



**YOUR ADVANTAGE.
AND THEN SOME.**

Managing Complex Programs

MG John W. Holly, USA (Ret.)

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Theory vs. Practice

- **Challenges**
 - **Technical Complexity**
 - **Multiple Interfaces**
 - **External Factors**
- **Reality**
 - **Dynamic not Static**
 - **2d (and 3d) Order Effects are important**
 - **Governance Model**
 - **Decision Making is Required**
 - **Capabilities Based drives *Personal* accountability**
 - **Agility is an advantage**
 - **Focus on what is really important**

Expectations

- **Technical Competence**
- **Management Competence**
- **Leadership**

"Leadership is the art of accomplishing more than the science of management says is possible."

GEN Colin Powell

Technical Competence

- **Understand the product; not just the technology**
- **Use all of the tools available**
- **Focus on the margins**
- **Maintain rigor in the change control process**
 - **What is a class 2 change?**
 - **Deep dive audits to validate class 2 changes**
- **Document trades well**

A capability-based approach does not obviate the need for disciplined systems engineering.

Management Competence

- **Absolute Honesty**
- **Focus on the problem *and the solution***
- **Be a “Thought Leader”**
- **Manage technology**
 - Hurdle, barrier, or breakthrough?
 - Brutal honest – be your own worst critic
 - Establish a cut off plan for ideas that do not work
- **Know the difference between data, information, and judgment**
- **Common Enterprise Metrics**

Curiosity decreases as a test event nears.

Leadership

- **Use technology as an enabler – it is not a substitute for leadership**
- **Harness technology – do not become a slave to it**
- **Identify problems *and* follow through with solutions**
- **Influence investment decisions**
- **Look beyond what you do well – focus on adding value**

If everyone is thinking the same; no one is thinking...

Risk Based Leadership

- **Manage risk – do not simply monitor it!**
 - **Be aggressive**
 - **Ask questions – what could have happened, and why did it not?**
- **Follow careful planning with deliberative execution**
- **Be a leader: Swift ... decisive ... sure**

To achieve great things, one must take risks.

Risk in Defense Programs

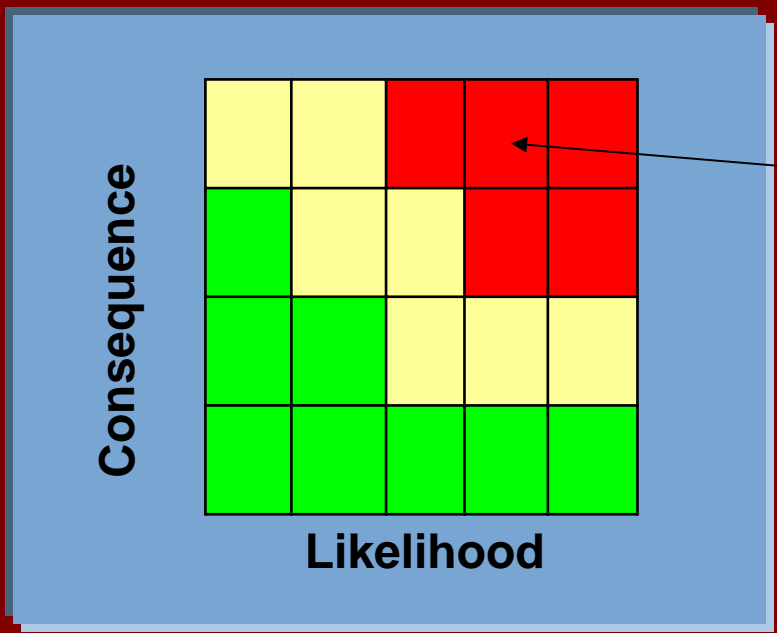
Consequence

Yellow	Yellow	Red	Red	Red
Green	Yellow	Yellow	Red	Red
Green	Green	Yellow	Yellow	Yellow
Green	Green	Green	Green	Green

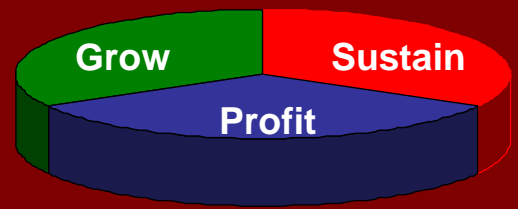
Likelihood



Change Management



Inability to control Change in Vendor & Subcontractor base



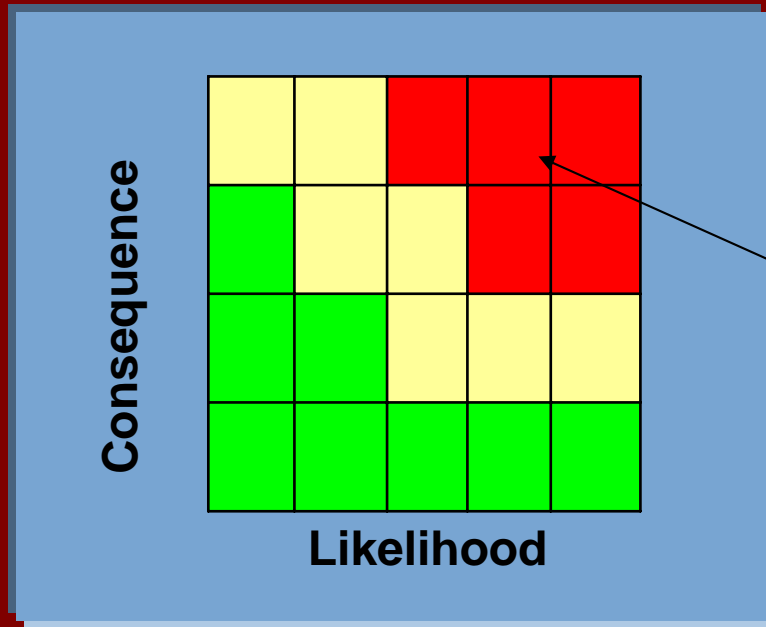
**Contributing Factor:
Regulatory Change Rate**

Case Study: Subcontractor Change Management

ATACMS
Insulation de-bond

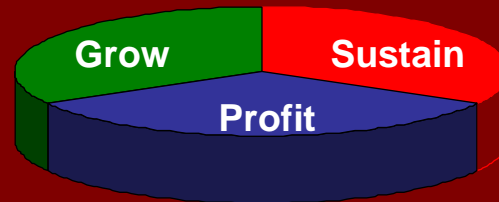


Configuration Management



Lack of Configuration Management Rigor

**Contributing Factor:
Increased System
Complexity**

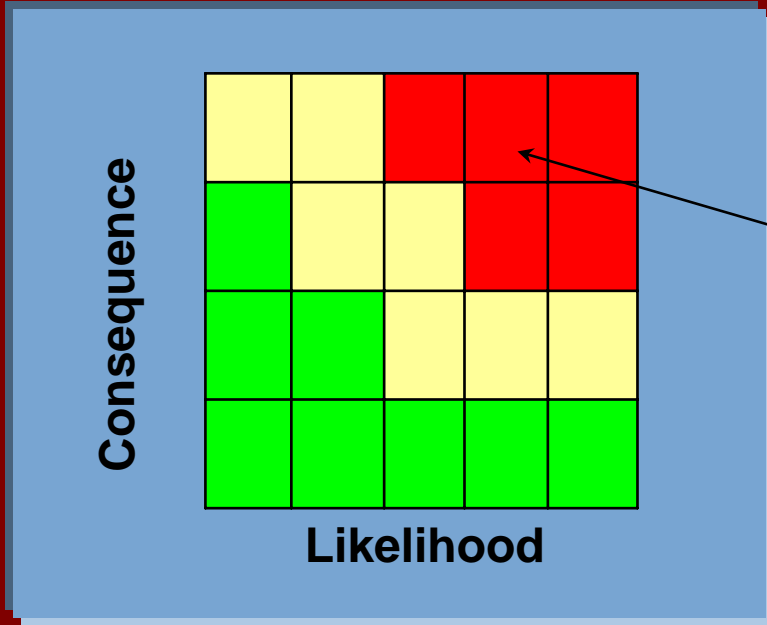


Case Study: Subcontractor & Vendor Change Management

Ground Based Interceptor: IFT-9

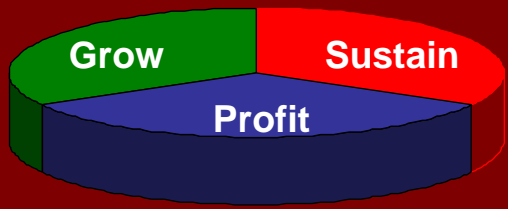


System Complexity



Failure to appreciate impact of First Time Integration Tasks

**Contributing Factor:
Increased Complexity with
Decreasing Budgets**

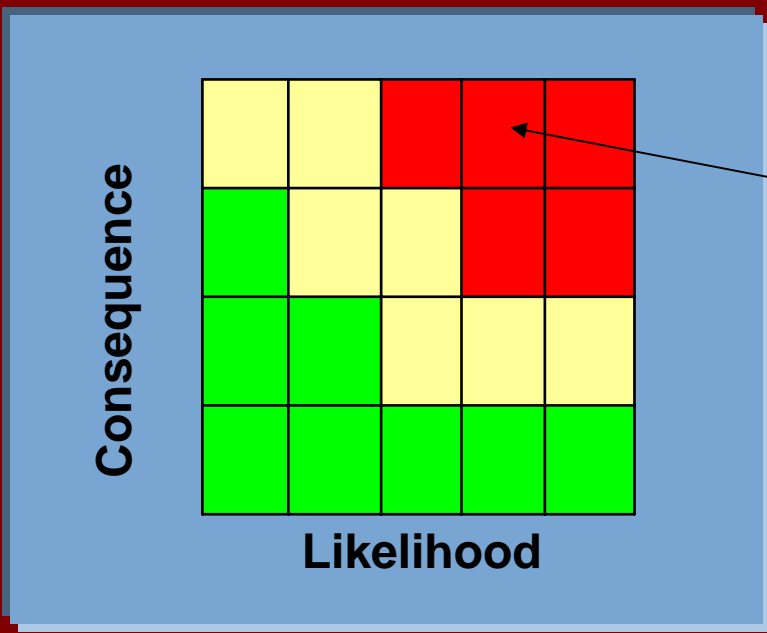


Case Study: System Complexity

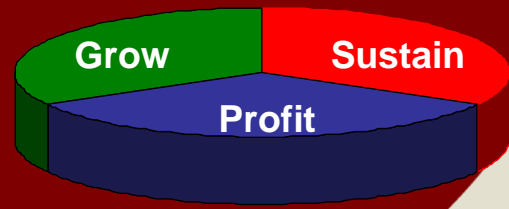
**Exo-atmospheric Kill Vehicle 4
consecutive intercept successes**



Cost Reduction Initiatives



Second Order Effects of Cost Reduction Programs

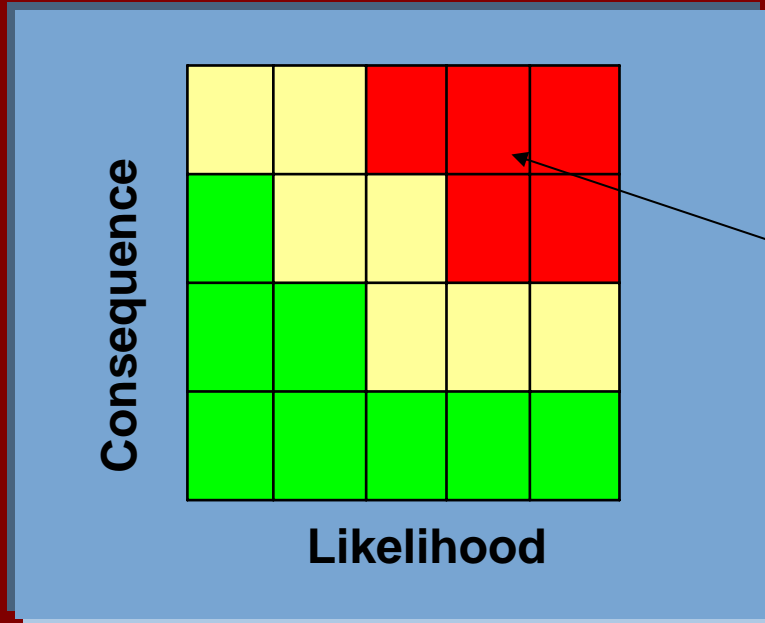


Case Study: Second Order Effects of Cost Reduction Programs

HELLFIRE Motor Cost Reduction Initiative

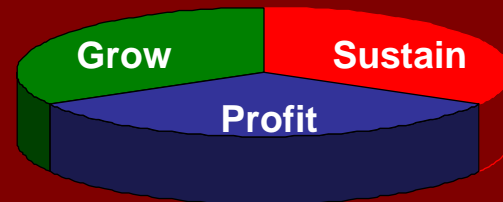


Risk Mitigation



Monitoring instead of Mitigating Risk

**Contributing Factor:
Continued Budget Pressure**



Case Study: Single Source

Ground Based Interceptor (GBI) Motor

- Risk Mitigation Strategy
- September 2002: CSD Explosions



Closing Thoughts

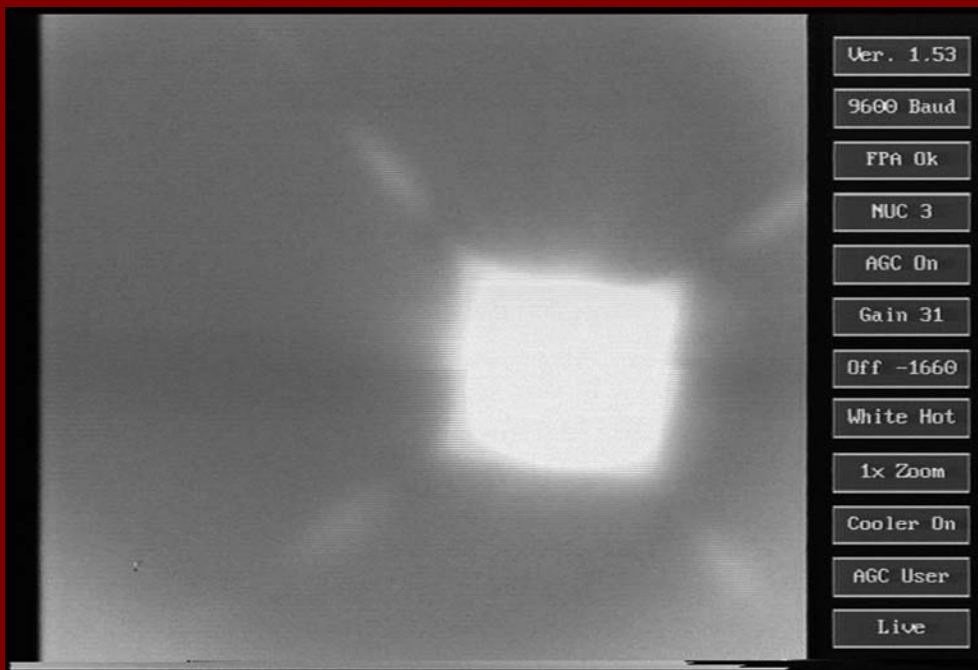
- Focus on the mission; not the organization chart
- Unpredicted challenges present great opportunities – exploit them
- Tell me what I need to know; not everything that you know
- Best people on biggest opportunities
- The first report is always wrong
- Be a high impact player
- Manage the margins
- Aggressively Manage Risk

“Criticism is easy; achievement is more difficult.”

Sir Winston Churchill

22 January 1941

- **Manage Risk**
- **Performance Counts**



Back-Up Slides

Points to Remember

- **Manage the margins**
- **Lead from the front**
- **Retain your options as long as possible**
- **Ideas and execution are the keys**
- **Careful planning and deliberate execution**
- **Be right or wrong; but not indecisive**
- **Maintain rigor in change control**
- **Be data rich and opinion poor**
- **Manage to a common set of metrics**

- **Complexity**
- **Process Controls**
- **Precision**
- **Reliability**
- **Cost**
- **Schedule**
- **Technical Maturity**
- **Producibility**
- **Discipline & Rigor**
- **Quality Assurance**
- **Configuration / Change Management**

So What?

***Risk Management Drives
Performance***

***... and
Past Performance Drives
Future Growth***