



Commercial Aviation Safety Team



Third Meeting of the Asia-Pacific Regional Aviation Safety Team

7 May 2013
Bangkok, Thailand

WHAT IS CAST?

- The CAST Model:
 - Commercial Aviation Safety Team.
 - Work began in 1997 after two significant accidents in 1996 (TWA 800 & ValuJet 592).
 - Opportunity for industry and government to focus resources on one primary aviation safety initiative.
- CAST Goals:
 - Reduce the U.S. commercial aviation fatality risk by at least 50 percent from 2010 to 2025.
 - Continue to work with international partners to reduce fatality risk in world-wide commercial aviation.

CAST METHODOLOGY

- CAST accomplishes its work by—
 - Studying accidents and incidents, identifying precursors to problems and safety enhancements (SE) to reduce or eliminate these precursors.
 - Conducting feasibility assessments of potential SEs and designing detailed implementation plans (DIP) to deploy these safety solutions.
 - Evaluating these safety solutions and providing prioritized recommendations for implementation.

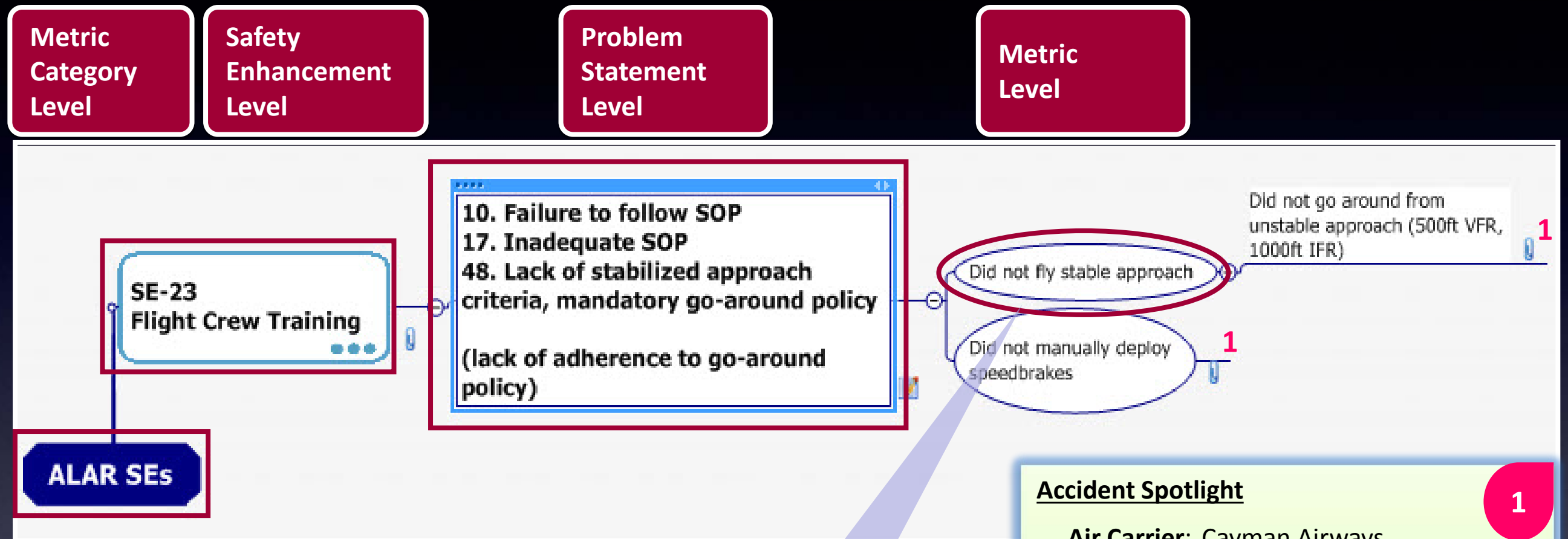
CAST PRIORITIZATION METHODOLOGY

- Identify the most effective solutions derived from all accident categories.
 - CAST teams originally developed 86 SEs addressing contributing factors systemic to the aviation accident risk.
- Consider effectiveness vs. resources.
- Test solutions against all fatal and hull loss accidents, U.S. domestic Part 121 operations.
- Create draft master strategic safety plan.
- Identify areas for future study/mitigation.

CAST's USE OF PREDICTIVE INFORMATION

- Fatal accident data was used to prioritize air carrier fatal accident risk.
- Safety Enhancement Initiative (SEIs) and DIPs were developed to reduce the fatal accident risk.
- Predictive data (Flight Operational Quality Assurance (FOQA) and air traffic radar data) are used to determine the effectiveness of the SEIs and DIPs.

EXAMPLE METRICS FOR APPROACH AND LANDING ACCIDENT RISKS

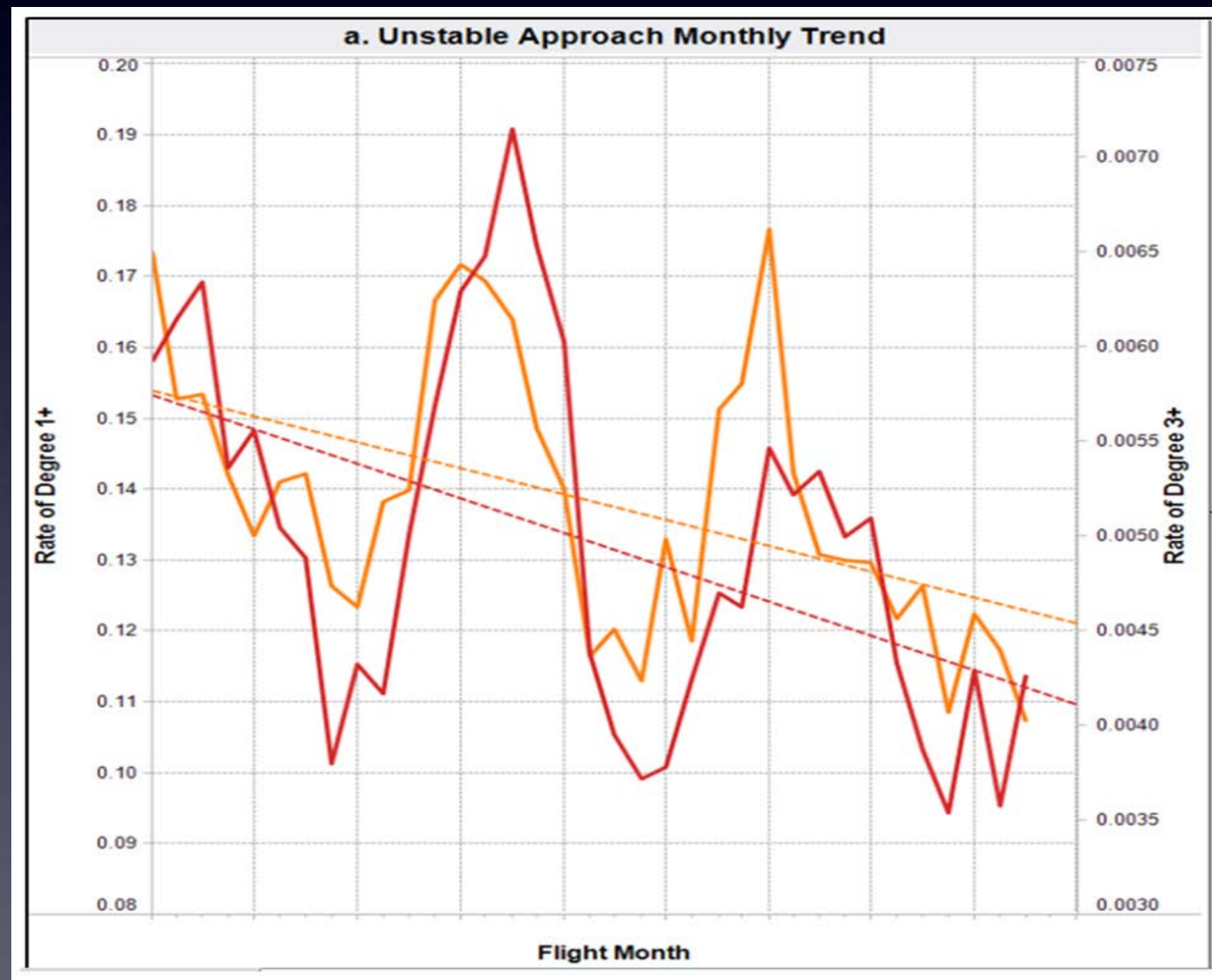


Unstable approaches are measured using the Height Above Touchdown (HAT) method, which captures the HAT on the first approach when the aircraft is 100%

- | | |
|---------------------------------|----------------------------|
| 1. Stable on Glideslope | 8. Landing Flaps Set |
| 2. Stable on Localizer | 9. Gear Down |
| 3. Stable [CAS-Vapp] | 10. Stable in Pitch |
| 4. Stable [CAS-Vref] | 11. Stable in Roll |
| 5. Stable Ground Speed | 12. Stable in Yaw |
| 6. Stable Rate of Descent (ROD) | 13. Ground Spoilers Armed |
| 7. Stable Thrust | 14. Speed Brakes Retracted |

CAST's USE OF PREDICTIVE INFORMATION

Predictive data can then be aggregated to form a comprehensive trend for SEI effectiveness monitoring.

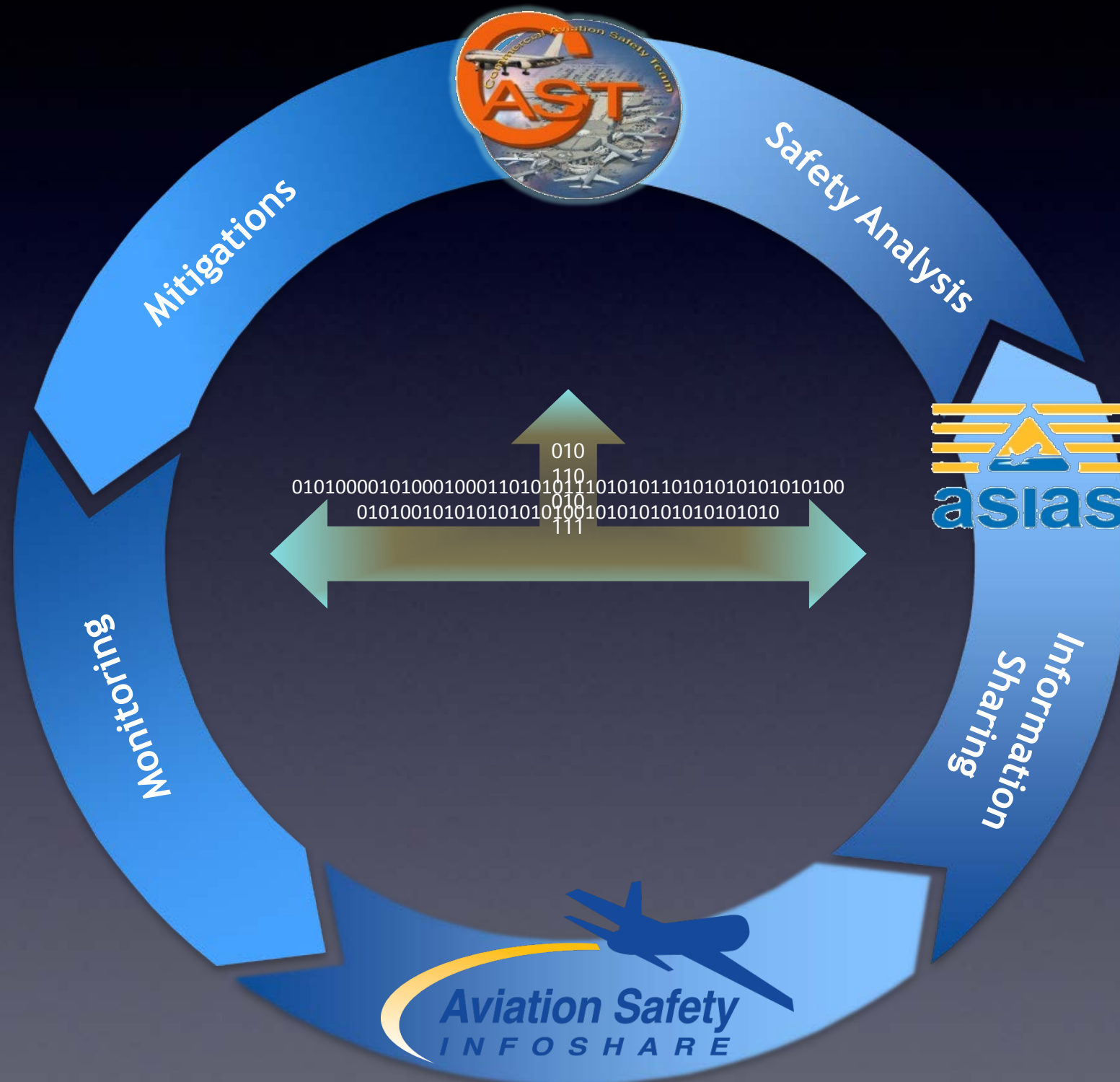


Approximately 8 Million FOQA Flights

PREDICTIVE INFORMATION EXCHANGE PROGRESS

- April 2012: RASG–APAC requested predictive information from CAST.
 - CAST agreed to provide aggregate, de-identified trend information to RASG–APAC and initiated a letter exchange about use of the data.
- Information will be used to assess effectiveness of SEIs and DIPs of top three risk areas in APAC region:
 - Runway excursion/incursion,
 - Controlled flight into terrain (CFIT), and
 - Loss of control in-flight (LOC–I).

PREDICTIVE DATA: A KEY COMPONENT OF CONTINUOUS AVIATION SAFETY IMPROVEMENT



A collaborative government and industry initiative on data sharing and analysis to proactively discover safety concerns before accidents or incidents occur, leading to timely mitigation and prevention.