jig Saw	
Crescent Wrench	
Drill Bit (Spade or Forestner)	9/32", 1/2", 9/16, 3/4"
Drill Bits	No. 24 (0.1520"), No. 38 (.1015"), 5/32"
Drill Motor	
Flat Head Screw Driver	
Hammer	
Hole Saw	1", 1-1/4", 1-1/2", 1-3/4" 2" Dia.
MIG or Stick Welder	
Needle Nose Pliers	
Open/Box End Wrench	7/16"
Plunger Router/Shaper	
Table Saw	
Wood Chisel	As Needed
Wood Rasp/File	

Over All Dimensional View



Procedures

Notes:

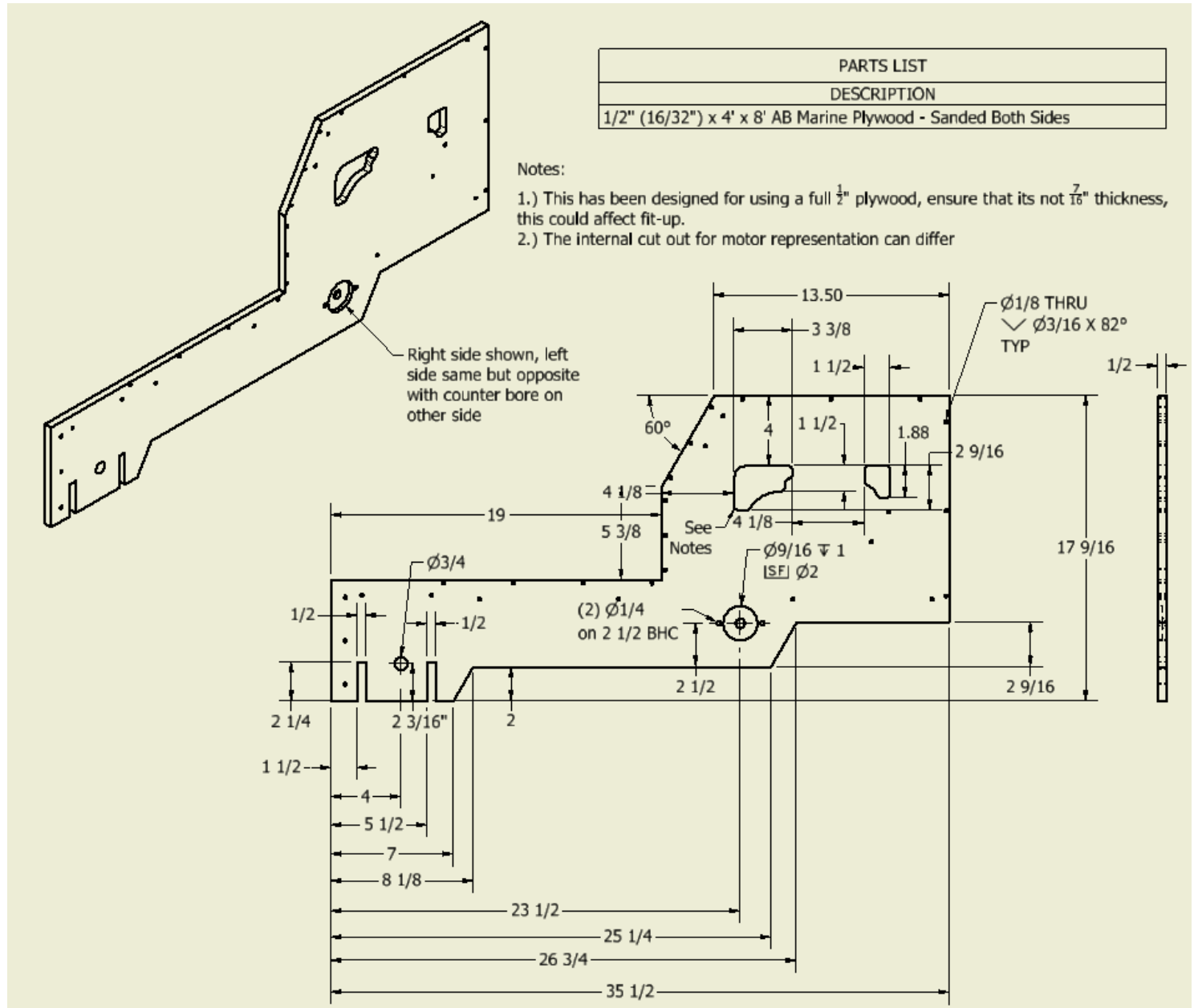
1.) If purchasing parts, such as the pedal crank or steering mechanism as an example, wait till the parts arrive to verify dimensions if you have to make adjustments

2.) The most difficult can fitting together the steering mechanism. The best is after the parts are cut, assemble the parts, removing one side, seat and rear axle top as shown in the picture

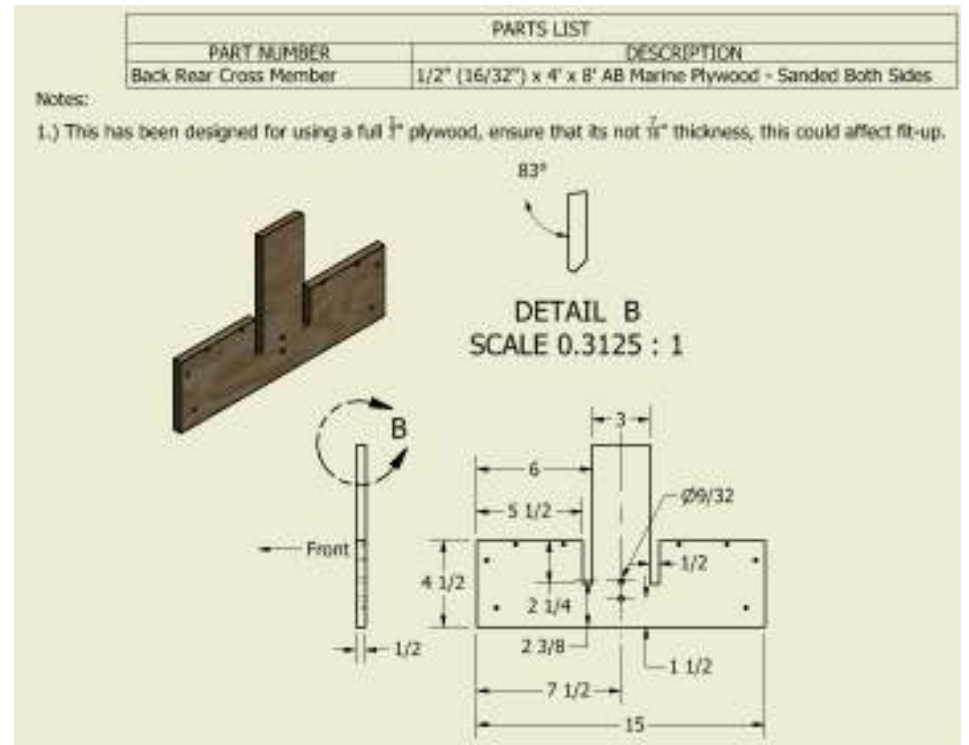
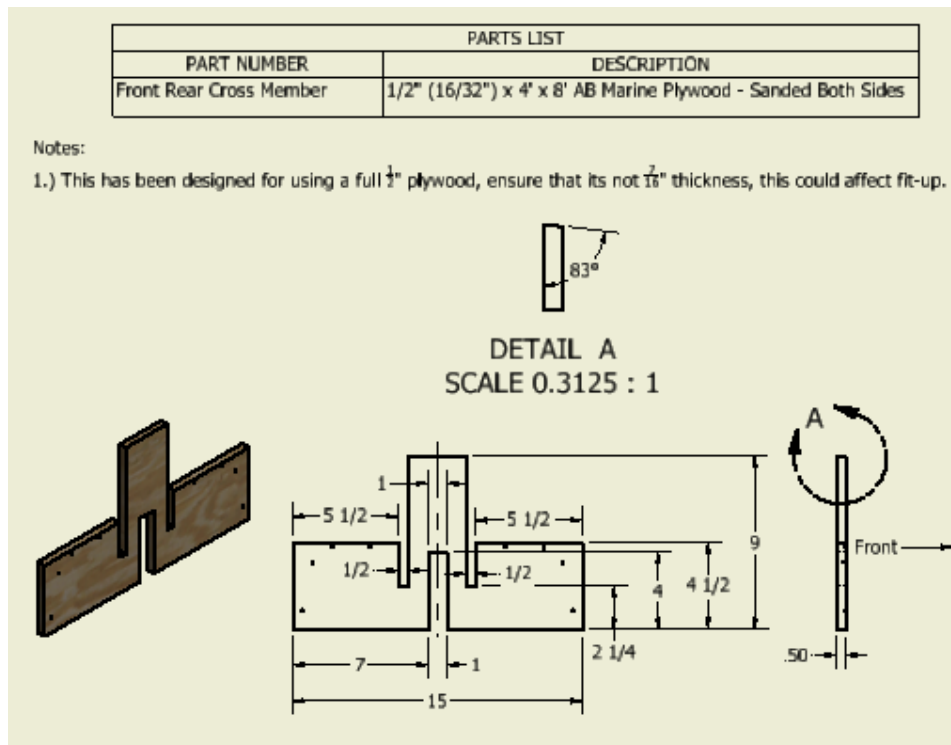
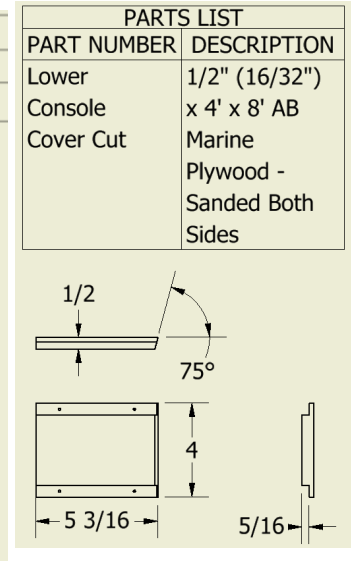
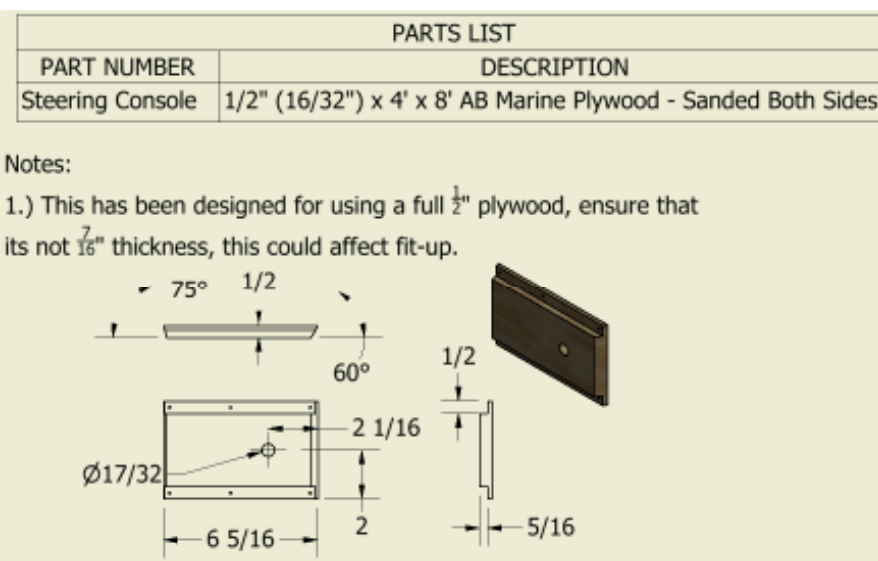
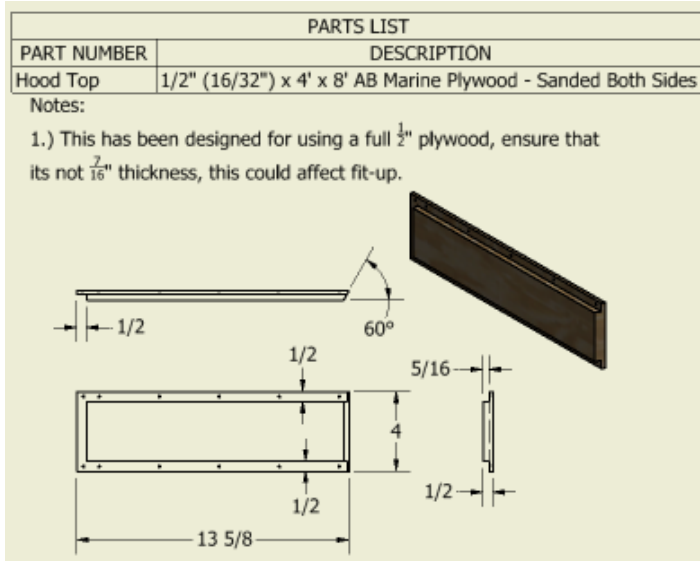
3.) most parts can be obtained at your local hardware store or online catalog.

Procedures:

1.) cut out the parts from the drawing (even though the plywood is sanded on both sides, it best to sand it again with finer sand paper for a better finish)



Dimensional Drawings of Cross members Hood Top and Console



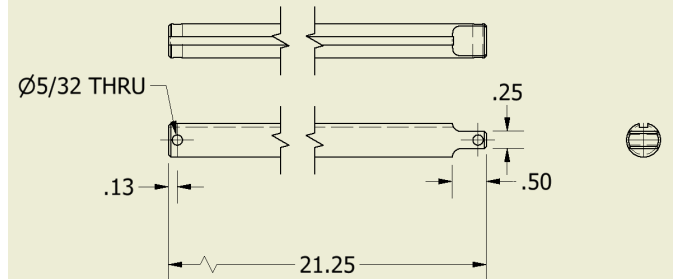
Metal Fabrication

2.) cut metal parts and fabricate as to drawing

3.) when assembling the steering column, you have to assemble the parts prior to final welding (mid frame and lower steering shroud

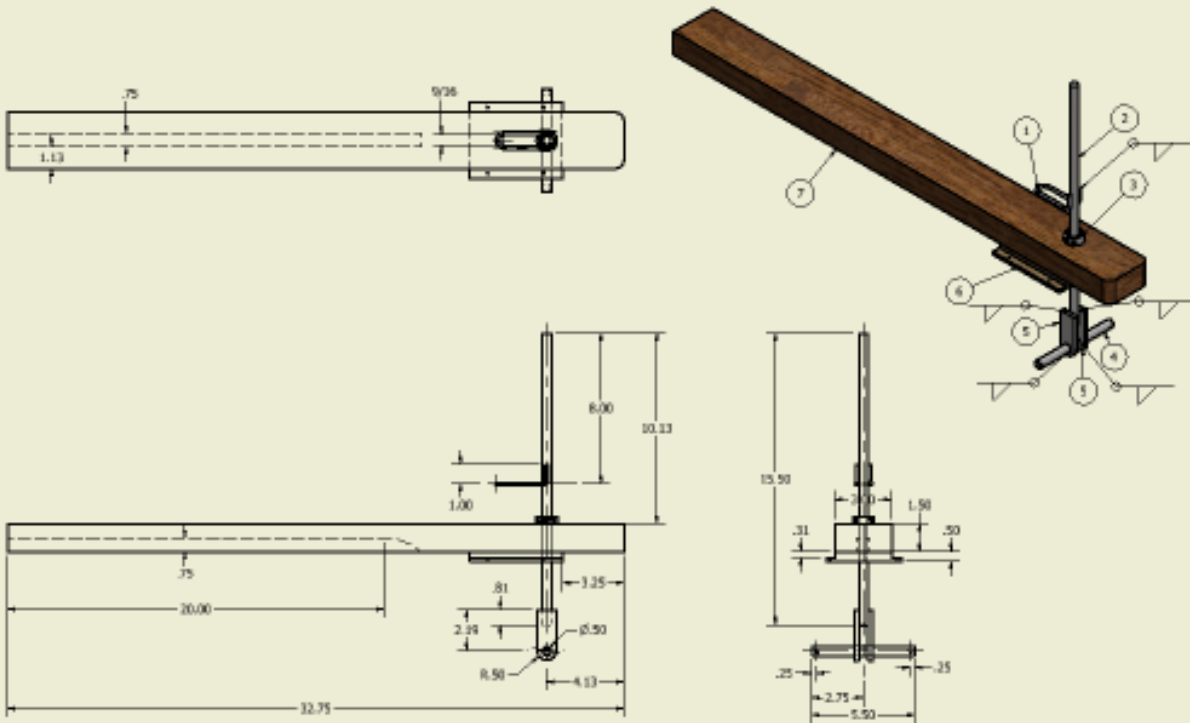
Rear Axle

PARTS LIST	
PART NUMBER	DESCRIPTION
Driven Shaft	Fully Keyed 1045 Steel Drive Shaft, 1/2" OD, 1/8" Keyway Width, 48" Stock Length



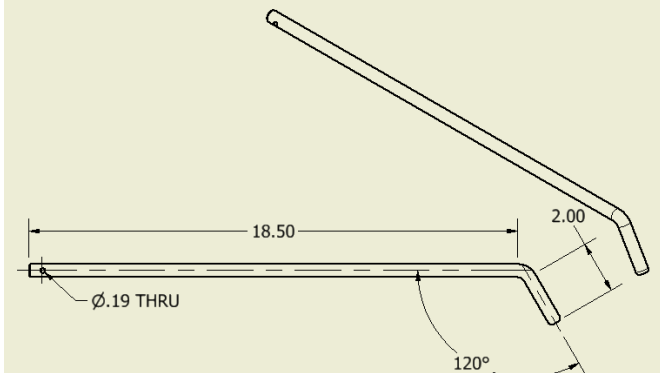
Steering Pivot Mechanism

PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	1327KS3	RND Bar: 3/16" Dia - 12" Long
2	1	1346K21	Steel Drive Shaft, 1/2" OD, 48" Stock Length
3	1	6439K14	Two-Piece Clamp on Shaft Collar
4	1	Front Axle	Steel Drive Shaft, 1/2" OD, 48" Stock Length
5	2	Front Axle Holder	FLT BAR: 1"x1/4" - C.S.
6	1	Lower Steering Shroud	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides
7	1	Mid Frame	Construction Grade Lumber



Steering Column

PARTS LIST	
PART NUMBER	DESCRIPTION
Steering Column	Steel Drive Shaft, 1/2" OD, 48" Length



Cut-Away View

4.) layout the right side on a table (outside facing down with the rear hanging off the table (this is using the right side as a template)

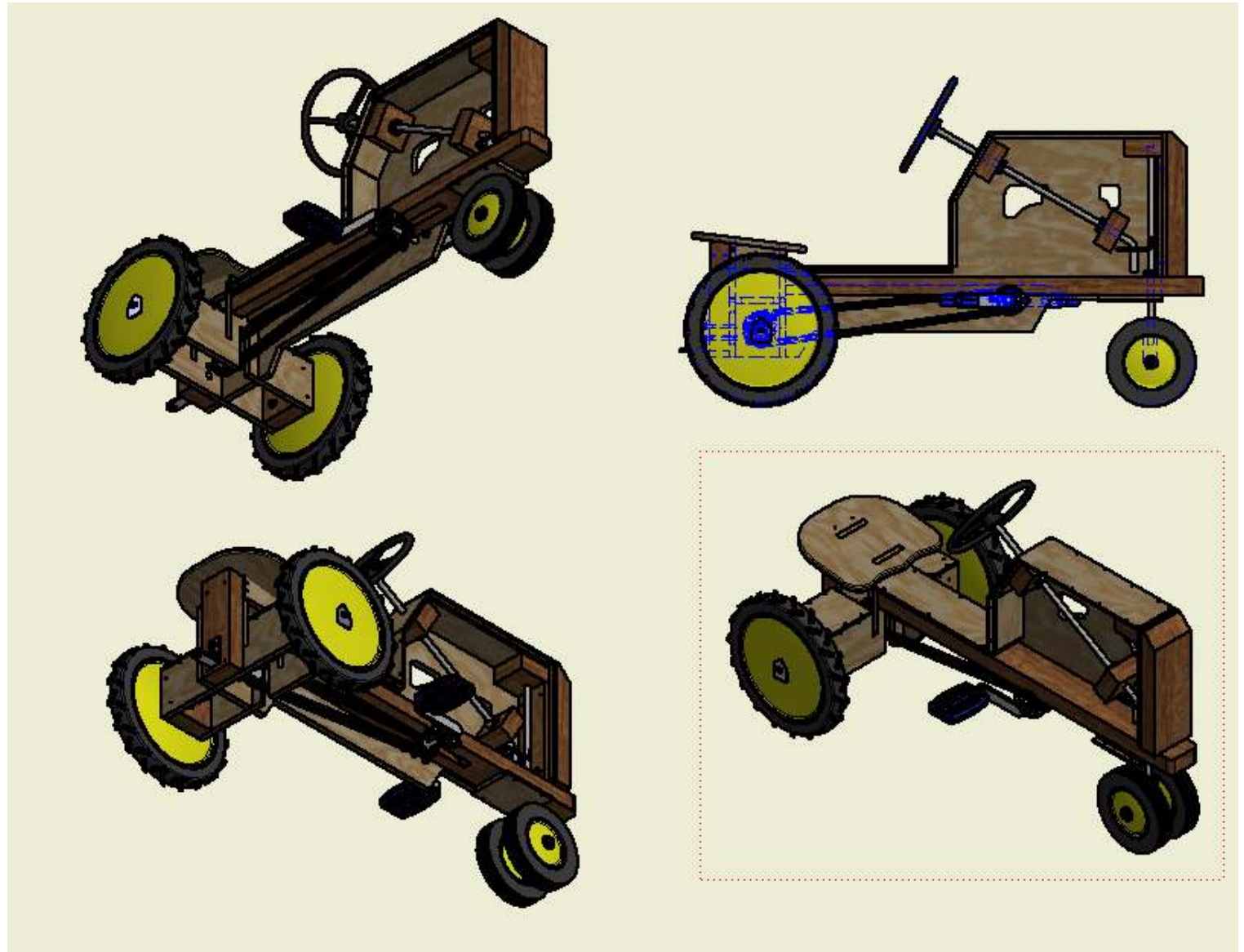
5.) assemble the outer edge, use minimal drywall fasteners, because these will be removed after a flip.

6.) lay in the internal steering alignment blocks, use the shafting as alignment jigs and leave in.

7.) test the steering mechanism by turning the column.

8.) after your satisfied with the mechanism tighten the locking collar on the column and post

9.) align the left side onto the outside border and complete fastening with screws periodically testing the steering to ensure the blocking did not move or shift.



10.) install the rear bearings on the left side

11.) install the pedal bearings on the left side

12.) flip the body on its left side and remove the right side

13.) install rear backer plate and hitch and fasten.

14.) install rear axle and 15 tooth sprocket, center rear axle and the sprocket onto the axle and tighten

15.) install the pedal axle and 9 tooth sprocket. Center the pedal axle and the sprocket on to the pedal axle and tighten

16.) reattach the right side and test the steering mechanism as you fasten it.

17.) install the rear bearings

18.) install pedal bearings

19.) install #40 roller chain

20.) install pedal arms and pedals

21.) install seat, steering wheel, rear and front wheel, keep in mind that only one rear wheel actually drives.

22.) break all sharp corner with a wood file or rasp.

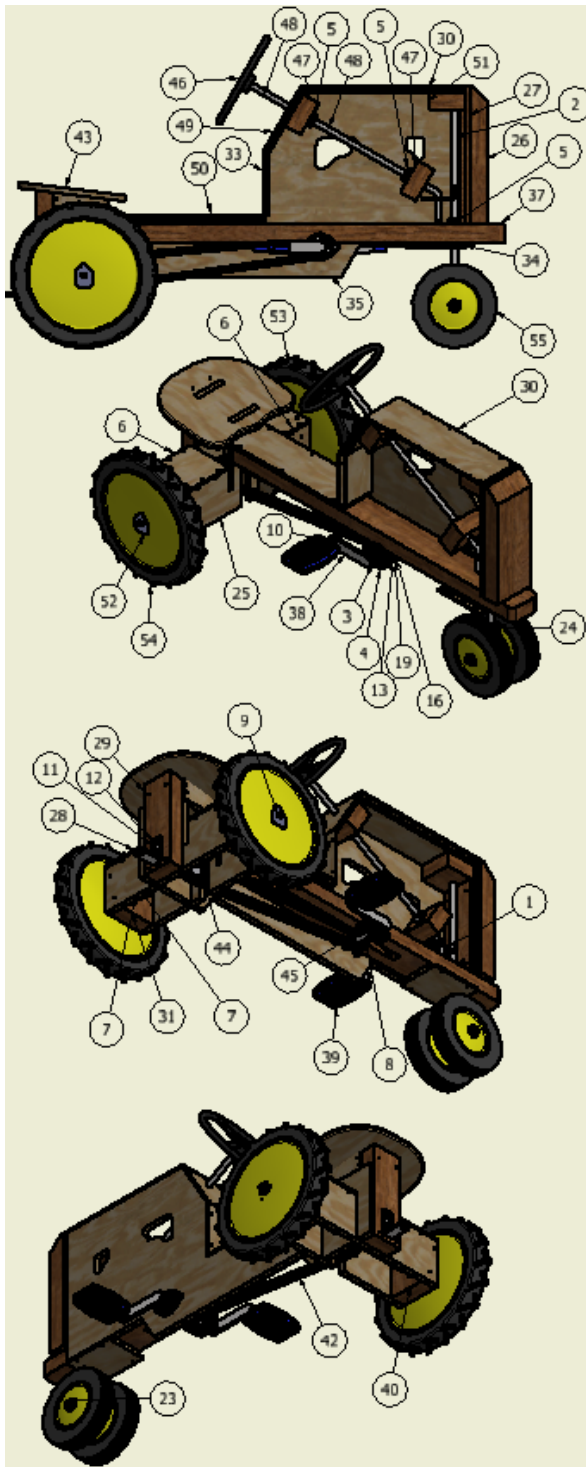
23.) paint you favorite color

24.) model stickers are available from an Internet search

Call Out

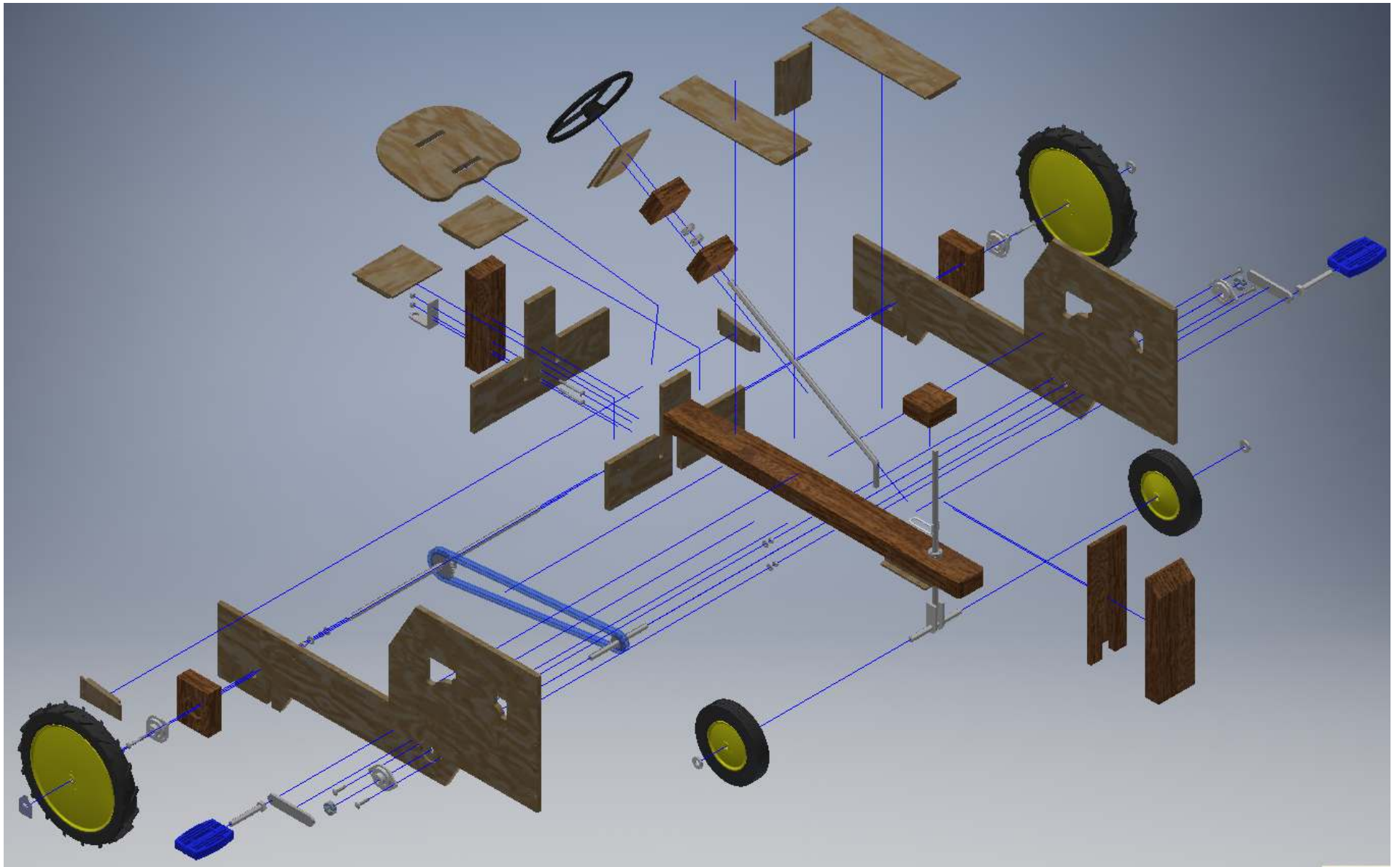
Note:

- 1.) Best to assemble with one side and seat removed for easier fit up.
- 2.) Remove all sharp corners with file.



ITEM	QTY	PART NUMBER	PARTS LIST	DESCRIPTION
1	1	1327K53	RND Bar: 3/16" Dia - 12" Long	
2	1	1346K21	Steel Drive Shaft, 1/2" OD, 48" Length	
3	2	3357K12	Two-Piece Clamp-on Shaft Collar with Keyway for 1/2" Diameter, Black-Oxide Steel	
4	4	5913K71	2-Bolt Flange Mount, for 1/2" Shaft Diameter	
5	3	6436K14	Two-Piece Clamp-on Shaft Collar	
6	2	Back Axle Cover	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
7	1	Back Rear Cross Member	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
8	1	Drive Shaft	Fully Keyed 1045 Steel Drive Shaft, 1/2" OD, 1/8" Keyway Width, 48" Length	
9	1	Driven Shaft	Fully Keyed 1045 Steel Drive Shaft, 1/2" OD, 1/8" Keyway Width, 48" Length	
10	2	Fastener: 1/2" - Modified	Bolt	
11	6	Fastener: 1/4 - 20	Hex Nuts (Inch Series) Hex Nut	
12	2	Fastener: 1/4-20 UNC - 2.5	Round Head Square Neck Bolt	
13	4	Fastener: Carriage Bolt 1/4-20 UNC - 1.125	Round Head Short Square Neck Bolt	
14	4	Fastener: Carriage Bolt 1/4-20 UNC - 2	Round Head Short Square Neck Bolt	
15	1	Fastener: Drywall Screw - 1-5/8" Length	Drywall Screw (Box)	
16	4	Fastener: Nut 1/4-20	Hex Machine Screw Nut	
17	1	Fastener: Steel Cotter Pin, 1/8" Diameter, 1-1/4" Length	Zinc-Plated Steel Cotter Pin, 1/8" Diameter, 1-1/4" Length	
18	3	Fastener: Washer 1/2	Washer	
19	4	Fastener: Washer 1/4	Washer	
20	4	Fastener: Washer- 1/4	Plain Washer	
21	1	Finished Bore Sprocket 15T: #40 Chain, 1/2" Pitch, 15 Teeth	Finished Bore Sprocket 15T: #40 Chain, 1/2" Pitch, 15 Teeth	
22	1	Finished Bore Sprocket-9T	Finished Bore Sprocket: #40 Chain, 1/2" Pitch, 9 Teeth	
23	1	Front Axle	Steel Drive Shaft, 1/2" OD, 48" Length	
24	2	Front Exle Holder	FLT BAR: 1"x1/4" - C.S.	
25	1	Front Rear Cross Member	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
26	1	Grill	Construction Grade Lumber	
27	1	Grill Backer	Construction Grade Lumber	
28	1	Hitch	Hitch	
29	1	Hitch Support	Construction Grade Lumber	
30	1	Hood Top	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
31	1	Left Axle Support	Construction Grade Lumber	
32	1	Left Side Seat Upright	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
33	1	Lower Console Cover	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
34	1	Lower Steering Shroud	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
35	1	Main Body - Left Side	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
36	1	Main Body - Right Side	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
37	1	Mid Frame	Construction Grade Lumber	
38	2	Pedal Arm	FLT BAR: 1"x1/4" - C.S.	
39	2	Pedal With Locking Tab	Purchased	
40	1	Right Axle Support	Construction Grade Lumber	
41	1	Right Side Seat Upright	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
42	1	Roller Chain: #40 Roller Change	Roller Chain	
43	1	Seat	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
44	1	Sprocket: 15T - #40 - 1/2" Finish Bore with Keyway	Roller Chain Sprocket	
45	1	Sprocket: 9T - #40 - 1/2" Finish Bore with Keyway	Roller Chain Sprocket	
46	1	3-Spoke Steering Wheel	Purchased	
47	2	Steering Blocks	Construction Grade Lumber	
48	1	Steering Column	Steel Drive Shaft, 1/2" OD, 48" Length	
49	1	Steering Console	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
50	1	Transmission cover	1/2" (16/32") x 4' x 8' AB Marine Plywood - Sanded Both Sides	
51	1	Upper King Pin Block	Construction Grade Lumber	
52	1	Wheel Drive Plate	Wheel Drive Plate	
53	1	Wheel: 12" Diameter	Lug Wheel	
54	1	Wheel: 12" Diameter	Lug Wheel	
55	2	Wheel: Front 7" Diameter	Wheel	

Exploded View



Presentation

When Christmas day came, the presents were too big to wrap, so we had them go into another room, and we set them up in the middle of the Kitchen.

And then we had them come out. It was a race.



This was one of the most enjoyable Christmas's we had. I stopped in a few months later, And I noticed, ;lug marks on the kitchen cabinets, I asked mom about that... she just laughed.

One more thing, you may wonder, "Why the silver horse paint scheme", and not Green, Red or Blue, Well.....



That's Grampa's colors of course.

