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Mechanical Engineering

Missouri University of Science and Technology (formerly UMR)

1234 Any Street

Rolla MO, 65401

February 13, 2013

Mrs. Elizabeth Roberson

Graduate Teaching Assistant, Technical Communication

Missouri University of Science & Technology, (formerly UMR)

500 W 14th St. HSS

Rolla, MO 65409-0560

Dear Mrs. Roberson,

Buell is currently distributing technical manuals for their product which is both lengthy and hard to navigate. With research and evaluation, the content of this manual could be improved greatly. This would allow for easier navigation as well as more informing.

I am requesting permission to submit a proposal to research this manual for possible improvements. Upon permission, I will begin conducting my research. If there are any questions or concerns, please contact me at (573) 364-9876. Thank you for your time.

Sincerely

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RESEARCH OF BUELL'S FIREBOLT XB9R MANUAL

Submitted to:

Mrs. Elizabeth Roberson

Graduate Teaching Assistant, Technical Communication

Missouri University of Science & Technology, (formerly UMR)

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Prepared by:

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Introduction

Buell is currently distributing technical manuals for their product, the Firebolt XB9R. This is a motorcycle filled with new concepts and innovations which most have never dreamed. These innovations have lead Buell to becoming one of the best handling motorcycles on the planet. One on the things that makes this motorcycle handle so well is the fact everything is designed to keep a low center of gravity, thus allowing more accurate turning. One of these innovations is the fuel tank design. This motorcycle doesn't have a traditional fuel tank; the fuel is actually stored within the frame. This contributes into lowering the center of gravity as well as provides space savings. Another innovation on this motorcycle is the oil tank. The oil is held in a hollowed out swing arm. This not only saves space but also keeps the reserve oil away from the engine, thus keeping it cooler. Any motorcycle that handles well also needs to stop well. Buell uses an inverted front brake system. By inverting the brake caliper, the disc brake contact area is greatly increased providing a greater torque, thus greater stopping abilities. These are just a few of the amazing innovations included in this motorcycle. Of course with innovations like these, new and even more difficult maintenance procedures are expected. With these procedures, an excellent manual needs to be created to have the capabilities of saving time and money. Buell has done a great job with their manual so far, but some users have experienced problems with understanding the logic in the trouble shootings steps provided in this manual. The step descriptions can sometimes give the readers a vague idea of performing the step, but lack some of the relevant information. Most parts on the motorcycle require a specific torque that the nut or bolt should be tightened to for that part to properly function. Most areas in the manual are without this important piece of information. This requires the reader to search in another section of the book, just to continue their work in the current section. Most of the problematic information could be enhanced by adding an extra line or two of wording and would save the customer time, money and frustration.

Plan

With research and evaluation, the content of this manual could be improved greatly. This would allow for easier navigation as well as more informing. The manual will be researched and improved based four main things; style, format, difficulty and content. Style is the first things to be researched. Does the style follow a professional manner or does the writer express opinion. Next, the formatting of the manual will be looked at. Does the format hinder the reader from finding valuable information? Then the manual will be tested on the difficulty of the content. With the steps currently in the manual, can the reader infer the material and know how to perform the task. Lastly, the content of the manual will be examined. Does the manual contain all the needed information to fully complete the task? The objective of this research is to improve this manual by allowing the reader to perform the task at hand with the least amount of effort possible.

Benefits

By researching and evaluating this manual, a more informative manual can be created. This would allow for anyone who works on a Buell to complete their objective in considerably less time and more accurately. Motorcycle shops who maintain these motorcycles can save a considerable amount of money due to the mechanics completing the tasks in a more timely fashion. This would also lower maintenance cost to the customer as well because their motorcycle will be in the shop for a shorter amount of time, hence less money per hour spent on the repair. If the manual is written well enough, more customers may even perform the maintenance themselves. They won't need to call a maintenance shop to ask simple questions.

Methods

The research of this project will be conducted by allowing non-knowledgeable as well as knowledgeable persons to read through a presented task in the manual in a set time. The persons will have time to examine the required task to its fullest extent to become as familiar as possible with the content. During the task, the person will be asked questions about the task, finding what information was inferred from the manual. This information will be useful in finding what content stands out and what knowledge the person obtains. The person will then be asked what materials were used to perform this task as well as the technical specifications required to perform the task. This will show what information is present in the steps, and what information is left out. Once the person is complete the task reading, they will then be asked what they feel should be added or removed to provide them with the necessary information to successfully complete that required task. This will allow for opinions from differing backgrounds and opinions to share their input. This will give a widespread input, giving many ways to improve the manual to perfect it for all skill levels.

Schedule

A schedule has been laid out to perform the research and evaluation in a timely manner. I plan on spending around six hours a week researching and evaluating this topic. These 6 hours will primarily consist of three hours in the lab and three hours outside the lab compiling information. The schedule has been mapped out over a course of ten weeks and has a prospected mid-research progress report that will be sent on Friday October 15, 2013 and competition date of Friday December 12, 2013. The schedule below shows specific time set for research, evaluation, and the date that the material will be completed.

Dates (2010)	Monday	Tuesday	Wednesday	Thursday	Friday
9/20 - 9/24	Usability Administration		Continue Usability		Continue Usability
9/27 - 10/1	Continue Usability		Continue Usability		Complete Usability
10/4 - 10/8	Compile Usability Report		Compile Usability Report		Usability Report Due
10/11 - 10/15	Compile Progress Report		Compile Progress Report		Progress Report Due
10/25 - 10/29	Continue Research		Continue Research		Continue Research
11/1 - 11/5	Compile Presentation		Compile Presentation		Presentation workshop
11/8 - 11/12	Conduct Presentations		Conduct Presentations		Conduct Presentations
11/15 - 11/19	Compile Recommendation Report		Compile Recommendation Report		Compile Recommendation Report
11/29 - 12/3	Recommendation Workshop		Recommendation Presentation		Recommendation Presentation
12/6 - 12/10	Recommendation Presentation		Recommendation Presentation		Recommendation Report Due

Materials

The materials needed for this research include basic items. The manual will be the first material used to conduct the research. This is where all the information will be gathered and what the test takers will be gathering their information from. Paper and pencils are needed for the test takers to take and record information from the usability testing. Printing resourcing will be used to print the questionnaires on the printer paper.

Budget

To conduct the usability testing basic materials are needed. Paper is required to for the usability conduction to have the answers printed and pencils are required for the participants to record their thoughts and answers while participating in the usability testing. A cost for printing the survey for usability testing is also included into the budget. With the time spent researching, a hourly salary is also included in the budget. Due to the fact that spare time will be spent on this project, an hourly wage of ten dollars per hour for the time spent researched. The table below displayed the projected budget.

		Cost	Quantity	Net Cost
Materials	Manual	\$90.00	1	\$90.00
	Paper	\$0.02	60	\$1.20
	Pencil	\$0.10	30	\$3.00
Pay	Hourly	\$10.00/hour	6hrs/week @ 10 weeks	\$600.00
Resources	Printing Cost	\$0.25	60	\$15.00
			Total	\$709.20