



Case study of a voluntary aviation safety and environmental accreditation programme



Kevin Oldham ^{a,*}, Jack Stanton ^b, Matt Bilderbeck ^a, Jessica Spinetto ^a

^a Navigatus Consulting Limited, PO Box 137249, Parnell, Auckland 1052, New Zealand

^b Civil Aviation Authority, PO Box 3555, Wellington 6140, New Zealand

ARTICLE INFO

Article history:

Received 22 August 2016

Received in revised form 16 January 2017

Accepted 19 February 2017

Available online 19 March 2017

Keywords:

Certification

Voluntary accreditation

Audit

Safety performance

Quality system

Agricultural aviation

ABSTRACT

Adopting the principle that it is better to self-regulate than to be regulated; voluntary accreditation schemes have been introduced by a range of high-hazard industries to lift safety and environmental performance. Both industries and regulators need to know if such programmes are effective.

This paper presents a comparative case study of safety and environmental performance for a voluntary industry-led accreditation programme (Aircare) in the New Zealand agricultural aviation sector. The study hypotheses relate to rates of reported:

- Accidents
- Incursions and other incidents
- Discharge and low flying occurrences
- Equipment defects

While there were observed differences in rates for the above occurrence types between accredited, transitional and non-accredited operators, none of these was found to be statistically significant, therefore the null hypotheses could not be rejected.

An additional sensitivity test was undertaken in which all examined occurrences were combined into one variable “all events”. Non-accredited operators had a higher rate of these combined occurrences (risk ratio 1.32) and this finding was significant at a 90%, one-tailed, level of confidence. The additional test suggests that statistically significant results may emerge as more data becomes available.

This finding indicates that participation in robust voluntary safety and environmental programmes may be associated with lead indicators of safer operations and fewer environmental incidents. Participation in such programmes may therefore convey important information on likely future safety and environmental performance.

© 2017 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Private standards are widespread across many industries (Bernstein and Cashore, 2007; Dondi et al., 2013; Eberlein et al., 2014; Meidinger, 2006). They are often developed to fulfil public interest (Fagotto, 2014), establish standards for responsible business conduct (Vogel, 2006), or solve societal problems in domestic and international settings (Porter and Ronit, 2006).

Strong alignment of goals between private standards and public regulation is essential to the success of private a programme (Gulbrandsen, 2014; Mills, 2016). Such private systems can not substitute for regulatory enforcement activities (Hedlund, 2014)

and rarely exist alone, most often supporting public regulation (Porter and Ronit, 2006). Recognition by states or government agencies provides legitimacy and often leads to the growth and evolution of the programme (Bartley, 2007; Cashore, 2002; Gulbrandsen, 2014).

Although seemingly with the same objective as public regulation, an advantage of private systems as opposed to public policy is that they are often able to establish “political legitimacy”, where stakeholders are united, accepting shared rules as “appropriate and justified” (Bernstein and Cashore, 2007). Being private, standards are more flexible and can rapidly respond to new risks (Fagotto, 2014). This flexibility and responsiveness can better service the needs of private industry, which is more likely to lead to success (Mills, 2016).

* Corresponding author.

E-mail address: k.oldham@navigatusconsulting.com (K. Oldham).

Among businesses, there is an incentive to invest in management oversight, as a series of accidents could hurt the reputation and profitability of the industry (Mills, 2016). An adverse environmental or safety record within the industry may impact market access, which could otherwise be denied to the industry. Conversely, regulators may reward firms who participate in self-audit and disclosure programmes, such as reducing the number of future inspections (Toffel and Short, 2011) or increasing access (OECD, 2011). These incentives help provide a strong market incentive to businesses which in turn promotes better compliance (Fagotto, 2014; Mills, 2016).

Though there is a significant uptake of private standards, there is little research reported in the literature on the effect of independently audited voluntary accreditation programmes on the safety and environmental performance of SME in any industries. Where studies have been reported, there is evidence that safety compliance and participation in voluntary accreditation schemes is positively correlated with safety performance (Hedlund, 2014; OECD, 2011).

This paper presents a comparative case study of safety and environmental performance for a voluntary industry-led accreditation programme (Aircare) in the New Zealand agricultural aviation sector. Aircare is an example of a private certification programme operating in a high hazard sector. The paper outlines the key aspects of the agricultural aviation sector in New Zealand and the Aircare programme, followed by analysis of historical data to determine the effectiveness of the programme. The findings of this study could have relevance not only for voluntary accreditation schemes in agricultural aviation, but for other activities in hazardous environments.

2. Background

As a rugged and sparsely populated country, New Zealand is heavily reliant on aviation for transportation and commercial activities. New Zealand also has a strong agricultural export sector, supported by a thriving agricultural aviation industry.

Aviation New Zealand (AvNZ) is the established industry body representing and promoting aviation industry interests in New Zealand. Membership consists primarily of aviation operators and associated service providers. AvNZ has developed a voluntary safety, quality and environmental accreditation programme branded as AIRCARE™ (the accreditation programme). The accreditation programme originated from the New Zealand Agricultural Avi-

ation Association (NZAAA), which now forms the agricultural aviation division of AvNZ. The programme has since been expanded into other aviation sectors. Some of the authors have been engaged in independent auditing of operators for the accreditation programme on behalf of ANZ from mid-2011.

Development of the accreditation programme followed a review by NZAAA which identified strategic threats to the industry, arising from a history of poor environmental and safety performance. NZAAA decided to take a proactive approach to these threats by building a credible system of industry-led initiatives, of which the accreditation programme is the centrepiece.

The structure of the accreditation programme is summarised in Fig. 1 and is described in more detail elsewhere (Aviation New Zealand, 2016). Research on the essential features of voluntary health and safety certification programmes for small enterprises has found that they need to be low cost, easy to maintain and tailored to suit sector needs (Vassie and Cox, 1998). An evaluation of the Aircare programme has found that it is consistent with these principles (Oldham et al., 2013).

Under the rules of the accreditation programme, operators in the programme must obtain accreditation for all types of aviation operations that they undertake. Operators are provided with codes of practice and checklists developed from the codes of practice. Audit findings include non-compliances, recommendations and other comments.

The typical field audit time is 5 hours. The use of specialist auditors with aviation expertise adds value to the programme by spreading best practice. Part of each site audit is spent discussing more advanced ways of thinking about hazards and managing risks.

All non-compliances must be closed out by corrective actions, before an operator can be accredited. This must be completed within 6 weeks of the audit. New entrants to the accreditation programme have an extended timeframe of 3 months for corrective actions. New entrants are not required to demonstrate that all management systems are working in practice as the events required to trigger a system response for some newer systems may not have occurred at the time of audit. For these reasons new entrants are restricted to a one year period of accreditation. Following the first year, operators can be accredited for periods of up to 3 years, depending on audit findings.

Governance is provided by the Aircare Management Committee, which is the decision-making body for accreditations and for any changes to the programme rules. Once the operator has closed

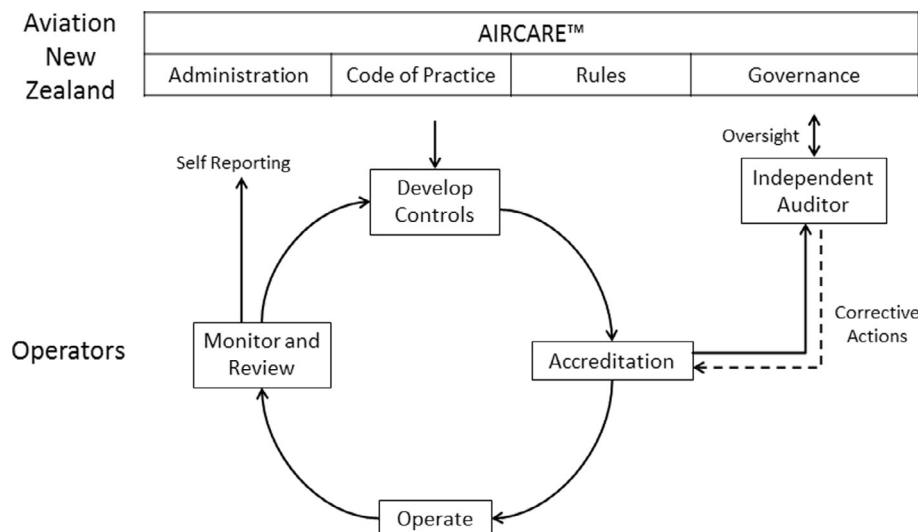


Fig. 1. Accreditation programme conceptual structure.

Download English Version:

<https://daneshyari.com/en/article/4981182>

Download Persian Version:

<https://daneshyari.com/article/4981182>

[Daneshyari.com](https://daneshyari.com)