

Eagle Scout Leadership Service Project Workbook



Christian Bourgeois

Scout's name

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Date of birth

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Troop 64

Unit No.

Redwood District

District

Pacific Skyline Council

Local council

Carl Baier

Unit leader's name

155 Crescent Ave Portola Valley, 94028 CA

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(650) 851-3185

Telephone No.

Gerry Sauer

Unit advancement committee person's name

18 Sandstone Portola Valley, 94028 CA

Address

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Project Description

Project name: Prototype Wheelchair

Describe the project you plan to do.

(This box may be adjusted to fit your description.)

Abilities United is a nonprofit organization for children and adults with developmental disabilities. Abilities United has been looking for improvements to their waterproof wheelchair for children, teens and adults suffering from limited mobility. On October 11, 2008 I met with Chris Logan and Renate Olaisen to talk about the wheelchairs. At this meeting they told me that, all of the waterproof wheelchairs that they have used have either been very uncomfortable or hard to use and have short life cycles. They would like one that is also light enough for the caregivers to lift out of the pool when they are filled with water, in addition to being comfortable and easy to use.

I plan to research, design, and produce a prototype wheel chair, and then have some users try it out. I will make sure to produce one that is more comfortable, easier to use and has a longer lifetime than the ones that Abilities United already owns. The prototype will be made of PVC pipe with vinyl mesh as seats, with wheels that are either stainless steel or plastic. After final testing, I will make any modifications that we need to make. Abilities United will use that wheelchair, and have more made if they want.

What group will benefit from the project?

Abilities United

650-494-0550

Name of religious institution, school, or community

Telephone No.

525 East Charleston Road

Palo Alto

CA

94306

Street address

City

State

Zip code

My project will be of benefit to the group because:

(This box may be adjusted to fit your description.)

Abilities United is a non-profit group without significant funding. Currently they purchase wheel chairs from two vendors with limited product options. Abilities United has determined that the currently available chairs have ergonomic and human factors issues that make them uncomfortable and hard to use. This project will address these issues and build a prototype but will also deliver drawings for use in making future chairs as required.

The current wheelchairs are uncomfortable or hard to use. Some of the users stay on the wheelchairs for up to an hour. The new wheelchair will help all of the users during their hydrotherapy sessions. When the wheelchairs are filled with water it is hard for the caregivers to lift, because they are so heavy. The new design will aid the caregivers, by having more holes to let water out.

Another way that it will help Abilities United is that they will have Computer Aided Design drawings for the wheelchair and will be able to produce more when it is necessary, because the waterproof wheelchairs will need replacing in the future.

This concept was discussed with my unit leader on:

Gerald L. Sauer ASM
3/18/09 Advancement
Date

The project concept was discussed with the following representative of the group that will benefit from the project.

Representative's name

Fanth H O/isa

Date of meeting

3/28/09

Representative's title

Phone No.

Project Details

Plan your work by describing the present condition, the method, materials to be used, project helpers, and a time schedule for carrying out the project, the estimated cost of the project, and how the needed funds will be obtained. Describe any safety hazards you might face, and explain how you will ensure the safety of those carrying out the project.

If appropriate, include photographs of the area before you begin your project. Providing before-and-after photographs of your project area can give a clear example of your effort.

(This box may be adjusted to fit your description.)

Right now, the waterproof wheelchairs that Abilities United are using are old, uncomfortable and hard to use. To create a better one, I will borrow one of their samples, and reference much of that design. I will modify the areas needing improvement and produce a prototype of the new design that should address improved comfort and use. Then I will have people try out the new wheelchair and provide any advice they have to make it better. I estimate that this project will take around 75 man hours.

The materials that will be needed are pvc pipe and connectors, for the main structure of the wheelchair, wheels and vinyl mesh. We will also need bearings for the wheels to spin, and glue to hold the pvc pipe together. In addition, we need brakes, button snaps, so the mesh will stay, and grip tape for the footrest. I estimate that the cost of the project will be about \$675. I will request assistance and funds for the project from vendors and donors. Also I will ask certain stores such as Home Depot if they would donate supplies.

The people that will be helping are going to be scouts from Troop 64. This project requires leadership, because I need to make sure that everything is done correctly, and everything is the right size. I will have to get all the materials to build the chair. I also need to put together rides to my dad's machine shop.

Some safety hazards include using the tools. We will be using power tools that require safe use. When the scouts use those tools, I will make sure that a parent is watching them. There will also be supervision to make sure that people do not get hurt and make sure the scouts are using the tools correctly. We will all have on safety equipment such as gloves and goggles. I will give instructions on how to use the tools.

Schedule

Phase	Start	End
1. Research -:	2/1/08	:3/11/08

2. Design -:	3/11/08 :	4/11/08
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Others will give opinions on how to make the chair more comfortable, or easier to use, and help with the design. We will meet together and talk about how we can make a better wheelchair.

3. Prototype-:	5/1/08 :	6/1/08
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I am going to organize meetings to build the wheelchair. Everybody will help. I will lead them and make sure that everyone is doing what they need to do, but at some point, more people will become unnecessary, and unhelpful.

4. Test & iterate-:	6/1/08 :	6/15/08
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I will lead others in the chair testing sessions. People will be there to watch as people test the wheelchair, and then we will take it back to the shop and fix any flaws in the design. A large part of the leadership is just getting through all the work, and finishing on time.

5. Release to Abilities United-:	6/16/08
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"Before" Photographs



Approval Signatures for Project Plan

Project plans were reviewed and approved by:

Leah H. Gira 3/20/09
Religious institution, school, or community representative Date

Chad Baker 3/18/09
Scoutmaster/Coach/Advisor Date

Gerard L. Sauer 3/18/09
Unit committee member Date
Advancement

Elzy Duck 4/14/09
Council or district advancement committee member Date

Important Note: You may proceed with your leadership service project only when you have:

- ☐ Completed all the above mentioned planning details
- ☐ Shared the project plans with the appropriate persons
- ☐ Obtained approval from the appropriate persons

Carrying Out the Project

Record the progress of your project. Keep a record of how much time you spend planning and carrying out the project. List who besides yourself worked on the project, the days they worked, the number of hours they worked each day, and the total length of time others assisted on the project.

If appropriate, list the type and cost of any materials required to complete the project. If your original project plan changes at any time, be sure to document what the change was and the reason for the change.

Hours I Spent Working on the Project

The length of time spent should be as adequate as is necessary for you to demonstrate your leadership of two or more individuals in planning and carrying out your project.

Hours I spent: Planning the project 80 Carrying out the project 59

Total hours I spent working on the project: 139

Hours Spent by Scouts, Venturers, or Other Individuals Working on the Project

Name	Date	No. of Hours
Kellan Draeger	6/15/10, 7/12/10	6
Ryan Corley	7/12/10, 12/17/10	6
George Baier	12/17/10	3
Christopher Sauer	6/15/10	3
Ben Krause	12/17/10	3
John Howard	12/17/10	3
Alex Duff	12/17/10	3
Gordon Williams	12/17/10	3
Reed Williams	12/17/10	3
Connor Jordan	6/15/10	3
Jonathan Zdasiuk	12/17/10	3
Renate Olaisen	Many Occasions	18
Molly Hale	Many Occasions	10
Chris Logan	Many Occasions	10
Mark Taliaferro	Many Occasions	3
Phil Bourgeois	Many Occasions	32

Total number of hours others worked on the project: 112

For a grand total, add the total number of hours you spent on the project to the total number of hours others worked on the project: 251

Materials Required to Complete the Project

Type of Material	Cost of Material
Vinyl Mesh 4 yards	\$28
2" Pvc Pipe 50'	\$65
Rear wheels 24" by 1"	\$200
7" Caster wheels	\$100
Connectors for Pvc pipe	\$80
Adhesive for pipes	\$20
Wheelchair brakes	\$20
Bearings	\$10
Button snaps	\$5
Grip tape	\$5
Seatbelt	\$30
Miscellaneous	\$113
Total	\$676

Tools		
Tool	Quantity	Provided By
Table saw	1	All tools will provided by Mr. Bourgeois
Vertical knee mills	1	
Lathe	1	
Hand Drills	2	
Disk Sander	1	
Belt Sander Bead Blaster	1	
Sewing Machine	1	
Rhinoceros	1	
Socket Wrench	2	
Miscellaneous screw drivers	2	
Center Punch	1	
Band Saw	1	
Square	1	
Bar Clamps	3	
Strap Clamps	3	

List any changes made to the original project plan and explain why those changes were made.

(This box may be adjusted to fit your description.)

After giving Abilities United the first chair, they wanted some changes to be made. They wanted the seat mesh design to be changed in a couple ways to be easier for the users. For example they wanted there to be loops at the end of the strap so the user could tighten the strap much easier. They also wanted the footrest to extend out three inches extra so that the seat would be more comfortable. Abilities United also wanted the seat to be lower and wider, to accommodate a larger range of users. The footrest needed a new type of grip tape, the tires needed to be filled with water, and the swing arm needed to be strengthened.

While building the first chair we had decide to use a glue that is put in after the pvc is put together. In the end it was easier to be made, but it lacked the strength that was required to hold it together. The second and third chairs were built using a glue that is put in before putting the pipe together, and the glue that we had used the first time.

"After" Photographs

Including photographs of your completed project (along with the "before" photographs) helps present a clearer overall understanding of your effort.



Approvals for Completed Project

Start date of project:

Completion date of project:

The project was started and has been completed since I received the Life Scout rank, and is respectfully submitted for consideration.

Christian Bourgeois
Applicant's signature

3/12/11
Date

This project was planned, developed, and carried out by the candidate.

Kit Lillian
Signature of Scoutmaster/Coach/Advisor

3/12/11
Date

Signature of the representative of religious institution, school, or community

Date