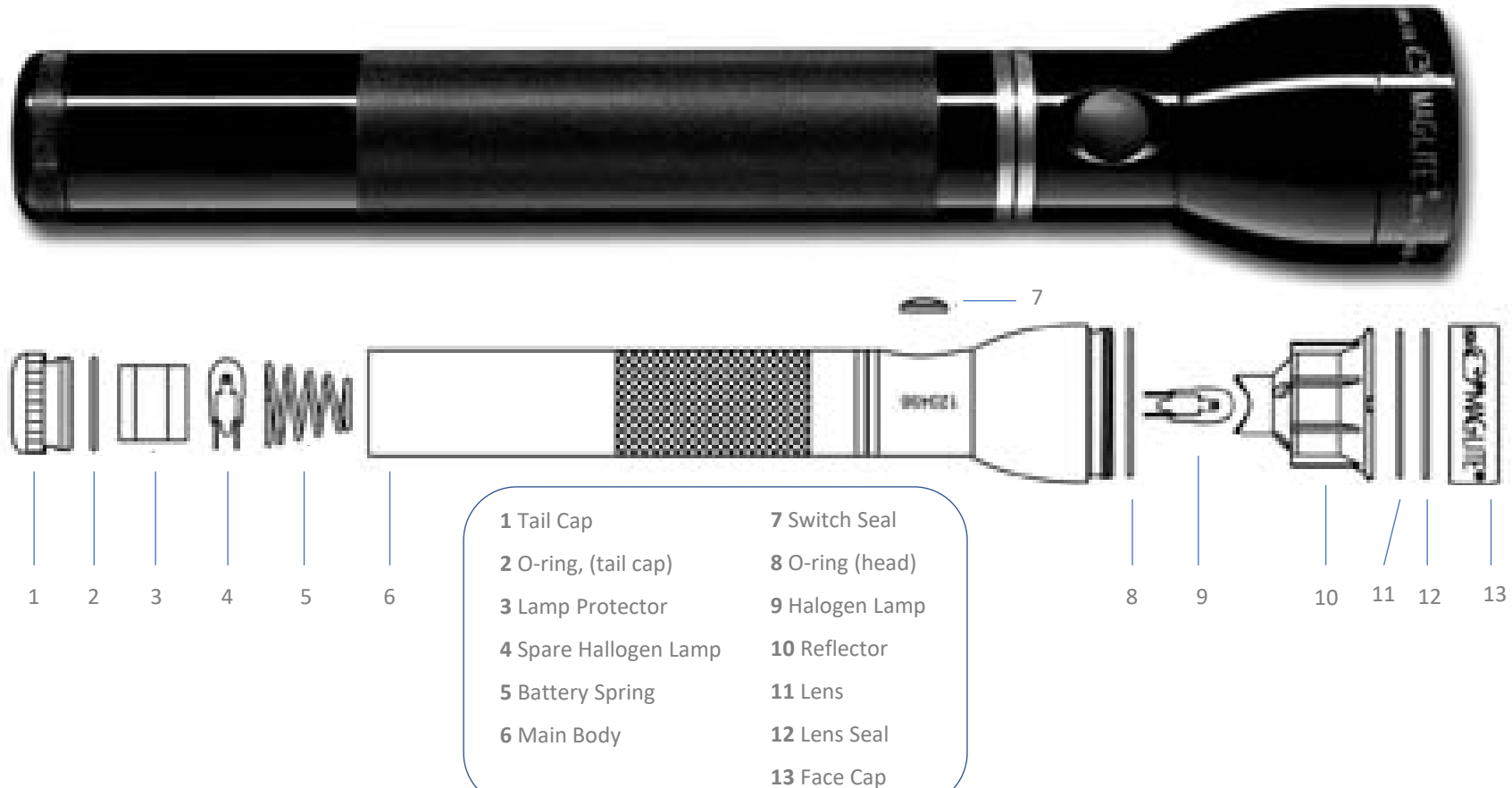


DFMEA Exercise



As part of a design review, you are tasked with developing a Design Failure Modes Effects Analysis (DFMEA) for a MAG-LITE 3D Work within your allocated groups and use the FMEA Template Provided.

DFMEA Exercise



Practical FMEA Implementation

1. Identify modes of failure (e.g. car won't start/stop)
2. Identify consequences & related systems for each mode
3. Rate the **Severity (S)** of each effect
4. Identify potential root causes for each failure mode
5. Rate the **Probability of Occurrence (O)** of each root cause
6. Identify process controls and indicators (e.g.: brake pad wear sensors or tell-tales)
7. Rate **Detectability (D)** of each mode/root cause
8. Calculate risk priority ($S \cdot O \cdot D$) and criticality ($S \cdot O$)
9. **Use design to mitigate high-risk or highly critical failures and re-evaluate to ensure goals have been achieved**

Severity Rankings

RATING	DEGREE OF SEVERITY	RATING	DEGREE OF SEVERITY
1	Customer will not notice the adverse effect or it is insignificant	6	Significant customer complaints likely due to poor performance
2	Customer will probably experience slight annoyance	7	High degree of customer dissatisfaction
3	Customer will experience annoyance due to degradation of performance	8	Very high degree of customer dissatisfaction and/or severe impact to the company
4	Customer dissatisfaction due to reduced performance	9	Customer endangered due to unsafe conditions with warning, significant loss of revenue, or violation of government regulations likely
5	Customer is made uncomfortable or their productivity is reduced	10	Customer endangered due to unsafe conditions without warning, significant loss of revenue, or violation of government regulations definite

Occurrence Rankings

RATING	LIKELIHOOD OF OCCURRENCE	RATING	LIKELIHOOD OF OCCURRENCE
1	Likelihood is remote	6	Moderate failure rate
2	Low likelihood	7	Relatively high failure rate
3	Infrequent failures	8	High failure rate
4	Occasional failures	9	Almost certain
5	Relatively moderate failure rate	10	Certainty

Detect-ability Rankings

RATING	ABILITY TO DETECT	RATING	ABILITY TO DETECT
1	Almost certain that the potential failure will be found or prevented before reaching the next customer	6	Controls are unlikely to detect or prevent the potential failure from reaching the next customer
2	Likely that the potential failure will be found or prevented before reaching the next customer	7	Poor likelihood that the potential failure will be detected or prevented before reaching the next customer
3	Low likelihood that the potential failure will reach the next customer	8	Very poor likelihood that the potential failure will be detected or prevented before reaching the next customer
4	Controls may detect or prevent the potential failure from reaching the next customer	9	Current controls probably will not even detect the potential failure
5	Moderate likelihood that the potential failure will reach the next customer	10	Absolute certainty that the current controls will not detect the potential failure