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The Effect on Embry-Riddle Aeronautical University's Reporting Culture from Implementing an Aviation Safety Action Program

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THE EFFECT ON EMBRY-RIDDLE AERONAUTICAL UNIVERSITY'S
REPORTING CULTURE FROM IMPLEMENTING AN AVIATION SAFETY
ACTION PROGRAM

by

Robert Blake Kelly

A Thesis Submitted to the College of Aviation Department of Applied Aviation Sciences
in Partial Fulfillment of the Requirements for the Degree of
Master of Science in Aeronautics

Embry-Riddle Aeronautical University
Daytona Beach, Florida
June 2012

THE EFFECT ON EMBRY-RIDDLE AERONAUTICAL UNIVERSITY'S REPORTING CULTURE FROM IMPLEMENTING AN AVIATION SAFETY ACTION PROGRAM
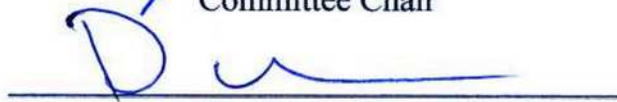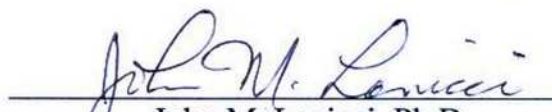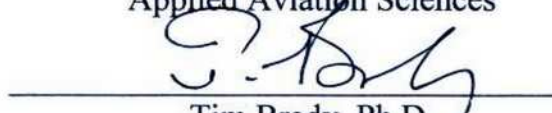
by

Robert Blake Kelly

This Thesis was prepared under the direction of the candidate's Thesis Committee Chair, Dr. Guy M. Smith, Associate Professor, Daytona Beach Campus, and Thesis Committee Member Dan McCune, Associate Vice President of Safety, Daytona Beach Campus and has been approved by the Thesis Committee. It was submitted to the Department of Applied Aviation Sciences in partial fulfillment of the requirements for the degree of Master of Science in Aeronautics
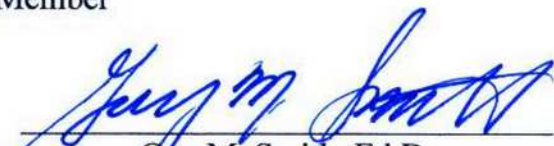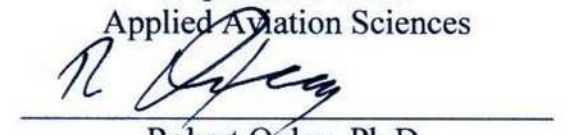
Thesis Committee:

Guy M. Smith, Ed.D.
Committee Chair

Dan M. McCune
Committee Member

John M. Lanicci, Ph.D.
Graduate Program Coordinator
Applied Aviation Sciences

Guy M. Smith, Ed.D.
Department Chair
Applied Aviation Sciences

Tim Brady, Ph.D.
Dean, College of Aviation

Robert Oxley, Ph.D.
Associate Vice President of Academics

7-18-12
Date

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Abstract

Researcher: Robert Blake Kelly

Title: The Effect on Embry-Riddle Aeronautical University's Reporting Culture
                from Implementing an Aviation Safety Action Program

Institution: Embry-Riddle Aeronautical University

Degree: Master of Science in Aeronautics

Year: 2012

The Flight Training Department at Embry-Riddle Aeronautical University, Daytona

Beach, has been contemplating implementing an Aviation Safety Action Program

(ASAP) in order to help protect students and instructors from certificate action. This

feasibility study analyzed what motivated instructor pilots to submit safety reports, and if

an ASAP would increase reporting from instructor pilots. It also identified what concerns

existed among instructors and managers regarding an ASAP. A survey was given to

instructors and managers; also instructors in leadership roles were interviewed. It was

found that the benefit to the organization and peers was the highest motivation factor to

submit safety reports and no significant evidence existed for an increase in reporting

under an ASAP. In fact, instructors and managers were concerned with Federal Aviation

Administration involvement and with the potential for an ASAP to decrease reporting.

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Chapter I

Introduction

Safety of an organization is usually an economic problem (Wood, 2003). In the

1800's, the industrial revolution was in progress and there was no organized effort to

reduce accidents or injuries. If the accident were the fault of the company, the worker or

their families would have to hire a lawyer to take the company to court, which almost

never worked. The company could simply outlast them. However, that all changed when

the idea of workers compensation migrated to the United States and by 1930 all states

had workers compensation laws on the books. The employer through a mandatory

insurance scheme paid the costs of the program where the premiums were based on the

company's accident record. Suddenly, it became clear to the employer that it was

cheaper to not have the accident in the first place than it was to pay for the results of it

(Wood, 2003).

Accidents and incidents cause direct and indirect costs associated with them

(Wood, 2003). In addition, it is argued that safety is an ethical obligation of

organizations and sometimes is required to maintain certain safety standards by

regulation. Organizations that choose to take a proactive stance on safety will usually

develop a safety program within their organization with the mission of reducing accidents

(Wood, 2003).

The Federal Aviation Administration's (FAA) mission is to provide the safest,

most efficient aerospace system in the world (FAA, 2011b). The FAA has begun the

rule-making process to require airports and Part 121 air carriers to develop and

implement a Safety Management System (SMS). The essential idea for any SMS is to

provide for a systematic approach to achieving acceptable levels of safety risk (FAA, 2011b). An SMS is comprised of four functional components (Safety Policy, Safety Assurance, Safety Risk Management, and Safety Promotion), including an intangible, but always critical, aspect called safety culture (FAA, 2011b).

Significance of the Study

One of the cornerstones of an SMS is a safety-reporting program (FAA, 2011b). A safety-reporting program enables members of an organization to report hazards that can lead to an aircraft accident or incident. The success of a safety program goes beyond the physical capabilities of the program but also relies on the existence of a strong reporting culture within the organization.

Currently Embry-Riddle Aeronautical University (ERAU) has an internal event reporting system used by its instructors, students, and other employees called *an Event Reporting System* or *Aviation Safety Reports* (AvSRs). The FAA has a formal voluntary safety-reporting program for certificated operators known as the *Aviation Safety Action Program* (ASAP) (FAA, 2002). ASAP encourages a certificated operator's employees to report safety information that may be critical in preventing accidents. ASAP formalizes the collection, analysis, and retention of safety data. It also resolves safety issues, reported through an ASAP, through corrective action rather than through punishment or discipline. In fact, the ASAP encourages the reporting of safety issues or events that involve non-compliance with Title 14 of the Code of Federal Regulations (14 CFR) through enforcement related incentives that are designed into the program (FAA, 2002).

Statement of the Problem

ERAU employs an internal aviation safety reporting program that does not involve the FAA. The program is supported by a strong organizational safety culture that stimulates the reporting of safety issues. The College of Aviation has a safety department that manages the internal safety reporting program. The safety department has its own formal processes for the collection, analysis and retention of safety data. The safety department also recommends corrective action to the College of Aviation's and the Flight Department's leadership. Though ERAU has its own successful internal safety reporting program, there may be additional benefits derived from implementing a formal ASAP. However, the change in internal processes or involvement of the FAA in ERAU's internal reporting program could negatively affect their entire safety program.

Purpose Statement

The purpose of this study was to determine the feasibility of ERAU implementing a formal ASAP program, as defined in *FAA Advisory Circular (AC) 120-66B* (FAA, 2002) and identifying the impact on safety of ERAU's flight program.

Research Questions

What currently motivates ERAU instructor pilots to report safety events?

Would ERAU's implementation of an ASAP increase safety reporting among instructor pilots?

What concerns exist among instructor pilots and flight department management in implementing an ASAP program?

Delimitations

This study was limited to exploring the impact on the safety culture of ERAU's Daytona Beach flight department, if they were to implement a formal ASAP program. The study was limited to the perceptions of instructor pilots and management personnel within the flight department at ERAU, Daytona Beach.

Limitations and Assumptions

This study was limited to the current perceptions relating to the possibility of implementing an ASAP, rather than a comparative study between the perceptions pre-implementation and post-implementation of an ASAP. It was assumed that all responses given in the surveys and structured interviews were truthful and correct by all participants.

Definition of Terms

ASAP	A formal FAA voluntary safety-reporting program for certificated operators that offers certain enforcement-related incentives for FAA certificated personnel of the operator (FAA, 2002).
AvSR	An ERAU internal Aviation Safety Report that can be submitted voluntarily by ERAU employees and students (ERAU, 2011a).
ERC	A committee that reviews the reports submitted under ASAP and determines corrective action. The ERC is a representative from the company, the pilot group or union, and the FAA. All decisions made by the ERC must be unanimous consensus (FAA, 2002).

| IPQC | A council of instructor pilots elected by their peers in order to represent instructor pilots on various workgroups with ERAU Flight Department leadership (ERAU, 2011a). |
| SMS | A systematic approach to achieving acceptable levels of safety risk. An SMS is comprised of four functional components: Safety Policy, Safety Assurance, Safety Risk Management, and Safety Promotion (FAA, 2011b). |

List of Acronyms

AC	Advisory Circular
ASAP	Aviation Safety Action Program
ASRS	Aviation Safety Reporting System
AvSR	Embry-Riddle Aviation Safety Report
CFR	Code of Federal Regulations
ERAU	Embry-Riddle Aeronautical University
ERC	Event Review Committee
FAA	Federal Aviation Administration
FOM	Flight Operations Manual
IP	Instructor Pilot
IPQC	Instructor Pilot Quality Council
MOU	Memorandum of Understanding
NASA	National Aeronautics and Space Administration
SMS	Safety Management System

Chapter II

Review of the Relevant Literature

Aviation Safety Program

Wood (2003) explains the importance of an organization having a safety program:

It is easy to spot an organization that does not have a safety program. There is no

internal reporting system; no deliberate selection of standards; no investigation or

resolution of incidents or hazards; and (worst of all) no knowledge on the part of

top management as to whether things are safe or unsafe. (p. 12)

Many organizations rely on the fact that they have not had an accident recently; they do

not need to take a proactive stance in investing in an Aviation Safety Program. However,

not having an accident recently is not a good measure of an organization's safety culture

(Wood, 2003).

Safety culture. Ron Westrum (as cited in Reason, 2008), an American social

scientist, classified safety culture into three kinds: generative, bureaucratic (or

calculative) and pathological. A major distinguishing feature is the way in which an

organization deals with safety-related information – or, more specifically, it is about how

they treat the bearers of bad news:

- *Generative or high-reliability organizations* encourage the upward flow of

    safety-related information. They reward the messengers, even when they are

    reporting their own potentially dangerous errors. They share a collective

    mindfulness of the hazards, respect expertise and are reluctant to simplify

    interpretations. They expect bad things to happen and work hard to prepare

    for the unexpected.

- *Bureaucratic or calculative organizations* – the large majority – occupy the middle ground. They don't necessarily shoot the messenger, but they don't welcome him or her either. Bad news and novel ideas create problems. They tend to be 'by-the-book' organizations that rely heavily on administrative controls to limit performance variation on the part of the workforce. Safety management measures tend to be isolated rather than generalised. They prefer local engineering fixes rather than widespread systemic reforms.

- *Pathological organisations* are inclined to shoot the messenger. They really don't want to know. Whistle-blowers are muzzled, maligned and marginalized. The organization shirks its safety responsibilities, doing only the bare minimum necessary to avoid prosecution and keep one step ahead of the regulator. It punishes or covers up failures and discourages new ideas. Production and the bottom line are the main driving forces (Reason, 2008, p.86).

Reason (as cited in Stolzer, Halford, & Goglia, 2011) defined several components of a safety culture. They describe the traits an organization should demonstrate in order to foster a positive safety culture:

- Informed culture – Safety management is largely a practice driven by decision-making. Consistent decision-making is supported by acquisition and use of sound information. Thus, an organization that constantly informs itself is more likely to succeed both in business and safety performance.

- Reporting culture – A key source of safety information comes from reports from all levels of the organization. An organization must then make sense of the acquired data by turning the reports into useful information through analysis.

- Just culture – 'an atmosphere of trust in which people are encouraged, even rewarded, for providing essential safety related information but'. However, it must also be a culture 'in which they are also clear about where the line must be drawn between acceptable and unacceptable behavior'.

- Flexible culture – when an organization 'possesses the ability to reconfigure themselves in the face of high tempo operations or certain kinds of danger'.

- Learning culture – Reporting and other data collection are of little value unless accompanied by sound analysis. This doesn't always have to take the form of sophisticated analytical or statistical methods. Simple review and discussion of reports, audit findings and other data is often all that is required. (pp. 146-147)

Reporting and just culture. Stolzer et al. (2011) highlighted how a just culture can affect a reporting culture:

There are two proven ways to kill a safety reporting system – burn the reporter or burn the data. If safety reports are used as a source of information for disciplinary action, the reporting system will likely suffer an almost immediate demise. Employees will quickly lose trust in the organization's motives. The second way is

slower but just as deadly to the system. If employees are not convinced that the organization is serious about acting on the situations that they report, they will ultimately lose faith in the system and discontinue using it. (p. 146)

On January 25, 2000, Dr. Lucian Leape, a Harvard professor of health, testified before Congress on what he saw as the state of healthcare safety in the U.S. (Marx, 2009). He told Congress that the single greatest impediment to error prevention in the medical industry is that "we punish people for making mistakes" (p. 3). A co-author of the Institute of Medicine's (IOM) report, *To Err is Human*, Leape cited that study's estimated 44,000 to 98,000 annual deaths that were caused as result of medical error alone. He said that healthcare providers would often only report what they could not hide. (Marx, 2009)

Sometimes 'just' or 'non-punitive reporting' is confused with being free from any form of discipline (Stolzer et al., 2011). However, it is important that an organization has clearly stated standards that are consistently and fairly enforced. An organization's members must know what is expected of them in terms of behaviors and performance, but they also need to be assured that they will not be sanctioned for reporting safety problems even when they result from inadvertent errors. (Stolzer et al., 2011)

Voluntary reporting systems. One of the most important aspects of incident investigation has been data collection (Lee & Weitzel, 2005). Although incidents occur more often than accidents, an incident can only be investigated if it has been reported. Thus, developing an effective incident reporting system is fundamental to incident investigation. (Lee & Weitzel, 2005)

Aviation Safety Reporting System (ASRS). The ASRS is a voluntary program allowing pilots to submit aviation safety incident reports that can be analyzed in order to reduce the likelihood of an aviation accident. To improve the effectiveness of the system by increasing the flow of information from its users, the agency eventually transferred the operational authority to the National Aeronautics and Space Administration (NASA). The new administration is non-regulatory and guarantees confidentiality to all users of the reporting system. FAA (2011c) prohibits the use of any information submitted through the ASRS toward any disciplinary action, except information regarding criminal offenses or accidents. When a violation of CFRs comes to the attention of the FAA from a source other than a report filed with NASA under the ASRS, then the FAA will take appropriate enforcement action; enforcement-related incentives are available, if the person submitted a report under ASRS. Neither a civil penalty nor certificate suspension will be imposed against a person found in violation of the CFRs, if he or she filed a report under ASRS. This conditional immunity is granted as long as: (a) the violation was inadvertent and not deliberate; (b) the violation did not involve a criminal offense, accident, or lack of qualification or competency; (c) the person has not been found in any prior FAA enforcement action to have committed a violation in the prior 5 years; and (d) the person submitted a report under ASRS within 10 days after the violation. NASA de-identifies all incoming reports and uses the information for further analysis to identify trends and improve aviation safety. The ASRS analysts provide periodic results and make all reports available to the public (FAA, 2011a).

ASAP. According to FAA (2002), the purpose of the ASAP is to encourage air carrier and repair station employees to voluntarily report safety information that may be

critical to identifying potential precursors to accidents. The FAA has determined that identifying these precursors is essential to further reducing the already low accident rate. Under an ASAP, safety issues are resolved through corrective action rather than through punishment or discipline. The ASAP provides for the collection, analysis, and retention of the safety data that is obtained. ASAP safety data, much of which would otherwise be unobtainable, is used to develop corrective actions for identified safety concerns, and to educate the appropriate parties to prevent a reoccurrence of the same type of safety event. An ASAP is based on a safety partnership that will include the FAA and the certificate holder, and may include a third party, such as the employee's labor organization. To encourage an employee to voluntarily report safety issues, even though they may involve the employee's possible noncompliance with 14 CFR, enforcement-related incentives have been designed into the program. (FAA, 2002)

FAA (2002) was first published on January 8, 1997. Since then it has been revised twice and the program has evolved since its original inception. Currently 170 ASAP Memoranda of Understanding (MOU) are in place between companies, labor associations and the FAA. Many lessons have been learned as the program has continued to grow (FAA, 2009).

Event Review Committee (ERC). The heart of an ASAP is the ERC. The ERC reviews the reports submitted under an ASAP and determines corrective action. The ERC is a representative from the company, the pilot group or union, and the FAA. All decisions made by the ERC must be unanimous consensus. Under an ASAP, consensus of the ERC means the voluntary agreement of all representatives of the ERC to each decision required by the Memorandum of Understanding (MOU). As described in the advisory circular, consensus does not require that all members believe that the decision or

recommendation is the best one, but only that it falls into their range of acceptable outcomes for the particular issue (FAA, 2002). The Sandia report in 2000 on the ASAP at American Airlines analyzed the fast pragmatic safety decisions made by the Event Review Team. The report concluded that:

> The core of ASAP is the [ERC] whose members are in conflict but work together as a productive team to analyze events. The team must discern meaning in complex events, overcoming both uncertainty (lack of information) and equivocality (lack of clarity). At each event, the team faces a recurring test, unanimous consensus, that maintains the stability of the overall process. We model the [ERC] interaction using a tile-table metaphor. The members must achieve a reasonable balance of views in order to take action. We suggest that this balance is achieved when members adopt a shared set of cultural priorities where productive action is paramount. Sideband communications, particularly humor, allow the [ERC] to construct a working buffer around its members and to interact effectively and efficiently. (Ganter, 2000, p. 17)

Figure 1 shows the composition of the ERC and outside parties that interface with the ERC.
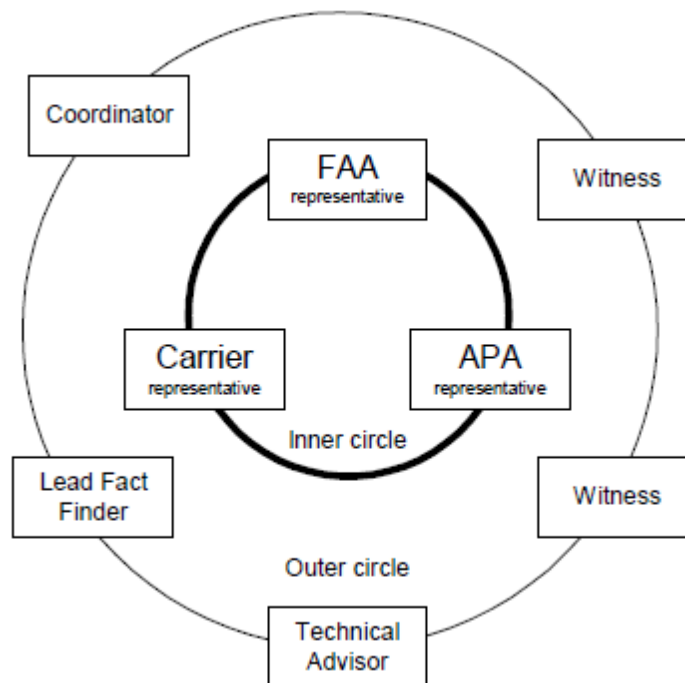
Figure 1. The ERC. *Note*. Adapted from "Fast Pragmatic Safety Decisions: Analysis of an Event Review Team of the Aviation Safety Action Partnership (SAND2000-1134)" by J. H. Ganter, C. D. Dean, and B. K. Cloer, 2000.

According to a *Best Practices for Event Review Committees* publication (FAA, 2009) an ERC's success largely depends on the characteristics of the individuals who serve as members. In order for the ERC concept to work effectively, the ERC representative must be empowered to make decisions within the context of the ERC discussions on a given report. Senior management and supervisors should not preempt their respective ERC representative's decision-making discretion for an event reported under the ASAP. If the parties to an ASAP MOU do not permit their respective ERC representative to exercise this discretion, the capacity of the ERC to achieve consensus will be undermined, and the program will ultimately fail. (FAA, 2002)

ERAU aviation safety program

Safety is the primary concern at ERAU (2011a). The University takes a proactive stance by emphasizing accident prevention, hazard identification, safety data collection and dissemination, comprehensive emergency response procedures, and an active safety education program. The effectiveness of the safety program relies on the unrestricted flow of information between instructors, students, staff and maintenance personnel. Participation in this program is critical to the continued safety of the University flight environment. Information voluntarily supplied (which does not involve negligence, deliberate violations or criminal acts) will not be used for punitive action or implication of guilt by anyone participating in this program (ERAU, 2011a).

Oversight of the safety of the flight department is vested in the Dean of the College of Aviation. The Director of Aviation Safety administers the College of Aviation's Aviation Safety Program. The Director of Aviation Safety reports directly to the Dean of the College of Aviation (see Figure 2).
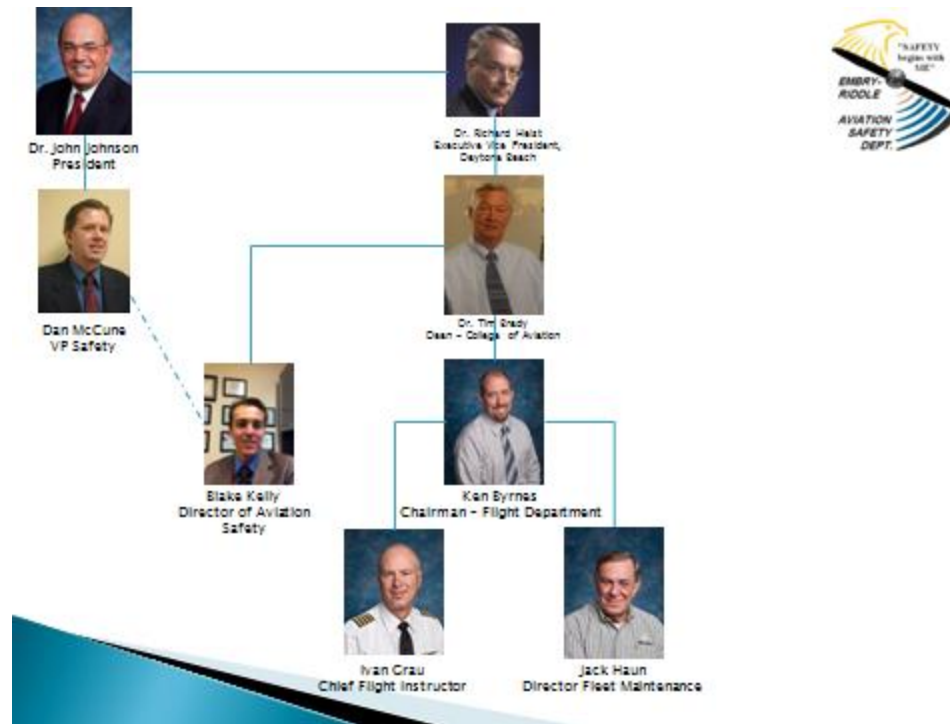
Figure 2. Organization structure, ERAU Daytona Beach Flight Training Department. *Note.* Adapted from "ERAU Aviation Safety Program" by R. B. Kelly, 2011.

According to ERAU (2011a) the Director of Aviation Safety has the following

authority:

1. Define ERAU investigation and reporting procedures for hazards, incidents, and

   accidents.

2. Develop the necessary forms and instructions for implementing the University

   Aviation Safety Program.

3. Define and require the reporting of any safety-related event.

4. Conduct an investigation of any safety-related event.

5. Require the grounding, if deemed necessary, of any flight student or instructor

   pilot involved in a safety-related event that is under investigation. Only the

Director of Aviation Safety, may lift safety-related groundings. In the absence of the Director of Aviation Safety or Chief Flight Instructor, their designated alternates will fulfill this role.

6. Conduct aviation safety inspections of any ERAU flight-related operation, facility, or contractor providing flight-related services.

7. Represent ERAU regarding aviation safety matters in dealing with government agencies and professional organizations.

8. Assume Embry-Riddle Investigator-In-Charge responsibilities for any accident or incident that is reportable under 49 CFR Part 830 (FAA, 2011c), as amended. Represent ERAU under the party participant provisions of 49 CFR Part 831 (FAA, 2011c), as amended.

According to ERAU (2011a) the Director of Aviation Safety has the following responsibilities:

1. Provide safety oversight of all aircraft maintenance and flight-related activities on a daily basis.

2. Provide aviation safety training as required by the University Aviation Safety Program.

3. Maintain a reporting system for hazards, incidents, and accidents.

4. Maintain an aviation safety analysis program.

5. Provide feedback on all identified hazards, incidents, and accidents.

6. Develop and maintain a pre-accident guide.

7. Support and promote the University Aviation Safety Program.

8. Maintain, review, and recommend revision of the Aviation Safety Program.

9. Maintain a risk mitigation process that assigns accountability and tracks the mitigation efforts to completion.

10. Facilitate confidential communication between flight students, instructor pilots, and flight administration.

11. Provide reports on aviation safety to University management.

12. Distribute aviation safety information and conduct regular meetings with flight training personnel and flight students.

13. Provide timely advice and assistance on aviation safety matters to line managers at all levels.

14. Participate in dialogue between safety professionals, Air Traffic Control, airport management, the University Aviation Safety Council, and the local community to discuss safety-related matters.

According to ERAU (2011a) under the Director of Aviation Safety, there are Safety Leaders who are appointed to represent the aviation safety program at the instructor pilot, student and maintenance technician levels. Safety Leaders are also tasked with assisting the Director of Aviation Safety with other duties as assigned. Safety Leaders' responsibilities include assisting the Director of Aviation Safety in his or her responsibilities and duties (ERAU, 2011a).

ERAU safety culture. The ERAU Safety Management System (SMS) is founded on the belief that a vibrant Safety Culture is the key to accident prevention (ERAU, 2011b). The University President knows that ERAU's Safety Culture must be strong to prevent accidents and protect the men and women who make up the Safety Culture.

The University President has established a written Safety Culture philosophy called, *Our Commitment to Safety*:

The well being [*sic*] and safety of our students, faculty, and staff are of paramount importance. Safety is an area that requires deliberate effort and a conscious commitment on the part of everyone in order to truly make a positive difference. My commitment is to work alongside each of you in ensuring the safest environment we can collectively achieve.

I encourage open participation and sharing of information, knowledge, intelligence, wisdom, and whatever other resources are at our disposal to make our workplace safer for all.

As the University President, I pledge that no disciplinary action will be taken against any person reporting a safety hazard or concern. I further pledge that those of you that make significant contributions in improving workplace safety will be appropriately acknowledged.

Let's all join in creating an atmosphere where safety permeates every part of our environment. –John P. Johnson (ERAU, 2011b, p. 6)

This Safety Culture philosophy is communicated to employees and students via posters and Safety Culture videos containing important safety messages from senior university leadership (ERAU, 2011b).

The Daytona Beach Flight Training Department also has developed 14 safety values that describe and communicate elements of the Safety Culture (ERAU, 2011a). These values were developed by a committee comprised of representation from different

levels in the organization. They are communicated to instructors and students via posters and video; they are outlined in the *ERAU Flight Operations Manual* (FOM). They are:

We value:

- A confidential, trustworthy system to promote and develop safety.

- The importance that mentorship has on the learning process.

- The maintenance of a fault and blame free system to minimize human error.

- The sharing of information, knowledge, intelligence, wisdom and resources, without reservation, in order to improve safety.

- Our employees and peers for reporting safety issues and making contributions to improve our workplace safety.

- Our next day of safe operations ahead of us more than our safety record.

- That the foundation of safety lies in the attitudes and beliefs of each individual.

- That the protection from harm is each individual's responsibility and requires deliberate effort on their part.

- The continuous analysis and improvement of our safety performance through feedback and communication.

- The efforts to report and address even the smallest hazard or safety event.

- The opportunity to learn through human error.

- The quality and competence of individuals and their motivation to continually develop their knowledge, skills, abilities.

- The right of any individual to challenge any safety issue to create a safer environment.

- The role teamwork plays in improving safety. (ERAU, 2011a, p. i)

ERAU's event reporting system. Any student, employee, or contract personnel observing a hazardous situation, event or concern that could affect flight safety is encouraged to report it to the Director of Aviation Safety, Safety Leader, or Duty Flight Supervisor by any available means (ERAU, 2011a). The Director of Aviation Safety will provide aviation safety reporting forms (blue forms) in accessible areas for this purpose. Reports can also be made via ERAU's event reporting system at http://smart.erau.edu. Aviation Safety Reports (AvSRs), submitted to the Aviation Safety Department, will be kept confidential and be non-punitive. No student or employee will be punished for submitting an AvSR or performing any action self-disclosed in their report except for reports that involve:

1. Criminal Activity

2. Substance Abuse

3. Controlled Substances

4. Alcohol

5. Intentional falsification

6. Intentional disregard for safety, or intentional violation of the *Code of Federal Regulations*. (ERAU, 2011a, p. 23)

According to D. M. McCune (personal communication, January 15, 2012) the Director of Aviation Safety reviews all submitted Aviation Safety Reports. The Director of Aviation Safety determines if any safety issue(s) identified in the report require

immediate action. The Director of Aviation also determines if the report is unacceptable

for any of the reasons specified for exclusion from the Aviation Safety Program outlined

in the *ERAU Flight Operations Manual* (FOM). The report is then either investigated by

the Director of Aviation Safety, or delegated to a Safety Leader for investigation. After

the report has been investigated, the findings and recommendations are reviewed by the

Director of Aviation Safety. The report is then de-identified and retained in the safety

department's database. Select de-identified reports are distributed to flight department

staff and management. Findings and recommendations are forwarded to the appropriate

line managers and routinely briefed to flight department leadership. The confidentiality

of reports are ensured by the Director of Aviation Safety and his aviation safety

department staff. Only aviation safety staff knows the identity of submitters of AvSRs.

Nearly all AvSRs are submitted with the submitter's name and contact information for

follow-up. The Aviation Safety Department received 336 reports in 2011 at an average

rate of 51 reports per 10,000 flight hours. (D. M. McCune, personal communication,

January 15, 2012)

Summary

An important element of an Aviation Safety Program or an SMS is an internal

safety-reporting program. The success of the program is reliant on a strong safety culture

that supports the reporting of safety-related issues by front line employees. The FAA has

established safety-reporting programs that offer enforcement-related incentives in order

to encourage the submission of safety-related events from pilots.

The NASA ASRS is available for all pilots, while an ASAP is only available to

pilots who work for an FAA certificated operator. NASA ASRS reports do allow pilots

to help improve the overall safety effort, however, the database doesn't particularly help improve the safety of a specific operator. Operators need an internal reporting system that is specific to their operation, providing data about safety issues the operator needs to address. An ASAP is designed for operators to have their own internal reporting system in partnership with the FAA. Having an ASAP also affords similar, if not arguably more, protection than the NASA ASRS program.

ERAU currently operates an internal safety reporting system.   This program is administered by their Aviation Safety Department that is led by the Director of Aviation Safety. The program collects important safety data regarding ERAU's flight training operation. The program is designed for strict confidentiality and a commitment of non-punitive action from submitting AvSRs.

Chapter III

Methodology

This study consisted of the development of a survey and an interview instrument to measure the current safety reporting culture and the possible impact, if the Flight Training Department at ERAU (Daytona Beach Campus) was to implement a formal ASAP. A survey was designed to gather the flight instructors' perceptions of safety reporting and the impact on the reporting culture, if an ASAP was implemented. A structured interview, consisting of a subset of questions contained in the survey, was administered to Flight Department management and flight instructor leadership to isolate their perceptions on the current safety reporting culture and the perceived impact an ASAP would have. The data were collected using a web-based solution, analyzed with statistical treatments and examined to gain insights into the perceptions of the impact of formalizing an ASAP.

Research Approach

The study was a descriptive study using a quantitative and qualitative mixed-methods research approach. The goal was to survey and interview participants to gather their subjective perceptions and experiences on the safety-reporting program and of the FAA's ASAP.

A 28-item survey was designed to gather data that could characterize the safety reporting culture of the organization within the Flight Department; the knowledge base of an ASAP; and the desire, concerns and possible consideration of implementing an ASAP. The researcher, in coordination with Flight Department management, developed the instrument. Also a collection plan was developed in order to give each flight instructor

the opportunity and privacy to take the survey. The data were collected directly from the participants using a computer-based survey tool called SurveyMonkey (SurveyMonkey, 2011) in university computer classrooms.

A 20-item structured interview was also developed that contained a subset of the questions presented on the 28-item survey. This interview form was used to gather both quantitative and qualitative data, comparable to the data collected from flight instructors on the survey, but from key leadership in the Flight Department. All the interviews were performed one-on-one by the researcher. The data were entered directly into SurveyMonkey (SurveyMonkey, 2011) during the interview either by the participant or the researcher.

The data were analyzed using SPSS® (IBM, 2010) to find relevant patterns, to draw conclusions, and to address the study's research questions.

Population/Sample

The population used for the survey instrument was all ERAU Flight Department instructor pilots. At the time the survey was administered, the total number of instructor pilots employed by the Flight Department was 137. The number of instructor pilots who took the survey was 115. Assuming a random sample and a population with a normal distribution, the results can be used to generalize to the entire population with 95 percent certainty (Krejcie and Morgan, 1970). The structured interview was administered to all flight department management personnel to include the Flight Department Chairman, the Chief Flight Instructors, the Assistant Chief Flight Instructors, Training Managers and a sample of four Instructor Pilot leadership personnel.

Data Collection Device

The survey was administered during the Fall term in 2011. All of the participants in the survey were employed instructors or standards pilots for the Flight Department. Participation was voluntary, but the study was fully endorsed by Flight Department Management and Supervisors.

The structured interview was administered to one Flight Department Chairman, one Chief Flight Instructor, two Assistant Chief Flight Instructors, five Training Managers, two Instructor Pilot Quality Council members, and two Instructor Pilot Union leadership representatives. All of the participants in the interviews were employed by the Flight Department. Participation in the interviews were also voluntary.

The survey instrument was comprised of a total of 28 items; 27 Items collected information data variables of interest, and one item collected free (qualitative) responses (see Appendix B).

A five-choice Likert scale was used to collect information on 22 of the 27 data variables. Of the 22 data variables, 21 of them (Questions 3-11, Questions 14-18 and Questions 21-27) used a Likert scale anchored by "Strongly Agree" and "Strongly Disagree". The other data variable (Question 2) used a Likert scale to measure knowledge level from "Very Knowledgeable" to "No Knowledge". The other five data variables (Question 1, Questions 12-13, and Questions 19-20) were multiple-choice options with two of them allowing the selection of more than one answer.

The structured interview instrument was comprised of a total of 20 items: 14 items (Questions 2-15) collected information data variables of interest, one item (Question 1) collected demographic data, and five items (Questions 16-20) collected free

(qualitative) responses (see Appendix C). A five-choice Likert scale was used to collect information on 12 of the 14 data variables. Of the 12 data variables, ten (Questions 4-13) used the Likert scale, anchored by "Strongly Agree" and "Strongly Disagree". The other data variable (Question 3) was used to measure knowledge level from "Very Knowledgeable" to "No Knowledge". The other two data variables (Questions 14-15) were multiple-choice options.

Both the survey instrument and structured interview were entered into SurveyMonkey (SurveyMonkey, 2011), an online data collection web-based service. Instructor Pilot survey participants were separated into six groups based on what training manager or "team" they reported to. Each group was scheduled in a university classroom with a sufficient number of computers available for each participant. Each group was briefed on the survey by the researcher or one of his designees. Then the participants were provided a SurveyMonkey (SurveyMonkey, 2011), hyperlink to access the online survey. This distribution method controlled access to the instrument. Participants were compensated their normal hourly wage while they took the survey. Completion times ranged from 15 to 30 minutes and participants were given ample time to complete the survey. All of the survey participants' responses were captured by SurveyMonkey (SurveyMonkey, 2011), aggregated, downloaded and imported into SPSS® (IBM, 2010) for analysis.

The structured interview participants were met one-on-one by appointment with the researcher. The participant and researcher met privately in an available office with a computer workstation with internet access. The researcher briefed the structured interview instrument and provided a SurveyMonkey (SurveyMonkey, 2011) hyperlink to

the participant. The participant was seated at the computer and while the researcher asked the questions the participant was instructed to enter his responses into SurveyMonkey (SurveyMonkey, 2011). This distribution method controlled access to the structured interview data collection instrument. Participants were compensated at their normal hourly wage, if hourly; or they performed the interview during their normal work hours, if salaried. Completion times ranged from 15 minutes to one hour. All of the interview participants' responses were captured by SurveyMonkey (SurveyMonkey, 2011), aggregated, downloaded and imported into SPSS® (IBM, 2010) for analysis.

Instrument reliability. For the IP perception survey, reliability was tested with questions written to elicit the same response: Questions 22 and 23, and Questions 26 and 27. For the structured interview, reliability was tested with questions written to elicit the same response: Questions 12 and 13.

Instrument validity. The researcher implemented actions and selected methodologies with the intention of producing results with content validity. The survey instrument was validated by subject matter experts including: Dr. Guy Smith, Department Chair – Applied Aviation Sciences; Dr. Tim Brady, Dean of the College of Aviation; Mr. David Zwegers, ASAP Analyst, JetBlue; and Mr. Ken Byrnes, Department Chair – Flight Training. Three instructor pilots who work in the Aviation Safety Department also reviewed the survey instrument for content validity. The input from all subject matter experts was incorporated into the survey. The same questions from the survey were incorporated into the structured interview, along with the input received from the subject matter experts.

Treatment of the Data

  Descriptive statistics. For the IP perception survey, interval data from Questions 3-11, 14-18, and 21-27 were described using tables to include the N, mean, SD, min and max values. Ordinal data from Questions 1, 2, 12, 13, 19, and 20 were described using figures. For the structured interview, interval data from Questions 4-13 were described using tables to include the N, mean, SD, min and max values. Ordinal data from structured interview Questions 2, 3, 14, and 15 were described using figures.

  Reliability testing. For the IP perception survey, Pearson correlations were calculated to test the reliability of Questions 22 and 23, and Questions 26 and 27. For the structured interview, Pearson correlations were calculated to test the reliability of Questions 12 and 13.

  Qualitative data. In the IP perceptions survey, respondents were able to provide qualitative data in the comments section. Selected comments were used in Chapter V to provide breadth and depth to the quantitative analysis. In the structured interview, respondents were able to provide qualitative data in four questions (Questions 16-19) formatted for qualitative data and in the comments section. If possible, comments were grouped into similar topics and selected comments were used in Chapter V to provide breadth and depth to the quantitative analysis.

Chapter IV

Results

Descriptive Statistics

IP perception survey. For the IP survey, 115 valid survey responses were

reviewed. Prior to the survey, the instructor pilots were provided a briefing on the ASAP

by the Director of Aviation Safety during one of their regularly scheduled team meetings.

The briefing consisted of an overview of what the ASAP entails and how it differs from

ERAU's current event reporting system and NASA's ASRS. Question 1 asked the

participants if they had in fact received this briefing, to which 83% responded yes and

17% responded no. See Figure 3.
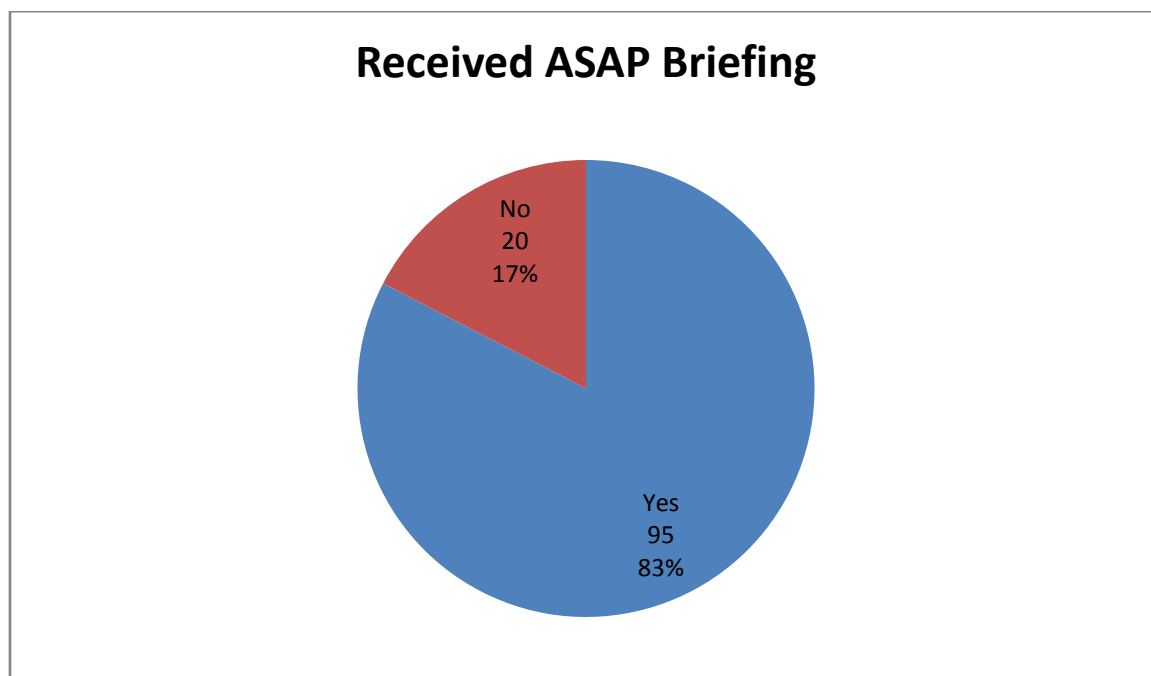
Figure 3. Instructor Pilots who received a briefing about ASAP from the Director of
Aviation Safety.

Question 2 of the IP perception survey asked the participants to rank their

perceived level of knowledge of ASAP. Of the 115 participants who responded, 57.4%

reported they had a basic understanding of ASAP, 17.4% reported they were somewhat

knowledgeable about the ASAP, 14.8% reported they had very little knowledge of

ASAP, 8.7% reported being very knowledgeable about ASAP, and 1.7% reported having

no knowledge of ASAP. See Figure 4.
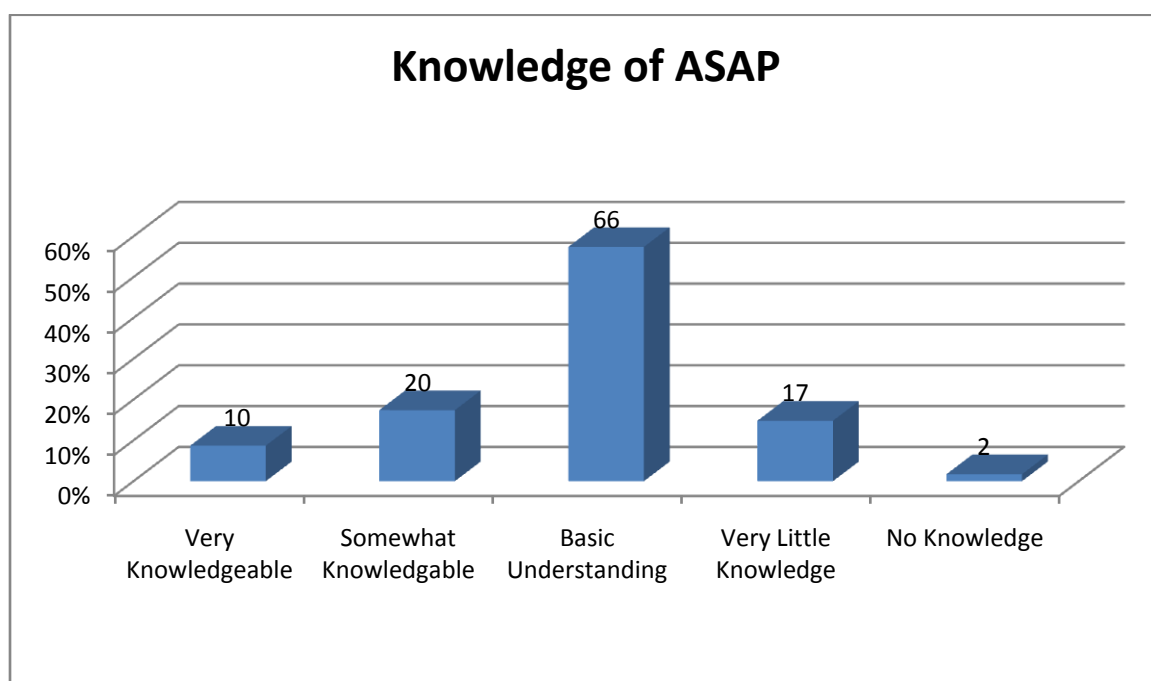
Figure 4. Level of knowledge of ASAP among Instructor Pilots.

Questions 3-6 asked the participants what factors motivated them to submit

AvSRs. The questions were asked on a Likert scale from strongly agree (5) to strongly

disagree (1) with a neutral option of neither agree nor disagree (3). Questions 3-6 also

provided an option for the participants to indicate that they did not currently submit

safety reports. Of the 115 participants who responded to Questions 3-6, four indicated on

one or more of the questions that they did not currently submit AvSRs. Since these

respondents indicated they did not submit safety reports their responses were removed

from analysis for Questions 3-6. Table 1 shows Questions 3-6, ranked by the mean from

highest motivator to lowest motivator.

Table 1

Motivators to Submit AvSRs

	N	Mean	*SD*	Min	Max
Q3. Organization and Peers	111	4.23	.63	2	5
Q6. Non Punitive	111	3.87	.82	2	5
Q5. Confidential	111	3.85	1.07	1	5
Q4. Feedback	111	3.77	.91	1	5

Questions 7-11 asked the participants what factors de-motivated them from

submitting AvSRs. The questions asked on a Likert scale from strongly agree (5) to

strongly disagree (1) with a neutral option of neither agree nor disagree (3). Table 2

shows Questions 7-11, ranked by the mean from highest de-motivator to lowest de-

motivator.

Table 2

De-motivators to Submit AvSRs

	N	Mean	*SD*	Min	Max
Q11. Certificate Protection	115	2.69	1.15	1	5
Q8. Non Punitive	115	2.37	1.04	1	5
Q7. Confidential	115	2.15	1.07	1	5
Q10. Feedback	115	1.88	.84	1	5
Q9. Organization and Peers	115	1.70	.82	1	5

In Question 12, participants were asked to indicate the methods they used to report a safety-related event that they were involved in. Question 13 asked what methods participants used to report safety-related events they witnessed. Both questions provided the same options: file a NASA ASRS report, file an ERAU AvSR, file an Ops Discrepancy report, and do nothing. Participants were able to select more than one option for Questions 12 (involved in a safety-related event) and Question 13 (witnessed a safety-related event). Figure 5 shows the breakdown for responses for Questions 12 and 13.
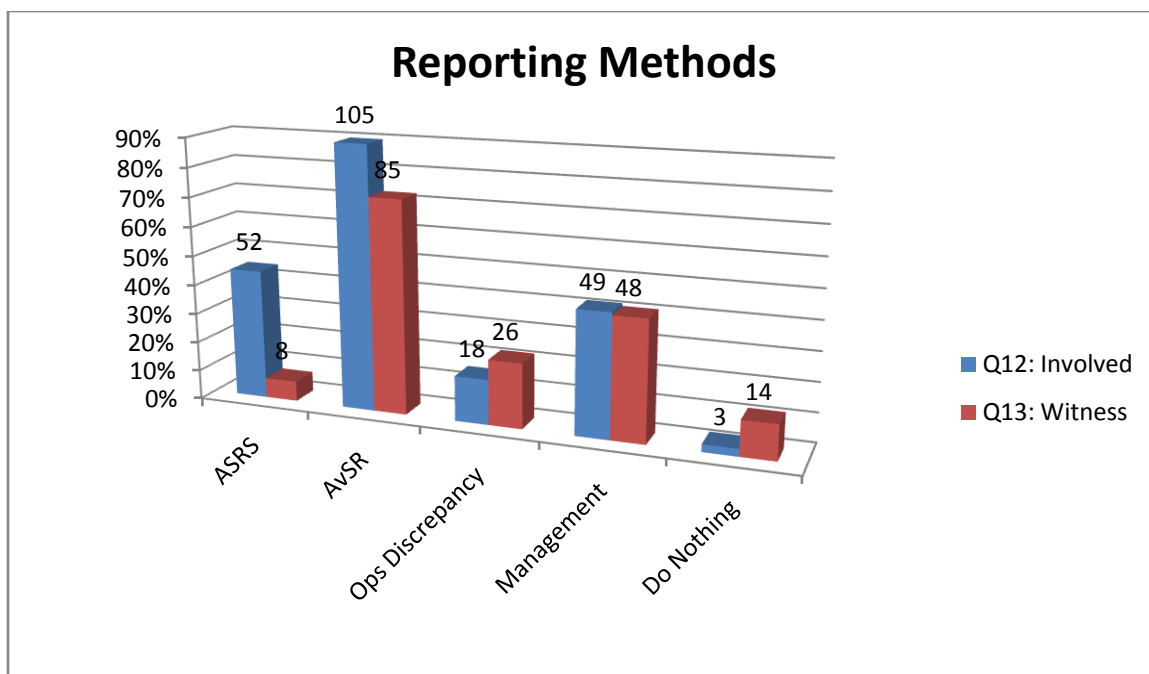
Figure 5. Breakdown of preferred reporting methods for Instructor Pilots.

In Questions 14-18 and 21, participants were asked what concerned them about the supposed implementation of an ASAP. Questions 14-18 focused on whether the participants were concerned about different groups' involvement in an ASAP, while Question 21 asked whether the participants were concerned about the loss of the current reporting system, if an ASAP was implemented. The questions were asked on a Likert scale from strongly agree (5) to strongly disagree (1) with a neutral option of neither agree nor disagree (3). Table 3 shows Questions 14-18 and 21, ranked by the mean from highest concern to lowest concern.

Table 3

Areas or Groups that Cause Concern with the Implementation of an ERAU ASAP

	N	Mean	*SD*	Min	Max
Q15. FAA	115	3.28	1.14	1	5
Q21. Loss of AvSR's	115	3.06	1.03	1	5
Q14. Management	115	2.98	1.00	1	5
Q18. Students	115	2.83	1.06	1	5
Q17. Instructors	115	2.45	1.05	1	5
Q16. Union	115	2.41	.92	1	5

Question 19 provided five options on who participants felt should be the management representative for an ASAP ERC. The options were: Assistant Chief Flight Instructor of Operations, Assistant Chief Flight Instructor of Standards, Training Manager(s), or Director of Aviation Safety. They also had an option to specify another management position. Participants could only select one option. Of the 115 responses; 47% selected the Director of Aviation Safety, 31.3% selected Training Manager(s), 9.6% selected the Assistant Chief Flight Instructor of Operations, 7.8% selected the Assistant Chief Flight Instructor of Standards, and 4.3% selected Other. See Figure 6.
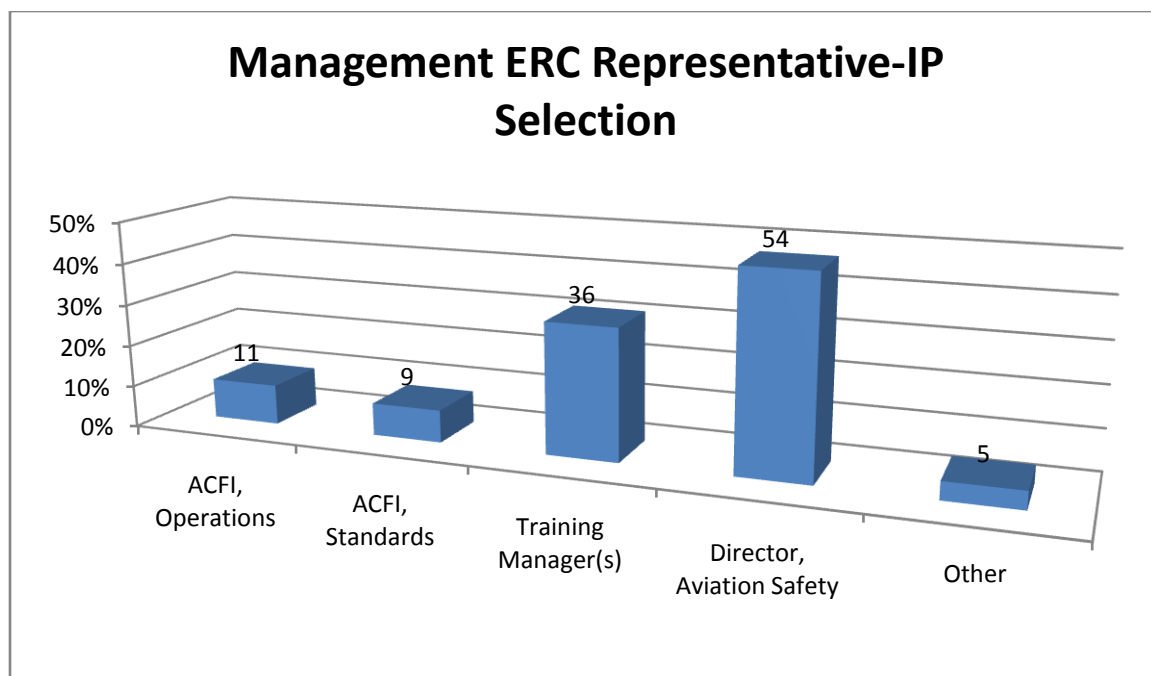
Figure 6. Instructor Pilots' preferred management ERC representative.

Question 20 provided six options on who participants felt should be the pilot representative for an ASAP ERC. The options were: the Instructor Pilot Quality Council Chairman, an Instructor Pilot Quality Council Representative, the Instructor Pilot Union President, an Instructor Pilot Executive Board Member, or an Instructor Pilot Union Steward. They also had an option to specify another pilot representative. Participants could only select one option. Of the 115 responses; 27.8% selected Instructor Pilot Union President, 24.3% selected an Instructor Pilot Quality Council Representative, 20% selected Instructor Pilot Quality Council Chairman, 12.2% selected an Instructor Pilot Executive Board Member, 7.8% selected a Union Steward, 4.35% selected Other (specifying an IP independent of the Union or IPQC) and 3.48% selected Other (unspecified). Figure 7 shows the breakdown of the selection of pilot ERC

representative, grouping the selections for union and IPQC options together, which shows 47.8% of participants selected a position affiliated with the IP union while 44.3% selected a position affiliated with the IPQC.
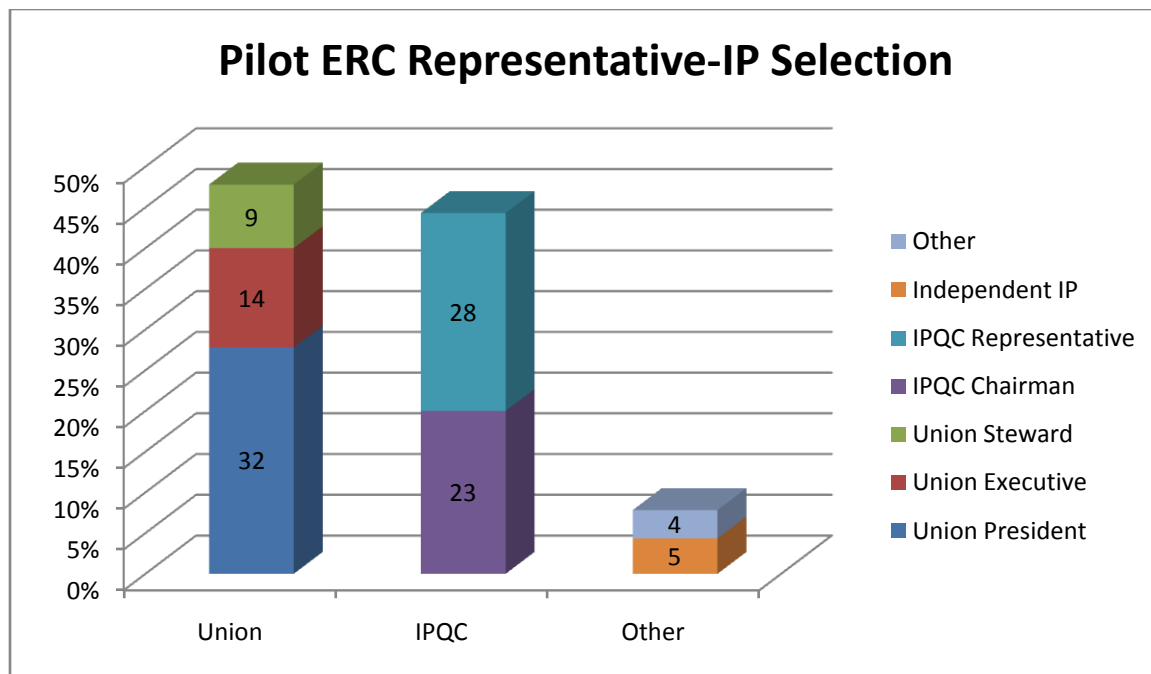
Figure 7. Instructor Pilots' preferred pilot ERC representative.

Questions 22 and 23 asked the participants if they would change their reporting habits if an ASAP was implemented. Question 22 asked if they would be more likely to submit safety reports, while Question 23 asked if they would be less likely to submit safety reports. The questions were asked on a Likert scale from strongly agree (5) to strongly disagree (1) with a neutral option of neither agree nor disagree (3). Table 4 shows Questions 22 and 23.

Table 4

Change in Reporting Habit if an ASAP was Implemented

	N	Mean	SD	Min	Max
Q22. More Likely to Report	115	3.01	.79	1	5
Q23. Less Likely to Report	115	2.84	.82	1	5

Questions 24 and 25 asked the participants how an ASAP would improve safety

at ERAU. Question 24 asked if they felt an ASAP would improve safety because more

reports would be submitted. Question 25 asked if they felt an ASAP would improve

safety because an ERC would recommend corrective action. The questions were asked

on a Likert scale from strongly agree (5) to strongly disagree (1) with a neutral option of

neither agree nor disagree (3). Table 5 shows Questions 24 and 25, ranked by the mean

from highest perceived improvement on safety at ERAU to lowest.

Table 5

Factors that Would Improve Safety if an ASAP was Implemented

	N	Mean	SD	Min	Max
Q25. ERC Corrective Action	115	3.43	.90	1	5
Q24. More Reports Submitted	115	2.97	.79	1	5

Questions 26 and 27 asked the participants what they felt an ASAP's impact on

safety would be. Question 26 asked if they felt an ASAP would have a positive impact

on safety at ERAU, while Question 27 asked if they felt an ASAP would have a negative

impact on safety at ERAU. The questions were asked on a Likert scale from strongly

agree (5) to strongly disagree (1) with a neutral option of neither agree nor disagree (3).

Table 6 shows Questions 26 and 27.

Table 6

ASAP's Impact on Safety at ERAU

	N	Mean	*SD*	Min	Max
Q26. Positive	115	3.63	.82	1	5
Q27. Negative	115	2.39	.84	1	5

Leadership structured interview. For the descriptive statistics, four IP

responses were removed to eliminate duplicate data from the IP perceptions survey, since

the IPs interviewed also took the IP perception survey. Nine management personnel were

surveyed and four instructor pilots in leadership positions. Of the nine management

personnel who responded to the structured interview; five identified themselves as middle

management and four identified themselves as upper management.

The management staff was also provided a briefing on the ASAP by the Director

of Aviation Safety during one of their regularly scheduled team meetings. Question 2

asked the participants if they had in fact received this briefing, to which 100% (9

managers) answered yes.

Question 3 of the structured interview asked the participants to rank their

perceived level of knowledge of ASAP. Of the 9 management participants: 55.6%

reported being somewhat knowledgeable about ASAP, 22.2% felt they had a basic

understanding about ASAP, 11.1% felt they had very little knowledge of ASAP, 11.1%

reported being very knowledgeable about ASAP, and 0% reported having no knowledge

of ASAP. See Figure 8.
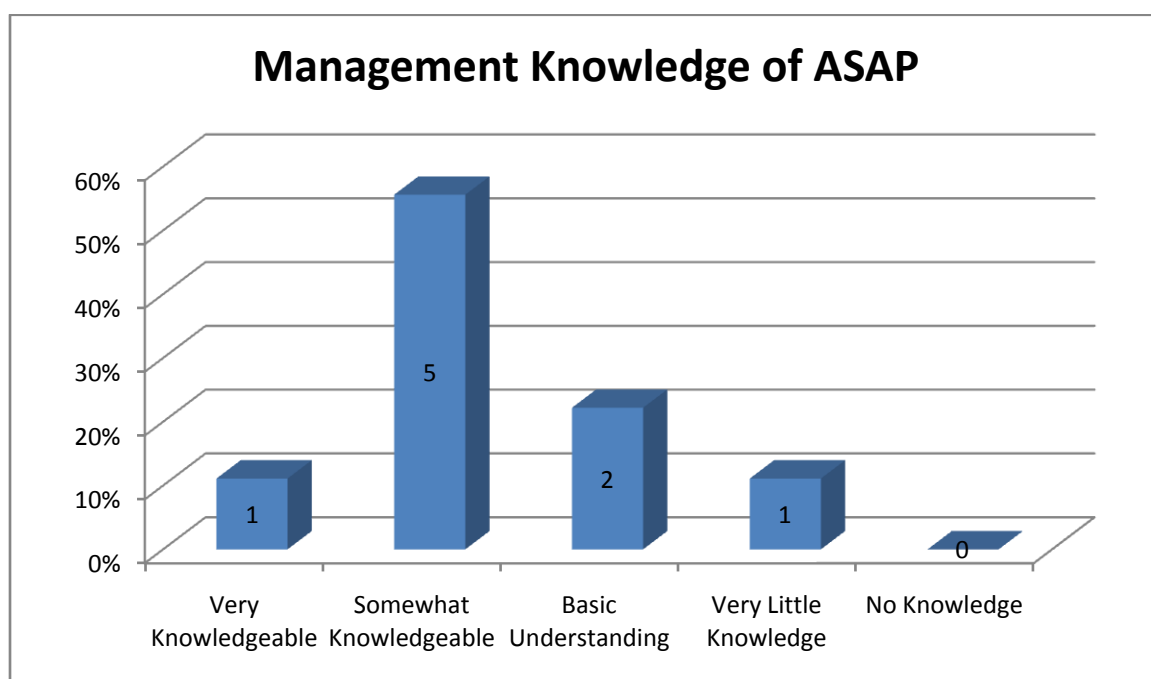
Figure 8. Breakdown of level of knowledge of ASAP among managers surveyed.

In Questions 4-9 of the structured interview, participants were asked what

concerned them about the implementation of an ASAP. Questions 4-8 focused on

whether the participants were concerned about different groups' involvement in an

ASAP, while Question 9 asked whether the participants were concerned with the loss of

the current reporting system, if an ASAP was implemented. The questions were asked on

a Likert scale from strongly agree (5) to strongly disagree (1) with a neutral option of

neither agree nor disagree (3). Table 7 shows Questions 4-9, ranked by the mean from highest concern to lowest concern.

Table 7

Areas or Groups that Cause Concern with the Implementation of an ERAU ASAP

	N	Mean	*SD*	Min	Max
Q5. FAA	9	2.78	1.30	1	5
Q9. Loss AvSR's	9	2.33	1.03	1	5
Q6. Union	9	2.33	1.12	1	4
Q8. Students	9	2.33	1.66	1	5
Q4. Management	9	2.11	1.17	1	4
Q7. Instructors	9	1.67	.71	1	3

Questions 10 and 11 asked the participants how an ASAP would improve safety at ERAU. Question 10 asked if they felt an ASAP would improve safety because more reports would be submitted. Question 11 asked if they felt an ASAP would improve safety because an ERC would recommend corrective action. The questions were asked on a Likert scale from strongly agree (5) to strongly disagree (1) with a neutral option of neither agree nor disagree (3). Table 8 shows Questions 10 and 11, ranked by the mean from highest perceived improvement of safety at ERAU to lowest.

Table 8

Factors that Would Improve Safety if an ASAP was Implemented

	N	Mean	*SD*	Min	Max
Q11. ERC Corrective Action	9	3.78	1.09	1	5
Q10. More Reports Submitted	9	2.67	1.00	1	5

Questions 12 and 13 asked the participants what they felt would be an ASAP's

impact on safety. Question 12 asked if they felt an ASAP would have a positive impact

on safety at ERAU, while Question 13 asked if they felt an ASAP would have a negative

impact on safety at ERAU. The questions were asked on a Likert scale from strongly

agree (5) to strongly disagree (1) with a neutral option of neither agree nor disagree (3).

Table 9 shows Questions 12 and 13.

Table 9

ASAP's Impact on Safety at ERAU

	N	Mean	*SD*	Min	Max
Q12. Positive	9	3.89	.93	2	5
Q13. Negative	9	2.00	1.00	1	4

Question 14 provided five options on who participants felt should be the

management representative for an ASAP ERC. The options were: Assistant Chief Flight

Instructor of Operations, Assistant Chief Flight Instructor of Standards, Training

Manager(s), or Director of Aviation Safety. They also had an option to specify another

management position. Participants could only select one option. Of the nine

management personnel responses, 44.4% selected the Director of Aviation Safety, 33.3%

selected Training Manager(s), 11.1% selected the Assistant Chief Flight Instructor of

Operations, 11.1% selected the Assistant Chief Flight Instructor of Standards, and 0%

selected Other. See Figure 9.
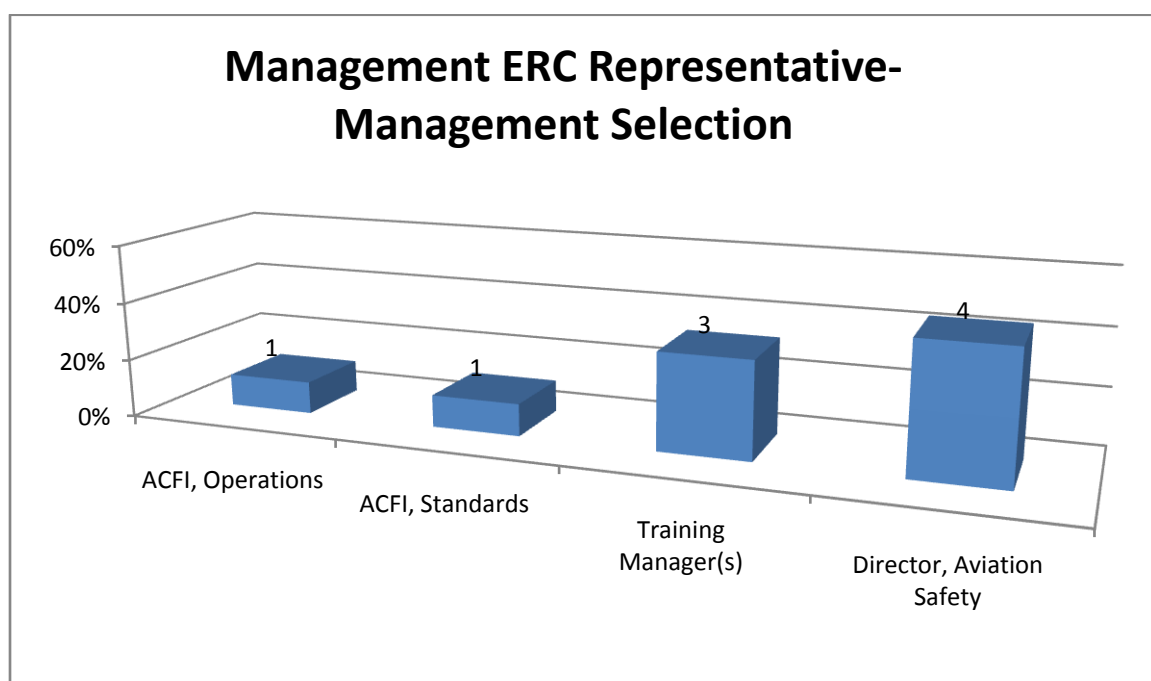
Figure 9. Management's preferred management ERC representative.

Question 15 provided six options on who participants felt should be the pilot

representative for an ASAP ERC. The options were: the Instructor Pilot Quality Council

Chairman, an Instructor Pilot Quality Council Representative, the Instructor Pilot Union

President, an Instructor Pilot Executive Board Member, or an Instructor Pilot Union

Steward. They also had an option to specify another pilot representative. Participants

could only select one option. Of the nine management responses, 44% selected Instructor

Pilot Quality Council Chairman, 22% selected an Instructor Pilot Executive Board

Member, 11% selected an Instructor Pilot Quality Council Representative, 11% selected

Other (specifying an IP independent of the Union), and 11% selected Other (specifying a

senior standards IP). Figure 10 shows the breakdown of the selection of pilot ERC

representative, grouping the selections for union and IPQC options together, and shows

22% of participants selected a position affiliated with the IP union, while 55% selected a

position affiliated with the IPQC.
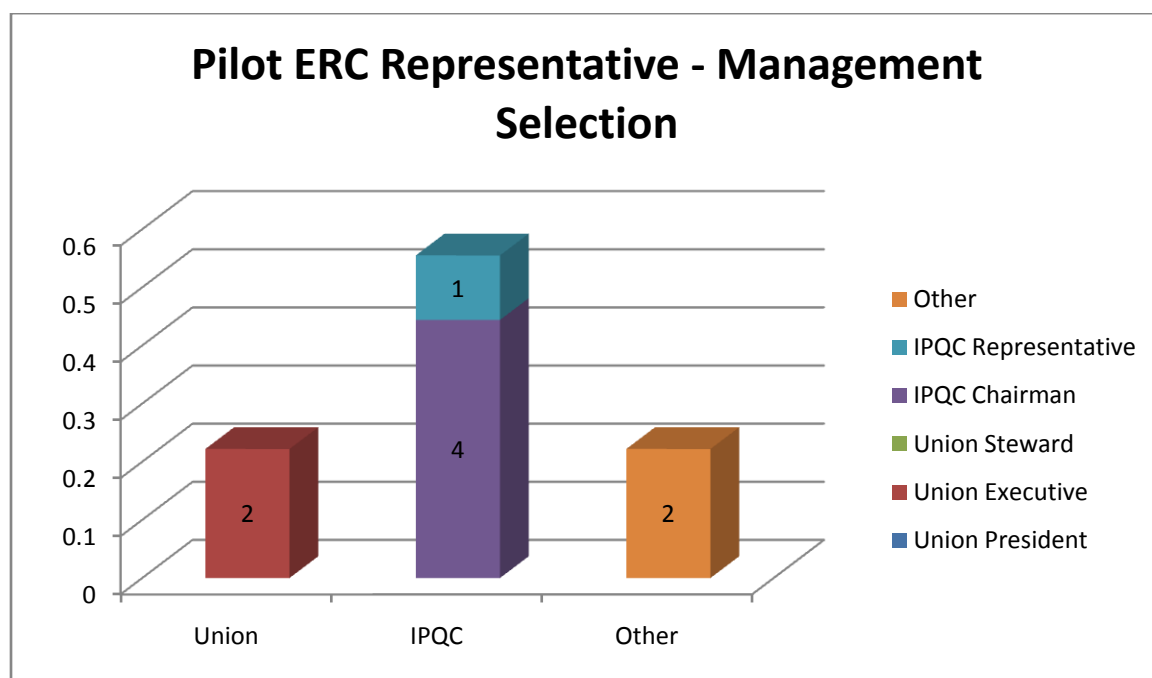
Figure 10. Management's preferred pilot ERC representative.

Reliability Testing

For the IP perception survey, Pearson correlations were calculated to test the

reliability of Questions 22 and 23, and Questions 26 and 27. For Questions 22 and 23,

the null hypothesis was: there was no relationship between responses to Question 22 and

23. For Questions 26 and 27, the null hypothesis was: there was no relationship between

responses to Question 26 and 27. Tables 10 and 11 show the results.

Table 10

Pearson Correlation Between Questions 22 and 23 on the IP Perception Survey

		More Likely	Less Likely
More Likely	Pearson Correlation(Sig)	1	-.565(.000)
	N	115	115
Less Likely	Pearson Correlation(Sig)	-.565(.000)	1
	N	115	115

Table 11

Pearson Correlation Between Questions 26 and 27 on the IP Perception Survey

		Positive	Negative
Positive	Pearson Correlation(Sig)	1	-.764(.000)
	N	115	115
Negative	Pearson Correlation(Sig)	-.764(.000)	1
	N	115	115

For both, reject the null hypotheses. There was a relationship between responses to Questions 22 and 23, and between responses to Questions 26 and 27.

For the structured interview, Pearson correlations were calculated to test the null hypothesis: there was no relationship between responses to Questions 12 and 13. Table 12 shows that the Pearson correlation was statistically significant; therefore reject the null hypothesis. There was a relationship between responses to Questions 12 and 13.

Table 12

Pearson Correlation Between Questions 12 and 13 on the Structured Interview

		Positive	Negative
Positive	Pearson Correlation(Sig)	1	-.943(.000)
	N	9	9
Negative	Pearson Correlation(Sig)	-.943(.000)	1
	N	9	9

Qualitative Data

IP perception survey. For the IP perception survey, 25 of the 117 instructors who took the survey provided additional comments to support their responses. Of the 25 responses, six were in clear opposition to an ASAP being implemented. Six responses clearly supported an ASAP and recommended implementation. Five responses advocated for more education on the ASAP before implementing it. Eight responses provided concerns or questions and did not clearly advocate for or against an ASAP.

Leadership structured interview. For the structured interview, nine

management personnel and four instructor pilots in leadership positions were

interviewed. For the interview qualitative data, responses from the four instructor pilots

in leadership roles were considered because there were no equivalent qualitative

questions on the IP perception survey. Of the four instructor pilots in leadership roles,

two were from the instructor pilot union and two were from the Instructor Pilot Quality

Council.

In response to Question 16, "Do you feel ERAU should pursue the formation of a

formal Aviation Safety Action Program?" - Eleven responded yes and two responded no.

All participants responded to Question 17, "What is your biggest concern with

formalizing an Aviation Safety Action Program?" The responses were:

- Five responded that their concern would be a decrease in the number of
  safety reports.

- Three responded that they were concerned with the FAA's involvement
  with an ASAP.

- One responded deciding who would be on the ERC.

- One responded involving students in an ASAP.

- One responded that an ASAP could slow down the entire safety process.

- One responded that the union pilots might get more protection than
  managers or non-union pilots.

- One responded their concern was everyone not understanding their roles
  under an ASAP.

All participants responded to Question 18, "What do you feel is the biggest motivator for instructor pilots to report safety events?" Ten responded that the biggest motivator was either the safety culture or to improve safety for themselves and peers. Only three responded that the biggest motivator was immunity from punitive action of some kind.

Chapter V

Discussion, Conclusions, and Recommendations

Discussion

Both the IP perception survey and the leadership structured interview provided insight into the ERAU Daytona Beach Flight Training Department's current perspective and knowledge of ASAP. The data from both the IP perception survey and the leadership structured interview can help analyze the impact on the safety culture of the Flight Training Department from implementing an ASAP. The impact on the safety culture can then be analyzed to determine whether the effect is desired and, if not desired, whether the benefits outweigh the negative effect. The data from the two instruments can also provide guidance for flight department leadership for the implementation of an ASAP, if leadership should choose to do so.

The IP perception survey data were analyzed to determine perceptions about the following:

- What level of knowledge of ASAP exists among the IPs?

- What currently motivates IPs to submit safety reports?

- What does not motivate IPs to submit safety reports?

- What are the preferred methods for IPs to report safety-related issues?

- What would concern the IP population, if ERAU was to implement an ASAP?

- Who does the IPs feel should make up the ERC?

- How would an ASAP change safety reporting habits among IPs?

- Do the IPs feel that an ASAP would improve safety at ERAU and, if so, how?

- Do the IPs feel that an ASAP would have a positive or negative impact on ERAU's overall safety?

The leadership structured interview data were analyzed to determine perceptions about the following:

- What level of knowledge of ASAP exists among management?

- What would concern management personnel, if ERAU was to implement an ASAP?

- Does management feel that an ASAP would improve safety at ERAU and, if so, how?

- Does management feel that an ASAP would have a positive or negative impact on ERAU's overall safety?

- Who does management feel should make up the ERC?

- What is management's perception of the motivators for IPs to report safety issues or events?

A comparison was also done in the following areas between data collected from IPs and management:

- Level of knowledge of ASAP comparison between IPs and management.

- Comparison between areas of concern of IPs and management.

- Comparison between the perceptions of IPs and management, if an ASAP would have a positive or negative impact on safety at ERAU.

- Comparison between the perceptions of IPs and management, if an ASAP would improve safety and how it would improve safety.

- Comparison between IPs and management on who should be on the ERC.

- Comparison between what reportedly motivates IPs to report safety concerns and what management believes motivates IPs to report safety concerns.

IP perception survey. It was the goal of the researcher and for flight department leadership that all IPs should receive a briefing on ASAP from the Director of Aviation Safety. The purpose of this briefing was to educate the IPs about the ASAP and to encourage them to study the topic more. However, only 83% of the IPs reported receiving the briefing. It could be that those who did not receive the briefing were not working or did not attend the meeting when the briefing on the ASAP was presented to their team.

The data for the knowledge level of ASAP among IPs appears to be normally distributed around the mean. The mean level of knowledge about ASAP among IPs was a basic level of understanding. Though it appears that the IPs knew about the ASAP, there was not an adequate level of knowledge to prevent misconceptions about the program and to have an educated stance on the benefits or drawbacks of the program. Several qualitative statements given by IPs on the IP perception survey support this. For example, one IP commented, "I currently do not have enough knowledge of the ASAP system to take a position in regards to pros/cons or versus the ERAU system." Four qualitative responses advocated for more education on the ASAP.

The IPs were asked on the IP perception survey what factors motivated them to submit AvSRs. The highest reported motivator was "the information benefits the organization and my peers." The standard deviation was smaller than the responses to similar questions. Followed by the benefit to the organization and peers, IPs reported non-punitive protection, followed by confidentiality, and then followed by feedback as

motivators for submitting safety reports. All these factors had a mean above the neutral point of the Likert scale, making them important aspects to the IPs.

The IPs were asked on the IP perception survey what factors de-motivated them from submitting AvSRs. The highest reported de-motivator was "I feel there is no personal benefit for myself in regards to certificate protection from the FAA from submitting ERAU Aviation Safety Reports." Lack of certification protection was followed by non-punitive protection, followed by confidentiality, followed by feedback, and then followed by benefit to organization and peers. It is understandable that certification protection from the FAA would be cited as the highest de-motivator, as the current ERAU aviation safety reporting program does not offer such protection; it would only be available through an ASAP. However, it is interesting to note that the mean response to the question regarding certificate protection as a de-motivator was slightly below the Likert scale neutral point. In other words, the mean response was between the neither agree nor disagree and the disagree responses. In fact, for all questions asking about what may de-motivate IPs from submitting AvSRs, the mean was skewed towards the disagree end of the Likert scale.

In Questions 12 and 13 of the IP perception survey, IPs were asked which methods they used to report safety-related events, whether they were involved in them or witnessed them. Of the IPs surveyed, 89.7% reported that they submitted an ERAU AvSR when involved in a safety-related event. The next highest method used by IPs involved in a safety-related event was submitting an ASRS report (44.4%). The highest reported method for reporting a witnessed safety-related event was also submitting an ERAU AvSR (72.6%) followed by informing management. About 41% of IPs would

inform management whether they were involved in a safety-related event or witnessed

one. The data show how important the current ERAU AvSR program is, as a vast

majority of IPs used it to report safety-related events. It is also interesting to note that

only 2.6% of IPs reported doing nothing when involved in a safety-related event;

however, 12% reported doing nothing if they witnessed a safety-related event. Only

6.8% of IPs used the NASA ASRS program when they witnessed a safety-related event.

A possible reason for this is that IPs did not use the ASRS program when it would not

protect them from certificate action.

When IPs were asked about areas of concern with implementing an ASAP

program, the highest reported concern was the involvement of the FAA. The second

highest concern was the loss of the current ERAU AvSR program. The statistical means

for both responses about the FAA and the loss of the current reporting system were

slightly skewed to the Agree side of the Likert scale. The third highest concern was the

involvement of management in an ASAP, with a mean centered at the neutral point in the

Likert scale. The fourth, fifth and sixth concerns were the involvement of students,

instructors, and the union, respectively, in an ASAP; with statistical means slightly

skewed towards the Disagree side of the scale. The concern about the involvement of the

FAA in implementing an ASAP was supported by nine qualitative comments submitted

by IPs in the IP perception survey, which intensified the concern about the FAA being

involved in ERAU's safety reporting program.

When IPs were asked who should serve as the management representative to the

ERC, the most selected person was the Director of Aviation Safety, followed by Training

Manager(s). The Assistant Chief Flight Instructors only received 20% of the selections

from IPs. It seems that more IPs were comfortable having the Director of Aviation

Safety serve as the management representative to the ERC because the Director of

Aviation Safety is currently the only management person directly involved in the safety

reporting program. This would mean little change in management involvement from

what is currently in place.

In regard to IPs selection of a pilot representative to the ERC, the selections were

split among the provided options. No single option got above 30%; the highest selected

was the IP union president. There seemed to be an even split between selection of a

union-affiliated person and an IPQC-affiliated person wherein 47.8% of IPs selected a

union-affiliated person, while 44.3% of IPs selected an IPQC-affiliated person. The

responses provided by IPs did not provide a clear group that the IPs wanted to represent

them on an ERC, if an ASAP was to be developed.

IPs were asked if they would be more likely to submit safety reports if an ASAP

was implemented at ERAU. The mean was centered on the neutral point of the Likert

scale. The reliability of this question was tested by asking the opposite question and

testing for a relationship; the Pearson correlation was statistically significant. There

wasn't evidence that IPs would be more or less inclined to submit safety reports under an

ASAP.

IPs were asked if they felt an ASAP would improve overall safety at ERAU. In

one question, they were asked if it would improve safety because IPs would submit more

reports. The mean of the responses was centered at the neutral point of the Likert scale.

In another question, IPs were asked if an ASAP would improve safety because an ERC

would recommend corrective action. The mean was skewed to the Agree side of the Likert scale.

The IPs were asked in the survey if they felt an ASAP would have a positive or negative impact on safety at ERAU. The reliability of these questions was tested for a relationship. The Pearson correlation was statistically significant. The mean of responses for IPs feeling that an ASAP would have a positive impact on safety at ERAU was skewed slightly to the Agree side of the Likert scale.

Leadership structured interview. Management staff were also included in the briefings regarding the ASAP, along with the instructors they managed. The interviewed management staff all received the briefing on the ASAP from the Director of Aviation Safety. Most managers reported being somewhat knowledgeable about the ASAP and all but one reported at least a basic understanding of the ASAP.

The management staff answered questions identical to questions in the IP perception survey regarding areas of the ASAP that may cause concern. The concern with the highest mean was the involvement of the FAA. The loss of the current safety reporting system, involvement of the union and students followed; they had the same mean among responses. The next areas of concern were the involvement of management and the involvement of instructors. All areas of concern had means below the neutral point in the Likert scale and skewed towards the Disagree side of the scale. This means that participants tended to disagree that these were strong concerns. Several managers supported their concerns about FAA involvement in their qualitative responses. One said, "The FAA is a political entity. A change in administration or perhaps a catastrophic current event could introduce negatives that are unforeseen at this point."

Management were also asked if they felt an ASAP would improve overall safety at ERAU. In one question, they were asked if it would improve safety because more reports would be submitted by IPs. The mean of the responses were skewed to the Disagree side of the Likert scale, tending to disagree that more reports would be submitted. In another question, management was asked if an ASAP would improve safety because an ERC would recommend corrective action. The mean was skewed to the Agree side of the Likert scale.

Management personnel were asked if they felt an ASAP would have a positive or negative impact on safety at ERAU. The reliability of these questions was tested for a relationship. The Pearson correlation was statistically significant. The mean of responses for management feeling that an ASAP would have a positive impact on safety at ERAU was skewed to the Agree side of the Likert scale, indicating that management felt an ASAP would have a positive impact on safety at ERAU.

Management participants were asked who should serve as the management representative on the ERC, if an ASAP was implemented. The most selected person was the Director of Aviation Safety followed by Training Manager(s). The Assistant Chief Flight Instructors only received 20% of the selections from managers. Managers were sensitive about who should represent them on the ERC and the impact on perceptions of IPs. Most managers supported having the Director of Aviation Safety continue to represent management or having a manager representative in the lower echelon of the organization, like a Training Manager.

Management also selected who they felt should be the pilot representative on an ERC. The most selected position was the IPQC Chairman with 44%. The second was an

IP union executive with 22%. The third, fourth and fifth were a IPQC representative, senior standards IP, and an IP independent of the union, respectively, each with 11%. Management overall favored a person affiliated with the IPQC with 55% of the selections.

When managers were asked what they felt motivated IPs to report safety concerns, seven of the nine managers responses indicated something similar to the overall culture, improving the organization, or helping their peers. An example from one manager was "Desire to improve their environment/system. Help their peers avoid a similar situation." Two cited protection from punitive action only.

IP perception survey and leadership structured interview comparison.
Several similarities and differences were identified between the data from the IP perception survey and the leadership-structured interview. The similarities could strengthen assumptions found in either data set, while differences could identify a difference in perceptions between the two levels of the organization.

One difference is that most managers were somewhat knowledgeable about the ASAP, while the majority of IPs had only a basic understanding. Both IPs and managers rated the concern of FAA involvement in an ASAP as the highest concern; based on the mean, managers appeared to be slightly less concerned. Both IPs and managers tended to agree an ASAP would have a positive impact on safety. Both IPs and managers felt that safety reporting wouldn't necessarily increase or decrease, but that an ERC recommending action would improve safety. Management and IPs had similar opinions about who should be the management representative to an ERC, favoring the Director of Aviation Safety or a Training Manager. Managers seemed to favor a nonunion pilot to

represent pilots on the ERC, compared to IPs who were split nearly 50/50 between a union or IPQC representative. In addition, managers and IPs agreed about what motivated IPs to report safety concerns; both identified "the information benefits the organization and peers" as the biggest motivator for submitting safety reports.

Conclusions

Several conclusions can be drawn from the data collected from both the IP perception survey and the leadership structured interview. These conclusions can help the Flight Training Department make informed decisions about how to proceed with an ASAP, if they decide to implement an ASAP. This study has identified areas of concern that should be addressed and how the Flight Training Department could implement an ASAP and not negatively impact its current outstanding safety culture.

Research Questions.

What currently motivates ERAU instructor pilots to report safety events? In the responses to the IP perception survey, IPs reported that the benefit to the organization and peers was what motivated them to submit safety reports. This was supported by interview responses from managers who also felt the biggest motivator for ERAU instructor pilots to report safety concerns was the benefit to their organization and their peers. Non-punitive action was identified as the second motivator for IPs to submit safety reports. Lack of certificate protection and not trusting the non-punitive nature of the program were the top two factors reported as de-motivators by IPs. However, IPs' mean responses showed all de-motivators skewed to the Disagree side of the Likert scale; thus de-motivators were not a major issue. The incentive for reporting under an ASAP is that the submitter is offered certain certificate enforcement protection. Though the FAA

feels that certificate enforcement protection strongly motivates pilots to submit safety-related concerns, it does not seem to be a strong motivator at ERAU. Though an ASAP might motivate IPs to report more, there was no significant evidence supporting this premise in either the IP perception survey or the leadership structured interview.

Would ERAU's implementation of an ASAP increase safety reporting among instructor pilots? In the IP perception survey, when asked if an ASAP would change their reporting habits, IPs indicated they would not submit reports more or less. As identified in the previous research question, though enforcement-related incentives of an ASAP may motivate IPs to report safety issues; it was not identified as the biggest motivator, nor was it a significant de-motivator for IPs. In fact, in management interviews, several managers expressed their concern about a decrease in reporting among IPs because of FAA involvement.   Due to the low level of understanding of the ASAP among IPs, more education would be necessary for them to be comfortable. Also they would need to build trust in the ASAP to see its benefits and to stem any decrease in reporting. Hopefully safety reporting would increase over time.

What concerns exist among instructor pilots and flight department management in implementing an ASAP program? The most notable concern about an ASAP presented by both instructor pilots and management was the involvement of the FAA. In light of survey and interview results, both instructor pilots and management identified it as the number one concern. Changing from the current ERAU safety reporting system was cited as the second highest concern by both groups. This was supported by both IPs and managers who preferred the Director of Aviation Safety to be involved in safety reports on behalf of management; they did not strongly support involving other

management. Another concern was a decrease in reporting because of FAA involvement. The last concern was a lack of understanding of the program among all involved parties, which could cause issues including decreased reporting and reduced program effectiveness.

Recommendations

Further education of flight department staff, specifically instructor pilots, is needed in order for all persons to fully understand the ASAP. Only then can a better-informed decision be made by instructor pilots and managers to adopt an ASAP. A recommendation for further study is to provide a better education package on the ASAP and provide it to all applicable flight department staff and management. Then the data collection devices used in this study could be repeated to see if education changes the results in any way.

Though this study evaluated the possible effect of an ASAP on the ERAU Flight Training Department's reporting culture, it did not clearly indicate whether the IPs *wanted* to implement an ASAP. No questions on the IP perception survey pointedly asked if the IP wanted ERAU to pursue an ASAP. Only in the leadership structured interview did the researcher ask if ERAU should implement an ASAP, to which ten said yes, two said no and one said maybe. This data from the IPs would be valuable to make the decision whether to pursue an ASAP.

One participant of the leadership structured interview said, "My concern is why do the rest of the approximately 40 universities that offer four year college degree [*sic*] with concentration in aviation and the other few thousands [*sic*] of 141 flight schools in the country don't have an ASAP program. Maybe we need to research why." This is an

intriguing point; of the 61 certificate holders who hold at least one ASAP MOU, only one of them is a flight school (FAA, 2011d). If ERAU was to implement an ASAP today, it would be the first aviation college or university to do so and only the second flight school. A recommendation for further study is to survey all FAA part141 flight schools and aviation colleges and universities to find out why they do not have an ASAP set up, if they plan to set up an ASAP, and what are the reasons for adopting an ASAP or not adopting an ASAP.

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Appendix A

Permission to Conduct Research

Embry-Riddle Aeronautical University

Application for IRB Approval

Determination Form

11-151

Principle Investigator: Dr. Guys Smith
        Other Investigators: Blake Kelly, Dan McCune

Project Title: *"ASAP Feasibility Study for Embry-Riddle Aeronautical University, Daytona Beach Flight Department"*

Submission Date: September 20, 2011

Determination Date: October 14, 2011

Review Board Use Only

Initial Reviewer: Teri Vigneau/Bert Boquet

Exempt: XYes ___ No

Approved: X Yes ___ No

Comments: The purpose of this study is to determine the feasibility of ERAU implementing a formal ASAP program as defined by FAA Advisory Circular (AC) 120-66B, and identifying the impact on safety of ERAU'S flight program. There are two parts to this study, collection through an online survey for instructor pilots; and an in-person interview of flight department personnel. There is no physical risk associated with this survey or interview; therefore it may be considered exempt. [Teri Vigneau 10-6-11] This protocol is exempt. [Bert Boquet 10-14-11]

Appendix B

Data Collection Device - Survey Instrument

Instructor Pilot ASAP Perception Survey

Introduction

Instructions: The following survey is used to collect data for a feasibility study on Embry-Riddle Aeronautical University Daytona Beach (ERAU) formalizing an Aviation Safety Action Program for its Flight Department. Your responses will be kept anonymous and your participation is voluntary. If you have any questions about the study, please contact:

Blake Kelly
kellyb5@erau.edu,
386-226-6763

Aviation Safety Action Program (ASAP) - is a program which employees can submit safety reports to an event review committee (ERC) who decide whether or not to accept the report. If a report is accepted under ASAP by the event review committee the submitter of the report will receive protection from certain enforcement actions by the Federal Aviation Administration.

Event Review Committee – a committee comprised of a representative from a certificated operators management, pilot group and the Federal Aviation Administration. It can also include flight student representation if the certificated operator is a pilot school or training center. The Event Review Committee reviews safety reports submitted under an Aviation Safety Action Program to decide whether the report should be accepted and what corrective action(s) should be made in order to prevent a similar event from happening again.

NASA's Aviation Safety Reporting System (ASRS) – is a reporting system in which certificated pilots can submit safety reports to NASA. These reports are kept confidential and are de-identified by NASA. These reports are used by the Federal Aviation Administration to improve the safety of the National Airspace System (NAS). The Aviation Safety Reporting System does offer certain protections from FAA enforcement action for the submitter of an ASRS report.

ERAU Aviation Safety Reports (AvSRs) – are ERAU's internal safety reports that employees can submit to ERAU's safety department. These reports are reviewed by ERAU's Aviation Safety department and recommendations are made to flight department management. The reports are kept confidential by ERAU's Aviation Safety department.

ERAU Ops Discrepancy Form – is a form that can be submitted by employees to the ERAU flight supervisor. These reports are forwarded to the Chief Flight Instructor's office for review. These forms are used to report possible non compliance with ERAU procedures or policies.

Instructor Pilot ASAP Perception Survey

＊1. I have received a briefing on the Aviation Safety Action Program from ERAU's Director of Aviation Safety:

○ Yes

○ No

＊2. I feel my understanding of ASAP is:

○ 5 - Very Knowledgeable ○ 4 - Somewhat Knowledgeable ○ 3 - Basic Understanding ○ 2 - Very Little Knowledge ○ 1 - No Knowledge

Instructor Pilot ASAP Perception Survey

*3. I currently submit ERAU Aviation Safety Reports (AvSRs) because the information benefits the organization and my peers:

◯ 5 - Strongly Agree   ◯ 4 - Agree   ◯ 3 - Neither Agree nor Disagree   ◯ 2 - Disagree   ◯ 1 - Strongly Disagree   ◯ I currently do not submit aviation safety reports

*4. I currently submit ERAU Aviation Safety Reports (AvSRs) because I want the individual feedback from report being investigated by the Safety Department:

◯ 5 - Strongly Agree   ◯ 4 - Agree   ◯ 3 - Neither Agree nor Disagree   ◯ 2 - Disagree   ◯ 1 - Strongly Disagree   ◯ I currently do not submit aviation safety reports

*5. I currently submit ERAU Aviation Safety Reports (AvSRs) because I want the confidential protection from the organization:

◯ 5 - Strongly Agree   ◯ 4 - Agree   ◯ 3 - Neither Agree nor Disagree   ◯ 2 - Disagree   ◯ 1 - Strongly Disagree   ◯ I currently do not submit aviation safety reports

*6. I currently submit ERAU Aviation Safety Reports (AvSRs) because I want the non punitive protection from the organization:

◯ 5 - Strongly Agree   ◯ 4 - Agree   ◯ 3 - Neither Agree nor Disagree   ◯ 2 - Disagree   ◯ 1 - Strongly Disagree   ◯ I currently do not submit aviation safety reports

Instructor Pilot ASAP Perception Survey

*7. I do not trust the confidential nature of submitting ERAU Aviation Safety Reports (AvSRs):

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

*8. I do not trust the non punitive nature of submitting ERAU Aviation Safety Reports (AvSRs):

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

*9. I feel there is little benefit to the organization and my peers from submitting ERAU Aviation Safety Reports (AvSRs):

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

*10. I feel there is no personal benefit for myself in regards to helpful feedback from submitting ERAU Aviation Safety Reports (AvSRs):

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

*11. I feel there is no personal benefit for myself in regards to certificate protection from the FAA from submitting ERAU Aviation Safety Reports (AvSRs):

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

Instructor Pilot ASAP Perception Survey

✱12. Currently if I am involved in a safety related event I: (check all that apply)

☐ File a NASA ASRS report

☐ File an ERAU AvSR

☐ File an Ops Discrepancy report

☐ Directly inform management

☐ Do Nothing

✱13. Currently if I witness a safety related event I: (check all that apply)

☐ File a NASA ASRS report

☐ File an ERAU AvSR

☐ File an Ops Discrepancy report

☐ Directly inform management

☐ Do Nothing

Instructor Pilot ASAP Perception Survey

*14. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with flight department management's involvement in the program:

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

*15. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with the FAA's involvement in the program:

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

*16. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with the union's involvement in the program:

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

*17. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with other instructor pilot's involvement in the program:

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

*18. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with student's involvement in the program:

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

Instructor Pilot ASAP Perception Survey

*19. I feel the best MANAGEMENT/COMPANY representative for the Event Review Committee (ERC) would be:

○ The Assistant Chief Flight Instructor, Operations

○ The Assistant Chief Flight Instructor, Flight Standards

○ Training Manager(s)

○ Director of Aviation Safety

○ Other (please specify)

_____

*20. I feel the best INSTRUCTOR PILOT representative for the Event Review Committee (ERC) would be:

○ Instructor Pilot Quality Council Chairman

○ Instructor Pilot Quality Council Representative

○ Instructor Pilot Union President

○ Instructor Pilot Union Executive Board Representative

○ Instructor Pilot Union Stewart

○ Other (please specify)

_____

Instructor Pilot ASAP Perception Survey

*21. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with the loss of our current ERAU Aviation Safety Reports (AvSRs):

○ 5 - Strongly Agree　　○ 4 - Agree　　○ 3 - Neither Agree nor Disagree　　○ 2 - Disagree　　○ 1 - Strongly Disagree

*22. I would be more likely to file a safety report under the Aviation Safety Action Program (ASAP) then under ERAU's current Aviation Safety Reports (AvSRs):

○ 5 - Strongly Agree　　○ 4 - Agree　　○ 3 - Neither Agree nor Disagree　　○ 2 - Disagree　　○ 1 - Strongly Disagree

*23. I would be less likely to file a safety report under the Aviation Safety Action Program (ASAP) then under ERAU's current Aviation Safety Reports (AvSRs):

○ 5 - Strongly Agree　　○ 4 - Agree　　○ 3 - Neither Agree nor Disagree　　○ 2 - Disagree　　○ 1 - Strongly Disagree

Instructor Pilot ASAP Perception Survey

*24. Under an Aviation Safety Action Program (ASAP) more reports would be submitted than under ERAU's current Aviation Safety Reports (AvSRs):

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

*25. I feel the Aviation Safety Action Program (ASAP) would improve safety at ERAU because an Event Review Committee (ERC) will determine corrective action for each report:

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

*26. I feel that the Aviation Safety Action Program (ASAP) will have a positive impact on safety at ERAU:

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

*27. I feel the Aviation Safety Action Program (ASAP) will have a negative impact on safety at ERAU:

○ 5 - Strongly Agree   ○ 4 - Agree   ○ 3 - Neither Agree nor Disagree   ○ 2 - Disagree   ○ 1 - Strongly Disagree

Instructor Pilot ASAP Perception Survey

28. Any comments regarding ERAU implementing ASAP or responses given in this survey?

Appendix C

Data Collection Device - Structured Interview Instrument

Leadership ASAP Perception Survey

Introduction

Instructions: The following interview will be used to collect data for a feasibility study on Embry-Riddle Aeronautical University Daytona Beach (ERAU) formalizing an Aviation Safety Action Program(ASAP) for its Flight Department. Your responses will be kept confidential and your participation is voluntary. If you have any questions about the study, please contact:

Blake Kelly
kellyb5@erau.edu,
386-226-6763

Aviation Safety Action Program (ASAP) - is a program which employees can submit safety reports to an event review committee (ERC) who decide whether or not to accept the report. If a report is accepted under ASAP by the event review committee the submitter of the report will receive protection from certain enforcement actions by the Federal Aviation Administration.

Event Review Committee – a committee comprised of a representative from a certificated operators management, pilot group and the Federal Aviation Administration. It can also include flight student representation if the certificated operator is a pilot school or training center. The Event Review Committee reviews safety reports submitted under an Aviation Safety Action Program to decide whether the report should be accepted and what corrective action(s) should be made in order to prevent a similar event from happening again.

NASA's Aviation Safety Reporting System (ASRS) – is a reporting system in which certificated pilots can submit safety reports to NASA. These reports are kept confidential and are de-identified by NASA. These reports are used by the Federal Aviation Administration to improve the safety of the National Airspace System (NAS). The Aviation Safety Reporting System does offer certain protections from FAA enforcement action for the submitter of an ASRS report.

ERAU Aviation Safety Reports (AvSRs) – are ERAU's internal safety reports that employees can submit to ERAU's safety department. These reports are reviewed by ERAU's Aviation Safety department and recommendations are made to flight department management. The reports are kept confidential by ERAU's Aviation Safety department.

ERAU Ops Discrepancy Form – is a form that can be submitted by employees to the ERAU flight supervisor. These reports are forwarded to the Chief Flight Instructor's office for review. These forms are used to report possible non compliance with ERAU procedures or policies.

Leadership ASAP Perception Survey

✱1. Management/Leadership Level:

◯ Upper Management

◯ Middle Management

◯ IP Leadership

✱2. I have received a briefing on the Aviation Safety Action Program from ERAU's Director of Aviation Safety:

◯ Yes

◯ No

✱3. I feel my understanding of ASAP is:

◯ 5 - Very Knowledgeable   ◯ 4 - Somewhat Knowledgeable   ◯ 3 - Basic Understanding   ◯ 2 - Very Little Knowledge   ◯ 1 - No Knowledge

Leadership ASAP Perception Survey

∗4. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with flight department management's involvement in the program:

◯ 5 - Strongly Agree   ◯ 4 - Agree   ◯ 3 - Neither Agree nor Disagree   ◯ 2 - Disagree   ◯ 1 - Strongly Disagree

∗5. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with the FAA's involvement in the program:

◯ 5 - Strongly Agree   ◯ 4 - Agree   ◯ 3 - Neither Agree nor Disagree   ◯ 2 - Disagree   ◯ 1 - Strongly Disagree

∗6. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with the union's involvement in the program:

◯ 5 - Strongly Agree   ◯ 4 - Agree   ◯ 3 - Neither Agree nor Disagree   ◯ 2 - Disagree   ◯ 1 - Strongly Disagree

∗7. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with other instructor pilot's involvement in the program:

◯ 5 - Strongly Agree   ◯ 4 - Agree   ◯ 3 - Neither Agree nor Disagree   ◯ 2 - Disagree   ◯ 1 - Strongly Disagree

∗8. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with student's involvement in the program:

◯ 5 - Strongly Agree   ◯ 4 - Agree   ◯ 3 - Neither Agree nor Disagree   ◯ 2 - Disagree   ◯ 1 - Strongly Disagree

∗9. If ERAU was to implement an Aviation Safety Action Program (ASAP), I would be concerned with the loss of our current ERAU Aviation Safety Reports (AvSRs):

◯ 5 - Strongly Agree   ◯ 4 - Agree   ◯ 3 - Neither Agree nor Disagree   ◯ 2 - Disagree   ◯ 1 - Strongly Disagree

Leadership ASAP Perception Survey

*10. Under an Aviation Safety Action Program (ASAP) more reports would be submitted than under ERAU's current Aviation Safety Reports (AvSRs):

○ 5 - Strongly Agree ○ 4 - Agree ○ 3 - Neither Agree nor Disagree ○ 2 - Disagree ○ 1 - Strongly Disagree

*11. I feel the Aviation Safety Action Program (ASAP) would improve safety at ERAU because an Event Review Committee (ERC) will determine corrective action for each report:

○ 5 - Strongly Agree ○ 4 - Agree ○ 3 - Neither Agree nor Disagree ○ 2 - Disagree ○ 1 - Strongly Disagree

*12. I feel that the Aviation Safety Action Program (ASAP) will have a positive impact on safety at ERAU:

○ 5 - Strongly Agree ○ 4 - Agree ○ 3 - Neither Agree nor Disagree ○ 2 - Disagree ○ 1 - Strongly Disagree

*13. I feel the Aviation Safety Action Program (ASAP) will have a negative impact on safety at ERAU:

○ 5 - Strongly Agree ○ 4 - Agree ○ 3 - Neither Agree nor Disagree ○ 2 - Disagree ○ 1 - Strongly Disagree

Leadership ASAP Perception Survey

*14. I feel the best MANAGEMENT/COMPANY representative for the Event Review Committee (ERC) would be:

○ The Assistant Chief Flight Instructor, Operations

○ The Assistant Chief Flight Instructor, Flight Standards

○ Training Manager(s)

○ Director of Aviation Safety

○ Other (please specify)

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*15. I feel the best INSTRUCTOR PILOT representative for the Event Review Committee (ERC) would be:

○ Instructor Pilot Quality Council Chairman

○ Instructor Pilot Quality Council Representative

○ Instructor Pilot Union President

○ Instructor Pilot Union Executive Board Representative

○ Instructor Pilot Union Stewart

○ Other (please specify)

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Leadership ASAP Perception Survey

*16. Do you feel ERAU should pursue the formation of a formal Aviation Safety Action Program (ASAP)?

*17. What is your biggest concern with formalizing an Aviation Safety Action Program (ASAP)?

*18. What do you feel is the biggest motivator for Instructor Pilots to report safety events?

*19. Who do you feel should make up the Event Review Committee (ERC)?

Leadership ASAP Perception Survey

20. Any comments regarding ERAU implementing ASAP or responses given in this survey?