

Requirement ID: 889

Sponsor Organization: AFS-230

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Requirement Title: Development of Guidelines and Tools for Effective Implementation of an Aviation Safety Action Program (ASAP) for Aircraft Maintenance Organizations

Funded Requirement:

- FY02: No
- FY03: Yes
- FY04: Yes
- FY05: Yes

Requirement Statement: The overall goal of this research initiative is to identify factors that can maximize the likelihood of successful implementation of ASAP for aircraft maintenance programs, and to develop both guidelines and user tools for that purpose. Research tasks shall be as follows:

1. A systematic survey and follow-up interviews of air carrier, repair station, labor association, and FAA participants in maintenance ASAPs will be accomplished.
2. Best practices will be documented.
3. Strategies for eliciting support from each of the various parties involved in ASAP MOU development and program implementation will be examined.
4. Appropriate methods for collection and analysis of maintenance errors reported under ASAP, categorization schemes for aggregating information on ASAP events and Event Review Committee (ERC) corrective action recommendations, data base design, information management, and user interface human factors considerations for archiving and querying ASAP information, and methods to display the results of ASAP program results to enhance the understanding of all ERC participants will be developed and documented.
5. Recommendations for Flight Standards Service consideration will be developed regarding the issue of appropriate acceptance and exclusion criteria for Maintenance ASAP reports. Within the latter effort consideration will be given to inadvertent errors, intentional disregard for safety, at-risk behaviors, negligence, and reckless behaviors in order to determine the relative usefulness of those terms in a maintenance ASAP context. It will include the development of recommended company guidelines for disciplinary action for ASAP events considered sole source by the ERC (because the only information available to the FAA is the ASAP report), but not considered sole-source by the company (because the company independently discovers the alleged violation, and informs the mechanic of it).
6. Guidelines for how ASAP derived corrective action recommendations may most effectively be communicated and implemented at all levels of the

maintenance system, including in particular the organization and design of maintenance documentation so as to reduce the probability of human error by mechanics, will be developed.

Because of the multifaceted nature of these research tasks, more than one research provider may be required for their successful accomplishment.

Background: The primary purpose of an Aviation Safety Action Program (ASAP) is to identify and correct adverse safety events that would otherwise not be likely to come to the attention of the FAA or company management.

Employees may be understandably reluctant to report information which might result in the FAA undertaking enforcement action against them, or their employer taking disciplinary action. As a result, important data that might help to correct safety-related systematic deficiencies could go unreported (and uncorrected). ASAP seeks to address this issue by providing enforcement incentives and through providing certain protections from company disciplinary action for employees who voluntarily submit ASAP reports (e.g., no company discipline is applied if the only source of the information is the employee). This allows the company and the FAA to obtain important safety information of which they might otherwise be unaware, and to act on that information.

An ASAP is entered into voluntarily by the FAA, a Part 121 or 145 certificated entity (e.g. an air carrier or repair station), and any third party (such as the employee's union) through a Memorandum of Understanding (MOU), which specifies the details of the program. The FAA provides guidance for writing such MOUs in ASAP Advisory Circular 120-66B and on an FAA maintained ASAP website (<http://www.faa.gov/avr/afs/afs200/afs230/asap/index.cfm>).

ASAP reports must be submitted within whatever timeframe has been stipulated in an ASAP MOU. Typically, the timeframe is either within 24 hours of the end of the duty shift for the day, or within 24 hours of the employee having become aware of a possible violation. An ASAP Event Review Committee (ERC), comprised of one representative each from company management, labor association, and the FAA, decides whether the time requirements for submission have been met. However, under a recent revision to FAA ASAP policy, reports which the ERC determines to be sole-source are not subject to any time requirement for submission. A sole source report is defined in terms of whether there is independent information (i.e. information other than the employee's report) on the reported event *available to the FAA*. A report can be considered sole source, even if the company discovers the event and informs the employee of it, provided that the FAA does not have information on the event independent of ASAP. There can be more than one sole source report for the same event.

It is FAA policy not to use the content of an ASAP report to initiate or support enforcement action against an employee, except for reports that involve possible

criminal activity, substance abuse, controlled substances, alcohol, or intentional falsification. Similarly, the company will not use the ASAP report per se to initiate or support any company disciplinary action. However, as presently implemented, a company may elect to use information that it acquires independently of ASAP to take disciplinary action against an employee, even if that employee has submitted an ASAP report on that event. This would typically be the case if the company discovers a maintenance error and informs the mechanic of it.

Where the employee is the sole source of the information (i.e. all evidence of the event available to the FAA is discovered or otherwise predicated on the report), the FAA will take no enforcement action against the employee for reports accepted under the program.

For non-sole source reports accepted under ASAP, the FAA will take administrative action in lieu of enforcement action, when sufficient evidence of a violation exists. Administrative action means a FAA Warning Notice or Letter of Correction, which is expunged from the FAA files after two years. For accepted non-sole source reports without sufficient evidence to prove a violation, the FAA will issue a Letter of No Action, which is expunged from the files after 30 days.

To be accepted under current ASAP policy, an alleged regulatory violation must be “inadvertent”, and must “not appear to involve an intentional disregard for safety”. The applicability, interpretation, and adequacy of these terms as acceptance/exclusion criteria for aircraft maintenance ASAP purposes are an issue in need of further examination. Also under current policy, the reported event must not appear to involve criminal activity, substance abuse, controlled substances, alcohol, or intentional falsification.

The operation of an ASAP is a highly subjective process that is influenced at a macro-level by corporate culture and organizational climate considerations, and at a group dynamics level by the background, personalities, and communication skills of the individuals selected to represent company management, labor association, and the FAA, respectively, on an ASAP ERC.

As of February 6, 2003, there are 26 airlines that operate ASAPs for various employee groups. The results of ASAP to date clearly indicate that the program has been effective in identifying and correcting literally thousands of unsafe conditions. While there are 26 ASAP MOUs for pilots, there are only 5 ASAP MOUs for aircraft maintenance mechanics. Of the 5 maintenance programs, several of them are considered by all stakeholders to have been highly effective. Because of the potential benefits to safety, a major interest of the FAA is a determination of whether the failure of ASAP to expand to multiple operators as rapidly for aircraft maintenance as it has for pilots is attributable to FAA ASAP policy, or to other factors beyond the control of the FAA.

Output: The output of research tasks 1, 2, & 3 shall be a final report presenting the results of the survey and interviews, documenting best practices for Maintenance ASAPs, and identifying strategies for eliciting support from each of the various parties involved in ASAP MOU development and program implementation.

The output of research task 4 shall be (a) a final report that reflects a review of categorization schemes employed by existing Maintenance ASAPs and contains guidelines on how to most effectively categorize the content of ASAP maintenance reports and associated corrective actions in order to optimize the usefulness of that information for safety and program tracking purposes; (b) a working prototype ASAP event reporting form in XML format for secure internet application that incorporates a recommended categorization and data collection scheme for maintenance ASAPs data acquisition, including the source code developed for the prototype; (c) a working prototype data base in Microsoft Access that incorporates sound cognitive science and human factors principles applicable to information management for the ASAP, to include documentation of all associated source code.

The output of research task 5 shall be a white paper containing recommendations for Flight Standards Service consideration regarding the issue of appropriate acceptance and exclusion criteria for Maintenance ASAP reports, including a discussion of the relative usefulness of the following terms: inadvertent errors, intentional disregard for safety, at-risk behaviors, negligence, and reckless behaviors. The white paper will include an examination of the impact on program participation of the current definition and treatment of a sole source report. The white paper will address the issue of whether the failure of ASAP to expand to multiple operators as rapidly for aircraft maintenance as it has for pilots is attributable to FAA ASAP policy, or to other factors beyond the control of the FAA.

The output of research task 6 shall be a final report containing guidelines for how ASAP derived corrective action recommendations may most effectively be communicated and implemented at all levels of the maintenance system, including in particular the organization, and design of maintenance documentation so as to reduce the probability of human error by mechanics.

Regulatory Link: none