ENGR 10 – Reverse Engineering

Disposable Camera Project

Part I: *Reverse Engineering* (group assignment)

Introduction:
Engineering design involves learning how someone else has approached a problem to somehow better it.

Objectives:
1. Design component, material or manufacturing process of a new or existing product.
2. Analyze the components of a product through reverse engineering.

Goal:
- Disassemble the camera and perform an "autopsy" on it.
- Record your observations and findings to use in part II of the project.

Procedure:
You are asked to design a disposable camera improving the design and addressing the issue of the current camera.
You will be members of the design team.
Your task is to become the group who knows everything about the camera.
You will be the only one with this assignment and you will be responsible to answer any questions the other team members have.
Improve the design – functionality, material, cost, technology,…

Content:
1. Before taking the camera apart:

   - Examine the Camera and packaging
   - Describe what the Camera purports to do
   - How does it function?
   - What are its limitations?
   - What were the performance objectives?

2. As you take it apart:
   - Observe and list the design decisions the engineering team appeared to make as they satisfied the performance objectives
   - Pay particular attention to observations that effect cost
   - List the parts as you take it apart
   - Make a list of every part

- This is called a Bill of Materials (BOM) and is very important to the cost of the competitive design.

3. Describe how you believe the camera was assembled
   - What parts were put together first?
   - How were those "assemblies" put together?

4. List any other observations that you think will be relevant to your team as the team works towards improving the design of the camera.

   o Be careful! The camera has a flash circuit that can give you a memorable shock if you are not careful.

Deliverables:
Your group will deliver a 10 minutes Presentation
Your presentation should include all information you observed (your findings from the Content section)