Enhancing Safety in Aerospace Organizations

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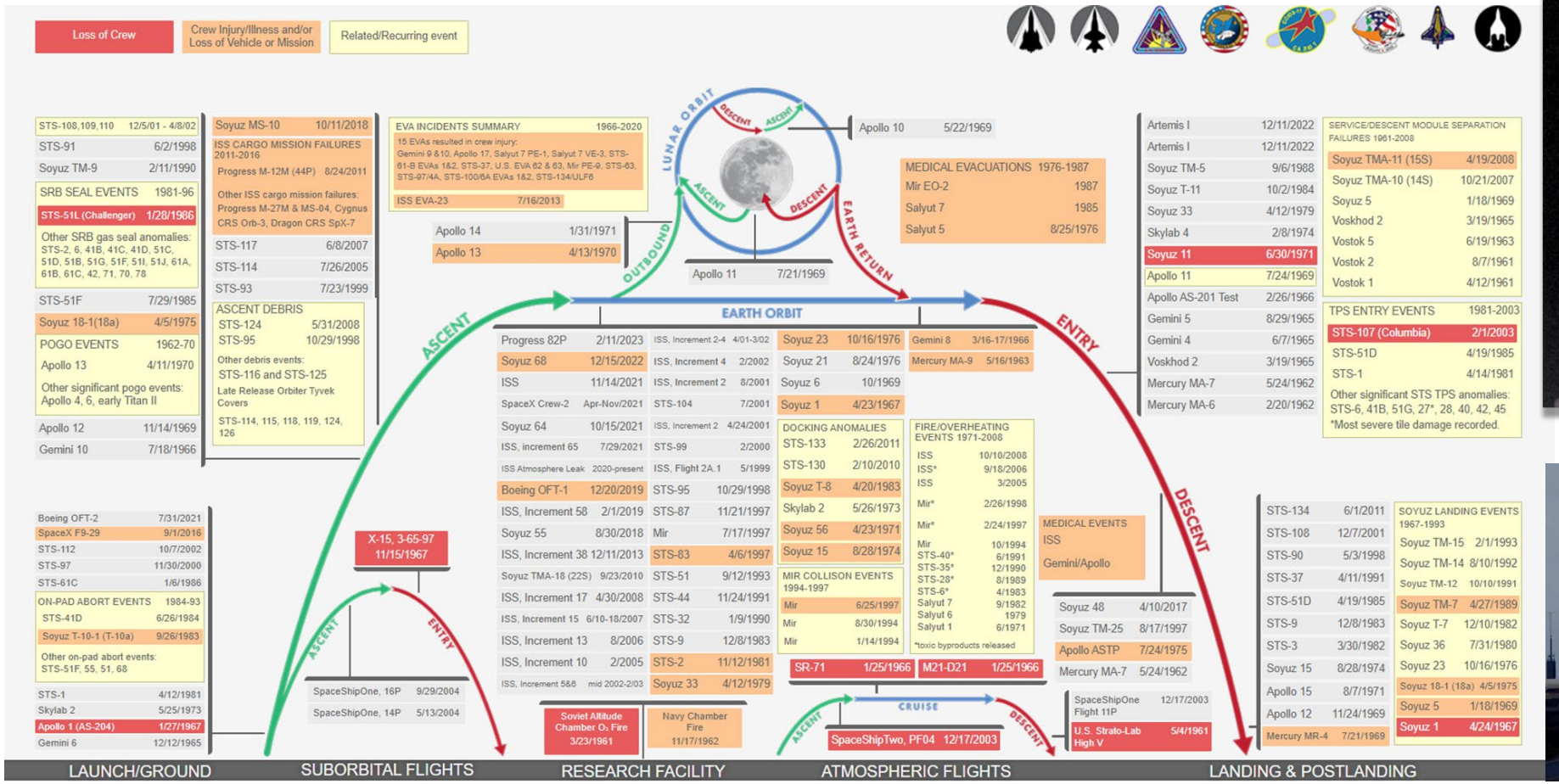
Spaceflight has inherent risks…



https://sma.nasa.gov/SignificantIncidents/

Common issues in aerospace safety assessments

- Underestimation of hazard likelihood
- Mischaracterization of risks as “non-credible”
- Lack of emphasis on integrated hazards in complex sociotechnical systems
- Frequent reliance on “special procedures and training” as a hazard control

Common issues in aerospace safety assessments

- Lack of understanding and acknowledgement that a vast majority of human errors should be attributed the “system failures”
- Underappreciation for human reliability analysis, at all levels in organizations
- Lack of systematic, continuous risk monitoring

A few examples of how social science can enhance safety in aerospace communities

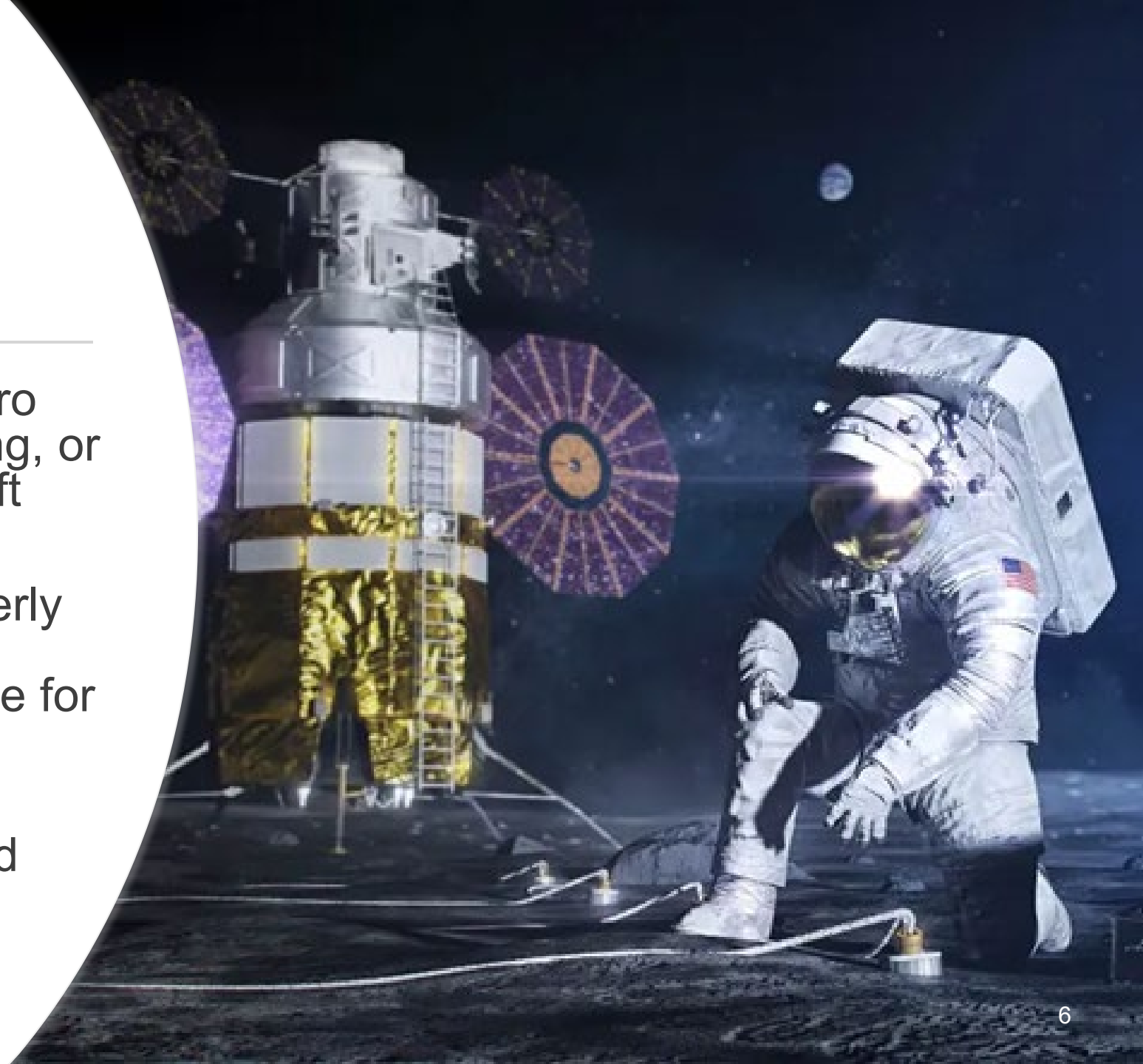
- Educating the workforce, at all levels, to recognize potential cognitive biases and their potential effect on risk characterization and risk acceptance

- Coaching aerospace personnel, particularly senior managers, on how to create environments which empower employees to present safety concerns and alternate positions on risk characterization and acceptance

- “De-mystifying” human reliability analysis, particularly the quantification of human error probability, to improve credibility and acceptance of HRA across all levels of the aerospace community

Closing thoughts

- There is no such thing as a “zero risk” ground test, launch, landing, or in-space operation of spacecraft
- It is imperative that risk is properly characterized and that decision makers understand the rationale for risk acceptance
- There is a fine line between and *safety consciousness* and *risk aversion*



Thank you!

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