





[REDACTED]

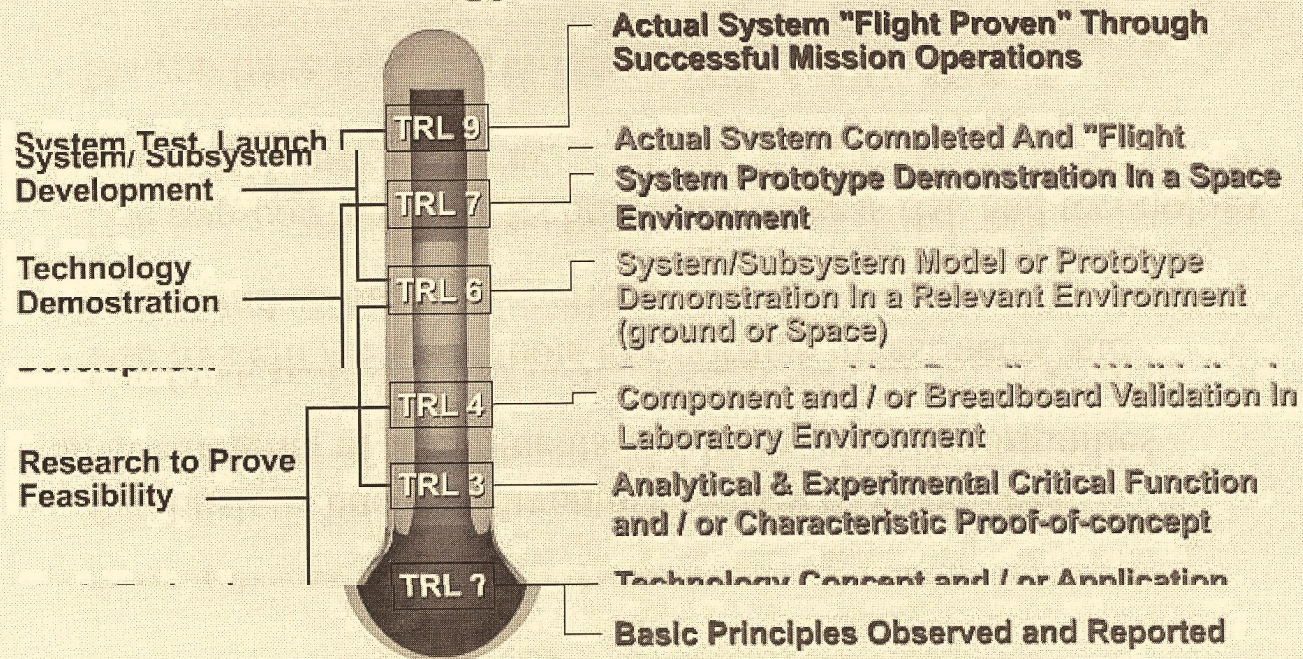
- ✓
- ✓
- ✓
- ✓

# A long record of methods

---

v

## Technology Readiness Level Scale



# ESA standards: ECSS

---

# Steps and Tasks in the Risk Management Process

Define risk management

# Implementation

---

$\emptyset$

$\emptyset$

$\emptyset$

$\emptyset$





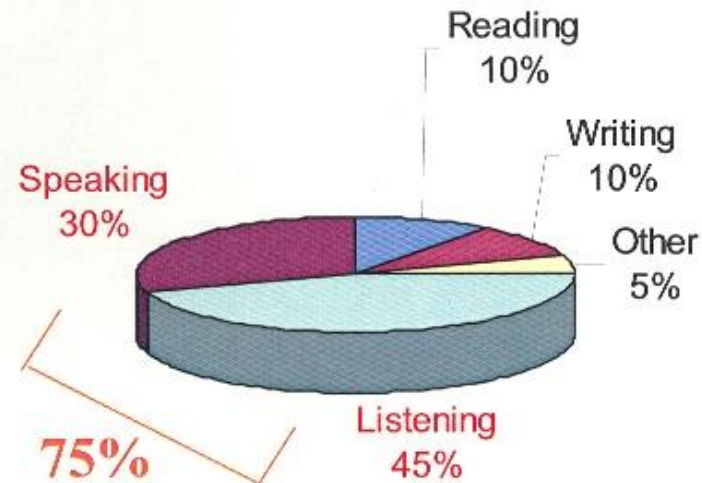
## **Normalization of Deviance.**

# Project Communications

Project Managers spend roughly 75-90% of their work time communicating

*“One’s effectiveness is determined by one’s ability to reach others through the spoken or written word... perhaps the most important of skills.”*

- Peter Drucker



§

## **Required Skills For Systems Engineers**

- **Broad View and Perspective on Systems and New Concepts**
- **Capacity to Synthesize Not Just Analyze**
- **Broad Range of Technical Understanding and a Very High Degree of Intellectual Curiosity**
- **Strong Ability to Effectively Communicate with Customers, Disciplinary Technical Experts and Senior Management**
- **Ability to View and Understand a Problem or System from Top Down Perspective: Identify and Focus on Critical Issues**
- **Broad Range of Work Experience**
- **Ability to Provide Team Leadership**
- **Ability to Structure and Conduct Reviews as Required to Meet System Requirements and Operational Performance**
- **Good Understanding and Use of Systems Engineering Tools**
- **Understanding of Past Failures and Lessons Learned and Applying to Current and Future Programs**

## Lessons learned

- Should be written by System Engineers and Key Senior Discipline engineers.
- Should not be Edited by Management
  - Trivialize what they do not understand or
  - Omit management mistakes.
- Communicating these Lessons Learned to the Workforce is a difficult problem.
- Advanced Internal Training Program should Incorporate Lessons Learned



∅

∅

∅

∅

∅

∅



∅

∅



∅

∅

∅

∅