

**Designers Name: Carl Columber**

**Project Title: Flashlight Design Concept**

**Version Number: 1, assignment 27**

**Date of Version: 05 December 2013**

**Product Overview:**

My flashlight design represents quality, durability, and dependability in a product. It is made from aluminum alloy to make it resistant to damage and corrosion. It uses LEDs to provide a brighter light source with longer operating hours than traditional incandescent lamps and uses a rechargeable battery for power, so it's a green energy product.

**Deliverables:**

- One Persona representing target market.
- Two sketches representing the 1<sup>st</sup> and 2<sup>nd</sup> design concepts.
- One foam core model representing the 2<sup>nd</sup> design concept.
- Two Solid Works 3D models representing the final design concept.

**Target Audience:**

My target market is married females between the ages 35 and 60 with teenage children. They are business professionals and earn an annual salary ranging between 65K and 125K. They are do it yourself home repair enthusiast and can fix most minor plumbing and electrical problems in the house and sometimes check the fluids in their car.

**Product Uses:**

My flashlight design is perfect for jobs that require multiple lighting needs and hands free usage. When a hands free repair is needed, the customer can attach the flashlight to a tripod and adjust the position of the light to the needed area. It is made of aluminum alloy so it is durable and is resistant to drops and dings that may occur when working from ladders. It has a magnetic base so it is ideal for mounting to the kitchen sink or under the hood of the car when performing simple task like checking the fluids. The batteries are rechargeable so it can always be ready for operation with no need for costly battery changes.

**Product Features and Benefits:**

- Aluminum alloy body for durability and corrosion resistance.
- Rubber strips to improve grip when handling.
- Push button power-switch for easy on/off operation.
- Rechargeable power source for lower operating cost and supports greener energy use.
- Power indicator to monitor power availability.
- LED lamps for long life, intense white light and low power usage.
- LEDs mounted on the front and side of the flashlight body for choice of direct beam or area lighting needs.
- Glow in the dark bands on the body make finding the flashlight in the dark an easier task.
- Tripod mounting port made into the body so the user can mount the flashlight for hands free usage.
- USB charging port for optional charging sources such as cars, computers and wall outlets.

**Product Materials:**

- Aluminum alloy 6061-T2 body construction, makes use of a light weight material with strength and durability.
- Nickel Metal Hydride 2.4VDC rechargeable battery pack, Provides low operating cost long life and is a reliable energy source.
- 8mm and 5mm Light Emitting Diodes, combined to provide an intense white light with minimal power consumption and long life.

**Product Distribution:**

My flashlight would be distributed by high end public and on-line stores. The average retail buyer is not willing to spend the \$50 -100 you will need for a premium light. This severely limits the amount of money the manufacturer can put into the best LEDs, circuitry, materials, CNC machining, etc.

**Competition:**

- The Maglite is an affordable quality flashlight made of aircraft grade aluminum alloy and uses LEDs for its light source.
- The Fenix UC40 is a quality flashlight that offers alloy construction intense lighting and rechargeable power source.

**Resources:**

“Light Emitting Diodes.” *Wikipedia.org*. Wikipedia. N.d. Web. 29 Sept. 2013.

“Materials.” *flashlight.wiki.com*. N.p. 12 June 2012. Web. 29 Sept. 2013.

Morris, Mike. “Women Tackling Do-It-Yourself Home Repair.” *Managemylife.com*. Manage My Life. 2009. Web. 29 Sept. 2013.

Norman, Don. “Designing For People.” *Jnd.org*. CACM. 2005. Web. 29 Sept. 2013

Staff. “Flashlight Casing Materials and Terms.” *Overstock.com*. N.p. n.d. Web. 29 Sept. 2013


Vorkoetter, Stefan Review: Pre-Charged (Low Self-Discharge) Rechargeable Battery Comparison, *stefanv.com*, N.p. February 22, 2009. Web. 29 Sept. 2013.

**Writer: Carl Columber**

**Persona No. 1 / Version no. 2 / 02 December 2013**

**Personas name: Mary Jones**

**“I need a flashlight that does not use disposable batteries, but is always ready to work. I also want a flashlight that is self standing and can be secured to surrounding objects so it can be used hands free.”**

	<b>Demographic Profile:</b> <ul style="list-style-type: none"><li>• 35 to 60</li><li>• Female</li><li>• Professional</li><li>• 65K to 120K salary</li><li>• MBA in Business Administration</li><li>• Married with college aged kids</li></ul>	<b>Psychographic Profile:</b> <p>In the busy world of today there is just not enough time to wait for someone to do what you can do yourself. So when things need repaired around the house, Mary is confident she has the know how to do the job. So whether she has a leaky faucet or a bad light switch, Mary is ready to take on the task.</p>
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**Product use scenario:**

There is a leak under the kitchen sink and Mary is a do it yourself enthusiast. With this in mind she retrieves a flashlight from the kitchen drawer and gathers a few additional tools before she starts the job. First, she leans into the cramped confines of the cabinet below the sink where the plumbing is concealed. She fumbles with the power button on back of the flashlight, but when she gets it in the on position, nothing happens. The batteries are dead so she has to replace them with new ones. After she replaces the dead batteries and gets the flashlight working. The beam is a dull yellow light and she is having trouble seeing in the dark space below the sink. She could use a flashlight that has an adjustable beam and that has a better source of light. Finally she identifies the location of the leak. She reaches for her wrench and attempts to tighten the connection but is unable to hold the wrench and the flashlight at the same time. She realizes her need for a flashlight that can be used without holding it in her hands. Again, her flashlight does not meet her needs. After much hassle Mary is able to get the pipe fixed, but the job could have been a lot easier if she owned a more versatile flashlight.

**Resources:** *Client Meeting Report.*