Who cares about CAIR?

Paper by

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Abstract

The Australian confidential aviation incident reporting system "CAIR" has been successfully operating for the past thirteen years. Is there a place for confidential reporting in the contemporary air safety investigation practices of the 21st century? The paper will outline a brief history of CAIR and other international confidential systems and describe some of the successes and failures. The challenges to the aviation industry that are being presented by globalisation and E-business will also be discussed.

Introduction

The topic of the 2001 ASASI seminar is “contemporary air safety investigation practices of the 21st century”. As investigators, we recognise that air safety investigation is no longer confined to going to crash sites and examining the wreckage. Aircraft accidents are the end result of a system that has failed. We can still learn from accidents - but we learn much more from incident investigation, the examination and analysis of what went wrong and why it went wrong.

Our skills today as investigators, must focus on identifying system deficiencies before the accident, which logically, may prevent another one from happening. The CAIR program does identify such system deficiencies. This paper will review confidential reporting generally, and then look as some of the challenges for the future.

History

Australia – CAIR. In 1984, a feasibility study was commenced by the BASI Human Performance and Investigation Research Group for the possible introduction of an Australian confidential aviation incident reporting program. This program would supplement the mandatory accident and incident reporting program that had been running in Australia since 1947.

The terms of reference were modified in 1986 and 1987 and the feasibility study evolved into an implementation study that was released in a report in January of 1988. The CAIR program was introduced on 1 July 1988, initially for technical flight crew only due to resource constraints, but was extended to ATC in January 1999 followed shortly thereafter by the inclusion of maintenance/ground handling personnel and flight attendants. The CAIR program now accepts CAIR reports from all sources. Confidential reporting programs were already running in the United States, Canada and the United Kingdom[1]. So why, and where did these systems start.

USA - ASRS, NASA’s aviation safety reporting system. Just over 25 years ago on a cold and cloudy day, TWA flight 514, a Boeing 727 was flying through turbulent skies. The aircraft crashed on approach to runway 30 at Washington‘s Dulles International Airport. Flying a non-precision VOR approach in heavy winds and rain, the crew misidentified the final approach fix and began to descend prematurely, impacting a Virginian mountain top approximately 14 miles from the runway. All 92 persons on board perished.

During the subsequent NTSB investigation, a disturbing finding was made. Six weeks earlier a United Airlines flight crew had experienced a similar misunderstanding and had narrowly missed hitting the same mountain during a night approach. The crew, through their company’s internal reporting system, had reported this incident and all other United pilots were alerted to

[1] Bureau of Air Safety Investigation (1988), *Confidential Aviation Incident Reporting,* Canberra, ACT: AGPS

the hazard. Unfortunately, there was no process available at the time to share this safety information with other airlines, such as TWA.

In the aftermath of this tragedy, it was determined that a non-punitive national safety reporting system be developed to share safety related information throughout the aviation community. To ensure that the trust of the aviation community was secured, NASA was entrusted to administer the program as a body independent of the regulator, the FAA. The program began in 1976 and, in April of this year, celebrated its 25th Anniversary. The US program has received over 500,000 reports[2].

UK – CHIRP The UK Confidential Human Factors Incident Reporting Program, more commonly known by the acronym CHIRP, has been operating since 1982, when it was established by the RAF Institute of Aviation Medicine. Accident rates in commercial air transport operations had reduced to an extremely low level. However, the number of accidents with Human Factors causes had not declined at the same rate and thus became the dominant cause in major accidents.

Incident reporting programs have proved to be valuable tools in the identification of safety related issues and the definition of corrective actions. They are an early warning system. In the specific case of incidents involving human error, the availability of an independent, voluntary, confidential reporting medium has provided valuable additional information to that available through the formal or mandatory reporting systems.

CHIRP was established in its present form, as a charitable company limited by guarantee, on 1 November 1996 following an industry wide review by the Guild of Air Pilots and Navigators (GAPAN). This type of corporate structure was selected in order to provide a totally independent organisation, with management and fiscal responsibilities held by an independent Board of Trustees. The Civil Aviation Authority funds the Program[3].

Canada – Securitas. The Confidential Aviation Safety Reporting Program (CASRP) commenced in 1985 and continued until 1995 when the SECURITAS program commenced. When the multi-modal Transportation Safety Board of Canada was set up, SECURITAS was established to extend the program to other modes. The SECURITAS program closely parallels the ATSB CAIR program but was allowed to run down due to competing investigation demands (investigators involved in the program were assigned to accident investigations). Due to no follow up on reports submitted, reports reduced to less than 120 per year. Action is underway to re-establish the program through a promotion campaign[4].

New Zealand. Originally set up as the ISAT program in 1988 but later failed when industry lost confidence in the system after an analyst knowingly

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[2] National Aeronautics and Space Administration (2001), *Callback,* Number 260, Moffett Field, CA: NASA.

[3] http:/www.chirp.co.uk/air_transport/Chirp_Summary.htm

[4] Author's notes, International Confidential Aviation Safety Systems seminar, October 2000.

released the name of a reporter to the regulator. A psychologist and a doctor with backgrounds in aviation then established an independent and private company to run the ICARUS program. Airways Corporation agreed to fund the program for two years but after this period, difficulties were encountered securing funding to continue the program. The relationship between the two partners failed and one of them attempted to continue alone. While having the support of the general aviation sector, a similar degree of support was not forthcoming from the NZALPA. Lessons to be learned include the need for support from the regulator (without attempts to identify reporters), industry associations and understanding the culture of the country.

Otago University and the General Aviation Association of New Zealand are currently developing another confidential reporting system, aimed primarily for general aviation[5].

Other countries – Germany has had a program in the past (EUCARE) but lacked a source of funding to continue. **South Africa's** program lacks funding and has ceased operating, **France** operates a GA system through its investigation agency - the BEA. **Japan, Korea and Taiwan** all have recently developed fledgling programs. Japan's is run by the airlines of JAL, ANA and JAS. Taiwan's system is managed by the Aviation Safety Council and Korea is managed by KOTSA (the regulator)[6].

Successes, failures and challenges

How do you measure success? How do you ever know if a report of a notification of a system deficiency subsequently prevents an accident? An identified system weakness, knowledge of a violation, limitations in training are all factors - known as "holes in the cheese" - and defences are then developed and put in place to limit the risk and improve safety.

Several outcomes can be identified from CAIR reports where action has been taken to make the system safer, such as CASA's withdrawal of the AOC of shonky operators, changes to inadequate or inaccurate documentation, navigation aids or procedures. But how many accidents has the CAIR system prevented? No one knows. The CAIR office received numerous reports of alleged maintenance deficiencies with a major airline last year. Was it a coincidence that the regulator CASA grounded a number of an operator's aircraft earlier this year? It would be drawing a long bow to say that an aircraft did not crash or have an accident because the early warning system had raised an awareness of deficiencies and action was taken to prevent such an outcome.

[5] Author's notes, International Confidential Aviation Safety Systems seminar, October 2000 and email correspondence with Dr Ross Ewing, 2001.

[6] Author's notes, International Confidential Aviation Safety Systems seminar, October 2000.

What about the recent accident in Bangkok[7]? Were flight crews concerned about deficiencies with training or procedures? Were flight crews aware of the potentially increased risk with the flaps 25 approach, in particular, a high and fast approach to a wet runway - at night. If they were concerned about any of these matters – why was no report submitted to the CAIR system? Are the flight crews of airlines persuaded to not submit reports to the CAIR system because of a negative event that had occurred to one their members in the past?

The greatest concern, and what is considered to be a failure of the safety system, are those occasions when an operator or an organisation seeks to find out who submitted a CAIR report.

If you were the head of an airline, of course you would want your own systems in place to capture any information that identified deficiencies in your defences. For public relations reasons, you would not want these deficiencies known by the public – its bad for business. But it is not as bad as having an aircraft slide off the end of the runway or having large cracks found in the wings or engine pylons, or having a large portion of your fleet grounded.

If you were the head of an airline and one of your employees was aware of a safety hazard but was uncomfortable with the internal reporting system, you would want that person to tell someone, especially someone that had a system in place that would alert you to the hazard. Any attempt to identify the reporter of a CAIR report does make the CAIR manager's job harder and has the potential to weaken the whole system. A system that was solely developed to protect our industry by improving flight safety.

The history of flight was in its infancy at the beginning of the last century. Thus, the contemporary air safety investigation practices of the 21st century are, by definition, in their infancy. So what are the challenges for confidential incident reporting. First and foremost is the maintenance of the viability and integrity of the confidential program. The demise of the various confidential programs of other countries has resulted from a lack of commitment, funding and the rigid application of robust procedures.

In Australia, the three pillars of CAIR are:

- The maintenance of the confidentiality of the reporter
- The willingness of industry to use the system, and
- The provision of feedback to the reporter and industry.

While the program manager has a degree of control over the first and last of the three pillars, the willingness of industry to use the program can be destroyed in a moment. The CAIR program needs the support of all facets of industry: flight crew, operators, engineers, regulators and managers. Everyone committed to safety should promote and support the reporting of incidents through both the open and confidential incident reporting systems.

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[7] Australian Transport Safety Bureau (2001), *Investigation Report 199904538 Boeing 747-438, VH-OJH Bangkok, Thailand,* Canberra, ACT: ATSB.

For nations within the Asia-Pacific region, confidential reporting is proving to be an enormous challenge. It is not part of the Asian culture to admit to a personal mistake, or to be in error. Admission of even a minor failure involves a loss of face. However, times are slowly changing and Taiwan, Korea and Japan are to be commended and encouraged in their efforts to date. Any support that we are able to provide must be given, if only to enhance our own safety when flying in the region. This leads us to the next point.

Some of these neighbouring countries are forging alliances and partnerships with our own nation's airlines. A Qantas or an Ansett ticket may have you flying on a foreign carrier's aircraft. Indeed, is Ansett now a foreign carrier? Foreign safety systems are, by default, your passengers' safety systems. We live in an increasingly complex, dynamic and globalised world: a world where responsibility and accountability are becoming more ill defined. New Zealand's sovereignty would be challenged if the ATSB ran a national confidential reporting system for them. Nevertheless, we would not hesitate to send an Alert Bulletin or a For Your Information notice to Air New Zealand's safety department on a reported deficiency that was received through the CAIR system involving one of their aircraft. We would welcome a report from another nation on a deficiency of our own, particularly if it made our own system more robust. Will the Star Alliance or OneWorld develop for their group a common incident reporting system? Will that information be shared between the umbrella organisations? What a challenge that will be, to implement a system that crosses national borders, cultures and languages.

Communication is the key, and the Internet has become a way of life for many people, certainly with Email and Websites that provide rapid access to information. The ATSB already has on-line reporting and many investigations have been published on-line. Selected de-identified CAIR reports published on the web will be the next step forward. Let's hope there are not too many legal challenges to the publishing of such information.

Conclusion

Australia is a world leader in the collection of safety information and its safety record is the envy of many nations. We have had a mandatory accident and incident reporting system for more than fifty years and the confidential system has supplemented it since 1988. Caution must be observed that the CAIR program does not become purely a "whistleblower's" system. The human factors issues of unobserved situations, such as "there I was, flying along, when this happened to me …..". The lessons learned from those situations need to be passed on to others. The data needs to be collected, trends noted and problems analysed. Other nations are now recognising the value of obtaining valuable safety information through confidential incident reporting systems and are struggling to develop a better safety culture.

The 21st century brings new technology that increases the opportunity for communication in a world where borders are less easily defined. We must use

that technology to share safety related information and to encourage others to do likewise. We must not look upon the confidential reporting of system deficiencies in a negative way, but look upon them as a free lesson, a gift, and an opportunity to rectify latent deficiencies. We should all care about CAIR.