The Journal of Knowledge Advancement & Integration is available since 1st September 2006. Its “birth” is symbolised by newborn Zaida PH, who will appear on the cover of all articles published in the first volume of the Journal.

This first volume (year 2006) of the Journal of Knowledge Advancement & Integration has been built up to serve as a practical example of the Journal’s offerings, possible contributions, and formatting. Therefore, contributions have been restricted for such purpose, and contributors to the 2006 volume have been invited to do so. For guidelines for future volumes, please refer to the Guidelines document in the Journal website, at www.lulu.com/Journal-KAI.
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Book review: “The Southwest Airlines way”
by Jose D. PÉREZGONZÁLEZ (2006)

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Abstract

“The Southwest Airlines Way” synthesises an eight-year research work done by Jody Hoffer Gittell on four airlines in the United States. However, the title and focus of the book is on Southwest Airlines, namely because this airline has shown distinctive practices that seem to account for its better performance in terms of efficiency and quality. Those distinctive practices form the antecedent variables of a model of relational coordination that Gittell elaborated within this research.

Ten practices constitute the antecedent variables to the model of relational coordination. The core of the model is composed by two elements in constant iteration with each other: relationships (defined in terms of shared goals, shared knowledge, and shared respect), and communication (defined in terms of frequency, timing, and problem-solving orientation). According to Gittell, any organisation can manage those ten practices to increase the levels of relational coordination between their employees. A higher level of relational coordination will then increase the levels of organisational performance (measured in terms of both efficiency and quality).

“The Southwest Airlines Way” is more than a case study on Southwest Airlines. It is also an important reference for future research on the topic of relational coordination beyond the airline’s sector as the book already provides the tools for such future research (i.e. model, methodology and results). This future research, if respecting the methodology and procedures followed by Gittell, will further inform about the validity of the model and its importance for a wider range of organisations.

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Keywords

Relational coordination; Southwest Airlines; American Airlines, United Airlines, Continental Airlines; Aviation; Health care; United States.
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### Theoretical Frame

- Personal opinion, review, etc.
- Compilation & interpretation
- New theory

### Design

**Flexible/Qualitative designs**
- Case study
- Ethnographic study
- Grounded Theory study
- Other (biographical, phenomenological…)

**Fixed/Quantitative design**
- Correlational
- Comparative
- Field research
- Non-experimental
- Quasi-experimental
- Experimental

### Generalization Anchors

- North-America (USA)
- Anglo-Saxon culture
- Western culture
- Organisational coordination
- Organisational management
- Human resources management

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**Book Review: “The Southwest Airlines Way.”**

1. Introduction.

This book synthesises an eight-year research work done by Jody Hoffer Gittell on four airlines in the United States – American Airlines (two sites were under study), United Airlines (three sites), Continental Airlines (two sites), and Southwest Airlines (two sites). The focus of the book is on Southwest Airlines, namely because it showed distinctive practices – leading to relational coordination – which made of it the best performer of all four airlines in terms of efficiency and quality. Gittell describes in her book the way in which Southwest Airlines did things, the degree in which such doing affected performance, and the degree in which the other airlines compared to Southwest Airlines both in relational coordination and performance.

There is no clear indication of the time span of the research, but 2002 seems to be the year when the book was finalised and, with it, the interpretation of the results. Therefore, it seems reasonable to date the end of Gittell’s research back to such date. McGraw-Hill copyrighted and published the book in hardcover in 2003, and re-published it in paperback in 2005.


Perhaps the most important contribution of Gittell’s book is not so much the description of idiosyncratic practices at Southwest Airlines – i.e. its way of doing things –, but the way in which such practices combine with each other as to provide the basis for an empirical model of coordination. Gittell’s model of relational coordination grew out of a comparative study between Southwest Airlines and American Airlines (ch.3), and was probably elaborated at an early stage in the research. Gittell, then, used this model as a benchmark to analyse the degree of relational coordination between the four U.S. airlines, and correlated it with the airlines’ departure operations performance.

In brief, Gittell was able to identify ten practices used by Southwest Airlines that explained the levels of relational coordination within the airline. Those ten practices had been developed by Southwest Airlines since its inception, and were used for managing relational coordination in the company. When compared against American Airlines, Gittell found that this relational coordination accounted for the higher levels of quality and efficiency in performance shown by Southwest Airlines.

However, Gittell also found that those practices were not idiosyncratic in nature but only in expression. That is, those practices could be found in any other airlines (and work sectors, for that matter), only varying the way in which they were managed. This way, the model of relational coordination was borne.

The model of relational coordination is relatively simple to understand from the outset. Gittell proposes that the efficiency and quality of flight departures can be explained by the quality of the relationships maintained by the different groups of employees between themselves (based on shared goals, shared knowledge, and shared respect), and the quality of their communication (based on its frequency, timing, and problem-solving orientation). Therefore, the core of relational coordination is based on the iterative nature between both relationships and communication.

Ten practices constitute the antecedent variables to the model. These are: leadership with credibility and caring, investing in frontline leadership, hiring and training for relational competence, using conflicts to build up relationships, bridging the work / family divide, creating boundary spanners, measuring performance broadly, keeping jobs flexible at the boundaries, partnering with unions, and building relationships with suppliers.

Any organisation can manage those practices in order to increase the levels of coordination between their employees. A higher level of relational coordination will then imply a higher level of departure operations performance both in efficiency and in quality.

The validity of the model was explored by comparing Southwest Airlines with the remaining airlines in regards to those ten practices, as well as by using regression analysis to estimate how well each variable predicted performance. In so doing, Gittell plotted all nine sites according to performance, and found out “how relational coordination resulted in fewer delays, fewer lost bags, faster turnarounds, and higher employee productivity.” (p.25).
Furthermore, Gittell also informs how well the model of relational coordination was able to predict similar results in the health care sector, as well (ch.4).

3. What you get.

“The Southwest Airlines Way” is more than a book on Southwest Airlines. When you buy the book, you get the following:

- A brief history of how Southwest Airlines was funded, and how it grew to become the world’s most successful airline (ch.1, 2 & 17).
- A model of relational coordination (ch.3).
- A methodology to assess relational coordination (ch.3).
- A case study on how Southwest Airlines managed relational coordination for better performance (especially for quicker turnaround at the gate) (ch.5 to ch.14).
- Comparative results (also as case studies) on how American Airlines, United Airlines and Continental Airlines managed relational coordination, and its impact on their respective departure operations (ch.5 to ch.14).
- Results of a field research on relational coordination in the health care sector (ch.4).
- Appendixes with all the relevant results.

Gittell also offers some insight on how the ten Southwest Airlines practices reinforce each other (ch.15). Gittell suggests that the ten practices are correlative to each other, and that they work at unison. In this line of thought, chapter 15 offers an insight on how things could go wrong if each practice in turn was missing while all others were present. In my opinion, however, Gittell goes beyond the data that were available to her at this point –i.e. she actually did not take out one practice at a time while maintaining the others present. Therefore, the conclusions reached in this chapter are not informed empirically and, thus, are potentially unsustainable.

In chapter 18, Gittell offers recommendations on how to implement the ten practices for managing relational coordination in organisations. These recommendations are sustained by empirical results from the two sectors commented in the book –i.e. aviation and health care. Notwithstanding this, the reader needs to be aware that there is no guarantee regarding whether such implementation would work or not in his organisation, especially if this is in a different sector than those from which results exist.

4. Conclusions and way forward.

Gittell’s book is an excellent book on aviation management. It offers both research data and practical advice in a clear and amenable manner. Furthermore, the book is complete inasmuch as it presents and describes a research model that can be used to compare both the degree of relational coordination in different organisations and its impact on organisational performance. The book also provides the methodological tools which the author used in her research. Therefore, practitioners or researchers can avail of the same methodology in order to cross-validate the relational coordination model in different locations, sectors, or cultures. Finally, relevant quantitative results are also available, this offering a great opportunity for comparing the results obtained by Gittell with future results obtained elsewhere.

In conclusion, “The Southwest Airlines Way” is more than a case study on Southwest Airlines. It is also an important reference for continued research on the topic, be this at academic or practitioner level. Such future research, if respecting the methodology and procedures followed by Gittell, will further inform of the validity of the model and its importance for today’s organisations.

5. References.

6. Sources of knowledge about relational coordination and Southwest Airlines¹:

- **AMAZON.COM, retrievable from www.amazon.com**

  Amazon.com is not a source of knowledge about relational coordination per se, but it allows the reader to read the reviews that other readers have posted on Gittell’s book “The Southwest Airlines Way” before buying it. That is, it is a good site to get second and third opinions, if these are needed.


  Gittell’s book reviewed in this paper.

- **GITTELL’s webpage at The Heller School for Social Policy and Management, retrievable from http://heller.brandeis.edu/professors/jodygittell/JHGittellHome.htm**

  There are not many sources of information about relational coordination up-to-date. Relational coordination appears to be a model of coordination that has not grown beyond Gittell’s sphere—which is to say, it has not grasped the attention of researchers or practitioners other than Gittell’s research group. There are several research papers published by Gittell and her research group, but the quickest way of knowing which they are, is by accessing Gittell’s website, under the publications tab


  This link will bring you to the press section of Southwest Airlines and what has been written about them up to the 10th March 2004 –last updated to date. This is a handy source of further information for the interested reader who wants to know more about the airline.


  This is a handy tool, rather than a source of knowledge per se. This guide contains instructions to make Gittell’s book into a reviewed edition, with the important ideas underlined/underscored, and the essential ideas highlighted. The underlying captures some 15% of the text, and offers a concise version of the book by focusing on the model of relational coordination and on the results for Southwest Airlines, thus keeping the overall coherence of the book in describing that airline’s performance. The highlighting captures some 3% of the text, and offers a stripped-off case study of Southwest Airlines. Thus, this tool helps transform the original book into a better source of knowledge by providing a hierarchy in the information but without removing any of it. This allows the reader (be this a practitioner or a researcher) to quickly re-read the book by focusing on the highlighting or the underlying. It also allows him to go into the normal text whenever further clarification is needed.

¹ These references are offered here primarily for their knowledge value, not for commercial purposes (although commercial links to the selected references may be given, if available). The references are ordered alphabetically according to the first author's surname. The first date after the author refers to the date the original work was done, first copyrighted or first published. The title of the work follows. Finally, the location where to find such work is given, for example a webpage or a publishing company—which also includes country of publication, publication year, and ISBN number.
Dr. Jose D Pérezgonzález obtained his PhD – together with the honorific award Doctor Europeus – from University of La Laguna (Spain) in January 2005, with staying both in Ghent University (Belgium) and Trinity College Dublin (Ireland) for research purposes. He has developed his research and lecturing career in Ireland, both in Trinity College Dublin and in Dublin Institute of Technology. He will now develop it further in the School of Aviation at Massey University (New Zealand). Much of his research up to date has been with the Aerospace Psychology Research Group, participating in several European-funded research projects. His research expertise ranges from aviation efficiency to health and safety management in organisational settings, and is especially interested in policy, reporting and auditing systems, health and safety management, and knowledge management systems. Nowadays, he is extending the idea of Knowledge Management Editions™, and aims to edit his own journal with a similar philosophy. He also aims to create a Centre of Excellence for Aviation in New Zealand, at Massey University.

The author’s list of recent publications and reports on aviation is as follows:


8. Which & where.

School of Psychology at Trinity College Dublin, Ireland. Updated CV:

The School of Psychology at Trinity College Dublin offers graduate and postgraduate degrees in Psychology. It has three main research strengths: Neuroscience and Cognition; Health, Clinical & Counselling; and Culture, Systems & Development. It also has a track record of research grants both internationally (especially by the European Commission and the US National Institute of Health), and nationally (the Welcome Trust, the Health Research Board, and the Higher Education Authority).

A sample of the School’s recent publication list follows:


School of Aviation at Massey University, New Zealand. Updated CV:

The School of Aviation is part of the College of Business, based both in the Turitea Campus (Aviation Management), and the Milson Flight Centre at Palmerston North International Airport. It offers bachelor with honours in Air Transport Piloting and Aviation Management, and masters and doctorate degrees in Aviation Management). The School is relatively new (it was established in 1990) and its research curriculum is only starting to grow now.

A sample of the School’s recent publication list follows:

- **PÉREZGONZÁLEZ, Jose D (2005).** A review of the auditing system proposed by EASA Part-145. Pergonomas/Lulu Press (USA), 2006.
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A review of the auditing system proposed by EASA Part-145

by Jose D. PÉREZGONZÁLEZ (2005)

Aerospace Psychology Research Group, School of Psychology, Trinity College Dublin, Ireland
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Abstract

The requirement for implementing a quality system in all approved aircraft maintenance organisations under the European Aviation Safety Agency’s legislation, regulates the auditing of compliance with standards of aircrafts and components, as well as the quality of organisational procedures, to ensure airworthiness and good maintenance practices, thus ensuring the safety of the aircraft, its crew, passengers and bystanders. These requirements have not been amended significantly since, at least, 2001, a fact which rather highlights the maturity of the regulations in this regard. An auditing system is a necessary and integral part of the overall feedback macro-system within the organisation, and plays a critical role in capturing and correcting risks before these risks cause an accident. Auditing systems are necessary to manage the airworthiness of the aircraft and its safety.

Although regulations for auditing are relatively mature and well accepted by maintenance organisations, there is still room for improvement. Therefore, this article has two main intentions: to conduct a critical review of the quality system proposed by EASA by comparing it with a prototypical audit management system, and to offer guidance for new requirements for an effective audit management system within the scope of EASA Part-145.A.65 (or, rather, a recommended Part-145.A.67).

Keywords

Quality systems; Audit management systems; EASA Part-145; JAR-145 Amendment 5; Approved maintenance organisations.

Acknowledgements

This work is based on a model elaborated within the ADAMS-2 project – Human Centred Systems for Aircraft Dispatch and Maintenance Safety- (GRD1-2000-25751), which was undertook within the GROWTH 2000 programme, with a financial funding of the European Commission Directorate General for Science, Research and Development.

This paper has been borrowed from www.lulu.com/perezgonzalez for the launch of this journal, and to serve as a practical example of the contents, layout and formatting of future papers.
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Public notice: The corresponding author of this paper asserts that this is an original piece of work, it reflects the contributor’s understanding of the contents covered, and the information in it contained is provided for its knowledge value and not for commercial, personal or other purposes.

Notice to readers: This paper has not been subjected to professional proof-reading; thus, some errors in grammar, syntax or use of language may be found. However, most readers will be able to understand the meaning of what is said despite such errors; thus, such errors shall not delay or otherwise prevent publication of this material as long as the meaning of the transmitted content is not impaired. Notwithstanding this, the paper has been revised as far as practicable in order to capture and correct as many errors as possible. The reader might forgive those that have not being so captured.
A review of the auditing system proposed by EASA Part-145.

1. Introduction.

This paper continues the task started in a previous article, which explored the occurrence reporting system advanced by EASA Part-145 (see Pérezgonzález et al., 2005). Following a similar logic and structure, this paper now explores the auditing system advanced in the same regulations.

EASA Part-145.A.65(c) specifically regulates quality systems in approved aircraft maintenance and repair organisations (MROs). Nonetheless, other pieces of regulation relevant to quality can be found scattered across Part-145, as it shall be seen. According to EASA Part-145.A.65(c), this quality system will consist of both independent audits [Part-145.A.65(c)(1)] and a quality feedback reporting system to inform the accountable personnel within the organisation of the proper and timely correction of any findings captured by the audits [Part-145.A.65(c)(2)].

There are a number of ways in which this quality system improves when acceptable means of compliance (AMC) are also taken into account. Firstly, AMC 145.A.65(c)(1) defines the concept, purpose and scope of the independent audit, including the sampling of products, the conditions and timing of audits, and the personnel who is responsible for audits within the system. Secondly, AMC 145.A.65(c)(2) further clarifies the role of the quality feedback reporting system in both bringing awareness of organisational levels of compliance to relevant personnel in the organisation, and managing corrective actions for adverse findings.

EASA’s quality system [especially if the more detailed AMC 145.A.65(c) is taken into account]

* Because of the recent change from a Joint Aviation Authority (JAA) to a European Aviation Safety Agency (EASA) with only small discrepancies between JAR-145 (Amendment 5, 2003) and EASA Part-145 (2004), this review focuses on EASA’s present regulations. Although the JAA still exists, reference to the two agencies will be made in consideration of future developments. Thus, reference to JAA and JAR is made in relation to the past, whereas reference to EASA is made in relation to current regulations (unless otherwise stated).

* Regulatory bodies refer to these organisations as approved maintenance organisations (AMO) but the industry seems to prefer the concept of maintenance and repair organisations (MRO). The latter concept will, thus, be used in this paper.

* That is, at the time of the ADAMS-2 project, the AMS assessed MRO’s compliance with JAA requirements.


Quality systems; Audit management systems; EASA Part-145; JAR-145 Amendment 5; Approved maintenance organisations
When EASA’s requirements for a quality system are compared against this generic map, many of its operations are met, especially if AMC 145.A.65(c) is taken into consideration. Furthermore, these requirements have been seldom amended since, at least, 2001 (JAR-145, Amendment 4), which further highlights the maturity and acceptance of auditing regulations and practices in the aviation maintenance sector. Therefore, the remainder of this paper will focus on recommending small changes for creating a more comprehensive set of regulations regarding auditing systems. Three main issues, aimed at improving understanding and implementation of the actual regulations and at providing a functional system with the capacity for managing any audit findings, will be addressed in this paper. The first issue to tackle is a clearer delimitation of the role and scope of the quality system, and the proposal for a specific and complete paragraph for auditing systems. The second issue that needs addressing is the tidying up of any loose issues regarding the transformation of the required auditing system into an audit management system (AMS). It will be done so by improving the specific audit paragraph and complementing it with any other available regulation that is relevant to such purpose. The third issue refers to an overall assessment of the current regulation, venturing what else need to be done to make the auditing system into a functionally effective audit management system. These three issues will now be addressed consecutively.

2. Role and scope of the quality system.

The role and scope of the quality system is somewhat misleading in EASA Part-145. That is, the implementing rules section does not provide a definition of what a quality system means or implies. Only the AMC 145.A.65(c)(1) clarifies that the primary objectives of the system are two: to ensure that the organisation can deliver a safe
product, and to ensure that the organisation remains in compliance with EASA Part-145 requirements. Still, the use of the concept “quality system” actually seems to refer to two different issues in the regulations: to quality practices (such as independent audits), and to the organisation’s quality philosophy (such as that reflected in the safety and quality policy). Let’s explore both meanings in turn.

On the one hand, Part-145.A.65(c) reflects the practicalities of the quality system. It specifies that the role of the system is to monitor compliance of aircrafts, components and procedures in order to ensure good maintenance and airworthiness. This role also implies the feedback of any findings to both the personnel responsible for correcting non-compliances and the personnel responsible for ensuring that such corrections are done properly and timely. AMC 145.A.65(c) expands these functions.

Further indication of the practicalities of the quality system is scattered across the regulations. Thus, a second role of the quality system is to self-monitor its performance (i.e. the performance of the independent audits and feedback) in order to ensure its effective and efficient functioning [Part-145.A.30(c)]. A third role of the quality system is to issue certification authorisations for staff, as specified in Part-145.A.35(i).

On the other hand, Part-145.A.75(b) describes that one of the privileges of the approved maintenance and repair organisation is to “arrange for maintenance [...] at another organisation that is working under the quality system of the (former) organisation”. Although this quality system might be understood as the current auditing and feedback procedures of the organisation, it makes clearer sense if it was understood as referring to the organisation’s Maintenance Organisation Exposition (MOE), such as “the procedures and quality system established by the organisation under 145.A.25 to 145.A.90” [see Part-145.A.70(12)]. This broader understanding of the concept “quality system” is supported by AMC 145.A.75(b). In this broader sense, the reference to the quality system appears to imply the organisation’s quality philosophy as reflected in its policies and procedures (which, of course, includes those policies and procedures more specifically related to auditing and feedback as quality practices).

Therefore, in its narrower understanding as quality practices, the quality system is restricted to specific personnel and probably delimited to a single department (e.g. the quality department). In its broader understanding, the quality system actually covers the whole of the organisation’s performance (including that of any subcontractors). This broader understanding refers to a quality philosophy and does not restrict the role and scope of the quality system to the auditing of particular elements.

Were this broader meaning to be embraced, then an alternative concept is necessary to refer to those quality practices in EASA Part-145. The option here proposed is to refer to them as the “auditing system”. A second proposal is to create a specific and complete paragraph for this auditing system, which will clearly separate the latter from the quality system. This separation seems necessary in order to make explicit the existence of the independent auditing system as a process in the organisation. At the same time, it helps segregate auditing practices from the quality system, thus preventing the misunderstanding that the only role of the quality system is the auditing of compliance and the feedback of information to the responsible agent (in fact, the management of occurrence reporting should also be a task for the quality system, as much as issuing certification approvals is [e.g. Part-145.A.35(i)]). In brief, the proposal ventured here is to maintain Part-145.A.65 for regulating the broad quality system, and to create a new paragraph, Part-145.A.67, for regulating the practicalities of the independent audits. Let’s explore this proposal in turn.

2.1. A specific and complete paragraph for the quality system.

The role of the quality system is that of monitoring the whole organisation in order to ensure the airworthiness of the aircraft and/or aircraft components maintained by the organisation. This quality system will also liaise with external organisations (e.g. the competent authority and the operator) for the same purpose.

The scope of the system will broaden to include related sections both explicit and implicit in the regulations. Namely, the quality system would encompass activities such as inspections (i.e. monitoring by an operational department) and organisational audits (i.e. monitoring by the quality department). It would also encompass the findings by external auditors such as the Authority (i.e. monitoring by the competent authority) and those by the operator (i.e. monitoring by third
organisations). Furthermore, the recording, correction and verification of any findings should be carried out by the organisation according to the same procedures set out for the internal auditing system (which will be introduced later).

A discussion of this quality system merits a separate paper and, thus, shall not be done here. In brief, however, the paragraph describing the quality system would remain in its present location; thus, the proposed amendment to section (c) in the regulation would read as follows:

145.A.65 Safety and quality policy, maintenance procedures and quality system.

[...]

(c) The organisation shall establish a quality system which will ensure the following:

- It monitors organisational compliance with aircraft / aircraft component standards and procedures as specified in Part-145.A.67(a).
- It monitors the performance of the auditing system itself in order to ensure its effective and efficient functioning, as specified in Part-145.A.30(c).
- It liaises with a similar quality system at the competent Authority, as specified in Part-145.B.30, and third organisations, if so required.
- It manages the occurrence management system specified in Part-145.A.60.
- It issues certification authorisations for staff, as specified in Part-145.A.35(i).

2.2. A specific and complete paragraph dealing with auditing systems.

As stated earlier, a related proposal is the creation of a separate paragraph which specifically deals with the auditing system in the organisation. This is the system that sustains the auditing practices, the feedback of information and the correction of findings. This system forms part of the organisational quality system and is managed by an independent department (e.g. the quality department). The new paragraph could read as follows:

145.A.67 Audit Management.

The organisation shall establish an internal auditing system that includes the following:

- Independent audits in order to monitor compliance with required aircraft / aircraft component standards and adequacy of the procedures to ensure that such procedures invoke good maintenance practices and airworthy aircraft / aircraft components. In the smallest organisations the independent audit may be contracted to another organisation approved under this Part or a person with appropriate technical knowledge and proven satisfactory audit experience; and
- A quality feedback reporting system to the person or group of persons specified in 145.A.30(b) and ultimately to the accountable manager that ensures proper and timely corrective action is taken in response to reports resulting from the independent audits established to meet paragraph (1).

Consequently, the corresponding acceptable means of compliance (AMC) and guidance material (GM) would also reflect the proposed changes (see next section for an example).

3. Transforming EASA’s auditing system to an audit management system (AMS): from auditing to management.

Were above recommendations for a specific paragraph to be applied, EASA’s auditing system would not yet be clearly laid-out as such a system. To strengthen the role of the auditing system in ensuring safe products and compliant organisations, EASA Part-145 could describe the auditing system in a fashion that mirrors both the audit management system model developed in the ADAMS-2 project (see illustration 1), and the occurrence management system described in Pérezgonzález et al. (2005). Thus, the proposed amendment to the regulations for an audit management and learning system would read as follows:

145.A.67 Audit Management.

The organisation shall establish an internal audit management system (AMS) which enables the following:

- Independent audits in order to monitor compliance with required aircraft / aircraft component standards and adequacy of the procedures to ensure that such procedures invoke good maintenance practices and airworthy aircraft / aircraft components. In the smallest organisations the independent audit may be contracted to another
organisation approved under this Part or to a person with appropriate technical knowledge and proven satisfactory audit experience.

- The collection of findings reports [as described in AMC 145.A.67(a)(10)]
- the evaluation of those reports [e.g. as specified in Part-145.A.95]; the assessment and extraction of those findings reportable to the Authority and other relevant organisms [e.g. as specified in Part-145.A.60(a), and similar in intention to Part-145.A.45(c)]; further investigation of those findings whose aetiology is not known [as described in AMC 145.A.67(b)(c)(2)]
- data analysis to identify adverse trends in the findings; the construction of recommendations; the implementation of suitable corrective and/or preventive actions [as described in AMC 145.A.67(b)(c)(2), implied in Part-145.A.67(c)], and similar in intention to AMC 145.A.60(b)(3)]
- the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)], and implied in Part-145.A.67(c)]
- the assessment of the implementation for its effectiveness in addressing the findings [e.g. similar in intention to Part-145.A.45(d)].

- It includes a method to circulate the information as necessary. As, for example, a quality communication system to feedback the person or group of persons specified in Part-145.A.30(b) and ultimately to the accountable manager that ensures proper and timely corrective action is taken in response to reports resulting from the independent audits established to meet paragraph (1).
- As for reporting to the Authority, the following paragraphs apply: Part-145.A.60(a),(c),(d),(e) [it may also include GM 145.A.60(a),(c)].

The AMC and GM sections would also reflect these changes, such as follows:

- AMC 145.A.65(a), AMC 145.A.65(b), AMC 145.A.65(b)(2), and AMC 145.A.65(b)(3)

would remain unchanged, as they refer to the quality system.

- AMC 145.A.65(c)(1) Safety and quality policy, maintenance procedures and quality system, would change to AMC 145.A.67(a) Audit management.
- AMC 145.A.65(c)(2) Safety and quality policy, maintenance procedures and quality system, would change to AMC 145.A.67(b)(c) Audit management.
- GM 145.A.65(c)(1) Safety and quality policy, maintenance procedures and quality system, would change to GM 145.A.67(a) Audit management.

4. Improving the resulting AMS: towards physical and procedural requirements.

This section now offers a critical review of the present EASA Part-145 regulations regarding auditing in order to discover what further requirements are deemed necessary to improve the auditing system. This review considers EASA Part-145.A.65(c) regulations [including AMC 145.A.65(c), and GM 145.A.65(c)], in the light of the AMS developed within the ADAMS-2 project (see illustration 1).

4.1. Inputs.

EASA specifies two main audit inputs to the AMS in the regulations: compliance with required aircraft / aircraft component standards, and adequacy of procedures to ensure good maintenance practice and airworthiness [Part-145.A.65(c)(1)]. In general, these two main inputs [which are further described in AMC 145.A.65(c)(1)] cover products, procedures, work practices and compliance with Part-145 regulations.

Thus, with regard to the inputs to the auditing process, these seem to be complete and clearly stated, and there is not much to review at this stage.

4.2. The auditing process (step 1 in illustration 1).

As was the case for the inputs, the auditing process is also well laid-out, even when this is
done as an acceptable means of compliance. In fact, AMC 145.A.65(c)(1) describes acceptable means of compliance regarding how to audit, when to do it, who should do it, and what to audit. Furthermore, GM 145.A.65(c)(1) exemplifies a working audit plan which would be acceptable for the purpose.

Therefore, with regard to the auditing step itself, there is not much to review, either.

4.3. Record management (step 2).

This step is concerned with the collection and assessment of audit reports within the organisation. An adequate audit system should ensure that reports are complete and accurate, and should record these reports as the proper inputs to the AMS.

Curiously enough, EASA regulates on maintenance records [see Part-145.A.55], but only describes acceptable means of compliance for audit records [AMC 145.A.65(c)(2)(5)], even when the type of tasks involved in record processing is basically similar in both cases.

In general, a good record management would ensure that the information contained in any audit report is recorded as complete, legible and understandable for future reference. It should also ensure that the physical record itself is kept as regulated.

4.4. Reporting to the Authority (step 3).

EASA has not explicitly regulated, or even implied, which audit findings may be of interest to the Authority. However, it is plausible that serious findings can be unmasked during an audit. It is true that these findings would probably get reported as occurrences [thus, relevant under Part-145.A.60]. However, such uncertainty could be easily addressed in the regulations, for example, as recommended in section 3 above. More specific recommendations regarding reporting to the Authority are similar to those described in Pérezgonzález et al. (2005).

4.5. Investigation (step 4).

EASA does not address the issue of investigation of findings in an adequate manner. It just makes a brief comment for all findings to be properly investigated under AMC 145.A.65(c)(2)(2).

Nonetheless, it may be the case that regulations already in place for the investigation of occurrences [Part-145.A.60] are relevant to the investigation of audit findings. Thus, recommendations made to EASA’s occurrence management regulations in this respect (see Pérezgonzález et al., 2005) equally apply here.

Therefore, all investigations should include the evaluation of all relevant information relating to any findings, as well as all pertinent information about the condition and evaluation results which are known to the organisation. Furthermore, an adequate AMS would also require that further investigation of unclear or new findings be thoroughly investigated.

4.6. Trend analysis (step 5).

EASA does not address the issue of trend analysis in regard to audit findings. However, trend analysis is not only as relevant for findings as it is for occurrences, but the periodic nature of auditing may actually prove a much more reliable option for such type of analysis at organisational levels than occurrences do. Again, regulations already in place for occurrence reporting [Part-145.A.60(b)] are relevant. The recommendations made by Pérezgonzález et al. (2005) regarding the need to bring trend analysis up to EASA’s level also appear to be relevant here.

4.7. Findings and recommendations (step 6).

EASA does not address the issue of reporting findings and recommendations in an appropriate manner. On the one hand, there are references made to reporting findings [AMC 145.A.65(c)(1)(10)] as well as to circulating such reports [AMC 145.A.65(c)(2)(3)]. However, these references appear as means of compliance, not as regulations, thus they may be overlooked by MROs. On the other hand, there is no mention to making recommendations.

Again, regulations already in place for reporting occurrences, as well as recommendations previously made for improving the reporting system (i.e. Pérezgonzález et al., 2005), may apply to this step too. Thus, such reports ought to inform both of the evaluation results and of any other relevant information found during the evaluation of the findings [Part-145.A.60]. They also ought to provide for the elaboration of recommendations to rectify such findings.
4.8. Implementation of corrective actions (step 7) and monitoring & control of the activity (steps 8 and 9).

The implementation, monitoring and control of corrective actions for addressing any safety issues found by audits are implied rather than clearly addressed in the present regulations [Part-145.A.65(c)(2)]. It is true that they have been addressed by AMC 145.A.65(c)(2); however, as this is not a regulation but a means of compliance, MROs might overlook them. Thus, the only recommendation proposed in this regard is to make paragraphs 3 and 4 of the AMC into a regulation.

4.9. Assessment of the corrective action (step 10).

EASA does not address the assessment of the corrective actions taken. However, present regulation Part-145.A.45(d) inherently assumes this step when it requires to prove the quality of the modifications made to maintenance instructions.

The spirit of that paragraph can be easily adopted, and a similar requirement be made, for the auditing system. Such requirement will ensure that the actions taken do in fact correct the problem and/or will prevent it from arising in the future. This assessment should be carried out by an independent department (such as the quality department), and should either ensure the effectiveness of the action in re-installing the system to the intended level of safety or, alternatively, prompt a new implementation plan.

4.10. Closure of the corrective path (step 11).

It is not clear in the regulations when to close the corrective path for audit findings. Part-145.A.65(c)(2) may imply that it should be done once proper and timely corrective actions have been taken. However, this step has not yet been adequately addressed. The AMS model here described considers that the closure of a corrective path (and ultimately, of the audit report itself), should happen once the corrective action has been assessed and the re-installation of the system to safety has been ensured.

Furthermore, a final report should also be required, which should ensure that all relevant information about the case is thoroughly documented in a single file (including the finding, the evaluation results, the recommendations, the corrective actions taken and the re-installation of the system to safety). It basically necessitates the reporting and recording of all relevant information related to the audit finding and its management.

4.11. Feedback and organisational learning (step 12).

EASA Part-145.A.65(c)(2) also requires that a feedback system is implemented in order to inform both relevant responsible persons and the accountable manager of any finding and its management.

However, an adequate AMS would also feed relevant information to the remaining personnel in the organisation, and would share it with other MROs. This would allow for a process of organisational and inter-organisational learning (for example, by sharing information about the aetiology of rare findings or by sharing information about proved corrective actions for certain findings).

5. Conclusions.

The auditing system is a necessary and integral part of the overall feedback macro-system within an organisation and plays a critical role in the management of safety. EASA (as previously did the JAA) has recognised the importance of auditing and now makes specific recommendations for a quality system to be implemented in all EASA approved aircraft maintenance organisations. Such a system ought to perform independent audits and inform the responsible personnel in the organisation about any findings and their correction. These aviation requirements have seldom changed in the past few years, a fact which highlights the relative maturity of the audit system in both European aviation regulations and in the European aviation maintenance sector. However, there is still room for improvement, especially for transforming today’s requirements into a functionally effective audit management system. Such was the objective of this article, which explored EASA’s auditing regulations with a focus on a functional and structural review of the proposed system. It also critically reviewed some apparent shortcomings of the present regulations, and suggested methods of avoiding them. However, because change may be slow, and possibly heavily resisted in a growing EASA, the article has been structured in a way which can
guide this change from the present auditing scheme to an audit management system at the organisational level. Thus, this progression represents the order in which future amendments might be introduced.

6. References.


7. List of Acronyms.

ADAMS-2 – Human Centred Systems for Aircraft Dispatch and Maintenance Safety (project GRD1-2000-25751, undertaken within the GROWTH 2000 programme, with financial funding from the European Commission Directorate General for Science, Research and Development)

AMC – Acceptable Means of Compliance (EASA / JAA)

AMS – Audit Management System

MRO - Aircraft Maintenance and Repair Organisation

MOE – Maintenance Organisation Exposition

EASA – European Aviation Safety Agency

GM – Guidance Material (EASA)

JAA – Joint Aviation Authority

JAR – Joint Aviation Requirements (JAA)
8. Sources of knowledge about European aviation:

The following web links will bring you to the websites of several important organisations dealing with European aviation. Most of these websites will inform about each organisation’s structure and activities, rather than any deeper knowledge on aviation. Nonetheless, they are main sources of regulation, especially for aviation safety in Europe.

- **EUROCONTROL**’s website, retrievable from [www.eurocontrol.int/index1.html](http://www.eurocontrol.int/index1.html)
  Eurocontrol is the organisation for the safety of civil and military Air Navigation within Europe.

- **EUROPEAN AVIATION SAFETY AGENCY**’s (EASA) website, retrievable from [www.easa.eu.int](http://www.easa.eu.int)
  This is the main website of reference for this paper, as it is not only the website of the Aviation Regulator for Europe but also a portal to the websites of other National Aviation Authorities, especially those of member states of the European Union.

- **EUROPEAN CIVIL AVIATION CONFERENCE**’s (ECAC) website, retrievable from [www.ecac-ceac.org](http://www.ecac-ceac.org)
  The European Civil Aviation Conference (ECAC) is a non-regulatory agency which aims to promote safety, efficiency and sustainable civil air transport within Europe. It has close links with the International Civil Aviation Organisation (ICAO).

- **JOINT AVIATION AUTHORITY**’s (JAA) website, retrievable from [www.jaa.nl](http://www.jaa.nl)
  The JAA was the precursor of EASA, from which EASA inherited the present requirements and made them into regulations. Although JAA is becoming less and less important in terms of aviation regulation for European member states, it is still the Authority for other European states, no members of the EU. Eventually, the JAA will be fully absorbed by EASA, but until then, it is an important source of reference for aviation in Europe.

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1 These references are offered here primarily for their knowledge value, not for commercial purposes (although commercial links to the selected references may be given, if available). The references are ordered alphabetically according to the first author's surname. The first date after the author refers to the date the original work was done, first copyrighted or first published. The title of the work follows. Finally, the location where to find such work is given, for example a webpage or a publishing company –which also includes country of publication, publication year, and ISBN number.
9. Who’s who. Author’s updated CV.

Dr. Jose D Pérezgonzález obtained his PhD – together with the honorific award *Doctor Europeus* – from University of La Laguna (Spain) in January 2005, with staying both in Ghent University (Belgium) and Trinity College Dublin (Ireland) for research purposes. He has developed his research and lecturing career in Ireland, both in Trinity College Dublin and in Dublin Institute of Technology. He will now develop it further in the School of Aviation at Massey University (New Zealand). Much of his research up to date has been with the Aerospace Psychology Research Group, participating in several European-funded research projects. His research expertise ranges from aviation efficiency to health and safety management in organisational settings, and is especially interested in policy, reporting and auditing systems, health and safety management, and knowledge management systems. Nowadays, he is extending the idea of Knowledge Management Editions™, and aims to edit his own journal with a similar philosophy. He also aims to create a Centre of Excellence for Aviation in New Zealand, at Massey University.

The author’s list of recent publications and reports on aviation is as follows:


10. Which & where.

Aerospace Psychology Research Group at Trinity College Dublin, Ireland. Updated CV:

The Aerospace Psychology Research Group (APRG) is based in the School of Psychology at Trinity College Dublin (Ireland). It has a track record of research grants in the aviation sector, especially from the European Commission. At present, it either coordinates, or participates in, several research projects within the European 6th Framework. It also participates in other national projects within Ireland. Among the projects the APRG is engaged with are the following: HILAS (Human integration into the lifecycle of aviation systems), TATEM (Technologies and techniques for new maintenance concepts), and TRIP (Transport research and innovation for people).

A sample of the APRG’s recent publication list follows:


School of Aviation at Massey University, New Zealand. Updated CV:

The School of Aviation is part of the College of Business, and it is based both in the Turitea Campus (Aviation Management), and in the Milson Flight Centre at Palmerston North International Airport (Air Transport Pilot). It offers bachelor with honours in Air Transport Piloting and Aviation Management, and masters and doctorate degrees in Aviation Management. The School is relatively new (it was established in 1990) and its research curriculum is only starting to grow now.

A sample of the School’s recent publication list follows:

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A model of communication from a social perspective

by Jose D. PÉREZGONZÁLEZ (2006)

School of Food Science and Environmental Health, Dublin Institute of Technology, Ireland
Currently at School of Aviation, Massey University, New Zealand

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Abstract

This paper introduces a model of communication and interpersonal relationships from a social perspective, instead of from an engineering perspective (e.g. information theory). The model was firstly developed for teaching purposes at Dublin Institute of Technology in 2001. Since then, sporadic evidence has shown that the model is a good heuristic for explaining communication and social interaction, and offers a better modelling of communication as an interactive process than other models do. This is so because of the capability of the model to identify different operations in the communication process, as well as pinpointing where communication bottlenecks might occur. The same sporadic evidence also shows that many of the findings, recommendations, “tips”, and “tricks” in the literature on relationships and communication (be this scholar literature or otherwise) are directed towards solving one or another of those bottlenecks. However, the lack of a clear framework underlying such literature makes it difficult to explain how those recommendations actually work.

The purpose of this paper is, then, to open a research project that will test and validate this communication model by way of a meta-analysis of the information contained in the available literature. The literature under review will be meta-analysed on a case-by-case basis, and the results will be described in future papers.

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Keywords
Communication; Interpersonal relationships; Modelling; Research.
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Notice to readers: This paper has not been subjected to proof-reading; thus, some errors in grammar, syntax or use of language may be found. By experience, most readers will be able to understand the meaning of what is said despite such errors; thus, such errors shall not delay or otherwise prevent publication of this material as long as the meaning of the transmitted content is not impaired. Notwithstanding this, the paper has been revised as far as practicable in order to capture and correct as many errors as possible. The reader might forgive those that have not being so captured.
A model of communication from a social perspective.

1. Introduction.

This paper introduces a research project which aims to test and validate a model of communication and interpersonal relationships by way of carrying out a meta-analytical research on the relevant information contained in the available literature. Presently, this paper will deal with the communication model alone, describing it as the theoretical frame for such research. Any meta-analytical results will be described in future articles, mostly on a case-by-case basis.

The theoretical model of communication was firstly developed for teaching purposes at Dublin Institute of Technology in 2001. The model was born of a triple need at the time: describing communication to students without expertise in information sciences; offering a tool which the students could use to better understand the available literature on communication; and providing an easy framework for pinpointing both communication bottlenecks and possible solutions to those bottlenecks. The model is now reviewed and updated as to introduce it to the broader community.

Engineering heuristics (e.g. telephone, radio transmitter, etc) underlie the predominant models of communication. According to most of these models, there is a sender, a receiver, and a message transmitted by the former to the latter. The sender encodes the message before transmitting it through the selected channel. The receiver needs to decode the message before being able to understand it. Communication is normally bidirectional, thus enabling a feedback loop between sender and receiver, so that the sender is also a receiver, and the receiver is also a sender of information. Furthermore, noise exists; this being a factor which also needs to be taken into account as it may affect the communication process at any level. Finally, the sender and the receiver are embedded in their own fields of experience, this being another factor that affects the communication process itself and, especially, the understanding of the contents transmitted. Furthermore, communication is a transactional process, where the contents which are transmitted affect and change the relationship between sender and receiver.

Notwithstanding the advancement that transactional models represent over interactional and linear models of communication, any of those models appear to be relatively limited in their capability to explain other processes of communication (such as persuasion), or appear to be potentially naïve in their capability to recommend improvements in communication. That is, persuasion could be explained by those models, but many of the variables that account for persuasion would be relegated to the field of experience, for example. Other variables, such as the attractiveness of the sender, would be difficult to justify by these models (i.e. from an engineering perspective, the attractiveness of the sender should be an irrelevant variable with no effect on the quality of the message that is being transmitted). Regarding how to improve communication, those models can only offer an objective answer, linked to the quality of the message (i.e. a mechanism to improve the quality of encoding, the quality of decoding, or the quality of the transmission of the message). Nonetheless, it is always strange to justify social communication as an interaction similar to a phone conversation.

Thus, what is needed is a model of communication from a social perspective. Such is the gap that this model tries to cover. The research project here unveiled attempts to answer the question of whether such model has anything to offer to the state-of-the-art of today's communication theories or not.

2. Linearity, interaction and transaction.

The communication model is based on the assumption that communication and relationships are carried out in a social milieu. Therefore, modelling social interactions rather than merely modelling transmission of information is a better representation of social communication.

Notwithstanding this, the model actually contemplates many of the main features of previous models. That is, communication is a process which is linear in its progression (e.g. communication occurs in a linear way, which is better represented as a temporal progression of speech or writing). Communication is interactional.
in its requirements (e.g., most communications assume such interaction between sender and receiver). Finally, communication is transactional in its nature, as it is intended to change the receiver’s attitudes or knowledge. Let’s now see each of these features in detail.

Firstly, the model accounts for linearity by representing communication as a process where certain operations precede or follow certain others (see first illustration). Namely, the communication model follows a three-step continuous circle: plan – act – check2. This continuous circle means that a continuous planning, acting and monitoring is occurring during communication. However, representing the process of communication in such dynamic is more confusing than spreading the communication model in the way it is done here. Thus, the reader ought to appreciate that there is a constant planning and monitoring of actions at every step, even if they are not explicitly represented in the model.

Secondly, the model accounts for interaction by representing oneself (e.g., the sender) and the others (e.g., the receiver). Although the potential number of people one could interact with at once may range in the tens, even hundreds or thousands, such interaction can still be represented as a dyad: oneself and the others. This facilitates the graphical representation of the communication model. Still, although communication is an interactive process, not all operations which can be considered as part of such communication are equally interactive. To illustrate this point, we can return to the three-step continuous circle. The “planning” step is not interactive, as it requires personal involvement only. This is not to say that it cannot be affected by the interaction, but it operates at an eminently personal level. The “acting” step is interactive. It represents actions initiated by the person who is communicating, who, in turn, expects a re-action from those he is communicating with in order to continue the relationship. The “monitoring” step is also interactive because it assesses how the other person or persons are acting, so that the sender can respond appropriately. The interaction, thus, is established at the levels of action and assessment—which means that the other person is also assessing our behaviour and responding to it, while he is planning his own communication strategy at a more personal level. In communicating, interaction is a necessary feature because both action and monitoring need of a social milieu.

Thirdly, the model assumes that transaction may occur (i.e., the communication may change the receiver’s attitudes or knowledge).

In brief, as we follow the process of communicating as it develops, we can find several operations which play a role in communicating but which have not yet been identified by other models.

The first illustration shows the communication model. In this illustration, I have over-emphasised the dyad between oneself and the others for didactical and graphical purposes. Oneself (e.g., the sender) is represented here on a white background, using blue graphics and solid lines. The other person (or persons – e.g., the receiver) is represented on a dark background, using red graphics and dashed lines. As it can be observed, similar operations occur for each person participating in the communication process. It can also be observed that interaction occurs in, at least, three occasions: when assessing attractiveness and availability, when initiating direct communication (approaching), and when continuing the communication or relationship (work relationship). Such interaction is represented by the crossover of graphical lines from one field to the other, which represents operations such as perceiving the other’s behaviour (for assessing attractiveness and availability), or waiting for feedback (as to know if one is accepted or rejected). Interaction is also represented by a different colour and graphical line once the communication or interaction between the two persons is firmly established at the stage of working out the relationship.

What now follows is a more detailed description of the different stages in the model.


This step in the communication process broadly covers the planning stage in communicating. Three elements are considered at this stage: our particular goals for communicating (i.e., our needs), our beliefs about both how communication

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2 This three-step circle is a simplified representation of Deming’s four-step circle (plan–do–check–act), where the elements “do” and “act” actually represents a similar operation and, thus, can be collapsed into each other. That is, Deming’s element “act” is a reaction to feedback in order to fine tune the relationship between “plan” and “do”. It is reasonable to expect that such reaction is done with the conscious participation of one’s cognition, and that some monitoring is still carried out in order to assess the quality of the reaction. The overall sequence, thus, would be the following: plan – act – check – re-plan – re-act – re-check. This can be simplified as a three-step continuous circle: plan – act – check, as discussed in Pérezgonzález (2001).
works and how competent we are at it, and the strategy that we will finally decide upon according to those needs and beliefs.


Needs refer to something we want, wish for, or need (e.g. a pay raise, a romance, or to tell Mary some news). We can take the need, wish or want for communicating something as the starting point in the communication process, at least from a “sender’s” perspective. However, those needs are necessarily embedded in a personal understanding of how communication works, how good we are at it, and how to manage the situation so as to be successful in our communication. That is, needs are embedded in our own mental models.

Because needs refer to why we want to communicate, they will provide the motivation to start the communication process, but they may also help in deciding the object of communication (who we want to communicate with) and the time of communication (when we want to communicate).

3.2. Beliefs.

Needs are not born in a vacuum. They are partly modified by our own experiences, mental models, attitudes and expectations of success. We have our own individual understanding of how the world around us works, and how capable we are at getting those needs satisfied.

Thus, beliefs refer to how we communicate. Beliefs interact with needs, as they provide information regarding all of above, especially information regarding object, timing and manner. Our mental models inform us about the expectancy of succeeding, and play a role in providing the strategy to develop our communication needs.

3.3. Strategy.

Above operations of clarifying our needs and estimating our expectancies would decide the communication strategy that will follow. At this stage, consider strategy as planning a goal that has not yet being subjected to interaction with reality in order to get implemented (thus, it is still at cognitive levels).
The stage of needs & beliefs represents a motivational step previous to the communication process, but leading to it. This stage would be activated early in the communication process when we are the sender – i.e. we want to communicate something, thus we start the process of communication. It would be activated later, once communication has been established, if we are the receiver – i.e. we first react to an invitation to communicate, previously to assess whether we have something to communicate at all.

As a final note to this point: the communication process is a transactional process at its best. This means that our own beliefs will be affected, even challenged, during the interaction. Sometimes we will resist changes to how we perceive reality. Some other times we may need to change those beliefs in order to be more skilful or successful in our interactions. Thus, this step in the process is not necessarily the first nor it is unmovable, but it is embedded in a continuous loop of learning and adaptation (or, else, resistance to change), within a process which is eminently transactional. Thus, as we learn more, our communication strategy will change to incorporate any new learning and adapt to the other person’s interaction, and this could even happen in real time, while we are keeping a conversation. Thus, this is a dynamic step within a dynamic process.

4. Attractiveness, availability, context, and expectations of approachability.

This second step in the communication process pushes us towards interaction with our communication environment (let’s call this a pre-interaction stage). That is, we start assessing the overall context of communication in order to fine-tune our strategy to reality, and implement it. At this step, we compare the situation at present against our beliefs (i.e. against what we thought would be the ideal situation), and decide whether the situation is right for starting our communication or not. This step is about perception and assessment of the context, including the other person, and should lead to the elaboration of expectations that will inform our final decision to act. Obviously, once interaction has started, this step continues active, and informs us whether to continue our interaction in the same manner or to adjust it according to changes in the context or the interaction itself. Thus, the use of the concept of pre-interaction is to signal not that interaction per se has not started, but that the type of interaction which will be informed by this assessment has, in fact, not started.

Four main elements may be assessed at this stage: the attractiveness of the other person, the availability of the other person, contextual circumstances, and personal (i.e. internal) circumstances. All these elements are assessed at the time of commencing the interaction, thus informing our expectations in real time.

Again, these elements may interact and affect each other (e.g. finding an available person makes her more attractive than otherwise, or we being in a bad mood makes most contexts unfavourable for communication). Still, we should be able to describe each of the four elements in an autonomous manner.

4.1. Attractiveness of the other person.

The attractiveness of the other person answers questions such as: How adequate is this person at this time to my communication strategy? How interesting is this person at this time to my strategy? Is this the person I need right now? Is this the person that can help me out with my needs now? Attractiveness does not refer to physical attractiveness, although it may encompass it (e.g. an attractive person has more chances to be “attractive” to our needs than a less attractive one). Therefore, this assessment means an assessment of the other person in terms of how adequately she will suffix our goals. When assessing attractiveness, we are assessing that the person we want to talk to is the correct one at this moment for the message we need to communicate.

The attractiveness or adequacy of a person also depends on what we need from the communication process (e.g. if only the boss can give us a pay raise, we won’t be looking for such pay rise from the cleaners), as well as on our own knowledge or expectancies of who could satisfy them (e.g. basically anybody on the street is potentially right for giving us directions to certain street, however a policeman, postman or shop owner may be perceived as more adequate, if we happen to find one at the time).

A decision on attractiveness can be made at the level of needs, beliefs and strategy (i.e. we can already choose a person if we have enough information that that person is the one we need). However, the fine-tuned assessment of attractiveness can only be made at this time of pre-interaction. That is, even if our boss is the right person to give us a pay raise, we may as well find...
out that the secretary could be a quickest way to such pay raise (thus, the attractiveness of the secretary increases). Or we may have certain idea of what an attractive potential partner is for us, but we still need to find attractive a real one before start interacting with him or her (and the experience of most people if that we may not even end up dating who we thought was our ideal type!).

4.2. Availability of the other person.

The availability of the other person answers questions such as: How available is the other person right now? How receptive is she right now? Has she the time to deal with my needs right now?

Thus, availability refers to physical or emotional availability, and is subjected to time (i.e. the other person may not be available right now, but she will eventually be).

Previous to this assessment we may have identified that certain person is adequate to give us directions, but then we may also notice that she is on the phone, thus not being available. Or we may have identified our boss as the only one who can give us a pay raise, however we may postpone talking to him about it if we find him in a bad mood (thus, he is not really available to talk about our pay raise successfully right now).

4.3. External circumstances (contextual information).

Although a calculation of both attractiveness and availability may suffix our decision to start the communication process, contextual information (i.e. that outside our control or the other person’s control) may also play an important role in the success of our communication or interaction. For example, we may have assessed the attractiveness and availability of a person and want to approach her, but our friends actually prevent it from happening.

Therefore, this element in the communication model tries to answer questions such as: Do we have the opportunity to start this communication? Is there anything in the environment that may prevent this communication from happening?

4.4. Internal circumstances (personal information).

Internal states (psychological, biological, etc) may also play an important role when communicating. For example, shyness, euphoria, and other emotions and feelings may help us when communicating, or may detract us from doing so.

Thus, this element is trying to answer questions such as: Do I feel physically or emotionally adequate for this communication right now?

In summary, this “second” operation in the communication process generates expectations of success or failure once the process is going to start. These expectations are generated by assessing four elements at present: the attractiveness and availability of the other person, the environment, and our own internal states. The expectations so generated will inform the next operation in the process: the decision to communicate or not.

We need to bear in mind that the above operation is an assessment at present, as a step previous to decision. A similar assessment of those elements could have been done much earlier in the process, at the needs stage. However, at such stage we are merely dealing with beliefs, not reality. Thus, any previous assessment may inform us of the person we may want to talk to (attractiveness), or when the person will be around (availability), but it will not be able to inform us fully how attractive or available that person will be at the time when we are ready to communicate with her.

5. Deciding on communicating.

Our expectations to succeed in our communication will lead us towards one of three possible responses (or a combination of them):

- Take no action, such as deciding not to approach, not to interact, or not to say something at a particular time.
- Decide on a passive communication strategy, namely signalling the other person to take action. This could mean encouraging people to approach us, dissuading them from approaching us, or somehow managing their expectations of approachability to us. The way of doing this is by managing our attractiveness and/or availability and so influencing the person’s beliefs regarding us, the communication process itself, or the message being communicated.
- Decide on an active communication strategy, namely either approaching or avoiding interaction or communication with the other person.
5.1. Decide not to communicate.

Upon assessing our expectations of success at present, we may decide not to start the communication, or not to continue it if it has already started (e.g., we may decide not to say something at a given time during the conversation, thus not communicating it to the person we are talking to).

5.2. Decide on a passive communication strategy.

We may also decide to follow an indirect path. That is, we may somehow signal the other person to approach us or to start communicating with us, which actually puts us at the receiving end of the process.

For the sake of brevity, I will use the concept of signalling approachability in its positive sense of encouraging action, rather than dissuading it. However, the signalling can be both way, and can even reach complex patterns, such as encouraging certain behaviours while, at the same time, discouraging others, all in the same interaction (e.g. the mixed signals many people complain about in romantic relationships).

Signalling approachability is an indirect manner of communicating in which we show the other person our interest in communicating with her, but we decide to wait for some feedback regarding her interest in communicating with us. It is also a manner of showing the other person our availability to be approached, although we expect that the other person is the one who should take the approaching action. Thus, signalling is not merely a passive communication approach, but it can double as a way of “testing the waters” before we approach the person or start communicating with her.

By signalling approachability we manage two elements in the communication process: our own attractiveness and our own availability. Thus, we want to increase / decrease our attractiveness to the other person, or we want to increase / decrease our availability to the other person, or both.

Because this is an indirect communication strategy, the other person has to assess whether she wants to approach and communicate with us or not. Obviously, she also has the alternative options of ignoring our signals (thus, taking no action), or signalling us to approach her, instead.

Thus, signalling approachability requires a response from the other person. Meanwhile, we become reliant on the feedback received in order to decide our next steps. This signalling can continue from both sides, becoming a subtle process of negotiation before any direct approach or communication is established.

Furthermore, we could also have decided on this passive approach from the needs, beliefs and strategy stage, thus planning the management of our attractiveness and availability beforehand. For example, we can strategically manage our attractiveness and availability long before any interaction occurs by carefully selecting our clothing when going out, thus increasing our chances of being approached by other people – which could provide us with a large enough pool of people from which to decide who we want to communicate with.

5.3. Decide on an active communication strategy.

This is the direct path to communicating our needs, as we actually approach the other person and communicate with her (or, else, we actively avoid her).

Approaching is an active step towards initiating communication. That is, we take the first step in the process, and we face the consequences of being accepted or rejected in our approach (being ignored can be effectively considered as a way of rejection).

If we are accepted, this will inform us whether we were correct in our expectations and want to continue the communication process, or whether we were mistaken and, thus, we need to fly away.

If we are rejected, we face similar options. We have to decide whether the rejection is genuine and we need to fly away, or whether we want to pursue the relationship longer and, thus, try again (for example, we may re-interpret such rejection as due to a misunderstanding by the other person, to our failure in perceiving correctly the availability of the other person, or, even, to an expected response –e.g. the controversial belief that some men hold that when a woman says “no” she actually means “yes”.

In summary, upon assessing our “expectations”, we have three courses of action: not to communicate, communicate indirectly, or communicate directly. The most obvious consequences of our communication is that the other person may keep communicating indirectly with us, may approach or avoid us, and may accept or reject us if we approach her. Even if communication is established, we (or the other
person) may still have the options of continuing the communication or not. When the communication is to be continued (such as when trying again after a rejection or when working out the relationship), the communication process closes over itself and onto needs and beliefs, thus maintaining the process active for as long as the communication is maintained.

6. Being at the receiving end of communication.

So far we have described communication from a “sender’s” perspective. However, such description does not account for the whole communication process. That is, because communication is a socially interactive process, chances are that we will also be the “receiver” of others’ advances. In this case, the same process already described would be carried out by the other person, with us as the target. Thus, some people may try and attract our attention by signalling interest in us, or may approach us and open a channel of communication. In this case, we are at the receiving end and will be playing the role of that who will decide whether to signal back to the other person, actively approach her, and accept or reject the interaction that she has already started.

It is in this situation of us being the “receiver” that we have a third set of interactive behaviours we could display. Let’s briefly summarise the other two before describing this set of behaviours.

Firstly, we have already said that the person could signal her interest in communicating with us, to which we can respond as already described: we can ignore the signalling (decide not to communicate), we can signal back (thus, continuing clarifying our expectations of approachability), or we can approach the other person.

Secondly, if we are approached, we have also to decide whether we accept such approach (thus continuing the communication) or whether we reject it (thus preventing it from going any further). Earlier we have also dealt with continuing the relationship, as once we have accepted it we can consider ourselves as actively engaging in the communication process (which should be similar to deciding for an active communication strategy).

Thirdly, if we decide to reject the approach, we will have to express the appropriate set of behaviours for rejecting the other person’s approach: either flying away ourselves, or sending the other person away.

7. What the model provides.

This model not only helps understand the process of communication from a social perspective, but also helps pinpoint where bottlenecks in communication could appear. The second illustration shows these potential communication bottlenecks:

- Communication could fail because we have the “wrong” beliefs or mental models regarding how communication works, or we have the “wrong” communication habits, skills, etc. This bottleneck may explain the problems of communication between different cultures, for example.
- Communication could fail at the level of perceiving and generating the right expectations of approachability. For example, we could misinterpret the attractiveness or availability of the other person, thus communicating with the “wrong” person or at the “wrong” time.
- Communication could fail at the level of signalling approachability, which is the case when giving the “wrong” signals, or when failing in being attractive or available enough for the other person to approach us.
- Communication could also fail when approaching the other person (e.g. when using “wrong” ice-breakers), or at the stage of recognising that the interaction may be a mistake and we need to fly away.

Not only communication can fail at any of above levels, but it can fail at more than one, as well. The important thing to remember, though, is that different people may be competent in some stages of communication while less competent in others. That is, communication problems may be circumscribed to different stages in the process rather than being a general inability of the person. Thus, this model really offers the understanding that “one size does not fit all” but that different people with communication problems will probably differ in the steps they fail.

The advantage of this model is that where there is a problem, a cure may be available as well. And because this model maps out the relationship-communication process and pinpoints the different
operations within such process, it is relatively easy to elaborate techniques that could help manage specific steps with a greater accuracy and effect. In fact, many of the “tricks and tips” that exist nowadays to help improve our communication or interaction skills, address one or another of above bottlenecks. Most of those techniques can be categorised as principally oriented towards managing beliefs, managing attractiveness (presentation techniques), managing availability, starting a direct communication (ice-breaking techniques), flying away, keep the communication going (communication keepers), or ending the communication process at present (communication enders). Thus, those techniques fit well within this model, as the second illustration shows.

8. The way forward.

This model is introduced here in order to open a line of research that may validate the model itself by way of meta-analysing available frameworks of communication and relationships. The way forward, therefore, is by way of identifying those available frameworks, applying a meta-analysis on the information they contain, and test whether this communication model can explain the same frameworks in a more ecological manner or, alternatively, it is a redundant model. The available frameworks will be identified and meta-analysed on a case-by-case basis. Therefore, the methodology and results will be described for each case in future papers. Whenever necessary, refinements to the model here presented will also be made, especially if such changes are informed by the results of the research.

9. References.

10. Sources of knowledge about communication models³:

The following sources of knowledge do not pretend to be either exhaustive in the information about existing communication models or academically relevant. They are offered here for those users who do not know much about communication but want a quick perusal of the topic:

  
  Kaminski acknowledges that much of the material in this handout is derived from C. David Mortensen’s book (1972), although he has adapted and updated it for this lecture. Therefore, this is a quite comprehensive introduction to several models of communication in a relatively comprehensible language, adequate for those users without an extensive knowledge on communication.

  
  Lee offers a snapshot of five models of communication, most of them already covered by Kaminski (2002).

  
  Wikipedia is a good source of knowledge on diverse topics, although some entries are more reliable than others. Keywords such as “communication”, “communication theory”, “information theory”, etc may probably suffix the reader interested in knowing more about communication theories, in general.

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³ These references are offered here primarily for their knowledge value, not for commercial purposes (although commercial links to the selected references may be given if available). The references are ordered alphabetically according to the first author's surname. The first date after the author refers to the date the original work was done, first copyrighted or first published. The title of the work follows. Finally, the location where it is possible to find such work is given, for example a webpage or a publishing company –the latter also includes country of publication, publication year, and ISBN number.
11. Who’s who. Author’s updated CV.

Dr. Jose D Pérezgonzález obtained his PhD – together with the honorific award Doctor Europeus – from University of La Laguna (Spain) in January 2005, with staying both in Ghent University (Belgium) and Trinity College Dublin (Ireland) for research purposes. He has developed his research and lecturing career in Ireland, both in Trinity College Dublin and in Dublin Institute of Technology. He will now develop it further in the School of Aviation at Massey University (New Zealand). Much of his research up to date has been with the Aerospace Psychology Research Group, participating in several European-funded research projects. His research expertise ranges from aviation efficiency to health and safety management in organisational settings, and is especially interested in policy, reporting and auditing systems, health and safety management, and knowledge management systems. Nowadays, he is extending the idea of Knowledge Management Editions, and aims to edit his own journal with a similar philosophy. He also aims to create a Centre of Excellence for Aviation in New Zealand, at Massey University.

The author’s list of recent publications and reports is as follows:


12. WHICH & WHERE.

School of Food Science and Environmental Health at Dublin Institute of Technology, Ireland. Updated CV:

The School of Food Science and Environmental Health is one of the three schools comprising the Faculty of Tourism and Food in the Dublin Institute of Technology. The School has a well appointed suite of laboratories for research and teaching. The School has a full-time lecturing staff of 32 supported by technical staff.

The School has shown vigorous and sustained professional activity since its formal inception in 1982. The School provides expertise in many areas including environmental health, risk management, environmental protection and management, food chemistry, food biochemistry, food microbiology, food processing and technology, instrumental chemical analysis, biotechnology, pharmaceutical chemistry, pharmaceutical microbiology, good manufacturing practices, food protection, sensory science, food and chemical engineering.

The teaching and research activity of the School is concerned with Environmental Health, Pharmaceutical Technology, Food Safety and Technology, Food Quality Assurance and Health and Safety. The academic and professional profiles of staff reflect these areas and bring both a multidisciplinary and a multi-sectoral influence to bear on programme development and delivery. The confluence of the activity is the interface between the industrialist, the regulatory agencies and the consumer. The focus is in optimising technologies and processes and in promoting consumer protection. The research programme is expressed in aspects of risk analysis, applied chemistry, applied microbiology, biotechnology, biochemistry / food technology, food processing and issues related to implementation of legislation. The research is supported by the European Union, national funding agencies, government departments and industry and by the Dublin Institute of Technology. There are six whole-time undergraduate programmes, three taught Masters programmes and postgraduate research.

School of Aviation at Massey University, New Zealand. Updated CV:

The School of Aviation is part of the College of Business, based both in the Turitea Campus and the Milson Flight Centre at Palmerston North International Airport. It offers bachelor with honours in Air Transport Piloting and Aviation Management, and masters and doctorate degrees in Aviation Management. The School is relatively new (it was established in 1990) and its research curriculum is only starting to grow now.

A sample of the School’s recent publication list follows:

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Or you like the idea of having both the entire contents of an article and a shorter version of it, all in the same edition.

Or you started reading an article but grew desperate of the length of its contents, details, redundancies, statistical results, etc.

Or you would like to read several articles to keep up-to-date in science but you do not actually like reading at all.

Or you read an article before and you would like to revise its main ideas without having to read the whole article again.

Or you would like to read as many articles as possible for your studies and this edition allows you to go through all those that you would like to.
Reseña de libro: “La manera de Southwest Airlines”
por Jose D. PÉREZGONZÁLEZ [traductor] (2006)
Escuela de Aviación, Universidad Massey, Nueva Zelanda


Enviando correspondencia a Dr. Jose D. PÉREZGONZÁLEZ, School of Aviation, Massey University, Turitea Campus, PO Box 11222, Palmerston North, New Zealand. Phone: +64 6 3505326; Fax: +64 6 3505536; Email: J.D. Perezgonzalez@massey.ac.nz

Resumen

“La Manera de Southwest Airlines” ofrece una síntesis de la investigación llevada a cabo por Jody Hoffer Gittell en cuatro aerolíneas de Estados Unidos durante ocho años. Sin embargo, tanto el título como el enfoque del libro son en referencia a Southwest Airlines por el simple hecho de que esta aerolínea ha mostrado prácticas organizacionales distintivas que parecen estar a la base del mejor desempeño de dicha aerolínea en cuanto a eficiencia y calidad. Dichas prácticas han terminado por constituir las variables antecedentes del modelo de coordinación relacional elaborado por Gittell.

Diez prácticas constituyen las variables antecedentes del modelo de coordinación relacional. El núcleo del modelo lo componen dos elementos en constante interacción: relaciones (definidas en términos de metas compartidas, conocimiento compartido y respeto compartido) y comunicación (definida en términos de frecuencia, coordinación temporal y orientación hacia la resolución de problemas). Según Gittell, cualquier organización puede gestionar estas diez prácticas para incrementar los niveles de coordinación relacional en la empresa y, por consiguiente, incrementar los niveles de desempeño organizacional (medido en términos de eficiencia y calidad).

“La Manera de Southwest Airlines” va más allá de un mero estudio de casos sobre Southwest Airlines. El libro es también una referencia importante para la investigación futura de la coordinación relacional en otros sectores, ya que el libro provee las herramientas que sustentarían dicha investigación (es decir, el modelo, la metodología y los resultados). Dicha investigación futura, si respetara la metodología y los procedimientos seguidos por Gittell, podría informar tanto acerca de la validez del modelo como acerca de su importancia para una amplia gama de organizaciones.

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Palabras clave
Coordinación relacional; Southwest Airlines; American Airlines, United Airlines, Continental Airlines; Aviación; Asistencia sanitaria; Estados Unidos.

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Agradecimientos
Este artículo ha sido tomado prestado de www.lulu.com/perezgonzalez para el primer volumen de esta revista, y para que sirva de ejemplo práctico del tipo de contenidos y el formato de futuras contribuciones.
Nota al lector: Esta obra no ha sido corregida de manera profesional; por tanto, algunos errores gramaticales, sintácticos o de uso del lenguaje pudieran aparecer. La mayoría de lectores podrán comprender el sentido de la dicha a pesar de algún que otro error. Por tanto, el riesgo de que aparezcan errores no retrasará o impedirá la publicación de este material tanto en cuanto el significado del contenido transmitido se halle salvaguardado. No obstante, esta obra ha sido revisada tanto como ha sido factible con el fin de capturar y corregir tantos errores como fuera posible. El lector sabrá perdonar aquellos que no lo han sido.

Nota pública: El autor de este artículo declara que éste es un trabajo original, refleja el entendimiento del autor de los contenidos cubiertos, y la información proporcionada lo es por razones de conocimiento, y no por razones comerciales, personales o de otra naturaleza.
Reseña de libro: “La manera de Southwest Airlines”.

1. Introducción.

Este libro sintetiza ocho años de trabajo investigativo llevado a cabo por Jody Hoffer Gittell en cuatro aerolíneas de Estados Unidos: American Airlines (dos sucursales fueron estudiadas), United Airlines (tres sucursales), Continental Airlines (dos sucursales), y Southwest Airlines (dos sucursales). No obstante, el libro se centra en Southwest Airlines simplemente porque esta compañía mostró unas prácticas organizacionales distintivas que están a la base del modelo de coordinación relacional que parecen ser las responsables de su mejor desempeño en términos de eficiencia y calidad. Gittell describe en su libro la manera en que Southwest Airlines opera (al menos hasta la publicación del libro), el grado en que dicha operación afecta el desempeño organizacional, y el grado en que las otras aerolíneas se diferencian de Southwest Airlines tanto en sus niveles de coordinación relacional como en su desempeño.

Si bien no existe una indicación clara del periodo en que la investigación fue llevada a cabo, el libro fue inicialmente publicado en el año 2002, lo que significa que el análisis de los datos y su interpretación fueron concluidos en esa misma fecha, si no antes. Por tanto, a falta de mayor precisión, parece razonable el fechar la finalización de la investigación en ese año. McGraw-Hill publicó el libro en tapas duras en el 2003, y lo ha vuelto a editar en rústica en el 2005. Ambas versiones son en inglés, y no existe todavía una versión en español del libro.

2. Un modelo de coordinación.

Quizás la contribución más importante de Gittell no sea tanto la descripción de las prácticas organizacionales de Southwest Airlines, sino la manera en que dichas prácticas se interrelacionan entre sí para conformar la base de un modelo empírico de coordinación relacional. El modelo de Gittell nació del estudio comparativo entre Southwest Airlines y American Airlines (tal y como se describe en el capítulo 3), probablemente en las etapas iniciales de la investigación. A continuación, Gittell usó el modelo como punto de referencia para comparar el grado de coordinación relacional de las cuatro empresas aeronáuticas, y correlacionarlo con la rapidez de respuesta entre la llegada y la salida del avión (“gate turnaround”, o “departure operations” en inglés).

Gittell identificó diez prácticas usadas por Southwest Airlines que describían los niveles de coordinación relacional en la empresa. Dichas prácticas fueron desarrolladas por Southwest Airlines durante la vida operativa de la empresa expresamente para gestionar los niveles de coordinación entre empleados. Gittell halló que dichas prácticas resultaban en mayores niveles de calidad y eficiencia en comparación con American Airlines.

Además, Gittell también halló que dichas prácticas no eran necesariamente idiosincrásicas de Southwest Airlines sino expresadas de una manera más prominente por dicha empresa. Es decir, prácticas similares podían encontrarse en otras aerolíneas (y otros sectores laborales), si bien la manera en que dichas prácticas eran gestionadas difería entre empresas. De esta manera nació el modelo.

El modelo de coordinación relacional es relativamente simple de comprender (al menos de una manera burda). Gittell propone que tanto la eficiencia como la calidad en las operaciones de “turnaround” pueden ser explicadas por dos factores: la calidad de las relaciones mantenidas entre los distintos grupos de trabajadores (definida en términos de metas compartidas, conocimiento compartido y respeto compartido), y la calidad de su comunicación (definida en términos de frecuencia, coordinación temporal y orientación hacia la resolución de problemas). Dichos factores constituyen el núcleo de la coordinación relacional.

Diez prácticas constituyen las variables antecedentes que influyen el núcleo del modelo. Éstas son las siguientes: liderazgo creíble y solidario, inversión en liderazgo en primera línea, selección y formación en competencia relacional, acercamiento de las esferas laboral y familiar, creación de roles que cubren varios puestos, medida global del desempeño, flexibilidad limitrofe entre puestos, asociación con los sindicatos, y mantenimiento de buenas relaciones con los proveedores.

Cualquier empresa puede gestionar estas prácticas para incrementar los niveles de coordinación entre empleados, lo que, a su vez, incrementará los niveles de desempeño organizacional tanto en eficiencia como en calidad.

La validez del modelo fue establecida por medio de la comparación entre Southwest Airlines...
y las otras aerolíneas, y por medio del uso de análisis de regresión para estimar la varianza de desempeño organizacional explicada por cada variable antecedente. Gittell describió gráficamente los resultados de las nueve sucursales bajo estudio, y halló que una mayor coordinación relacional resultaba en un menor número de retrasos, un menor número de maletas perdidas, una mayor rapidez entre la llegada y la salida del avión, y mayor productividad por empleado.

3. Lo que el libro ofrece.

“La manera de Southwest Airlines” es algo más que un estudio de casos sobre Southwest Airlines. El libro realmente ofrece lo siguiente:

- Un breve recuento histórico sobre cómo Southwest Airlines fue fundada, y cómo creció hasta convertirse en la aerolínea más exitosa a nivel internacional (capítulos 1, 2 y 17).
- Un modelo de coordinación relacional (capítulo 3).
- La metodología para evaluar la coordinación relacional (capítulo 3).
- Un estudio de casos sobre cómo Southwest Airlines gestiona la coordinación relacional para obtener un mayor rendimiento organizacional (especialmente una mayor rapidez operativa entre la llegada y la salida del avión) (capítulos del 5 al 14).
- Resultados comparativos (también en formato de estudio de casos) sobre cómo American Airlines, United Airlines y Continental Airlines gestionan la coordinación relacional, y su impacto en el desempeño organizacional de cada empresa (capítulos del 5 al 14).
- Resultados sobre una investigación similar en el sector sanitario (capítulo 4).

Gittell también ofrece algunas ideas sobre cómo cada práctica se relaciona íntimamente con las demás. El capítulo 15, por tanto, parte de dicha interrelación y explica cómo la coordinación relacional se vería afectada si cada una de las diez prácticas faltara aún cuando se mantuvieran las restantes. Sin embargo, en mi opinión, Gittell va más allá de sus datos en este capítulo. Es decir, Gittell nunca retiró cada una de las prácticas por turno mientras mantenía las restantes para así medir el efecto de la ausencia de dicha práctica en el desempeño. Por tanto, las conclusiones alcanzadas en el capítulo 15 no están sustentadas empíricamente y pudieran ser insostenibles.

En el capítulo 18, Gittell ofrece recomendaciones sobre cómo implementar las diez prácticas con el fin de gestionar la coordinación relacional en las organizaciones. Estas recomendaciones están basadas en los resultados empíricos obtenidos en dos sectores laborales (aviación y sanitidad). Sin embargo, el lector debe tener en cuenta que no hay garantías expresas acerca de los resultados a obtener tras la implementación de coordinación relacional en su empresa particular, especialmente si dicha empresa es en un sector laboral diferente de los dos sectores ya estudiados.

4. Conclusiones.

Esta obra es uno de los mejores libros en aviación y gestión que he encontrado últimamente. Mi opinión descansa en que el libro ofrece tanto datos de investigación como recomendaciones prácticas de una manera clara y agradable. Además, el libro presenta y describe un modelo de investigación que puede ser usado para comparar el grado de coordinación relacional en distintas empresas, así como su impacto sobre el desempeño organizacional. El libro ofrece también las herramientas metodológicas que la autora usó en su investigación. Tanto profesionales como investigadores pueden usar la misma metodología para validar el modelo de coordinación relacional en diferentes empresas, sectores o culturas. Finalmente, resultados cuantitativos relevantes también están disponibles, lo cual ofrece una gran oportunidad para comparar los resultados obtenidos por Gittell con otros resultados a obtener en un futuro.

En suma, “La manera de Southwest Airlines” es algo más que un estudio de casos sobre Southwest Airlines. Es también una referencia importante para continuar la investigación sobre coordinación bien a nivel académico bien a nivel profesional. Dicha investigación futura, si respeta la metodología y los procedimientos de Gittell, informará sobre la validez del modelo y sobre su importancia en el entorno empresarial actual.

5. References.


Coordinación relacional; Southwest Airlines; American Airlines, United Airlines, Continental Airlines; Aviación; Asistencia sanitaria; EEUU


Disponible electrónicamente en www.lulu.com/Journal-KAI

6. Fuentes de conocimiento acerca de la coordinación relacional y Southwest Airlines4:

- AMAZON.COM, en www.amazon.com

Amazon.com no es una fuente de conocimientos acerca de la coordinación relacional per se, pero permite al lector acceder a las reseñas que otras personas han escrito acerca del libro de Gittell. Por tanto, este es un buen lugar para obtener segundas y terceras opiniones, si fueran necesarias.


El libro de Gittell que ha sido reseñado en este artículo.

- GITTELL, su página web en The Heller School for Social Policy and Management, en http://heller.brandeis.edu/professors/jodygittell/JHGittellHome.htm

En general, no hay prácticamente ninguna otra fuente de información sobre coordinación relacional que no sea Gittell. Es decir, el modelo no parece haberse expansionado más allá del trabajo investigativo de Gittell y su grupo de investigación. La manera más rápida de acceder a los distintos artículos de investigación sobre el tema es, por tanto, por medio de la página web de Gittell, en la sección de publicaciones.


Esta guía es una herramienta de trabajo, no una fuente de conocimiento per se. La guía contiene instrucciones para reducir la carga lectora del libro por medio del subrayado de las ideas más importantes del mismo (un 15% del texto) y del marcado de las ideas esenciales (un 3% del texto). Una vez el libro original ha sido subrayado y marcado, resulta en una Edición Gestión del Conocimiento™ (Knowledge Management Edition™), que facilita el repaso de dichas ideas por razones profesionales o académicas, sin necesidad de tener que leerse todo el libro. Además, como el libro original sólo está disponible en versión inglesa, una versión Edición Gestión del Conocimiento™ facilita su lectura a las personas de habla hispana, ya que éstas pueden concentrarse en traducir solamente la parte subrayada con la confianza de que están leyendo las ideas principales del libro.


La sección de prensa de Southwest Airlines mantiene artículos que se han escrito en relación con la aerolínea, al menos hasta el 10 de marzo del 2004. Por tanto, este enlace puede ser una buena fuente de información para el lector que quiera conocer más acerca de la aerolínea.

4 Estas referencias se ofrecen principalmente por su valor como fuentes de conocimiento, y no por razones comerciales (si bien enlaces comerciales pueden aparecer para con algunas referencias). Las referencias aparecen ordenadas alfabéticamente según el apellido del primer autor o nombre empresarial. La primera fecha que aparece después del autor hace referencia a la fecha del trabajo original (cuando éste fue realizado, protegido o publicado por primera vez, en este orden). El título de la obra sigue al autor o autores. El lugar donde puede ser adquirida la obra aparece al final, bien una página web, bien una dirección editorial –en cuyo caso también se incluyen el país de publicación, el año de la publicación y el número ISBN. Referencias no bibliográficas siguen dicho patrón en la medida de lo posible.
7. QUIÉN ES QUIEN: Currículum del autor.

Jose D. Pérezgonzález obtuvo el grado de doctor – junto con la mención honorífica Doctor Europeus – por la Universidad de La Laguna (España) en enero del 2005, con estancias en el extranjero, tanto en la Universidad de Gantes (Bélgica) como en el Trinity College de Dublín (Irlanda), como condiciones para obtener dicha mención. También ha desarrollado su carrera investigadora y académica en Irlanda, tanto en el Trinity College de Dublín como en el Instituto Tecnológico de Dublín, y la continuará en la Escuela de Aviación de la Universidad Massey de Nueva Zelanda. La mayor parte de su investigación ha sido llevada a cabo con el Grupo de Investigación de Psicología Aerospatial (APRG) del Trinity Collage, participando en varios proyectos subvencionados por la Comunidad Europea. Su experiencia cubre áreas tales como eficiencia en la aviación, gestión de la salud y la seguridad organizacionales, legislación, sistemas de notificación de sucesos, sistemas de auditoría organizacionales, y gestión del conocimiento. En estas fechas, está interesado en extender la idea de las Ediciones Gestión del Conocimiento™, y aspira a editar su propia revista con una filosofía similar. Además, espera crear un Centro de Excelencia Aeronáutica para Nueva Zelanda, en la Universidad Massey.

El listado bibliográfico del autor en el campo de la aviación, bien como publicaciones científicas bien como informes de investigación, es el siguiente:


Enlaces:

- Coordinación relacional; Southwest Airlines; American Airlines, United Airlines, Continental Airlines; Aviaci
- 
- Asistencia sanitaria; EEUU

8. QUÉ Y DÓNDE:

Escuela de Aviación en la Universidad Massey, Nueva Zelanda. Currículo actualizado:

La Escuela de Aviación es parte del Colegio de Ciencias Empresariales, y se halla ubicada tanto en el Campus de Turitea (licenciatura en gestión) como en el Centro Milson de Vuelo en el aeropuerto internacional de Palmerston North. La Escuela ofrece licenciaturas en Aviación (piloto de transportes aéreos) y en Gestión de la Aviación, así como cursos avanzados de master y doctorado en Gestión de la Aviación. La Escuela fue fundada recientemente (en 1990) y su currículo investigativo apenas está comenzando a crecer en estos momentos.

Una muestra de la lista de publicaciones recientes de la Escuela es la siguiente:


- **PÉREZGONZÁLEZ Jose D (2006).** *A model of communication from a social perspective.* Pergonomas/Lulu Press (USA), 2006.


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Or you would like to read as many articles as possible for your studies and this edition allows you to go through all those that you would like to.
Thematic bibliography: aviation news in New Zealand during June 2006

by Jose D. PÉREZGONZÁLEZ (2006)

School of Aviation, Massey University, New Zealand

Correspondent: Dr. Jose D. PÉREZGONZÁLEZ, School of Aviation, Massey University, Turitea Campus, PO Box 11222, Palmerston North, New Zealand. Phone: +64 6 3505326; Fax: +64 6 3505536; Email: J.D. Perezgonzalez@massey.ac.nz

Abstract

This article commences a bibliographic series that documents monthly indicators for aviation management and aviation performance in New Zealand. The bibliography mainly collects links to aviation news on daily newspapers, and to aviation safety indicators maintained by the Civil Aviation Authority and the Transport Accident Investigation Commission. However, other sources are also possible, depending on their relevance. The bibliography is wide in its scope, thus, it may be more representative of aviation performance indicators that have caught the attention of New Zealanders than of indicators with a direct impact on New Zealand’s aviation sector. Notwithstanding this, the reader who wants to keep updated on what’s going on in the aviation sector in New Zealand may find this thematic bibliography of relevance.

During the month of June 2006, the most important aviation performance indicators that caught the attention of New Zealand’s media were the following (in order of importance): the Civil Aviation Authority’s performance in regards to the 2003 crash that killed eight people in New Zealand, the proposal for a codeshares deal between Air New Zealand and Qantas, Airbus woes with it’s A-380, the misleading price advertisements by Air New Zealand, the impact of fuel prices on the benefits of airlines nationally and worldwide, the findings in NZ of some links to the 9/11 terrorist attack in the US, and the black-star rating of Taupo Airport as the least safe airport in the world. Furthermore, a helicopter incident with no injuries or damages also occurred.

Keywords

Aviation; Management; Efficiency; Health; Safety; Environment; New Zealand.
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Editor: Dr. Jose D. PÉREZGONZÁLEZ; School of Aviation, Massey University, P.O. Box 11222, Palmerston North, New Zealand. Email: J.D.Perezgonzalez@massey.ac.nz. Published by Pergonomas. Printed and distributed by Lulu Press Incorporated, 3131 RDU Center Dr. Suite 210, Morrisville NC 27560, United States of America, http://www.lulu.com. Contact e-mail: orders@lulu.com. Phone: 919-459-5858 (Lulu.Press or Lulu.com may appear as the publisher in online retailers’ databases). The Journal of Knowledge Advancement & Integration (ISSN 1177-4576) is published on an ongoing basis as articles become available. No subscription is necessary, and articles can be purchased individually in the format offered, be this electronic or hard copy. Articles can be acquired at http://www.lulu.com/Journal-KAI.

School of Aviation
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http://aviation.massey.ac.nz
Thematic bibliography:
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NZHERALD (2006c). Airbus warns of delivery delays with A380s. The New Zealand Herald,


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16 June 2006


17 June 2006


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- **CAA-NZ, The Civil Aviation Authority of New Zealand, accessible at [www.caa.govt.nz](http://www.caa.govt.nz).**
  The CAA is the main source of information for aviation safety performance, but also for regulatory management of the New Zealand aviation macro-system. The two sections that are most informative in regards to aviation management and performance are the “Accidents and incidents” tab and the “What’s new” tab.

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- **STATISTICS NEW ZEALAND, accessible at [www.stats.govt.nz/default.htm](http://www.stats.govt.nz/default.htm).**
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- **TAIC-NZ, Transport Accident Investigation Commission, accessible at [www.taic.org.nz](http://www.taic.org.nz).**
  The TAIC is an independent body that investigates transport accidents and incidents with significant implications for safety. The two sections that are most informative in regards to aviation safety performance are the “Aviation” tab and the “News” tab. Because the TAIC is an investigative body for serious accidents and incidents, the information that it provides is limited to those incidents that the TAIC investigates (thus, it does not offer a complete picture of aviation safety performance) and is substantially delayed in time (thus, it is not a good indicator for prompt feedback on aviation safety performance).

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3. Who’s who. Author’s updated CV.

Dr. Jose D Pérezgonzález obtained his PhD – together with the honorific award Doctor Europeus – from University of La Laguna (Spain) in January 2005, with staying both in Ghent University (Belgium) and Trinity College Dublin (Ireland) for research purposes. He has developed his research and lecturing career in Ireland, both in Trinity College Dublin and in Dublin Institute of Technology. He is now developing it further in the School of Aviation at Massey University (New Zealand). Much of his research up to date has been with the Aerospace Psychology Research Group in Ireland, participating in several European-funded research projects. His research expertise ranges from aviation efficiency to health and safety management in organisational settings, and is especially interested in policy, reporting and auditing systems, health and safety management, and knowledge management systems. Nowadays, he is promoting the idea of Knowledge Management Editions™, and is founder and chief editor of the Journal of Knowledge Advancement & Integration. He is also setting the basis for a Centre of Excellence for Aviation in New Zealand, at Massey University.

The author’s list of recent publications and reports on aviation is as follows:


4. Which & where.

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Or you would like to read several articles to keep up-to-date in science but you do not actually like reading at all.

Or you read an article before and you would like to revise its main ideas without having to read the whole article again.

Or you would like to read as many articles as possible for your studies and this edition allows you to go through all those that you would like to.
Abstract

This article continues a bibliographic series that documents monthly indicators for aviation management and aviation performance in New Zealand. The bibliography mainly collects links to aviation news on daily newspapers, and to aviation safety indicators maintained by the Civil Aviation Authority and the Transport Accident Investigation Commission. However, other sources are also possible, depending on their relevance. The bibliography is wide in its scope, thus, it may be more representative of aviation performance indicators that have caught the attention of New Zealanders than of indicators with a direct impact on New Zealand’s aviation sector. Notwithstanding this, the reader wanting to keep updated on what’s going on in the aviation sector in New Zealand may find this thematic bibliography of relevance.

During the month of July 2006, the most important aviation performance indicators that caught the attention of New Zealand’s media were the following (in order of number of articles devoted to each of them): airport performance and weather conditions affecting airport performance (especially fog at Auckland International Airport), Air New Zealand’s performance and miscellaneous news in regards to airport performance and miscellaneous news in regards to Airbus-EADS-BAE, and international aviation accidents. Furthermore, three incidents were logged into CAA-NZ’s Occurrence Reporting database: two regarding light aircrafts and one regarding a helicopter, none with either serious injuries or damages to report.

Keywords
Aviation; Management; Efficiency; Health; Safety; Environment; New Zealand.
### Knowledge Management Space

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| Flexible/Qualitative designs          | ✔️ Aviation management                   |
|                                       | ✔️ Aviation efficiency                   |
|                                       | ✔️ Aviation health, safety and the        |
|                                       | environment                              |

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На русском языке:

Резюме.

Требования о внедрении системы качества во всех сертифицированных организациях по техническому обслуживанию самолетов, работающих в соответствии с законодательством Европейского Авиационного Агентства по Безопасности, регулирует проверку соблюдения стандартов обслуживания самолетов и компонентов, а так же качества организационных процедур, для обеспечения летной годности и правильных методов обслуживания, обеспечивая этим безопасность воздушного судна, экипажа, пассажиров и сторонних наблюдателей. В этих требованиях давно не вносились существенные изменения, по крайней мере с 2001 года, что скорее подчеркивает завершенность этих правил. Система аудита -необходимая составляющая часть общей макро-системы обратной связи в организации, и играет решающую роль в нахождении и исправлении рисков, до того как эти риски станут причиной авиационного происшествия. Система аудита необходима для поддержания летной годности самолета и его безопасности.

Хотя правила аудита относительно совершенные и повсеместно применяемые организациями по техническому обслуживанию, еще есть место для улучшения. Следовательно у этой статьи две основных цели: провести критический обзор системы качества, предложенной EASA путем сравнения этой системы с системой управления аудитом (являющейся прототипом последней), и предложение рекомендаций для новых требований эффективной системы управления аудитом в пределах EASA Part-145.A.65 (или скорее рекомендованной Part-145.A.67).

Ключевые слова для поиска
Система качества; Система управления Аудитом; EASA Part-145; JAR-145 Amendment 5; Одобренная система технического обслуживания.

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Обзор системы аудита, предложенной EASA Part-145.

1. Введение.

Эта работа продолжает задание начатое в предыдущей статье, которая исследовала систему отчетности о происшествиях, успешно примененную EASA Part-145 (см. Pérezgonzález et al., 2005). Следуя схожей логике и структуре, эта статья исследует систему аудита с успехом применяемую в этом же своде правил и рекомендаций.

EASA Part-145.A.65(c)2 точно определяет регулирование системы качества в сертифицированных организациях по ремонту и техническому обслуживанию воздушных судов (MROs)3. Тем не менее другие части регулирования, относящиеся к качеству могут быть найдены в разных частях Part-145, где они и должны быть. В соответствии с EASA Part-145.A.65(c), эта система качества будет состоять из независимого аудита [Part-145.A.65(c)(1)] и качественную систему обратной связи для информирования ответственного персонала этой организации о правильном и своевременном исправлении найденных аудиторами недостатков [Part-145.A.65(c)(2)].

Есть много способов благодаря которым система качества может быть улучшена, когда приемлемые средства соответствия (AMC, Acceptable Means of Compliance) принятые во внимание. В первую очередь, AMC 145.A.65(c)(1) определяют общие понятия, цель и границы независимого аудита, включая установление образцов продукции, условия и время аудита и персонала, ответственного за аудит в пределах системы. Во-вторых, AMC 145.A.65(c)(2) далее определяют роль качественной системы обратной связи работающей в двух направлениях: обеспечивая осознание ответственным персоналом уровня соблюдения организацией правил и управление корректирующими действиями для устранения обнаруженных недостатков.

Система качества EASA’s [особенно если брать в рассчет более детально описанные AMC 145.A.65(c)] вписывается относительно хорошо в систему управления аудитом (СУА) (см. ПЕТРОВИЧ, 2003; Baranzini et al., 2002; Corrigan et al., 2002). Эти правила могут быть определены как функциональная система управления, которая, в соответствии с Pérezgonzález (2005), показывает три основные черты. Существует группа элементов, которые координированы вместе, формируя целый блок (систему). Эта система трансформирует серию входящих данных в предопределенные продукты, и управляя двумя вещами – этой трансформацией и эффективностью самой системы. Наконец, описание и анализ системы сфокусированы скорее на назначении и процессе, чем на физических и процедурных чертах (это представляет функциональный подход).

Функциональная система управления аудитом разработанная в проекте ADAMS-2 основана на трех основных ресурсах информации, составляющих регулирующие требования для организаций технического обслуживания и ремонта MROs (no есть JAA’s JAR-145 Amendment 4, 2001), эмпирические результаты относительно сходства систем проверки документов и отчетности четырех MROs в Европе (ADAMS-2 research project), и теоретическая и эмпирическая поддержка из литературы о процессах умственной деятельности и создания систем (например von Bertalanffy, 1968; Cortés et al., 1974; Rummler & Brache, 1995; Skyttner, 1996). Дальнейшая оценка модели была произведена на двух других MROs не участвовавших в проекте ADAMS-2.

Полученная в результате система управления аудитом была задумана как общая карта процесса, которая могла быть использована для оценки системы аудита MROs для того чтобы оценить их


2 Из-за недавней трансформации Joint Aviation Authority (JAA) в European Aviation Safety Agency (EASA) с очень небольшими отличиями между JAR-145 (Amendment 5, 2003) и EASA Part-145 (2004), этот обзор сфокусирован на EASA’s правилах и рекомендациях. Хотя JAA еще существует, ссылки будут делаться на два агентства рассматривая дальнейшее развитие. Следовательно, ссылки на JAA и JAR сделаны относительно пролога, тогда ссылки на EASA сделаны относительно настоящих правил и рекомендаций (если другое не сказано в тексте).

3 Компетентный орган определяет эти организации как сертифицированные организации по техническому обслуживанию (OTO), но индустриальный сектор предпочитает определение организации по техническому обслуживанию и ремонту (OTO卯). Последнее определение и будет использовано в этой работе.
функциональную планировку, эффективность управления проверками безопасности и соблюдение правил установленных EASA c. Исходя из этих оценок могут быть сделаны соответствующие рекомендации для улучшения этой системы и производственные показатели могут быть установлены для оценки эффективности этих предложенных изменений.

Основная система управления аудитом (иллюстрация 1) представлена последовательностью из 12 шагов (то есть операций) в проведение аудита: (1) проверка документов и отчетности; (2) документирование, оценка и предварительное расследование; (3) оповещение внешних агентов (включая Управление); (4) расследование происшествий; (5) анализ тенденций; (6) рапорт о найденных недостатках, проведение оценки рисков и выработка рекомендаций; (7) внедрение рекомендаций и осуществление корректировочных действий; (8) наблюдение за внедряемыми рекомендациями; (9) контроль за своевременным внедрением рекомендаций; (10) оценка внедренных изменений и действий; (11) завершающий этап внедрения изменений; и (12) обратная связь и обучение внутри организации.

Если сравнить требования EASA к системе качества с этой основной картой, многие из этих операций совпадают, особенно если приняты во внимание приемлемые средства соответствия AMC 145.A.65(c). Более того эти требования были едва ли изменены как минимум с 2001 года (JAR-145, Amendment 4), что еще более подчеркивает завершенность и приемлемость рекомендаций и правил в секторе авиационного технического обслуживания. Следовательно рекомендации в этой работе будут сфокусированы на предложении небольших изменений для создания более понятного набора правил и рекомендаций относительно системы аудита.

Три основных проблемы нацелены на улучшение понимания и внедрения реальных правил и рекомендаций а так же предоставление функциональной системы, способной исправить найденные в результате проверки недостатки будут представлены в этой работе. Первая проблема, которую необходимо решить это более ясно определить границы роли и пределов системы качества, и предложение о специальном и полном параграфе для системы проверки документов и отчетности. Вторая проблема состоит в необходимости упорядочения любых несоответствий относительно трансформации требуемой системы проверки в систему управления аудитом (СУА). Это будет сделано посредством улучшения специального параграфа по аудиту и дополнение его любыми другими правилами и рекомендациями относящимися к данной цели. Третья проблема относится к общей оценке настоящих правил и рекомендаций, после которой автор осмеливается предложить то, что еще может быть сделано для превращения системы проверки в функционально эффективную систему управления аудитом. Эти три проблемы теперь будут рассмотрены последовательно.

2. Роль и пределы системы качества.

Роль и пределы системы качества в EASA Part-145 в некоторой степени входят в заблуждение, так как внедряемые правила не предоставляют четкого определения системы качества и что эта система означает. Только AMC 145.A.65(c)(1) вносит ясность, что основные две цели системы это гарантия что организация производит безопасный продукт и гарантия что организация соответствует требованиям EASA Part-145. Однако использование понятия "система качества" в действительности похоже относится к двум различным актуальным проблемам: качественные практики (такие как независимый аудит), и организационной философии качества (отраженной в политике качества и безопасности). Давайте рассмотрим обе проблемы по очереди.

С одной стороны, Part-145.A.65(c) отражает практичность системы качества. Эта часть определяет, что роль этой системы следует за соответствием воздушных судов, компонентов и процедур для того чтобы гарантировать хорошее техобслуживание и летную пригодность роль так же предусматривает обратную связь для оповещения двух сторон: персонала ответственного за корректирующие

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c Это верно для времени, когда использовался проект ADAMS-2, Система управления аудитом оценивала соответствие MRO’s требованиям JAA.
Иллюстрация 1: Основная система управления аудитом.

действия для устранения несоответствия и персонала ответственного за то, что бы эти корректирующие действия были произведены надлежащим образом и в срок. AMC 145.A.65(c) расширяет эти функции.

Дальнейшая индикация практичности системы качества разрознена по всем частям и рекомендаций. Поэтому, вторая роль системы качества заключается в возможности слежения за собой (например, деятельность независимого аудита и обратная связь) для того чтобы гарантировать эффективное функционирование [Part-145.A.30(c)]. Третья роль системы качества это выдача сертификатов авторизации для персонала, как определено в Part-145.A.35(i).

С другой стороны, Part-145.A.75(b) определяет, что одна из привилегий сертифицированных организаций по техобслуживанию и ремонту “выполнять техобслуживание [...] в других организациях, система качества которых является частью системы качества организации”. Хотя эта система качества может быть понята как текущий аудит и процедура обратной связи в данной организации, больший смысл был бы используя определения отраженные в Экспозиции Организации по Техническому Обслуживанию (ЭТО) таких как: “процедуры и система качества, разработанные организацией в соответствии с 145.A.25 до 145.A.90” [см. Part-145.A.70(12)]. Это более широкое толкование понятия “системы качества” поддерживается в AMC 145.A.75(b).

В этом более широком смысле, отношение к системе качества проявляется в организационной философии качества, отражающейся в ее политике и процедурах (которые конечно включают те процедуры и политику, которые более тесно связаны с аудитом и обратной связью).

Следовательно, если рассматривать качественные практики в узком понимании, то система качества ограничена определенным персоналом и возможно ограничена одним отделом в организации (например, отделом качества). В расширенном понимании, система качества в действительности охватывает всю организационную деятельность (включая даже смежные организации). Это более широкое понимание относится к философии качества и
не ограничивает роль и границы системы качества аудитом конечного элемента.
Если это более широкое значение будет избрано, то альтернативная концепция необходима по отношению к тем качественным практикам в EASA Part-145. Вариант предложенный здесь ссылается на них как "система аудита". Второе предложение это создание специального параграфа для этой системы аудита, который будет ясно отличать последний от системы качества. Это разделение видится необходимым для того чтобы точно сформулировать существование независимой системы аудита как часть производственного процесса в организации. В то же время это поможет выделить практику аудита из системы качества таким образом предотвращая заблуждение, что единственная роль системы качества это аудит соответствия и снабжение ответственного агента полученной информацией (в действительности организация системы оповещения о происшествиях должна быть задачей для системы качества, такой же как и выдача сертификатов [например Part-145.A.35(i)]).

2.1. Специальный и завершённый параграф для системы качества.

Роль системы качества заключается в наблюдении за всей организацией для того чтобы обеспечить четкую годность воздушного судна и/или его компонентов обслуживаемых организацией. Эта система качества будет так же поддерживать связь с внешними организациями (например между компетентным органом и оператором) с той же целью.

Границы системы будут расширены, чтобы включить соответствующие секции содержащие как точные формулировки, так и не выраженные прямо инструкции. Таким образом система качества могла заключать в себе такую деятельность, как инспекции (т.е. наблюдение производимое операционным отделом) и организационные проверки (т.е. наблюдение осуществляемое отделом качества). Она бы так же заключала в себе нахождение недостатков внешними аудиторами такими как Управление ГА (т.е. наблюдение осуществляемое компетентными организациями) а так же оператором (т.е. наблюдение третьими организациями). Далее записи, исправление и заверение всех найденных недостатков должны быть произведены этой организацией в соответствии с той же самой процедурой что и для внутреннего аудита (который будет представлен позже).

Обсуждение этой системы качества заслуживает отдельной работы, и поэтому не будет сделано здесь. Вкратце, однако, параграф описываемый систему качества остался бы на своем прежнем месте; таким образом предлагаемые изменения к секции (c) в правилах читались бы следующим образом (в данной работе приведена не переведенная с английского языка версия):

145.A.65 Safety and quality policy, maintenance procedures and quality system.

[... (c) The organisation shall establish a quality system which will ensure the following:
- It monitors organisational compliance with aircraft / aircraft component standards and procedures as specified in Part-145.A.67(a).
- It monitors the performance of the auditing system itself in order to ensure its effective and efficient functioning, as specified in Part-145.A.30(c).
- It liaises with a similar quality system at the competent Authority, as specified in Part-145.B.30, and third organisations, if so required.
- It manages the occurrence management system specified in Part-145.A.60.
- It issues certification authorisations for staff, as specified in Part-145.A.35(i).]

2.2. Специальный и завершённый параграф для системы аудита.

Как было сказано раньше предлагается создать отдельный параграф, который специализировано имеет дело с системой аудита в организации. Это система, которая поддерживает практики аудита, систему обратной связи с предоставлением информации полученной в результате аудита, и исправление
145.A.67 Audit Management.

The organisation shall establish an internal auditing system that includes the following:

- Independent audits in order to monitor compliance with required aircraft / aircraft component standards and adequacy of the procedures to ensure that such procedures invoke good maintenance practices and airworthy aircraft / aircraft components. In the smallest organisations the independent audit may be contracted to another organisation approved under this Part or to a person with appropriate technical knowledge and proven satisfactory audit experience; and

- A quality feedback reporting system to the person or group of persons specified in 145.A.30(b) and ultimately to the accountable manager that ensures proper and timely corrective action is taken in response to reports resulting from the independent audits established to meet paragraph (1).

The organisation shall establish an internal audit management system (AMS) which enables the following:

- Independent audits in order to monitor compliance with required aircraft / aircraft component standards and adequacy of the procedures to ensure that such procedures invoke good maintenance practices and airworthy aircraft / aircraft components. In the smallest organisations the independent audit may be contracted to another organisation approved under this Part or to a person with appropriate technical knowledge and proven satisfactory audit experience.

- The collection of findings reports [as described in AMC 145.A.67(a)(10)]; the evaluation of those reports [e.g. as specified in Part-145.A.95]; the assessment and extraction of those findings reportable to the Authority and other relevant organisms [e.g. as specified in Part-145.A.68(a), and similar in intention to Part-145.A.45(c)]; further investigation of those findings whose aetiology is not known [as described in AMC 145.A.67(b)(c)(2)]; data analysis to identify adverse trends in the findings; the construction of recommendations; the implementation of suitable corrective and/or preventive actions [as described in AMC 145.A.67(b)(c)(2), implied in Part-145.A.67(c)]; and similar in intention to AMC 145.A.60(b) (3)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)]; and implied in Part-145.A.67(c)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)]; and implied in Part-145.A.67(c)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)]; and implied in Part-145.A.67(c)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)]; and implied in Part-145.A.67(c)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)]; and implied in Part-145.A.67(c)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)]; and implied in Part-145.A.67(c)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)]; and implied in Part-145.A.67(c)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)]; and implied in Part-145.A.67(c)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)]; and implied in Part-145.A.67(c)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)]; and implied in Part-145.A.67(c)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)]; and implied in Part-145.A.67(c)].

- It includes a method to circulate the information as necessary. As, for example, a quality communication system to feedback the person or group

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4 AMC 145.A.67(a)(10) in accordance to recommendations made in this Part. They may be found as EASA Part-145 (1) (10) in EASA principles.
5 AMC 145.A.67(b)(c)(2) may be found as EASA Part-145.A.65(c)(2) in EASA principles.
6 Part-145.A.67(c) may be found as EASA Part-145.A.65(c)(2) in EASA principles.
7 AMC 145.A.67(b)(c)(4) may be found as EASA Part-145.A.65(c)(2)(4) in EASA principles.
of persons specified in Part-145.A.30(b) and ultimately to the accountable manager that ensures proper and timely corrective action is taken in response to reports resulting from the independent audits established to meet paragraph (1).

• As for reporting to the Authority, the following paragraphs apply: Part-145.A.60(a), (c), (d), (e) (it may also include GM 145.A.60(a), (c)).

AMC и GM секции так же отражали бы эти изменения следующим образом:

AMC 145.A.65(a), AMC 145.A.65(b), AMC 145.A.65(b) (2), и AMC 145.A.65(b) (3) would remain unchanged, as they refer to the quality system.
* AMC 145.A.65(c) (1) Safety and quality policy, maintenance procedures and quality system, would change to AMC 145.A.67(a) Audit management.
* AMC 145.A.65(c) (2) Safety and quality policy, maintenance procedures and quality system, would change to AMC 145.A.67 (b) (c) Audit management.
* GM 145.A.65(c) (1) Safety and quality policy, maintenance procedures and quality system, would change to GM 145.A.67(a) Audit management.

4. Улучшая полученную СУА: навстречу физическим и процедурным требованиям.

Эта секция предлагает критический обзор настоящих правил EASA Part-145 относительно аудита для того чтобы обнаружить какие дальнейшие требования нужны для улучшения системы аудита. Этот обзор рассматривает правила EASA Part-145.A.65(c)8 [включая AMC 145.A.65(c), и GM 145.A.65(c)], в свете AMC разработанных в проекте ADAMS-2 (см. иллюстрацию 1).

4.1. Исходные.

EASA в правилах определяет два основных исходных требования для системы управления аудитом (СУА): соответствие с требуемыми к воздушному судну/компонентам стандартам и адекватные процедуры гарантирующие хорошее техническое обслуживание и летную годность [Part-145.A.65(c)(1)]. В целом эти две исходные [которые далее описаны в AMC 145.A.65(c)(1)] покрывают деятельность, процедуры, рабочие практики и соответствие с Part-145 правилами.

Следовательно, по отношению исходных к процессу аудита, они кажутся завершенными и четко определены, поэтому на данном этапе не так много можно предложить для улучшения системы.

4.2. Процесс аудита (шаг 1 на иллюстрации 1).

Так же как это было для исходных, процесс аудита хорошо организован, даже если он произведен с приемлемыми средствами соответствия. Фактически AMC 145.A.65(c)(1) описывает приемлемые средства соответствия относительно того как производить аудит, когда и что проверять. Далее GM 145.A.65(c)(1) приводят пример рабочего плана аудита который был бы приемлем для этой цели.

Следовательно по отношению к аудиту как таковому не чего обсуждать то же.

4.3. Организация Записей (шаг 2).

Этот шаг нацелен на сбор и оценку информации после аудита в организации. Адекватная система аудита должна гарантировать, что рапорт завершен и содержит аккуратную информацию, и должна протоколировать эти рапорты как надлежащую входящую информацию в СУА.

Любопытно, что EASA устанавливает правила для записей по техническому обслуживанию [см. Part-145.A.35], и только описывает приемлемые средства соответствия для записи аудита [AMC 145.A.65(c)(2)(5)], даже когда тип задачи вовлеченный в процесс записи практически одинаковый в обоих случаях.

В целом хорошо организованная система записи гарантировала бы, что информация содержащаяся в любом аудиторском отчете записана полностью, в соответствии с законом, и понятна для дальнейшего использования. Так же это должно быть гарантировано, что физический отчет хранится в соответствии с правилами.
4.4. Оповещение Компетентного Органа (шаг 3).

EASA не только не прописала четко, но и не установила правила, какие найденные недостатки представляют интерес для Компетентного Органа. Хотя, это очевидно, что серьезные недостатки должны быть вскрыты во время аудита. Это правило, что об этих недостатках вероятно был бы подан рапорт как о проишествии [как то относящийся к Part-145.A.60]. Однако, такая неопределенность могла бы легко исправлена в правилах, например как рекомендовано в секции 3 выше. Более специализированные рекомендации относительно подачи рапортов Компетентному Органу схожие с теми, которые описаны в Pérezgonzález et al. (2005).

4.5. Расследование (шаг 4).

В EASA не определена проблема расследования найденных недостатков в адекватной манере. Там есть только краткий комментарий, что все найденные недостатки должны быть тщательно расследованы в соответствии с AMC 145.A.65(c)(2)(2).

Не смотря на то, что это может быть случаем, который в соответствии с правилами уже расследуется как проишествие [Part-145.A.60] может быть относящийся к расследованию по итогам аудита. Таким образом рекомендации касающиеся этого вопроса сделаны для правил расследования проишествий в EASA (см. Pérezgonzález et al., 2005) в равной мере относятся и сюда.

Следовательно все расследования должны включать оценку относиться к делу информации по отношению к обнаруженным недостаткам, так же как и умной информации о условиях и оценке результатов, которые известны организации. Кроме того, адекватная СУА потребовалась бы для дальнейшего расследования не очевидных или вновь обнаруженных недостатков.

4.6. Анализ Тенденций (шаг 5).

В EASA не прописана проблема анализа тенденций по отношению к найденным недостаткам. Однако, анализ тенденций не только так же ценен для найденных недостатков так же как и для проишествий, но еще и периодическая природа аудита может в действительности доказать большую надежность такого вида анализа на организационном уровне чем показывает анализ проишествий. И снова, правила, существующие для оповещения о проишествиях [Part-145.A.60(b)] своевременны. Рекомендации сделанные в Pérezgonzález et al. (2005) относительно необходимости приведения анализа тенденций к уровню EASA так же смотрятся своевременными и здесь.

4.7. Полученные данные и рекомендации (шаг 6).

В EASA не прописана проблема подачи рапорта о полученных данных и рекомендациях в приемлемой манере. С одной стороны существуют ссылки сделанные для составления рапорта о полученных результатах [AMC 145.A.65(c)(1)(10)] и так же циркуляция таких рапортов [AMC 145.A.65(c)(2)(2)]. Однако, эти ссылки указаны как средства соответствия, а не правила, следовательно они могут быть пересмотрены ОТОиР. С другой стороны ничего не сказано о выработке рекомендаций.

И снова, есть правила для подачи рапорта о проишествиях, так же как и рекомендации ранее сделанные для улучшения системы рапортов (например Pérezgonzález et al., 2005), могут быть применены к этому шагу то же. Следовательно этот рапорт может содержать оценочные результаты и любую другую относящуюся к делу информацию, полученную в процессе оценки полученных результатов [Part-145.A.60]. Они так же могут предоставлять разработку рекомендаций для исправления найденных недостатков.

4.8. Внедрение корректировочных действий (шаг 7) и наблюдение и контроль за этими действиями (шаги 8 и 9).

Внедрение, наблюдение и контроль над корректировочными действиями адресованных к любой проблеме безопасности найденной во время аудита скорее предполагается, чем прописано в настоящих правилах [Part-145.A.65(c)(2)]. Это правда, что они были прописаны в AMC 145.A.65(c)(2); однако это не правила, а средства соответствия и ОТОиР могут пересмотреть их. Следовательно единственная рекомендация, предложенная по этому поводу это переделать параграфы 3 и 4 из AMC в правила.
4.9. Оценка корректировочных действий (шаг 10).

В EASA не прописана процедура оценки корректировочных действий. Однако существующие правила Part-145.A.45(d) неотъемлемо подразумевают этот шаг, когда требуется доказательство качества изменений произведенных в инструкциях по техническому обслуживанию.

Дух этого параграфа может быть легко принят и похожие требования могут быть внесены в систему аудита. Такие требования будут гарантией, что произведенное действие реально устраняет проблему и/или предотвратит возникновение проблемы в будущем. Эта оценка должна произойти независимым отделом (таким как отдел качества), и должна так же гарантировать эффективность действий при повторной инсталляции этой системы до требуемого уровня безопасности, или в альтернативном случае при быстром внедрении нового плана.

4.10. Завершение корректировочных действий (шаг 11).

В правилах не определено ясно когда прекращать корректировочные действия по недостаткам выявленным во время аудита.. Part-145.A.65(c)(2) подразумевает, что это должно быть сделано, когда выполнены правильные корректировочные действия в срок. Однако этот шаг не был адекватно прописан. Модель СУА описанная здесь рассматривает завершение корректировочных действий (и в конечном счете самого аудита), должно произойти когда корректировочные действия были оценены и возвращение системы до требуемого уровня безопасности гарантировано.

Далее, заключительный отчет должен так же быть обязательным, и должен гарантировать, что вся относящаяся к делу информация тщательно запротоколирована отдельным файлом (включая найденные недостатки, результаты оценки, рекомендации, предпринятые корректировочные действия и возвращение системы к безопасному уровню). По существу, необходимы рапорт и запись всей существенной информации относящейся к обнаруженным во время аудита недостаткам и их устранение.

4.11. Обратная связь и обучение внутри организации (шаг 12).

EASA Part-145.A.65(c)(2) так же требует что бы была организована система обратной связи для того чтобы информировать ответственный персонал и определенного управляющего о любых недостатках найденных во время аудита и их исправлении.

Однако, адекватная СУА так же информировала бы оставшийся персонал в организации и делилась бы этой информацией с другими TOОР. Это было создано возможность для процесса производственного обучения как внутри так и между-организационного обучения (например путем обмена этюдологией редких недостатков или обменом одобренными методами исправления определенных недостатков).

5. Выводы.

Система аудита необходима и является составляющей частью общей макро системы обратной связи внутри организации и играет решающую роль в управлении безопасностью. EASA (как прежде делала JAA) признает важность аудита и в данное время разрабатывает специальные рекомендации для системы качества, которая будет внедрена во всех одобренных EASA организаций по техническому обслуживанию. Такая система может производить независимый аудит и информировать ответственный персонал в организации о любых недостатках и их исправлении. Эти авиационные требования редко менялись в последние несколько лет – факт который подчеркивает относительную завершенность этой системы аудита в Европейских авиационных правилах и Европейском секторе авиационного технического обслуживания. Однако, есть еще место для улучшения этой системы, особенно для трансформировавшихся сегодня требований в функционально эффективную систему управления аудитом. Такие улучшения были предметом этой статьи, которая обсуждала правила аудита установленные EASA с фокусом на структурном обозрении предложенной системы. Статья так же критически пересмотрела некоторые явные недостатки существующих правил, и предложила методы избежать их. Однако, из-за того, что изменения могут занять много времени, и возможно сильное противление
этим изменениям в растущем EASA, эта статья была составлена таким образом, который может рекомендовать изменения от настоящей схемы аудита к системе управления аудитом на уровне организации. Таким образом последовательность статьи представляет порядок, в котором будущие изменения могут быть введены в употребление.

6. Ссылки.


7. Список Сокращений.


AMC–Приемлемые Средства Соответствия (EASA / JAA)

СУА– Система Управления Аудитом

ОТОиР – Организации по Техническому Обслуживанию и Ремонту

ЭОТО – Экспозиция Организации по Техническому Обслуживанию

EASA – European Aviation Safety Agency

GM – Рекомендуемые Материалы (EASA)

JAA – Joint Aviation Authority

JAR – Joint Aviation Requirements (JAA)
8. Источники информации на тему Европейская авиация

Приведенные ниже ссылки позволяют вам использовать веб-сайты нескольких важных организаций, которые имеют дело с Европейской авиацией. Большинство этих сайтов информируют скорее об организационной структуре и деятельности, чем дают углубленные знания о авиации. Не смотря на это они являются основными источниками правил и рекомендаций, особенно по авиационной безопасности в Европе.

- **EUROCONTROL** веб-сайт адрес: [www.eurocontrol.int/index1.html](http://www.eurocontrol.int/index1.html)
  Eurocontrol это организация по безопасности гражданской и военной Аэро Навигации в пределах Европы.

- **EUROPEAN AVIATION SAFETY AGENCY (EASA)** веб-сайт адрес: [www.easa.eu.int](http://www.easa.eu.int)
  Это основной веб-сайт для ссылок в этой работе, так как это не только веб-сайт с нормативными документами для Европы, но еще и портал для веб-сайтов других Национальных Авиационных Компетентных Органов, особенно тех кто является членом Европейского Союза.

- **EUROPEAN CIVIL AVIATION CONFERENCE (ECAC)** веб-сайт адрес: [www.ecac-ceac.org](http://www.ecac-ceac.org)
  The European Civil Aviation Conference (ECAC) это агентство без права регулирования, целью которого является пропаганда безопасности, эффективности и надежности гражданского воздушного транспорта в Европе. Это агентство имеет близкие связи с International Civil Aviation Organisation (ICAO).

- **JOINT AVIATION AUTHORITY (JAA)** веб-сайт адрес: [www.jaa.nl](http://www.jaa.nl)
  JAA был предшественником EASA, от которого EASA унаследовало настоящие требования и переделало их в правила и рекомендации. Хотя JAA становится менее важным органом авиационного контроля для Европейских государств, эта организация еще остается авторитарным органом для других Европейских государств, кто не является членом Европейского Союза. В конце концов JAA будет полностью поглощено EASA, но до тех пор это важный источник ссылок на авиационные документы в Европе.

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1 Ссылки предложенные здесь в первую очередь для получения знаний, а не с коммерческой целью (хотя ссылки для коммерческого использования могут быть даны, если эта опция доступна). Ссылки расположены в алфавитном порядке в соответствии с первой буквой фамилии автора. Первая цифра после имени автора относится ко времени окончания работы над книгой, получения авторских прав или первой публикации. Затем следует название работы и иконическое место, где работа может быть найдена, например веб-страница или издательская компания, которая в свою очередь включает страну, год публикации и ISBN номер.

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Школа Авиации
Университета Массея, Новая Зеландия
http://aviation.massey.ac.nz
9. Кто есть кто. Резюме переводчика и автора работы.

Andrey Petrovich инженер-механик по эксплуатации летательных аппаратов и двигателей закончил Государственный Иркутский Технический Университет в 1998г. Имея опыт работы в Гражданской авиации, в качестве борт оператора самолета Ан-12 налет 4500 часов. В настоящее время прохожу курс обучения в Школе Авиации Масsey Университета, в Новой Зеландии по специальности Пилот Линейных Авиалиний третьего года обучения. Перевод выполнен как часть программы углубленного изучения Человеческого Фактора в управленческом секторе авиации.

Доктор Хозе Перезгонзалес получил докторскую степень вместе с наградой за отличие от Doctor Europeus – в Университете La Laguna (Испания) в Январе 2005, научная работа проводилась в двух местах: в Университете Ghent (Бельгия) и Trinity Колледж в Дублине (Ирландия). Его исследовательская и преподавательская карьера проходила в Ирландии в двух учебных заведениях: Trinity College Dublin и Dublin Institute of Technology. Сейчас он продолжает свою карьеру в Школе Авиации Университета Massey (Новая Зеландия). Большая часть его исследований проходили с Aerospace Psychology Research Group, где он принимал участие в нескольких исследовательских проектах финансируемых Европейскими агентствами. Его исследовательская деятельность охватывает темы от авиационной эффективности до вопросов здоровья и безопасности в организационных структурах, особое внимание в его исследованиях уделяно вопросам внутриорганизационной политики, системам аудита и оповещения, управление системами защиты здоровья и безопасности, и системы управления знаниями. В настоящее время он расширяет идеи Knowledge Management Edition™, и планирует выпустить свой собственный журнал с одноименной тематикой и философией. Он так же планирует создать Centre of Excellenceсия Авиации в Новой Зеландии при Университете Massey.

Лист недавних публикаций автора:


10. Что и где.

Школа Авиации в Massey Университете, Новая Зеландия. Резюме:

Школа Авиации это часть Бизнесс Колледжа, базирующаяся в двух местах в студенческом городке the Turitea (Авиационный Менеджмент), и the Milson Flight Centre at Palmerston North International Airport. Эта школа предлагает степень бакалавра для Линейных пилотов и в Авиационном Менеджменте, а так же степени мастера и доктора в Авиационном Менеджменте. Школа относительно новая (она была основана в 1990 году) и ее исследовательский объем работ только сейчас начинает расти.

Примеры недавних публикаций:

Thematic bibliography: aviation news in New Zealand during August 2006
by Jose D. PÉREZGONZÁLEZ (2006)

School of Aviation, Massey University, New Zealand

Correspondent: Dr. Jose D. PÉREZGONZÁLEZ, School of Aviation, Massey University, Turitea Campus, PO Box 11222, Palmerston North, New Zealand. Phone: +64 6 3505326; Fax: +64 6 3505536; Email: J.D. Perezgonzalez@massey.ac.nz

Abstract

This article continues a bibliographic series that documents monthly indicators for aviation management and aviation performance in New Zealand. The bibliography mainly collects links to aviation news on daily newspapers, and to aviation safety indicators maintained by the Civil Aviation Authority and the Transport Accident Investigation Commission. However, other sources are also possible, depending on their relevance. The bibliography is wide in its scope, thus, it may be more representative of aviation performance indicators that have caught the attention of New Zealanders than of indicators with a direct impact on New Zealand’s aviation sector. Notwithstanding this, the reader wanting to keep updated on what’s going on in the aviation sector in New Zealand may find this thematic bibliography of relevance.

During the month of August 2006, the most important aviation performance indicators that caught the attention of New Zealand’s media were the following (in order of number of articles devoted to each of them): terrorism (especially the UK bomb plot and its aftermath effects on aviation and air travel, but also other terror-linked incidents at international and national levels); miscellaneous news regarding international aviation (specially financial issues, and safety incidents); the falling and renaissance of Origin Pacific airlines; Auckland International Airport performance (including weather conditions); and Air New Zealand’s performance and miscellaneous news in regards to operations and flight checks. Furthermore, six incidents were logged into the CAA-NZ’s Occurrence Reporting database: two regarding hang gliders (both with serious injuries), one regarding a parachutist (with minor injuries), another two regarding helicopters (one with serious damages, but neither with serious injuries), and a final one regarding a light aircraft (with serious damages but not injuries). TAIC-NZ also published, at least, an accident investigation report during this period.

Keywords

Aviation; Management; Efficiency; Health; Safety; Environment; New Zealand.
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Public notice: The corresponding author of this paper asserts that this is an original piece of work, it reflects the contributor’s understanding of the contents covered, and the information in it contained is provided for its knowledge value and not for commercial, personal or other purposes.

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Thematic bibliography: aviation news in New Zealand during August 2006.

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16 August 2006


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18 August 2006


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22 August 2006


23 August 2006


24 August 2006


NZPA (2006c). Air NZ flights cancelled for safety checks. The New Zealand Herald, 2006-


25 August 2006


26 August 2006


28 August 2006


29 August 2006


30 August 2006


31 August 2006


2. Sources of knowledge about Aviation in New Zealand¹:

- **CAA-NZ, The Civil Aviation Authority of New Zealand, accessible at [www.caa.govt.nz](http://www.caa.govt.nz).**
  The CAA is the main source of information for aviation safety performance, but also for regulatory management of the New Zealand aviation macro-system. The two sections that are most informative in regards to aviation management and performance are the “Accidents and incidents” tab and the “What’s new” tab.

- **NZHERALD, The New Zealand Herald, accessible at [www.nzherald.co.nz](http://www.nzherald.co.nz).**
  Newspapers in New Zealand have the particularity of being linked to a region, and none can be found that is linked to the nation itself. “The New Zealand Herald”, for example, is the newspaper of Auckland, the northern part of New Zealand. Notwithstanding this, the most important newspapers in New Zealand will reflect similar news in a relatively similar way. Therefore, “The New Zealand Herald” has been singled out as a main reference because it covers well aviation events at national and international levels (thus, its reliability), and it is relatively easy to access and navigate online (thus, its convenience as a source of information for readers outside New Zealand).

- **STATISTICS NEW ZEALAND, accessible at [www.stats.govt.nz/default.htm](http://www.stats.govt.nz/default.htm).**
  This is the only source of information available so far regarding overall aviation efficiency performance in New Zealand. Under the heading “Tourism and migration” it is possible to find statistics for international passenger traffic per airport or by airport of embarkation, for example. It does not offer a good deal of information on aviation nor updated one (statistics are available for ended years only), but it is a starting point.

- **TAIC-NZ, Transport Accident Investigation Commission, accessible at [www.taic.org.nz](http://www.taic.org.nz).**
  The TAIC is an independent body that investigates transport accidents and incidents with significant implications for safety. The two sections that are most informative in regards to aviation safety performance are the “Aviation” tab and the “News” tab. Because the TAIC is an investigative body for serious accidents and incidents, the information that it provides is limited to those incidents that the TAIC investigates (thus, it does not offer a complete picture of aviation safety performance) and is substantially delayed in time (thus, it is not a good indicator for prompt feedback on aviation safety performance).

¹ These sources are offered here primarily for their knowledge value, not for commercial or other purposes (although links to the selected sources may be given if they are available). Sources related to the topic in question but which offer no relevant knowledge or offer redundant knowledge have been skipped. These sources are ordered alphabetically according to the first author's surname or source name. The first date after the author/source refers to the date the original work was done, first copyrighted or first published. The title of the work follows. Finally, the location where to find such work is given, for example a webpage or a publishing company –which also includes relevant information such as country of publication, publication year, ISBN number, etc.
3. Who’s who. Author’s updated CV.

Dr. Jose D Pérezgonzález joined the School of Aviation at Massey University (New Zealand) in June 2006. Much of his research up to date has been with the Aerospace Psychology Research Group in Ireland, participating in several European-funded research projects. His research expertise ranges from aviation efficiency to health and safety management in organisational settings, and is especially interested in policy, reporting and auditing systems, health and safety management, and knowledge management systems. Nowadays, he is promoting the idea of Knowledge Management Editions™, and is founder and editor-in-chief of the Journal of Knowledge Advancement & Integration. He is also setting the basis for a Centre of Excellence for Aviation in New Zealand, at Massey University. Among the recent projects which he is developing are the following: an awareness campaign regarding aviation management, efficiency and safety in New Zealand; a meta-analysis of aviation safety legislation at international levels; and a meta-analysis of communication models in the available literature.

The author’s list of recent publications and reports on aviation is as follows:


4. Which & where.

School of Aviation at Massey University, New Zealand. Updated CV:

The School of Aviation is part of the College of Business, based both in the Turitea Campus and the Milson Flight Centre at Palmerston North International Airport. It offers bachelor with honours in Air Transport Piloting and Aviation Management, and masters and doctorate degrees in Aviation Management. The School is relatively new (it was established in 1990) and its research curriculum is only starting to grow now.

A sample of the School’s recent publication list follows:


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by Jose D. Pérezgonzález (2006)

School of Aviation, Massey University, New Zealand

Abstract

This article continues a bibliographic series that documents monthly indicators for aviation management and aviation performance in New Zealand (see, for example, Pérezgonzález, 2006).

During the month of September 2006, the most important aviation performance indicators that caught the attention of New Zealanders were the following (in order of available pieces of information devoted to each of them). Firstly, aviation incidents at national levels. Six incidents were logged into the CAA-NZ’s Occurrence Reporting database: one regarding a hang glider, another regarding a paraglider, a third one regarding a microlight aircraft, two incidents regarding light aircrafts, and one incident regarding a helicopter (neither serious injuries nor damages were reported for any of those incidents). Furthermore, another two incidents caught the attention of the media, but no registry in the CAA database was found: one of the incidents was in regards to a light aircraft, and the second was in regards to a medium aircraft on a scheduled flight to Christchurch, and with 99 people onboard (no injuries or damages were reported by the media for any of those two incidents).

Secondly, five reports released in September (at least, one of them released by TAIC-NZ) also caught the attention of the media. Thirdly, five international accidents. Fourthly, the aftermath of the UK bomb plot and its effect on aviation and air travel. Fifthly, the resignation of CAA’s top manager. Sixthly, planned fees and other miscellaneous news regarding Auckland International airport. Seventhly, the aftermath of the Air New Zealand and Qantas codeshares proposal. Eighthly, the aftermath of Mike Pero and Origin Pacific. And ninthly, some reminiscent news on the Airbus A-380.

Keywords

Aviation; Management; Efficiency; Health; Safety; Environment; New Zealand.
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  The CAA is the main source of information for aviation safety performance, but also for regulatory management of the New Zealand aviation macro-system. The two sections that are most informative in regards to aviation management and performance are the “Accidents and incidents” tab and the “What’s new” tab.

  This journal may become an important source of information on aviation performance in New Zealand if the current series is continued. This is so because the CAA-NZ only provides information on registered accidents six weeks in retrospect. After that period, the information disappears, and there is no manner of accessing those indicators until the CAA publishes a report (or accident brief) on the accident once their investigation is concluded. This could take several months or years. The journal, however, keeps a record of those indicators in the published articles, thus increasing its importance as a referential source.

  Newspapers in New Zealand have the particularity of being linked to a region, and none can be found that is linked to the nation itself. “The New Zealand Herald”, for example, is the newspaper of Auckland, the northern part of New Zealand. Notwithstanding this, the most important newspapers in New Zealand will reflect similar news in a relatively similar way. Therefore, “The New Zealand Herald” has been singled out as a main reference because it covers well aviation events at national and international levels (thus, its reliability), and it is relatively easy to access and navigate online (thus, its convenience as a source of information for readers outside New Zealand).

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  The TAIC is an independent body that investigates transport accidents and incidents with significant implications for safety. The two sections that are most informative in regards to aviation safety performance are the “Aviation” tab and the “News” tab. Because the TAIC is an investigative body for serious accidents and incidents, the information that it provides is limited to those incidents that the TAIC investigates (thus, it does not offer a complete picture of aviation safety performance), and is substantially delayed in time (thus, it is not a good indicator for prompt feedback on aviation safety performance). Furthermore, TAIC does not date the release of a given report, which makes difficult to say since when such reports may start having an impact on aviation safety.

These sources are offered here primarily for their knowledge value, not for commercial or other purposes (although links to the selected sources may be given if they are available). Sources related to the topic in question but which offer no relevant knowledge or offer redundant knowledge have been skipped. These sources are ordered alphabetically according to the first author's surname or source name. The first date after the author/source refers to the date the original work was done, first copyrighted or first published. The title of the work follows. Finally, the location where to find such work is given, for example a webpage or a publishing company—which also includes relevant information such as country of publication, publication year, ISBN number, etc.
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The author’s list of recent publications in regards to the awareness campaign on aviation management, efficiency and safety in New Zealand is as follows:


Recent publications in regards to the meta-analysis of aviation safety legislation are the following:


Recent publications in other aviation-related areas are the following:


4. Which & where.

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A sample of the School’s recent publication list follows:


评 EASA Part-145 规章中描述的审核体系

新西兰 梅西大学 航空学院


联络人（中文）: 张恒，电子邮件: hungugu@gmail.com
Correspondence in English: Dr. Jose D. PÉREZGONZÁLEZ, School of Aviation, Massey University, Turitea Campus, PO Box 11222, Palmerston North, New Zealand. Phone: +64 6 3505326; Fax: +64 6 3505536; E-mail: J.D. Perezgonzalez@massey.ac.nz

摘要

欧洲航空安全机构 (EASA) 的规章要求航空器维护单位的质量体系中，均需按照标准建立各自的审核体系，以确保严格的维护程序在各单位得以良好的执行，使航空器及其部件的维护达到应有的标准。审核体系可以确保航空器在良好的维护下拥有良好的适航性，从而使航空器、机组人员、乘员及公众的安全得到保证。相关的规章至少从 2001 年来都没有进行过较大的修订，这从一个侧面反映了现行规章的成熟。审核体系作为维护单位的综合质量反馈宏系统（overall feedback macro-system）中不可或缺的一环，扮演着发现并及时纠正潜在事故风险的关键角色。也就是说审核体系对管理航空器适航性及其运行安全具有不可或缺的价值。

尽管现行的关于建立审核体系的要求标准大体上比较成熟，在航空器维护单位中也被广泛接受，但这并不代表不存在继续改进的空间。因此，本文的主要意图在于：一，籍与审核管理体系（AMS，audit management system）的原型模型做出比较，评论 EASA 提出的质量体系规章；二，在现有的 EASA Part-145.A.65 的基础上，为建立更有效的审核管理体系规章而需要的新要求提供指引（或推荐增加 Part-145 A.67）。

关键

质量体系；审核管理体系；EASA Part-145；JAR-145 第五修正稿；经认可的民用航空器维护维修单位。
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评EASA Part-145 规章中描述的审核体系

1. 导言

本文继续了作者此前对EASA Part-145 未完成的研究工作。继对事故报告系统部分的评论后（见Pérezgonzález et al., 2005），本文按照相似的逻辑和结构对EASA Part-145 规章中关于审核体系的内容作出探讨。

EASA Part-145.A.65(c)乃关于管理经认可航空器维护及维修单位(MROs)之质量体系的章节。除此之外，我们还能在Part-145 其他许多地方找到许多关于质量体系的内容。根据EASA Part-145.A.65(c)的要求，质量体系应包括独立审核(1)以及内部的质量回馈报告体系(2)。质量回馈报告体系可使在相关负责人可以及时获知在审核过程发现的问题已得到及时且正确的解决。当 可接受的遵从方式（acceptable means of compliance，AMC）也被考虑在内时，有许多方法可使质量体系得到进一步的完善。首先，AMC 145.A.65(c)(1) 除明了独立审核的定义、目的外，还对独立审核的范围——包括取样、审核的条件及时机、实施审核的人选等一系列细节也作出了规定。其次，AMC 145.A.65(c)(2)进一步阐明了质量回馈报告系统所扮演的角色——一，使相关人员得悉整个单位遵从规章的综合程度；二，管理发现问题后的补救过程。

EASA 的质量体系 （尤其是据更为详细的AMC 145.A.65(c)所提出的）与 “ADAMS-2 计划”（见 Pérezgonzález et al., 2003; Baranzini et al., 2002; Corrigan et al., 2002）设计并验证的审核管理体系(Audit Management System, AMS) 有着颇多的相似之处。

ADAMS-2 计划根据下述的三个来源，发展出了其功能性审核管理体系：一，职能机构对于维护维修单位的管理规章（如JAR-145 Amendment 4, 2001）；二，欧洲四个维护维修单位审核系统的实践经验结果中所显示的共性（见 ADAMS-2 研究计划）；三，系统思考（systems thinking）及流程再造（process re-engineering）论著中的理论及实验经验。（例如：von Bertalanffy, 1968; Cortés et al., 1974; Rummler & Brache, 1995; Skyttner, 1996）此外，此体系还基于没有参与ADAMS-2 计划的另外两家维护维修单位的实践经验，得到进一步的论证。

由此而发展出来的审核管理体系（AMS）的目的在于为维护维修单位提供一个通用的审核系统评估流程。其评估的内容包括功能规划、安全审核的有效性及保证其审核系统符合EASA的规定。在这样的评估下提出的相应建议可帮助改善审核系统，与此同时，可以通过设立一系列指标来检测做出这些改进的效果。如图（一）所示，通用审核管理体系的审核流程包含十二个步骤：(1) 审核；(2) 记录管理、评估及初步调查；(3) 对外报告（包括向管理机关）；(4) 事件调查；(5) 趋向分析；(6) 发布结论、作风险评估并提出改进建议；(7) 纠正错误并施行改进建议；(8) 监测改进的过程；(9) 评估施行过程；(10) 结束审核周期；(11) 反馈和总结。

在ADAMS-2 计划开展时，JAA尚未被EASA取代，也就是说时其所指的是JAA的规定。

2. 质量体系的角色及管理范围

在 EASA Part-145 中，质量体系的角色及管理范围，是一个常常让人产生误解的问题。EASA Part-145 中关于规章贯彻的部分并没有为“质量体系”做出明确的定义。但 AMC 145.A.65(c)(1) 中就阐明了质量系统的两个基本目标：一，确保维护产品的安全性；二，确保相关维护维修单位遵从 EASA part-145 的规定。事实上，现行规章中“质量系统”之概念，可以解读出两种不同的涵义：一，质量管理实践（例如进行独立审核等实际操作）；二，各机构的质量理念（反映在维护维修单位的安全质量规定、方针等）。接下来我们将依次就这两方面展开探讨。

在一方面，AMC Part-145.A.65(c) 反映了质量系统的实际操作。它指出质量系统的角色是航空器及其部件和程序的监控者，其目的是保证航空器得到良好的维护和确保航空器的适航性。这个角色意味着质量系统的实际操作和责任对制定维护维修人员方面的要求做出监管和对它们作出反馈：确保对不符合要求的操作做出修正。
质量体系：审核管理系统；EASA Part-145；JAR-145 修正；经认可的民用航空器维护维修单位

正：及确保修正正被及时且恰当地得以执行。AMC 145.A.65(c)较详细地说明了这些功能。

更多对于质量系统自身实践实务的描述散布在规章的许多地方。我们可以从中看到为了确保质量系统自身的高效运作，质量系统所扮演的第二个角色：对自身运作表现的监控者（例如，监控独立审核及反馈的表现）[Part-145.A.30(c)]。根据 145.A.35(i) 所提到的那样，质量系统还扮演了第三个角色：为相关维护维修工程签发上岗认可。


从质量体系的狭义理解上说，质量管理实践也许只限定于特定的人员或特定的某一部位（如质量监控部门）。从广义上的理解看，质量体系实际上涵盖了整个维护维修单位的运作（甚至包括了所有外发承包商）。这样的广义理解代表了一整套质量理念，而并不是将质量体系的作用局限于对某部分操作的审核过程上。


2.1 一个明确而完全的关于质量体系的章节

质量体系监督整个维护维修单位的运作，确保对维护维修下之保证航空器及其航空器部件的适航性。质量体系当与其它外部机构（如管理当局和航空公司）协作以达到这样的目的。

质量体系的范围将被扩大，以至包括了现有规章中或直接或间接的涉及所有相关部分。也就是说，质量体系将同时包含运作检查（由操作部门本身执行）及审核（由内部相对独立的审核部门管理）两部分。这也将包含来自外部机构的任何审核发现，如来自管理当局（如民航主管机构）和飞行器运营者（独立的外部机构）。此外，质量体系将依照同内部审核体系（下文中将提到这个概念）一致的标准对审核的进行记录、更正和查证。关于质量体系内容的讨论足以自成一篇，这里就不再详述了。简单说来，关于质量体系的内容当在提议中的规章里位置不变；设想中的 145.A.65(c) 小节如下：

145.A.65  Safety and quality policy, maintenance procedures and quality system.

[...]
(c) The organisation shall establish a quality system which will ensure the following:
• It monitors organisational compliance with aircraft / aircraft component standards and procedures as specified in Part-145.A.67(a).
• It monitors compliance with Part-145 from 145.A.25 to 145.A.90.
• It monitors the performance of the auditing system itself in order to ensure its effective and efficient functioning, as specified in Part-145.A.30(c).
• It liaises with a similar quality system at the competent Authority, as specified in Part-145.B.30, and third organisations, if so required.
• It manages the occurrence management system specified in Part-145.A.60.
• It issues certification authorisations for staff, as specified in Part-145.A.35(i).
### 2.2. 明确而完全的关于审核体系的章节

正如上文提及的那样，本文建议在规章内加入关于审核体系的独立部分。这将是维护维修单位中执行审核实践、提供信息反馈及修正建议的体系。这部分功能作为质量体系中的一部分，由独立的部门所管辖（如质量管理部门）。设想的这个部分是:

145.A.67 Audit Management.

The organisation shall establish an internal auditing system that includes the following:

- Independent audits in order to monitor compliance with required aircraft / aircraft component standards and adequacy of the procedures to ensure that such procedures invoke good maintenance practices and airworthy aircraft / aircraft components. In the smallest organisations the independent audit may be contracted to another organisation approved under this Part or to a person with appropriate technical knowledge and proven satisfactory audit experience; and

- A quality feedback reporting system to the person or group of persons specified in 145.A.30(b) and ultimately to the accountable manager that ensures proper and timely corrective action is taken in response to reports resulting from the independent audits established to meet paragraph (1).

据此，可接受的遵从方式（Acceptable Means of Compliance, AMC）及指导文件（Guidance Material, GM）也从而应根据设想中的改变而相应做出改动（下文将举例说明）。

### 3.“审核系统”到“审核管理系统（Audit Management System, AMS）”的转变：从审核到管理

倘若按照上文提议的那样，为审核系统部分设立独立的段落，这样 EASA 现行的相关部分内容并不足以清楚描述这样的一个审核体系。为了强化审核系统的作用——包括确保航空安全及维护维修单位对安全标准的严格执行，EASA Part-145 可参照 ADAMS-2 计划提出的审核管理体系模型（audit management system model，见图一）及 Pérezgonzález 等学者 2005 年提出的事故管理体系模型来描述审核管理体系。建议 EASA Part-145 的关于审核管理及自我学习体系的章节可被修改如下:

145.A.67 Audit Management.

The organisation shall establish an internal audit management system (AMS) which enables the following:

- Independent audits in order to monitor compliance with required aircraft / aircraft component standards and adequacy of the procedures to ensure that such procedures invoke good maintenance practices and airworthy aircraft / aircraft components. In the smallest organisations the independent audit may be contracted to another organisation approved under this Part or to a person with appropriate technical knowledge and proven satisfactory audit experience.

- The collection of findings reports [as described in AMC 145.A.67(a)(10)\(^d\)]; the evaluation of those reports [e.g. as specified in Part-145.A.95]; the assessment and extraction of those findings reportable to the Authority and other relevant organisms [e.g. as specified in Part-145.A.60(a), and similar in intention to Part-145.A.45(c)]; further investigation of those findings whose aetiology is not known [as described in AMC 145.A.67(b)(c)(2)\(^e\)]; data analysis to identify adverse trends in the findings; the construction of recommendations; the implementation of suitable corrective and/or preventive actions [as described in AMC 145.A.67(b)(c)(2), implied in Part-145.A.67(c)\(^f\), and similar in intention to AMC 145.A.60(b)(3)]; the monitoring of such implementation [as described in AMC 145.A.67(b)(c)(4)\(^g\), and implied in Part-145.A.67(c)]; and the assessment of the implementation for its effectiveness in addressing the findings [e.g. similar in intention to Part-145.A.45(d)].

- It includes a method to circulate the information as necessary. As, for example, a quality communication system to feedback the person or group of persons specified in Part-145.A.30(b) and ultimately to the

\(d\) AMC 145.A.67(a)(10) 乃本文设想中之的章节，现行规章中相关内容见AMC-145.A.65(c)(1)(10)

\(e\) AMC 145.A.67(b)(c)(2)——见现行AMC-145.A.65(c)(2)(2)

\(f\) Part-145.A.67(c)——见现行AMC-145.A.65(c)(2)

\(g\) AMC 145.A.67(b)(c)(4)——见现行AMC-145.A.65(c)(2)(4)
质量体系；审核管理系统；EASA Part-145；JAR-145 修正；经认可的民用航空器维护维修单位

现有规章对于这个部分的描述完整而清晰，目前并没有需要特别修改的地方。

4.2. 审核流程 (图一中的 “step 1”).

同第一部分一样，关于这部分的内容编排得当，包括当审核流程作为一种可接受的遵循方式时。事实上 AMC 145.A.65(c)(1) 具有对于适航性验证审核流程的详细描述，包括应该在何时由何方审核、应该如何审核和应该审核什么等。此外，GM 145.A.65(c)(1) 还提供了一份可作实际应用的审核计划供参考。

因此，这部分内容同样没有太多需要修改的地方。

4.3. 记录管理 (step 2).

进一步相关的内容是审核结果的采集和评估。完备的审核体系应确保审核报告的完整和准确，并将这些审核结果记录为文件提交审核体系中的 “输入” 部分内容加以记录。

奇怪的是，EASA 规章中有关于飞行器保养记录的要求，但对于审核记录却仅描述了其可接受的遵循方式[AMC 145.A.65(c)(5)]。即便对于这两种记录的处理方法基本上并没有太大区别。

一般而言，良好的记录管理当确保审核报告中的信息均完整、清晰且易于理解，以便于日后查询。与此同时，记录载体本身也应被妥善保存。

4.4. 对管理机构报告 (step 3).

EASA 规章并无直接提及或间接暗示怎么样的审核发现应提交管理机构。然而审核的过程确实可能会发现一些严重的问题，并可作为事故或事故征兆上报相关的管理机构（从而与 Part-145.A.60 相关）。可就正如本文第 3 部分中所设想的那样，在规章中可对此部分内容做出更明确的规定。更有针对性的关于事故报告系统的建议，可参见 Pérezgonzález 等人 (2005) 另文中的内容。

4.5. 调查 (step 4).

EASA 并未就此问题费太多的笔墨，仅大略地规定应当在 AMC 145.A.65(c)(2)(2) 的约束下调查所有审核发现。

但是，EASA 规章中关于事故调查的部分（见 Part-145.A.60）也许对于审核发现的调查
具有相关性，所以另文中有对 EASA 之事故管理规章所做出的建议（见 Pérezgonzález 等，2005）在此同样适用。

也就是说，所有调查将所有有关的信息纳入考虑，如涉及到任何审查发现、外部条件、评估结果所有可知得信息。此外，好的审核管理体系（AMS）当确保任何新的及尚存疑问的审杳发现得以彻底调查。

4.6. 趋势分析 (step 5).

EASA 规章并没有包含对审核发现进行趋势分析的内容。但正如趋势分析在分析事故或事故征兆中的作用一样，对审核发现的趋势分析同样具有重要意义——事实上，因为审核本身的周期性特点，对审核发现做周期性趋势分析也许对于维护维修单位来说更有意义。例如，事故报告系统部分关于趋势分析的内容在这里再一次同样适用（见 Part-145.A.60(b)）。因此 Pérezgonzález 等人（2005）在另文中就事故报告系统做出的关于将趋势分析写入 EASA 规章的建议，在这里同样适用。

4.7. 结果及建议 (step 6).

EASA 规章并没有对这个问题做出适当的规
定。虽说在相关规定中有提及审核的结果报告应当被提交至管理机构（AMC 145.A.65(c)(1)(10)）并予发布（AMC 145.A.65(c)(2)(3)）。但是这部分的内容是作为可接受的遵从方式的一部分出现，而不是 EASA 规章本身的一部分，所以很容易被维护维修单位所忽略。再者，没有任何地方提及关于提出建议的内容。

和之前的部分一样，针对这方面的规章在管理事故报告系统部分业已存在，而 Pérezgonzález 等人（2005）在另文中也就此方面问题如何改进事故报告系统提出了建议，这些建议在这里同样适用。也就是说，审核报告应包括审核的评估结果以及其他任何与分析审核结果有关的信息（Part-145.A.60）。同时审核报告应对审核结果提供尽可能详尽的建议。

4.8. 改正措施 (step 7) 及相关监控 (steps 8 and 9).

就审核结果的改正措施及相关监控这个问题，现行规章并没有作出特别明确的规定（Part-145.A.65(c)(2)），而仅有间接提及。虽然 AMC 145.A.65(c)(2)包括了相关的内容，但是这只是可接受的遵从方式的一部分，而非正式的 EASA 规章，所以可能被维护维修单位所忽略。

所以，最好的解决方法是将 AMC 的第三和第四条内容加入到 EASA 规章中。

4.9. 对改正措施的评估 (step 10).

EASA 并不直接介入管理这个方面。然而现有规章（Part-145.A.45(d)）规定维护维修单位须证明任何操作上的改变都是正当且有效的——这间接地规定了任何改正措施应该得到适当的评估。

这部分规章的精神和要求可以很容易被直接移植到针对审核体系的规章中去。对改正措施的恰当的评估将确保改正措施可以确实地起到作用，并预防同样的问题再次发生。这项评估的执行者（一个独立的部门，例如质量管理部门），应确保改正措施可使运作可达到应有安全标准，否则可提出新的整改执行计划。

4.10. 改整过程的结束 (step 11).

规章中并无明确规定指出应当何时正式结束对于审核发现的整改过程。Part-145.A.65(c)(2)间接的提到，当改正措施被正确、及时地贯彻后，整改过程便可划上句号。但这样的规定并不充分。这里的审核管理体系模型提出整改过程的结束（以及最终整个审核报告本身），应以改正措施被评估后并确认运作达到了应有的安全标准为标志。

此外，当确保所有与审核相关的资料和报告内容以一份综合报告的形式得以妥善存档保存（包括审核发现、调查结果、改善建议、改正措施以及最终的运作是否达到安全标准等）。也就是说，必须记录存档并向管理机构报告所有与审核结果及改正措施相关的信息。

4.11. 反馈及组织学习 (organisational learning) (step 12).

EASA Part-145.A.65(c)(2)要求维护维修单位在设立沟通反馈机制，用于知会相关人员及责任经理任何的审核发现和相应的整改措施。

然而，恰当的审核管理体系（AMS）可使维护维修单位中所有的人员得到相应的反馈；甚至把审核中发现的问题及处理经验通报至其他维护维修单位。从而提升单位乃至整行业处理
问题的能力（例如通过通报罕见问题的成因；或共享改正某方面问题的经验等）。

5. 结语

质量审核体系是飞行器维护维修单位之整体质量反馈宏系统（overall feedback macro-system）中不可或缺的一部分，它在安全管治上扮演了至关重要的角色。EASA（正如 JAA 过往所做那样）强调了质量审核的重要，并对其下辖的所有经认可的航空器维护维修单位提出关于设立质量审核体系的一系列明确的要求。质量审核体系应做出独立审核并根据结果责成相关人员做出改进。这些相关的规定在过去几年中几乎没有被改动过，这说明欧洲现行关于建立质量审核体系的要求标准大体上比较成熟，在航空器维护单位中也被广泛接受。尽管如此，仍然存在改进的空间。尤其是将现行规定转化为更“功能性有效”的质量审核系统。正如本文的目标那样：从功能与架构两方面的角度审视了 EASA 现行的关于审核体系的规章。同时对现行规章的一些明显的缺陷进行了评论，并对避免这些缺陷提出了改进意见。尽管对 EASA 这样尚在成熟、发展中的管理机构来说，规章上的改变也许会异常缓慢并在过程中遇到不少阻力，本文试图在维护维修单位基层的角度出发，为发展更先进的审核管理体系提供指南。也就是说，本文内容也许代表了未来管理规章可能的改变方向。

6. 参考书目。


7. 缩写词表。


AMC – Acceptable Means of Compliance (EASA / JAA), 可接受的遵从方式。

AMS – Audit Management System, 审核管理体系

MRO – Aircraft Maintenance and Repair Organisation, 航空器维护及维修单位

MOE – Maintenance Organisation Exposition, 维修单位说明文件

EASA – European Aviation Safety Agency, 欧洲航空安全机构

GM – Guidance Material (EASA), EASA 指导文件

JAA – Joint Aviation Authority, 欧洲联合航空署

JAR – Joint Aviation Requirements (JAA), 欧洲联合航空管理规定


电子版本: www.lulu.com/journal-KAI
8. 欧洲的航空管理机构：

这里是一些欧洲主要的民航组织的网站，它们基本上都分别介绍了各自的结构主要功能。在这些网站中，尽管也许您并找不到太多深入探讨民航及民航安全的资料，但至少可以让您对欧洲民航安全管理体系有一个较全面的认识。

- **EUROCONTROL** —— [www.eurocontrol.int/index1.html](http://www.eurocontrol.int/index1.html)
  Eurocontrol 是欧洲的航空管制组织。和中国民航管制部门不同的是，它同时管理欧洲各国空军的空中交通活动。

- 欧洲航空安全机构（EUROPEAN AVIATION SAFETY AGENCY，EASA） —— [www.easa.eu.int](http://www.easa.eu.int)
  EASA 正逐渐彻底取代 JAA 成为欧洲的主要航空管理机构。在 EASA 的网站您还能找到指向其他国家，尤其是欧洲各国民航管理机构的链接。这也是本文最主要的参考资料来源。

- 欧洲民航会议（EUROPEAN CIVIL AVIATION CONFERENCE，ECAC）—— [www.ecac-ceac.org](http://www.ecac-ceac.org)
  ECAC 以非管理者的身份在欧洲致力于促进民用航空交通的安全、效率和可持续发展。ECAC 与国际民航组织（International Civil Aviation Organisation，ICAO）有十分紧密的合作关系。

- 欧洲联合航空署（JOINT AVIATION AUTHORITY，JAA）—— [www.jaa.nl](http://www.jaa.nl)
  JAA 乃 EASA 的前身，EASA 继承了 JAA 的大部分运行要求并逐步发展出现在的 EASA 规章。JAA 现在仍然完全负责欧盟国家以外的欧洲国家的航空管理事务（欧盟成员国归 EASA 管理）。尽管 JAA 最终将被 EASA 完全取代，但是目前您依然可以在 JAA 的网站找到许多关于欧洲航空的重要资料。
9. 关于译者及作者

本文译者 张恒（Zhong Heng）从新西兰梅西大学（Massey University, New Zealand）航空管理系（Aviation Management）毕业。此前曾于澳门直升机机场 / 香港港联直升机公司（Macau Heliport / HeliExpress / East Asia Airlines）工作。在开始尝试翻译航空类文章前，曾于中国海运船务代理公司（China Shipping Agent）东莞分公司的员工提供海事英语培训课程。

此前的译有:

皮尔冈萨雷斯博士这项重要的研究工作都在总部设于都柏林的航空航天心理学研究中心 (Aerospace Psychology Research Group) 完成。他参与了多个欧盟资助的研究计划。他的研究涉及航空绩效、组织中的健康与安全管理等等。他最感兴趣的方向是航空安全管理政策、报告及审核体系和知识管理系统。他正在积极扩展和推广他自己提出的“知识管理版本”之应用，这首先体现在他自己的著作中。

皮尔冈萨雷斯博士的目标是在梅西大学建立一个民用航空研究卓越中心。

皮尔冈萨雷斯博士近期关于民航的著作列表：


10. 关于新西兰梅西大学及其航空学院  -- School of Aviation at Massey University, New Zealand

梅西大学航空学院位于梅西大学在北帕默斯顿（Palmerston North）的主校区。梅西大学是新西兰唯一提供航空管理各等级学位以及民用飞行器驾驶学士学位的课程的大学。其航空训练中心曾经或正在为多家亚太地区包括中国的航空公司培训飞行员。于1990年建立的航空学院，作为大学内相对较新的部门，它正在其领域获得越来越多的成就和声望。

航空学院近期的出版书目：


Abstract

This article continues a bibliographic series that documents monthly indicators for aviation management and aviation performance in New Zealand (see, for example, Pérezgonzález, 2006).

During the month of October 2006, the most important aviation performance indicators that caught the attention of New Zealanders were the following (in order of available pieces of information devoted to each of them). Firstly, miscellaneous news regarding airport operation and performance (especially at Wellington, Auckland, and Whenuapai). Secondly, job cuts in Air New Zealand. Thirdly, international accidents and incidents (especially the recent aircraft crash in Brazil). Fourthly, other miscellaneous news on Air New Zealand’s operation and performance. Fifthly, some reminiscent news regarding the Airbus A-380. And sixthly, national incidents and accidents. Four incidents were logged into the CAA-NZ’s Occurrence Reporting database: three regarding light aircrafts (only one reported serious injuries for the pilot, and damages on the aircraft); a fourth occurrence was a tandem paraglider accident, with two people being seriously injured.

Keywords

Aviation; Management; Efficiency; Health; Safety; Environment; New Zealand.
Public notice: The corresponding author of this paper asserts that this is an original piece of work, it reflects the contributor’s understanding of the contents covered, and the information in it contained is provided for its knowledge value and not for commercial, personal or other purposes.

Notice to readers: This paper has not been subjected to professional proof-reading; thus, some errors in grammar, syntax or use of language may be found. However, most readers will be able to understand the meaning of what is said despite such errors; thus, such errors shall not delay or otherwise prevent publication of this material as long as the meaning of the transmitted content is not impaired. Notwithstanding this, the paper has been revised as far as practicable in order to capture and correct as many errors as possible. The reader might forgive those that have not being so captured.

Editor: Dr. Jose D. PÉREZGONZÁLEZ; School of Aviation, Massey University, P.O. Box 11222, Palmerston North, New Zealand. Email: J.D.Perezgonzalez@massey.ac.nz. Published by Pergonomas. Printed and distributed by Lulu Press Incorporated. 3131 RDU Center Dr. Suite 210, Morrisville NC 27560, United States of America, http://www.lulu.com. Contact e-mail: orders@lulu.com. Phone: 919-459-5858 (Lulu.Press or Lulu.com may appear as the publisher in online retailers’ databases). The Journal of Knowledge Advancement & Integration (ISSN 1177-4576) is published on an ongoing basis as articles become available. No subscription is necessary, and articles can be purchased individually in the format offered, be this electronic or hard copy. Articles can be acquired at http://www.lulu.com/Journal-KAI.
Thematic bibliography: aviation news in New Zealand during October 2006

1 October 2006


2 October 2006


3 October 2006


4 October 2006


5 October 2006


6 October 2006


7 October 2006


9 October 2006


10 October 2006


11 October 2006


12 October 2006


13 October 2006


16 October 2006


17 October 2006


18 October 2006


19 October 2006


20 October 2006


21 October 2006


22 October 2006


23 October 2006


24 October 2006


25 October 2006


26 October 2006


27 October 2006


30 October 2006


YOUNG Audrey & John ARMSTRONG (2006). Save our jobs, say Unions to

31 October 2006


References

2. Sources of knowledge about Aviation in New Zealand:

- **CAA-NZ**, The Civil Aviation Authority of New Zealand, accessible at www.caa.govt.nz.
  The CAA is the main source of information for aviation safety performance, but also for regulatory management of the New Zealand aviation macro-system. The two sections that are most informative in regards to aviation management and performance are the “Accidents and incidents” tab and the “What’s new” tab.

  This journal may become an important source of information on aviation performance in New Zealand if the current series is continued. This is so because the CAA-NZ only provides information on registered accidents six weeks in retrospect. After that period, the information disappears, and there is no manner of accessing those indicators until the CAA publishes a report (or accident brief) on the accident once their investigation is concluded. This could take several months or years. The journal, however, keeps a record of those indicators in the published articles, thus increasing its importance as referential source.

  Newspapers in New Zealand have the particularity of being linked to a region, and none can be found that is linked to the nation itself. “The New Zealand Herald”, for example, is the newspaper of Auckland, the northern part of New Zealand. Notwithstanding this, the most important newspapers in New Zealand will reflect similar news in a relatively similar way. Therefore, “The New Zealand Herald” has been singled out as a main reference because it covers well aviation events at national and international levels (thus, its reliability), and it is relatively easy to access and navigate online (thus, its convenience as a source of information for readers outside New Zealand).

  This is the only source of information available so far regarding overall aviation efficiency performance in New Zealand. Under the heading “Tourism and migration” it is possible to find statistics for international passenger traffic per airport or by airport of embarkation, for example. It does not offer a good deal of information on aviation nor updated one (statistics are available for ended years only), but it is a starting point. There are also related statistics on migration published every month or so, comparing a given month against the same month a year earlier.

  The TAIC is an independent body that investigates transport accidents and incidents with significant implications for safety. The two sections that are most informative in regards to aviation safety performance are the “Aviation” tab and the “News” tab. Because the TAIC is an investigative body for serious accidents and incidents, the information that it provides is limited to those incidents that the TAIC investigates (thus, it does not offer a complete picture of aviation safety performance), and is substantially delayed in time (thus, it is not a good indicator for prompt feedback on aviation safety performance). Furthermore, TAIC does not date the release of a given report, which makes difficult to say since when such reports may start having an impact on aviation safety.

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1 These sources are offered here primarily for their knowledge value, not for commercial or other purposes (although links to the selected sources may be given if they are available). Sources related to the topic in question but which offer no relevant knowledge or offer redundant knowledge have been skipped. These sources are ordered alphabetically according to the first author's surname or source name. The first date after the author/source refers to the date the original work was done, first copyrighted or first published. The title of the work follows. Finally, the location where to find such work is given, for example a webpage or a publishing company –which also includes relevant information such as country of publication, publication year, ISBN number, etc.
3. Who’s who. Author’s updated CV.

Dr. Jose D Pérezgonzález joined the School of Aviation at Massey University (New Zealand) in June 2006. Much of his research up to date has been with the Aerospace Psychology Research Group in Ireland, participating in several European-funded research projects. His research expertise ranges from aviation efficiency to health and safety management in organisational settings, and is especially interested in policy, reporting and auditing systems, health and safety management, and knowledge management systems. Nowadays, he is promoting the idea of Knowledge Management Editions™, and is founder and editor-in-chief of the Journal of Knowledge Advancement & Integration. He is also setting the basis for a Centre of Excellence for Aviation in New Zealand, at Massey University. Among the recent projects that he is developing are the following: an awareness campaign regarding aviation management, efficiency and safety in New Zealand; a meta-analysis of aviation safety legislation at international levels; and a meta-analysis of communication models in the available literature.

The author’s list of recent publications in regards to the awareness campaign on aviation management, efficiency and safety in New Zealand is as follows:


Recent publications in regards to the meta-analysis of aviation safety legislation are the following:


Recent publications in other aviation-related areas are the following:


4. Which & where.

School of Aviation at Massey University, New Zealand. Updated CV:

The School of Aviation is part of the College of Business, based both in the Turitea Campus and the Milson Flight Centre at Palmerston North International Airport. It offers bachelor with honours in Air Transport Piloting and Aviation Management, and masters and doctorate degrees in Aviation Management. The School is relatively new (it was established in 1990) and its research curriculum is only starting to grow now.

A sample of the School’s recent publication list follows:


Abstract
This paper presents the results of the first published meta-case study that assesses the potential of Pérezgonzález’s (2006) model as a generic framework that could explain the processes of communication and interrelationship from a social perspective.

This paper assesses the goodness of fit of the ideas expressed in Rabin’s book on how to flirt (1993), into that communication model. The object of this paper is neither validating nor endorsing Rabin’s ideas. However, the fact that the information is available in a coherent book which shows relative construct validity makes it a good candidate for this meta-analysis. Therefore, those ideas can be considered available data representing a series of recommendations on how to communicate and interact in social environments. The methodology is based on a content analysis of Rabin’s book. The recommendations contained in the book are categorised according to the element in the communication model they best fit in.

The results thus obtained shows that Rabin’s recommendations can be explained by the communication model. Furthermore, when doing so, it also becomes apparent which is the communication (or flirting) model underlying Rabin’s recommendations.

Finally, some small adaptations to Pérezgonzález’s model are also made, and necessary clarifications of the scope of the elements “signalling” and “approaching” are made in the discussion section.

Keywords
Modelling; Communication; Social interaction; Social relationships; Case-study; United States of America.
### Knowledge Management Space

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Notice to readers: This paper has not been subjected to professional proof-reading; thus, some errors in grammar, syntax or use of language may be found. However, most readers will be able to understand the meaning of what is said despite such errors; thus, such errors shall not delay or otherwise prevent publication of this material as long as the meaning of the transmitted content is not impaired. Notwithstanding this, the paper has been revised as far as practicable in order to capture and correct as many errors as possible. The reader might forgive those that have not being so captured.
Meta-case study: Rabin’s guide to flirting.

1. Introduction.

This paper presents the results of a meta-case study on communication and social relationships, specifically on strategies for flirting and communicating more successfully in diverse social settings.

Susan Rabin published “How to attract anyone, anytime, anyplace” in 1993. This book is marketed as a guidebook to flirting in which she gives a series of recommendations on how to flirt and communicate better.

Rabin shifts between conceptualising flirting as a step in a romantic relationship – i.e. “the first positive step for attracting anyone, anytime, anyplace” (p.4) – to conceptualising it as a quality of communication – i.e. “flirting has everything to do with communication. [...] It is social intercourse [...] It allows you to act and interact without serious intent as you successfully meet and relate to others” (p.2-4). That is, “flirting is the fine art of relating to others and allowing others to relate to you” (p.19-20). The first definition is more sexually oriented, being part of the mating process. The second definition is more generic, as flirting equals communication.

Rabin’s ambivalence, although easily accepted from a reader’s perspective, poses a challenge to the researcher as it is difficult to ascertain whether the book – and its recommendations – is self-help for better dating or self-help for better communicating. Nonetheless, the main covering of the book seems to be on flirting as a communication process, from getting to know somebody to ending an established relationship. However, the reader may want to keep in mind such ambivalence as it will help understand better the recommendations given by the author.

Rabin claims that her recommendations are based on more than ten years of research and study (p.16), these based both on direct personal experience, and on vicarious experience by friends and some 2,500 attendees to her workshops and lectures (p.145).

This paper is interested in a meta-analysis of Rabin’s recommendations in order to gather data for testing and validating the model of communication introduced in an earlier paper (see Pérezgonzález, 2006).

A note to the reader may be necessary at this point: the object of this paper is neither validating nor endorsing Rabin’s ideas. However, her ideas (as per this book only) will be taken as available data representing a series of recommendations on how to communicate in social environments. The onus of proving the reliability or validity of those ideas rests on the author of the book or on future research. However, the fact that the information is available in a coherent book which shows good construct validity, makes it a good candidate for this meta-analysis.

2. Methodology.

Rabin’s book will be the subject of this meta-case study. This study means a content analysis of the beliefs and recommendations put forward by Rabin. Namely, those beliefs and recommendations will be clustered together according to the categories of a theoretical model. Thus, Pérezgonzález’s model of communication and social relationships (2006) will be used as a contrasting template, and the fit of Rabin’s ideas to such template will be assessed.

This is an exploratory research, and no specific hypotheses regarding the goodness of fit of Rabin’s ideas to the model are advanced. The recommendations contained in Rabin’s book will be clustered as pertaining to that element in the communication model they best fit in\(^1\). Therefore, two main questions will be answered by this content analysis. Firstly, do Rabin’s ideas fit into Pérezgonzález’s communication model? Secondly, are there any ideas that the model cannot explain?

A decision regarding the matching of the contents of the book to the communication model will be carried out in the discussion section. Furthermore, if the model proves to be a reasonable template for Rabin’s ideas, the discussion will describe those elements in the communication model that Rabin emphasises.

Finally, any implications of this meta-case study on the original theoretical model will also be discussed, as appropriate.

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\(^1\) Several of the techniques can have duplicated functions in the communication model (e.g. most of them help increase your attractiveness). These duplicated functions are but a reflection of natural processes in social settings. In this research, however, I will attempt to reduce duplicity by matching each technique to that single element in the model with which they related more, thus simplifying analysis and interpretation without necessarily losing accuracy.
3. Results regarding the working up of your communication.

3.1. Your needs, beliefs, and strategy.

3.1.1. Your needs.

Rabin does not identify any personal needs that you must have in order to communicate or relate better. However, she identifies the process of flirting itself as a need in today’s (North-American) society: “It is okay to flirt! In fact, it is more than okay; it is necessary in the ‘90s in getting to know someone, and is the first positive step for attracting anyone, anytime, anyplace!” (p.4). Thus, flirting is not just recommended, it is necessary. Even better, flirting is natural –which could be understood as biologically ingrained–, and we are already “flirting” from the time we are born (p.17). Thus, because you are a natural flirt, Rabin’s book is not so much about teaching you something new, but about rediscovering and improving the person you are.

3.1.2. Your beliefs.

3.1.2.1. Basic assumptions underlying Rabin’s recommendations.

Basic assumptions are beliefs that seem to underlie Rabin’s implicit model of flirting, rather than being proper recommendations. These core beliefs represent Rabin’s understanding of flirting. Thus, the remaining recommendations in the book may be nonsense unless the reader “accepts” these basic assumptions.

A core belief underlying Rabin’s book is that flirting –either as a mating step or, more generally, as social interaction– is all about communication (p.2). And, although Rabin does not explicitly talk of a communication model, her book is structured in the sequential pattern in which communication normally occurs: getting to know yourself (ch.1), getting out of the house (ch.2), managing your body language (ch.3 and ch.5), breaking the ice and conversing (ch.4), dealing with rejection (ch.6), and ending a relationship (ch.7).

A second core belief is that flirting is a skill that can be learnt (despite having your own flirting style). The only conditions are that you are willing to learn the proper steps, and that you stop skipping the ones you think you don’t need (p.3). The recommendations provided in the book are “surefire strategies” for the purpose (p.19), according to Rabin.

A third core belief is that flirting is natural, not manipulative, and that we are born to flirt (p.17). Thus, the negative social connotations associated with flirting are not to be considered as such, but as a positive aspect of our lives.

A fourth core belief considers that everything you wear and do communicates who you are and how you relate to the world (p.90). This further expands into the following beliefs: that singles (read as other people) judge you in the first five minutes after meeting you (p.93), and you never get a second chance to make a first impression (p.94).

A fifth core belief –in opposition to some of the above– considers dating (or, rather, meeting that significant other), a numbers game (p.145).

Finally, a sixth core belief is that flirting can be used in any social milieu, including your job. Basically, flirting is social communication which will enrich your life with interesting people, will make you more appealing to the people you wanted to meet but dared not, will enable you to accept yourself as you are, will enhance your awareness of others’ needs and give you the necessary skill to reduce rejection to a minimum, and will make business a more satisfying place (p.19). The recommendations provided in the book are “surefire strategies (that) will help you to develop a vital network of friendly contacts, charm your way into the job of your dreams, and enable you to attract anyone, anytime, anyplace…” (p.19).

3.1.2.2. Your beliefs and attitudes.

This subsection highlights practical beliefs and attitudes that support some of the techniques and recommendations in Rabin’s book, but cannot be considered techniques as such.

One of those practical beliefs is that in order to flirt successfully, you must approach, have the right attitude, and take action (p.3, and p.145). The attitudinal component seems to be the one relevant here, and is expanded in this section, while the remaining two will be expanded in the following sections. Although Rabin does not explicitly say what the right attitudes are, the following may be those she refers to.

Overall, you can change your live if you change your thinking (p.112) –especially in the direction of the recommendations given in the book.
Another attitude is that you can shout your availability as a single anywhere, if you “consider anyplace a meeting place, [...] use [...] anything as conversational kindling, and [...] accept everybody as a potential friend” (p. 28).

A third important attitude is to be honest to yourself. “When you try to be someone you aren’t, you attract people who aren’t right for you. And that is always a waste of time, money, and energy” (p. 28).

Another important attitude is to be proactive. Rabin comments on the need for acting upon crushes, rather than merely fantasizing about them (p. 138). That is, change your attitudes towards being more spontaneous, and talk to strangers that intrigue you in the same manner in which you talk to people who you are not sexually interested in (e.g. the postman, the butcher, etc). Rabin encourages the attitude that not talking to that stranger is worst than giving the wrong impression, and it is not effective flirting. That is, you miss your chance (p. 65).

Another attitude is that the three fundamental skills that will allow you “to focus on what you want, flirt with confidence, and walk away a winner [...] are eye contact, smile savvy, and body language” (p. 40). Put it another way: consider that 7% of communication is through words, 38% through voice tone and timbre, and 55% through gestures and body language. Thus, projecting your voice and controlling your body means 93% of communicative capability (p. 61).

Another attitude is that body language can either beckon others closer or wave them away. On the one hand, it is important to know how to assess others’ body language (but look for gesture clusters rather than single gestures – p. 87). On the other hand, it is also important for you to be aware which message you are sending with your body language, and act accordingly (p. 44).

About breaking the ice, Rabin says that everyone is afraid of speaking first. Thus, most people will respond to you if you go first (p. 67). And almost anything you say to break the ice is okay but being rude, sarcastic or insulting (p. 69). Thus, take the attitude of being first in opening a line of conversation.

Regarding background work, Rabin says that successful flirting may need of forethought and attention (p. 31). Thus, for example, a little bit of planning to set a “chance” encounter with an attractive stranger can pay off big-time (p. 30).

Regarding attractiveness, Rabin recommends smiling at others the way you want them to smile at you. Then, get feedback in the following way: if you’re comfortable with the looks you’re getting, you’re doing it right (p. 53).

Also, people tend to like people who are like them. Mirroring other people’s behaviours transmits two messages: I like you, and I am like you. The other person may not know you, but they know themselves. By mirroring their behaviours, you make yourself more like that person. If you can mirror someone in his nonverbal behaviour, postures and words, you will make a positive connection. However, you should not look obvious in your mimicking, nor mimic their negative attributes (p. 55-58).

Rabin also defends the acquisition of the main attitude of trying again after any rejection (especially when approaching a stranger for the first time). She recommends either trying again with the same person (although not to the point of becoming a stalker), or trying again with someone new – as a manner of continuing playing the game of flirting (p. 136).

Regarding you rejecting someone else (especially in personal relationships already established), Rabin also recommends adopting the following philosophy of rejection: rejection is not personal, it is an opportunity to move forward, you need to find ways to turn it around, it is not serious, and it is not the end of the world (p. 112-120).

Regarding being rejected (especially in personal relationships already established), such rejection or break up may be a necessary and fair thing to do for both partners when you don’t want to continue in that relationship (p. 140). Furthermore, in order to prevent you failing in this regard, Rabin also recommends you to believe that neither you are responsible for the other person’s reaction to your announcement (p. 142), nor you need or will be universally loved by that person (p. 143). Still, break up nicely, as keeping your ex-partner on your side may allow you to dip into his pool of friends and acquaintances for future romances (p. 140).

3.1.2.3. Your skills, aptitudes, habits, etc.

This subsection deals with skills, aptitudes and habits that work in the background of communication and relationships, and which may be necessary for you to develop. Many of them can inform other elements in the model (e.g. attractiveness). However, because what is required is some personal work previous to the interaction or communication, they are rather part of the
personal baggage of skills and aptitudes in communicating and interacting.

One of those skills is to know how you flirt – or, as Rabin puts it, to “get to know the kind of flirt you already are” (p.5) – out of seven flirting types describe in the book. Rabin provides a convenient quiz for the purpose.

Also as part of knowing yourself is finding out about which places and activities interest you the most (for flirting, you should choose your favourite places, as you will feel more focused and comfortable in them –p.26). Rabin also provides precise instructions on how to find out about those places and activities.

Another recommendation is to practice the different techniques in the book in order to master them. In general, you can do so by watching and studying others, by playing charade with your friends and studying their behaviours, and by mimicking target dating scenarios with your friends (p.61).

More specifically, you can start training your skills in managing your own attractiveness by training your smiling in front of a mirror, or by asking a friend about how your smiles come across to them (p.49). You could also study the smiles that you like in magazine models, and find out what make them so good (p.49). Or you could study actors in films (p.49). You can train your skills in controlling your body language by videotaping yourself (p.108). You can train your skills on how to break the ice, with acquaintances first, until you feel comfortable enough as to start talking to total strangers (p.68). And you can train your listening skills with a friend (p.108).

Another skill is to be prepared for dating people: prepare business cards, think of meeting for coffee instead of for alcoholic drinks, think of lunch instead of dinner if dinner seems too intimate, etc (p.37). Rabin even recommends to network social situations when you cannot handpick who you want to flirt with –i.e. those people sure can bring “friends-of-a-friend” contacts (p.36).

Rabin also goes onto giving some more therapeutic techniques for getting over personal rejections. These are the inventory of your assets (p.121), the Teflon technique (p.122), and the reading between the lines technique (p.122). Furthermore, reprogramming your negative chatterbox (p.126-136) is the using of rational-emotive therapy in order to control personal beliefs and feelings when a relationship has been ended by the other person. Other techniques with similar purpose are rationalization (p.116), and projection (p.116).

3.2. Your attractiveness, availability, context, and expectations of approachability.

3.2.1. Assessing the attractiveness of the other person.

Rabin gives two recommendations that seem to be targeted to assessing the attractiveness of other people.

On the one hand, she says that active listening can be used as a tool for the assessment of attractiveness (i.e. for you to get relevant information about the other person, and thus decide whether you want to go any further with that person or not –p.101).

On the other hand, Rabin also talks about pickup signals being given away by women. (Pick up signals convey availability rather than attractiveness. However, the signals that Rabin talks about are those linked to preening, which may convey attraction or sexual tension, but does not necessarily convey availability). Thus, if you are a man, learn how to read behavioural patterns that signal she is attracted to you: playing with her hair, tossing her head, fidgeting with her skirt, smoothing her collar, checking her lipstick, showing an open palm, skirt hiked slightly higher than before, pouting or licking her lips… (p.58).

3.2.2. Assessing the availability of the other person.

Rabin recommends that, during the interaction, you check if the person you’re flirting with is flirting back (p.45), so that you know how far you may proceed.

She further dedicates a long section of her book to telling signals regarding availability of the other person for you to approach (and how much to approach), and for you to be more intimate (and how much so) –p.94-97.

3.2.3. Contextual circumstances.

This element is not addressed in the book.

3.2.4. Your personal circumstances.

Although Rabin does not give any direct tips related to environmental circumstances, she does highlight the belief that those places and activities that interest you the most may be the
recommended for your dating, as you will feel more focused and comfortable in those places (p.26). Thus, they help you to relax, calm down and chill out, positively affecting your interaction.

Another technique—which Rabin presents as an attractiveness technique—is to learn to laugh at the little foibles that happen to you, instead of letting them put you down (p.77).

3.3. Deciding on communicating.

3.3.1. Deciding not to communicate.

This element is not addressed in the book.

3.3.2. Deciding for an indirect communication strategy.

3.3.2.1. Managing your attractiveness.

Interestingly enough, Rabin leaves out the management of your attractiveness before any interaction occurs. Instead, she mostly focuses on managing your attractiveness during the interaction, be this while flirting or while communicating.

Recommendations for managing your glances are the following: hold your glances long enough, but not too long (p.45); don’t look at and away too quickly—or you will come across as darting or sneaky (p.46); stop your glancing at the face, not any lower (p.46). Winks, raised eyebrows and staring are taboos; thus, use the flirting triangle technique instead (p.42).

The main recommendation for your smiling is for you to smile but without looking maniacal or desperate, nor showing a forever happy face (p.49).

The main recommendation for your body posture is to adopt a good body posture that expresses you feel comfortable and are approachable (p.53).

Regarding touch, Rabin recommends giving good handshakes (p.99) but, other than that, avoiding any further touching of the other person, especially on first meetings (p.98).

Regarding voice timbre, Rabin only offers women the recommendation of doing a sound check (p.82), so that your voice does not come out as a shrill.

Recommendations while interacting are those aimed to show similarity with the other person, such as mirroring nonverbal body language (p.55), as well as voice tone and words (p.57). Also, people may feel more stimulated by one sense in particular, such as hearing, touching or visualising. Thus, another recommendation is to tailor your communication to such preference (p.59).

While conversing, the following recommendations help manage your attractiveness: don’t just talk about yourself, but get to know the other person too (p.73), give compliments freely but sincerely (p.74), personalize the conversation (p.76), show enthusiasm that is contagious (p.76), stop the whining (p.77), don’t criticize or judge (p.78), and never interrupt (p.79). Furthermore, active listening is also a way of making you appear as more empathetic and caring (p.101).

In conversation, men, manage yourself so that you don’t come across as one that kisses and tells, patronizes her, only talks about politics, religion or family problems, wants to find out about her age, and focuses on sex (p.80). Also, let her know that you are actively listening (p.80).

Women, manage yourself so that you don’t come across as one that wants to find out about his wealth, and only talks about her past, her health, and her children (p.82).

3.3.2.2. Managing your availability.

Rabin also gives recommendations on how to manage your availability (i.e. on how to make your own luck).

The foremost recommendation is to get out of the house (p.23) —for example, to places that interest you (p.24). But also to walk to places—thus giving yourself more opportunities to meet people on the way (p.24)—, and to separate from your friends while in social situations—so that new people can approach you (p.35).

Furthermore, issue invitations with your body language in order to seem approachable (p.89). And monitor your appearance and body language in order not to give away signals conveying that you are not approachable (p.91).

3.3.3. Deciding for a direct communication strategy.

3.3.3.1. Ice-breakers.

For breaking the ice, you could focus on the five W’s of what is going around you: who is the other person, what are you doing, where are you, ask why things occur, and ask when things occur (p.70).

Other conversation openers are recommended in page 84.

3.3.3.2. Responding to rejection.

3.3.3.2.1. Fly-away techniques.
Some recommendations to end (as for flying away from) a conversation are given as happy endings in page 85—although Rabin proposed them as neutral closings to ensure a good impression (thus, for managing your attractiveness).

3.3.3.2.2. Try again techniques.
Rabin offers two similar techniques for trying again despite rejections to your approach by strangers: two-out-of-three rejections (p.117), and nine-out-of-three rejections (p.118).

3.3.3.3. Working out the relationship.

3.3.3.3.1. Conversation keepers.
The main recommendation for keeping a conversation is asking open-ended questions (p.75). However, more specific recommendations for men—when flirting with women—are talking about emotions, or asking for her opinions (p.80). More specific recommendations for women—when flirting with men—are talking about work, and talking about typical male topics (p.82).

Rabin also suggests that silence can also be part of the conversation. Thus, be aware of it and use it wisely (p.107).

3.3.3.3.2. Conversation closings.
At least one conversation closing that could be used when the prospect is to continue the relationship at some later stage, is neutral closing 2 in page 85.

3.4. Responding to a direct approach by the other person.

3.4.1. Acceptance techniques.
This element is not addressed in the book.

3.4.2. Rejection techniques.
Rabin recommends the following when breaking up a relationship: use “I” messages, be brief, use positive messages before or after the blow, and be kind (i.e. no rudeness, sarcasm or hostility)—p.140-143.

4. Results regarding the working up of the other party.

4.1. Their availability.
Rabin recommends some techniques that will help manage the availability of other people. Active listening can be used as a way of making people feel comfy enough with you that they will open up to you (p.101).

Echoing, the Third ear technique, and Repeating, rephrasing, and reflecting the conversation away from you (p.104) are also techniques that work up the other party’s availability while in conversation.

4.2. Their approach.
Rabin also gives some recommendations to help the other party to approach you. These are wearing a flirting prop (and avoiding negative ones, p.32) and wearing other conversational aids (p.77), which the other person can use as ice-breakers or conversation keepers.

5. Items that do not fit the model.
None.

6. Discussion.
Three separate issues need to be tackled in the discussion of this meta-case analysis: the results of this study, the possible re-interpretation of Rabin’s book according to Pérezgonzález’s model, and the possible implications of this exercise on the original model of communication.

6.1. Results of this study.
As introduced earlier, two main research questions needed to be answered by this meta-analysis. Firstly, do Rabin’s recommendations fit into Pérezgonzález’s communication model? Secondly, are there any ideas that the latter model cannot explain?

In regards to the first research question, Rabin does not explicitly offer a model of communication, but such model appears implicit in the structure of her book. Such implicit model fits into Pérezgonzález’s framework. Furthermore, all the techniques and recommendations in the book seem to also fit into such framework.

In regards to the second research question, there are not ideas which do not fit into the model.

Thus, it appears reasonable to conclude that Rabin’s ideas fit nicely (that is, can be well categorised) into Pérezgonzález’s model.
6.2. Re-interpretation of Rabin’s ideas.

How does Rabin’s book stand after this meta-analysis?

Illustration 1 schematises the elements in Pérezgonzález’s model covered in Rabin’s book. The upper half of the model –blue boxes– represents the managing of your own communication. It can be appreciated that Rabin gives recommendations for all but three elements in this section of the communication model, including the perception of the other person’s attractiveness and availability (in the lower part of the model). Thus, recommendations cover some 81% of your participation in the communication process.

Furthermore, Rabin also covers two elements of the lower part of the model –red boxes–, which can be considered as managing or influencing the other person’s communication process. Those elements are in regards to facilitating availability by the other person, as well as facilitating his approaching (icebreaking). This represents 12% of the other person’s participation in the communication process.

Overall, there are some 158 recommendations in Rabin’s book when counting techniques, skills and beliefs. A breakdown of those techniques per operational category means that 46% of the recommendations (i.e. 72) are dedicated to communicating (including direct communication and signalling); 35% of the recommendations (i.e. 55) are dedicated to strategy (including needs, beliefs and skills); 12% of the recommendations (i.e. 19) are dedicated to assessing approachability (including assessment of attractiveness, availability, context and personal information); 4.4% of the recommendations (i.e. 7) are dedicated to influencing the other person’s communication (at any level); and 2.5% of the recommendations (i.e. 4) are dedicated to responding to others’ approaches.

Furthermore, a breakdown of the same 158 recommendations according to specific elements in the communication model, shows that there are eight main elements that Rabin’s techniques develop in more detail. Firstly, managing your attractiveness (as a sender), with some 24% of the recommendations (i.e. 38) dedicated to it.
Secondly, adopting new practical beliefs and attitudes, with some 16% of the recommendations (i.e. 25) dedicated to it. Thirdly, developing new skills and aptitudes, with some 15% of the recommendations (i.e. 23) dedicated to it. Fourthly, assessing the other person’s availability, with some 9% of the recommendations (i.e. 15) dedicated to it. Fifthly, ice-breaking, with some 9% of the recommendations (i.e. 15) dedicated to it. Sixthly, basic assumptions, with some 4% of the recommendations (i.e. 6) dedicated to it. Seventhly, managing your availability, with some 4% of the recommendations (i.e. 6) dedicated to it. Finally, conversation keepers, with some 4% of the recommendations (i.e. 6) dedicated to it.

This breakdown allows the following conclusion: Rabin’s implicit communication model is focused on developing your own communication (versus influencing the other person’s). Eighty percent of your efforts should go both onto managing your own interaction (namely, managing your attractiveness, ice-breaking, availability, and conversation keepers), as well as onto managing your beliefs and skills (namely your attitudes and habits towards communication, as well as accepting new basic assumptions regarding flirting and communicating in a social milieu).

6.3. Implications for the communication model.

Finally, are there any implications of this analysis for the model? Initially, there are no obvious implications of this analysis for the model. However, during this first meta-case analysis I have adapted the model so that it can be better used as a template. I also came across the need to clarify an aspect of the model that may not have been obvious in the previous paper. This clarification is regarding a potential confusion between the decision of signalling and approaching. Two possible interpretations are possible, which may lead to confusion.

The first interpretation is to equal signalling with non-verbal communication, and approaching with verbal communication. This interpretation, then, implies that signalling refers to both indirect verbal and non-verbal communication, while approaching refers to both direct verbal and non-verbal communication.

The communication model actually considers the latter interpretation as the correct one. Thus, signalling is using indirect ways of conveying what one needs and wants, or work towards managing other elements in the model (e.g. attractiveness). These indirect ways can be either non-verbal or verbal (or, most probably, a combination of both). Equally, clear and distinctive gestures can be as direct a communication as clear and distinctive verbalizations.

7. Conclusion.

Rabin’s book represents the first published meta-case study that assesses the potential of Pérezgonzález’s model as a generic framework to explain the processes of interrelationships and communication from a social perspective. The results obtained with this first meta-case study seem to support such potential. This encourages further research in a similar line, continuing exploring other relevant studies on communication and relationships.

8. References.


9. Sources of knowledge about communication models:

This section will build up on the knowledge management space of the theoretical paper.

  
  Kaminski acknowledges that much of the material in this handout is derived from C. David Mortensen’s book (1972), although he has adapted and updated it for this lecture. Therefore, this is a quite comprehensive introduction to several models of communication in a relatively comprehensible language, adequate for those users without an extensive knowledge on communication.

- **LEE Dick (2006).** Developing effective communications. Website retrievable from [http://extension.missouri.edu/explore/comm/cm0109.htm](http://extension.missouri.edu/explore/comm/cm0109.htm)
  
  Lee offers a snapshot of five models of communication, most of them already covered by Kaminski (2002).

  
  This seems to be the only theoretical model developed from a social perspective, instead of an engineering one. The model, thus, can explain both communication and social interaction. Formal testing and validation of the model is still in progress. Notwithstanding this, the model adds a social perspective to the rather engineering communication models that are still prevalent in the literature on communication.

  
  Wikipedia is a good source of knowledge on diverse topics, although some entries are more reliable than others. Keywords such as “communication”, “communication theory”, “information theory”, etc may probably suffix the reader interested in knowing more about communication theories, in general.

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1 These references are offered here primarily for their knowledge value, not for commercial purposes (although commercial links to the selected references may be given, if available). The references are ordered alphabetically according to the first author's surname. The first date after the author refers to the date the original work was done, first copyrighted or first published. The title of the work follows. Finally, the location where to find such work is given, for example a webpage or a publishing company –which also includes country of publication, publication year, and ISBN number.
10. Who’s who. Author’s updated CV.

Dr. Jose D Pérezgonzález joined the School of Aviation at Massey University (New Zealand) in June 2006. Much of his research up to then had been done in Ireland, both with the Aerospace Psychology Research Group, participating in several European-funded research projects, and with Dublin Institute of Technology. His research expertise ranges from aviation efficiency to health and safety management in organisational settings, and is especially interested in policy, reporting and auditing systems, health and safety management, and knowledge management systems. Nowadays, he is promoting the idea of Knowledge Management Editions™, and is founder and editor-in-chief of the Journal of Knowledge Advancement & Integration. He is also progressing the basis for a Centre of Excellence for Aviation in New Zealand, at Massey University, which was launched in November 2006. Among the recent projects that he is developing are the following.

- A validation of a communication model:
  

- An awareness campaign on aviation management, efficiency and safety in New Zealand:
  
  
  
  
  

- A meta-analysis of aviation safety legislation:
  
  

  
11. Which & where.
School of Aviation at Massey University, New Zealand. Updated CV:

The School of Aviation is part of the College of Business, based both in the Turitea Campus and the Milson Flight Centre at Palmerston North International Airport. It offers bachelor with honours in Air Transport Piloting and Aviation Management, and masters and doctorate degrees in Aviation Management. The School is relatively new (it was established in 1990) and its research curriculum is only starting to grow now.

A sample of the School’s recent publication list follows:


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- Or you would like to read as many articles as possible for your studies and this edition allows you to go through all those that you would like to.
Thematic bibliography: aviation news in New Zealand during November 2006
by Jose D. PÉREZGONZÁLEZ (2006)
School of Aviation, Massey University, New Zealand

Correspondent: Dr. Jose D. PÉREZGONZÁLEZ, School of Aviation, Massey University, Turitea Campus, PO Box 11222, Palmerston North, New Zealand. Phone: +64 6 3505326; Fax: +64 6 3505536; Email: J.D. Perezgonzalez@massey.ac.nz

Abstract
This article continues a bibliographic series that documents monthly indicators for aviation management and aviation performance in New Zealand (see, for example, Pérezgonzález, 2006).

During the month of November 2006, the most important aviation performance indicators that caught the attention of New Zealanders were the following (in order of available pieces of information devoted to each of them). Firstly, aviation incidents at national levels. Eight incidents were logged into the CAA-NZ’s Occurrence Reporting database: two regarding light aircrafts (the second one with two fatalities and substantial damages reported), another two regarding helicopters (no injuries or damages reported), another two regarding gliders (one with substantial damage but no injuries; the second with two fatalities), a seventh incident regarding a hang glider (with one person seriously injured), and an eighth incident regarding a gyrocopter (with substantial damages but no injuries reported). The media also dedicated several articles to some of those incidents. The report of an accident occurred back in February was also released by the CAA during November and commented by the media.

Secondly, miscellaneous news on Air New Zealand operations, especially on the failure of the Tasman code-share agreement with Qantas, but also on cut jobs and other operational news. Thirdly, miscellaneous news on different (mostly international) airline operations and performance. Fourthly, news on Qantas takeover. Fifthly, terrorism news (especially the aftermath of the London plot, and other terror incidents). Sixthly, international incidents and accidents. Seventhly, miscellaneous news related to the environment. Eighthly, some miscellaneous news on the Airbus A380. And ninthly, some news on air tourism around the icebergs nearing New Zealand coastline.

Keywords
Aviation; Management; Efficiency; Health; Safety; Environment; New Zealand.
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Notice to readers: This paper has not been subjected to professional proof-reading; thus, some errors in grammar, syntax or use of language may be found. However, most readers will be able to understand the meaning of what is said despite such errors; thus, such errors shall not delay or otherwise prevent publication of this material as long as the meaning of the transmitted content is not impaired. Notwithstanding this, the paper has been revised as far as practicable in order to capture and correct as many errors as possible. The reader might forgive those that have not being so captured.

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Thematic bibliography: aviation news in New Zealand during November 2006

1 November 2006


2 November 2006


3 November 2006


4 November 2006


5 November 2006


6 November 2006


7 November 2006


8 November 2006


9 November 2006


10 November 2006


11 November 2006


12 November 2006


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18 November 2006


20 November 2006


21 November 2006


22 November 2006


23 November 2006


24 November 2006


25 November 2006


26 November 2006


27 November 2006


28 November 2006


29 November 2006


30 November 2006


References

2. Sources of knowledge about Aviation in New Zealand:

- **CAA-NZ**, The Civil Aviation Authority of New Zealand, accessible at [www.caa.govt.nz](http://www.caa.govt.nz). The CAA is the main source of information for aviation safety performance, but also for regulatory management of the New Zealand aviation macro-system. The two sections that are most informative in regards to aviation management and performance are the “Accidents and incidents” tab and the “What’s new” tab.

- **JOURNAL OF KNOWLEDGE ADVANCEMENT & INTEGRATION**, accessible at [www.lulu.com/Journal-KAI](http://www.lulu.com/Journal-KAI). This journal may become an important source of information on aviation performance in New Zealand if the current series is continued. This is so because the CAA-NZ only provides information on registered accidents six weeks in retrospect. After that period, the information disappears, and there is no manner of accessing those indicators until the CAA publishes a report (or accident brief) on the accident once their investigation is concluded. This could take several months or years. The journal, however, keeps a record of those indicators in the published articles, thus increasing its importance as a referential source.

- **NZHERALD**, The New Zealand Herald, accessible at [www.nzherald.co.nz](http://www.nzherald.co.nz). Newspapers in New Zealand have the particularity of being linked to a region, and none can be found that is linked to the nation itself. “The New Zealand Herald”, for example, is the newspaper of Auckland, the northern part of New Zealand. Notwithstanding this, the most important newspapers in New Zealand will reflect similar news in a relatively similar way. Therefore, “The New Zealand Herald” has been singled out as a main reference because it covers well aviation events at national and international levels (thus, its reliability), and it is relatively easy to access and navigate online (thus, its convenience as a source of information for readers outside New Zealand).

- **STATISTICS NEW ZEALAND**, accessible at [www.stats.govt.nz/default.htm](http://www.stats.govt.nz/default.htm). This is the only source of information available so far regarding overall aviation efficiency performance in New Zealand. Under the heading “Tourism and migration” it is possible to find statistics for international passenger traffic per airport or by airport of embarkation, for example. It does not offer a good deal of information on aviation nor updated one (statistics are available for ended years only), but it is a starting point. There are also related statistics on migration published every month or so, comparing a given month against the same month a year earlier.

- **TAIC-NZ**, Transport Accident Investigation Commission, accessible at [www.taic.org.nz](http://www.taic.org.nz). The TAIC is an independent body that investigates transport accidents and incidents with significant implications for safety. The two sections that are most informative in regards to aviation safety performance are the “Aviation” tab and the “News” tab. Because the TAIC is an investigative body for serious accidents and incidents, the information that it provides is limited to those incidents that the TAIC investigates (thus, it does not offer a complete picture of aviation safety performance), and is substantially delayed in time (thus, it is not a good indicator for prompt feedback on aviation safety performance). Furthermore, TAIC does not date the release of a given report, which makes difficult to say since when such reports may start having an impact on aviation safety.

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1 These sources are offered here primarily for their knowledge value, not for commercial or other purposes (although links to the selected sources may be given if they are available). Sources related to the topic in question but which offer no relevant knowledge or offer redundant knowledge have been skipped. These sources are ordered alphabetically according to the first author's surname or source name. The first date after the author/source refers to the date the original work was done, first copyrighted or first published. The title of the work follows. Finally, the location where to find such work is given, for example a webpage or a publishing company –which also includes relevant information such as country of publication, publication year, ISBN number, etc.
3. Who’s who. Author’s updated CV.

Dr. Jose D Pérezgonzález joined the School of Aviation at Massey University (New Zealand) in June 2006. Much of his research up to date has been with the Aerospace Psychology Research Group in Ireland, participating in several European-funded research projects. His research expertise ranges from aviation efficiency to health and safety management in organisational settings, and is especially interested in policy, reporting and auditing systems, health and safety management, and knowledge management systems. Nowadays, he is promoting the idea of Knowledge Management Editions™, and is founder and editor-in-chief of the Journal of Knowledge Advancement & Integration. He is also setting the basis for a Centre of Excellence for Aviation in New Zealand, at Massey University. Among the recent projects that he is developing are the following: an awareness campaign regarding aviation management, efficiency and safety in New Zealand; a meta-analysis of aviation safety legislation at international levels; and a meta-analysis of communication models in the available literature.

The author’s list of recent publications in regards to the awareness campaign on aviation management, efficiency and safety in New Zealand is as follows:


Recent publications in regards to the meta-analysis of aviation safety legislation are the following:


4. Which & where.

School of Aviation at Massey University, New Zealand. Updated CV:

The School of Aviation is part of the College of Business, based both in the Turitea Campus and the Milson Flight Centre at Palmerston North International Airport. It offers bachelor with honours in Air Transport Piloting and Aviation Management, and masters and doctorate degrees in Aviation Management. The School is relatively new (it was established in 1990) and its research curriculum is only starting to grow now.

A sample of the School’s recent publication list on aviation follows:


A sample of the School’s recent publication list on areas other than aviation follows:


