# Terminology

## Reliability

Probability that a piece of equipment/component will perform its intended function satisfactorily for a prescribed time, under stipulated environmental conditions

## Safety and Security

Safety is freedom from accidents and losses

## Failure

opposite of Reliability
- Early
- Random

## Risk

Hazard level combined with likelihood of an accident and exposure

## Accidents, Incidents and Hazards

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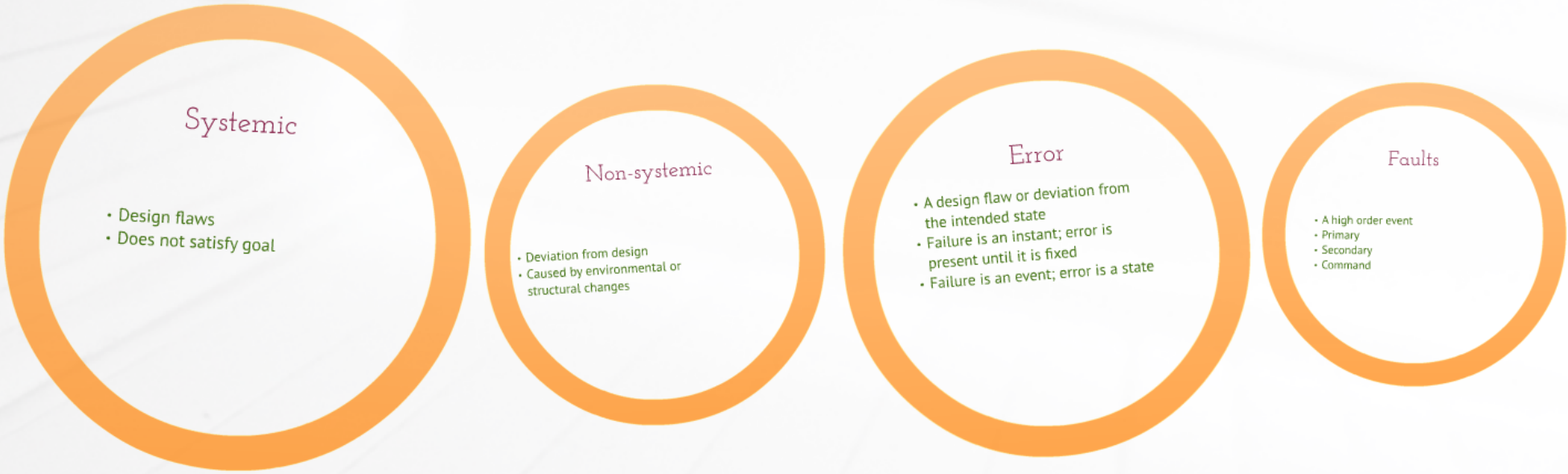

# Systemic

- Design flaws
- Does not satisfy goal

- Dev
- Cau
stru

# Non-systemic

- Deviation from design
- Caused by environmental or structural changes

# Error

- A design flaw or deviation from the intended state
- Failure is an instant; error is present until it is fixed
- Failure is an event; error is a state

# Faults

- A high order event
- Primary
- Secondary
- Command

# Accidents, Incidents and Hazards

## Hazard

A state or set of conditions that will lead to an accident when combined with other environmental conditions

- Defined with respect to the system's environment
- Depends on where the boundaries are drawn
- Likelihood is evaluated qualitatively or quantitatively
- Level determined by severity and likelihood

## Accident

An accident is an undesired and unplanned event that results in a specified level of loss

## Incident

Undesired event which has little or no loss

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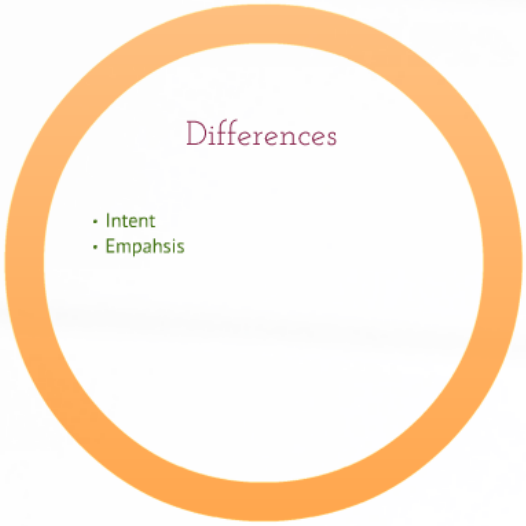


# Differences

- Intent
- Empahsis

# Similarities

- Threats or risks
- Protection against losses
- Important
- Regulated

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# Conclusion

Although a bit tedious terminology is necessary for good communication within the engineering field. As such it is important that students understand and effectively use correct terminology to enable progress towards solutions.

## Reference

Leveson Chapter 9

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