SMS Promotion and Assessment

Dave Chapel
Flight Safety and Reliability Director
GE Aviation
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Outline

- Background
- SMS Promotion
- SMS ICG Evaluation Tool Assessment
- Where Does GE Think SMS Should Be Going

Powering the world's airline fleets

- Every 2 seconds, a GE, CFM, or EA powered airplane takes off somewhere in the world
- At any given moment, more than 2,200 of these aircraft are in-flight, carrying between 50 and 850 passengers
- That's more than 300,000 people ... right now ... who are depending on our engines

More than 30,000 total engines in service

GE's Safety Culture

- DC10 event in Sioux City, IA (July 19, 1989) was a catalyst for safety culture at GE Aviation. Resulted in the creation of over-arching safety policy and Safety Program Management Teams (SPMT) in the mid-90's.

Chief Consulting Engineer Reviews of Safety issues

Top Problem Meetings

SPMT Meetings

Safety Policy

Acceptable Risk Guidance

SMS

1970s **1980s** **1990s** **2000s** **2010s**

CAAM Committee Started

CAAM 1 Report

AC 39-8

CAAM 2 Report

ICAO SMS

CAAM 3 Kickoff

GE's Safety Management System (SMS)

- GE Aviation leadership made decision to benchmark existing safety processes versus ICAO Annex 8, Appendix in 2011
- Missing elements identified and addressed in 2012
- GE also participated in FAA SMS Pilot Program in 2Q12. Lessons learned from this exercise applied to policy refinement

Result: GE Aviation believes its SMS is aligned with ICAO intent

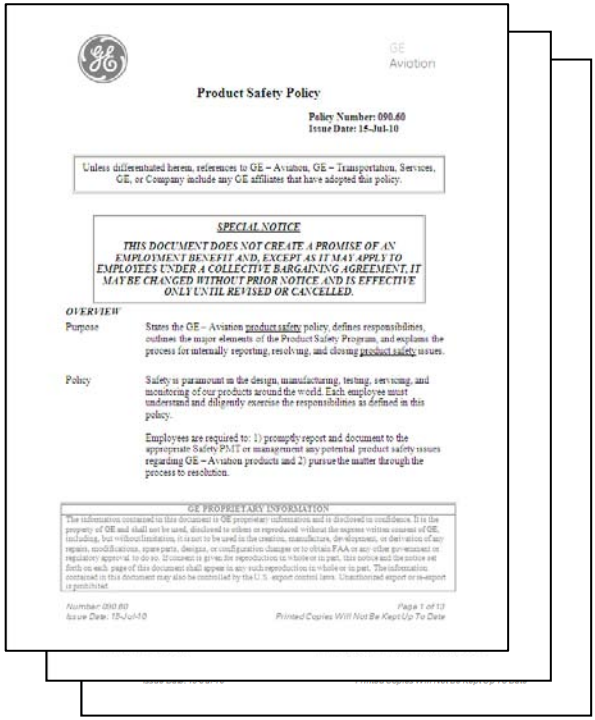
SMS Launched in January 2013

- *Policy / Procedure Updates Released*
- *Website Launched*
- *Training Ongoing*
- *Promoting externally*
- *Direct involvement in FAA's Part 21 / SMS ARC*
- *"Product Safety" month in October*
- *"Challenge" Coins Released*

Safety Policy Updates

Historic safety policy (090.60) had enhancements required relative to the ICAO SMS Policy requirements in four areas:

1. *Top Management Oversight (up a level)*
2. *Transparency (broader scope)*
3. *Reporting (detailed metrics)*
4. *Standardization (minimize program variance)*



GE Aviation

Product Safety Policy

Policy Number: 090.60
Issue Date: 15-Jul-10

Unless differentiated herein, references to GE – Aviation, GE – Transportation, Services, GE, or Company include any GE affiliates that have adopted this policy.

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OVERVIEW

Purpose — States the GE – Aviation product safety policy, defines responsibilities, outlines the major elements of the Product Safety Program, and explains the process for internally reporting, resolving, and closing product safety issues.

Policy — Safety is paramount in the design, manufacturing, testing, servicing, and monitoring of our products around the world. Each employee must understand and diligently exercise the responsibilities as defined in this policy.

Employees are required to: 1) promptly report and document to the appropriate Safety PMT or management any potential product safety issues regarding GE – Aviation products and 2) pursue the matter through the process to resolution.

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Website

Hello David Chapel | Personal Items | Communities | Cases | Forms | Search: | In: Communities | GO

Safety Management System

Feature Set | Ask An Expert | Community Cases

Policy

- 090.60 Product Safety Policy
- 090.61 Safety Management System Procedure
- Management System
- Spirit and Letter Briefing
- 090.66 Risk Analysis
- SPMT Operating Guidelines

Risk Management

Safety Management System Framework

Safety Promotion

"Remember, in times of high growth and business pressure, never compromise on safety and integrity."

- SMS Familiarization
- Product Safety Video (Schilling)
- Product Safety Training
- Newsletters
- SMS Manual
- SMS Manager Training

Elements of GE Aviation's SMS

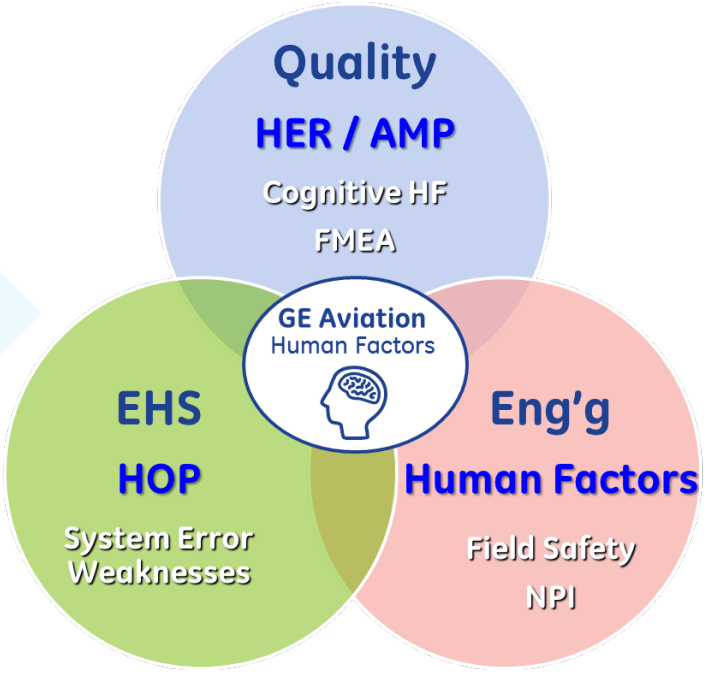
*The GE Aviation **Safety Management System (SMS)** is a systematic approach to managing safety including the necessary organizational structures, accountabilities, and policies and procedures. It comprises four elements.*

Training Slide Example

Integrated Aviation Human Factors

- Provides awareness, learning, strategy, functional tools
- Evaluate reason for error from a human and organizational perspective
- Solutions more targeted to error source
- Consistent with SMS and emerging Part 145 requirements

- Cross-functional effort
- Complements existing tools and processes
- Single message that works for diverse organizations



SMS ICG Evaluation Tool Assessment

Fully Effective

Policy- 46 items

Risk Management – 26 items

Assurance - 10 items

Promotion - 12 items

Intended Variance from Item

Policy - 3 items

Risk Management - 2 items

Assurance – "safety objectives" presented difficulty – 18 items

Promotion – 6 items

Present, suitable, operating, collecting evidence of effectiveness

Policy - 3 items

Risk Management - No items

Assurance - 2 items

Promotion - 1 item

Intended Variances - Policy

- 1.1.5 The safety policy includes a commitment to observe all applicable legal requirements, standards and best practice
  - Legal requirements and their compliance are defined in policies separate from the safety policy.
  - GE's position is that the party system requirements of the NTSB require that Legal needs to remain separate from the safety process related to investigations.

Intended Variances: Assurance

- 3.1.1 Safety objectives have been established…..3.1.5 safety objectives are reviewed and updated periodically…..3.1.6 Safety objectives are specific, measurable, agreed-to, relevant and time-based….3.1.11 …encompass all areas of the organization
  - Numerical objectives have not been set, because they are impracticable to develop. The closest metric of safety is lack of accidents, but using this as a real-time metric would expose the public to very high risk.
  - Occurrence of an accident shows the fleet was not safe enough; absence of an accident does not prove that the fleet is sufficiently safe.
  - Using less serious events as the basis for safety objectives immediately calls into question the relevance of the objective – we must not set an objective using a metric which shows us to be safe even when accidents are actually occurring.
- GE has chosen to set safety objectives in very general terms (purpose statement) so that each employee can bring their own context and apply the objective to their own task.

Intended Variances: Assurance

- 3.1.10 When establishing and reviewing objectives and performance indicators, the organization considers:- hazards and risks; financial, operational and business requirements; view of interested parties.
  - Performance indicators are data-driven, based on events with a high conditional probability resulting in an unsafe condition. Financial, operational and business requirements and people's "views" are not applicable..

Intended Variances: Assurance

- 3.2.1 The organization has established a process and conducts formal hazard analyses and risk assessments for major operational changes, major organizational changes and changes in key personnel.
  - The organization considers risks qualitatively and introduces abatements, to protect business continuity. Protection of business continuity inherently protects the safety of products, so far as can reasonably be foreseen. Quantitative risk assessment is beyond the state of the art for this kind of change.
  - The ability to institute changes successfully is an inherent part of a business's core competency and is important intellectual property; each business thriving today does so as a result of its ability to manage change.

Intended Variances: Assurance

- 3.3.7 and 3.3.8 For safety related services the organization requires contracted organizations not required by regulations to have an SMS. Contracted organizations have the ability to participate and share information in the SMS
  - Open sharing of SMS data with a supplier risks loss of IP (from both parties) and breach of anti-trust laws. Specific safety related data is shared throughout the industry, via trade association/rulemaking groups after sanitizing.
  - Supplier quality is addressed under the PCH rules / QMS and requiring an SMS is therefore unnecessary and unlikely to bring added value.

Intended Variances: Promotion

- 4.1.3 There is a process that evaluates the individual's competence and takes appropriate remedial action when necessary.
  - This is considered incompatible with a Just Culture and candid feedback for safety training.

- 4.1.12 Training includes attendance at symposiums and industry conferences.
  - Training is focused on the concept of what people need to know to do their job well. It is made specific to the business; training developers and directors attend symposia etc, so that the most applicable and valuable material can be presented to the in-business target audience in a rapidly assimilated form.

Evaluation Tool Summary

- The evaluation tool assessment identified evaluation areas that need clarification
- Organizational evaluation related to Legal, change management, training, data sharing and HR are industry activities and are not appropriate evaluations for SMS
- The “safety objective” definition and applicability is the most prevalent disconnect that needs to be addressed

Where Does GE Think SMS Should Be Going?

- Concerns remain over multiple SMS compliance requirements in an international arena
- FAA SMS rule realistically still years away, what do we do in the interim?

- GE believes it meets the intent of SMS.
  - How do we get validation?
  - How do we assure it applies across regulatory boundaries?

- Third party accreditation should be evaluated as an option.


imagination at work