Improving Airport Safety and Operations Through Cost-Effective Planning and Data Management

Emerging Safety Management System (SMS) and Technology Trends

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Problem Statement: Regulation

- Understanding What is the #1 Purpose of SMS?

COMPONENTS

- SAFETY POLICY
- RISK MANAGEMENT
- SAFETY ASSURANCE
- SAFETY PROMOTION

- When FAA Approved, Part 139 Airports to Have Deadline for Completion, Anticipated at 268 Airports (98% of Enplanements)
Why SMS and Technology? – Trends

• 1980’s
  – Paper-based systems – Log books!
  – Initial desktop systems – Electronic log books
• 1990’s
  – Custom software for Operations Compliance – Big airports
  – Homegrown systems MS Windows/Office – Fax distribution
• 2000’s
  – Web-based, internet, email
  – Integrated enterprise systems – “stand alone” Part 139 programs
  – More functionality, more competition
    • GIS Map – Find this location
• 2010’s
  – Cloud-hosted systems with advanced functionality
  – SMS Software Tools or Systems come on-line
  – Low-cost, basic systems; more “build your own”
    • GIS Map – Follow me at all times
Data Solutions Solve Problems... Right?

- It’s Easy! Let me walk through the steps!
Why would someone do this!?:
Common & Less Common

- Significantly Improved Record Keeping – Finding documents through searches
- P139 Inspection – less effort and quick report
- Email – sending & receiving
- Work Order Management (CMMS) – repair status?
- Weather data – “weather.com” access; or from the field, live and logged
- Wildlife Management – logged and reported to FAA Wildlife site
- Field Condition (FICON) – FAA reporting; better predict snow conditions
  – e.g. Friction and Runway Temperature sensor/measurements
- FAA NOTAM Manager – Integrated data from FAA website to your log
- Runway Incursion Warning System (RIWS) – passive & active control

- MODELING AND PREDICTIABILITY!
SMS Software Solutions:

- Safety Data Reporting Only
  (SMS, OSHA, Incident, Accident, Property Damage)
- Safety and CMMS integration
- Safety and Property Management
- Safety and GIS
- Safety and Accounting
- Safety and All
- Dashboards,
  Dashboards,
  Dashboards (by responsibility)
SMS Software Solutions:

Part 139 Logging
- Operations Data Logging
- Event Management
- Situational Awareness
- Assurance Monitoring

DATA

ASSURANCE MONITORING

SMS
- Hazard Reporting
- Documentation
- Risk Analysis
- Corrective Action Plan
- Safety Inspections
SMS Software Functions: Separate Needs and Wants

Must Considerations:
• Regulatory Understanding
• Technology Limitations
• Ability to Update for Projects
• Flexibility for Upgrades

How do you get the Information Out to Others
**SMS - Costs vs. Solution vs. Functions**

- **SMS SOLUTIONS**
  - Risk Management
  - Hazard Reporting
  - Safety Quality
  - Safety-Promotion

**Costs and FAA Compliance**

- GPS – Follow Me
- DYI Forms
- Work Orders

- GPS – Find Me
- Web/Cloud Mobile

- Maps Tracking
- Basic Data & Reports
- GIS Tracking

- Advanced Data Analysis and Reporting with GIS Integration

**Solution Module or Function**
(Electronic) SMS Procurement

• SMS Solutions – What should you choose!?!?
  • Start with SMS Consultants on Needs and current FAA (Function) Requirements
    • Many offerings that say they meet FAA requirements but may not
    • Not all policy decisions yet sorted out
  • Look at Airports of Similar Size and what that are doing (Lessons Learned)
  • Keep In Mind Existing and Future Capabilities
    • They run the gamut - from simple to advanced
  • Combine SMS Solutions with Airport Software (e.g. Part 139 Inspection Reporting, Work Order Management)
(Electronic) SMS Procurement

• SMS Solutions – What should you choose!?!
  • Flexibility is Key; Technology is Ready
    • Invest in Data and Not Software
    • Stay “Leading Edge”, Not “Bleeding Edge”
    • Test Drive the Systems with (your) Data, Not Simulators
  • Consider Homegrown to the Most Solutions/Functions you can afford
    • FAA Funds are available for SMS Implementation Plans (Planning)
    • Check with FAA/Consultant on software funding from FAA
Question & Answer