The Journal of Knowledge Advancement & Integration is available online since 1st September 2006. Volume 2007 Issue 1 is represented by the ruins of Pompeii (Napoli, Italy). Therefore, such cover identifies those online articles published in this issue.

Volume 2006 of the Journal of Knowledge Advancement & Integration was built up to serve as a practical example of the Journal’s offerings, possible contributions, and formatting. That task was continued with Volume 2007 Issue 1. Thus, contributions to the journal have been restricted, and contributors to Volume 2007 Issue 1 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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The Journal caters especially for longitudinal research projects (e.g. research projects spanning several years but able to produce publication-quality outputs at determined milestones within that time), macro-projects (e.g. those with funding from governments and other organisms, such as the European Commission), and integration and interpretation of previous knowledge in order to update it to the present time (e.g. an updated revision of safety management models, or a bibliography of stress contributions from a given year to date). Notwithstanding this, the Journal will also accept more idiosyncratic outputs whenever available (e.g. one-off research publications, book reviews, etc).

The Journal is thus open to contributions of quality from most areas of knowledge. In order to preserve the quality of the outputs, the Journal will accept contributions from researchers (with a masters degree on research or higher) and other established professionals by default. Contributions from other candidates (e.g. students) may be accepted on a per-case basis depending on the merit of the contribution (unless a researcher or professional figures as an author or the coordinator in that contribution). Contributors hold responsibility for the contents to be published and will need to sign and forward a note in this regard to the Journal, together with a copyright transfer note.

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Обзор Книги: “The Southwest Airlines Way”
Андрей Петрович [переводчик] (2006)

Школа Авиации, Massey Университет, Новая Зеландия.


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Резюме.

"The Southwest Airlines Way” синтезирует восьмилетнее исследование четырех Американских авиакомпаний проведенного Jody Hoffer Gittell. Однако название и фокус книги о Southwest Airlines поскольку эта авиакомпания продемонстрировала характерные методы которые как можно видеть улучшили показатели эффективности и качества. Эти характерные методы выведены из последовательных переменных модели координации отношений которые разработала Gittell в ее исследовании.

Десять следующих друг за другом переменных составляют модель координации отношений. Суть модели состоит из двух элементов в постоянном взаимодействии: взаимоотношения (определенные общими целями, знаниями и взаимоуважением), и общение (определенное частотой, временем, и направленностью на решение проблем. По утверждению Gittell любая организация может использовать эти десять практик для повышения уровня координации отношений между работниками этой организации. Повышение уровня координации отношений в свою очередь повысит производственные показатели (выраженные в эффективности и качестве)

"The Southwest Airlines Way” это более чем частный случай исследования Southwest Airlines, это так же важная основа для будущих исследований в тему координации отношений вне пределов авиационного сектора, так как эта книга уже предоставляет инструменты для этих исследований (например модель, методологию и результаты исследования). Эти будущие исследования, если следовать методике и подходу, которые использовала Gittell, будут далее информировать о действенности и ценности этой модели для более широкого круга организаций.

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Ключевые слова для поиска.
Координации взаимоотношений; Southwest Airlines; American Airlines, United Airlines, Continental Airlines; Авиация; Здравоохранение; Соединенные Штаты Америки.

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Общее заявление: Автор этой работы заверяет что это подлинная работа, отражающая понимание автором тем затронутых в книге. Информация содержащаяся в статье предназначена для получения знаний, а не для коммерческого, личного или других целей.

Заявление для читателей: Эта работа не была одобрена для чтения; поэтому некоторые грамматические, синтаксические или лингвистические ошибки могут быть обнаружены при чтении. Исходя из опыта, большинство читателей будут в состоянии понять написанное не смотря на ошибки; следовательно эти ошибки не должны задержать или каким-либо другим образом помешать публикации этих материалов потому как содержание и значения не искажены. Не смотря на предыдущее утверждение, эта работа была пересмотрена на предмет нахождения и исправления как можно большего количества ошибок. Читатель может извинить за те ошибки которые не были найдены.

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 been so captured.

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Обзор Книги: “The Southwest Airlines Way.”

1. Введение.
   Эта книга синтезирует восьмилетнее исследование проведенного Jody Hoffer Gittell на четырех Американских авиакомпаниях – American Airlines (два места были исследованы), United Airlines (три места), Continental Airlines (два места), и Southwest Airlines (два места). Книга сфокусирована на Southwest Airlines, в основном потому что она показала характерные методы - ведущие к координации отношений - что позволило этой компании стать лучшей по показателям эффективности и качества из названных четырех компаний. Gittell описывает в своей книге метод работы Southwest Airlines, степень в которой этот метод влияет на производительность и сравнивает производительность и координацию отношений других авиакомпаний по сравнению с Southwest Airlines.

Временной промежуток, в который проводилось исследование не указан четко, но как мы можем видеть книга была закончена в 2002 году, следовательно мы можем принять эту дату как время окончания работы Gittel за срок к которому исследование было закончено. Издательство McGraw-Hill приобрело права и опубликовало эту книгу в 2003 году в твердой обложке и переиздало в 2005.

2. Модель координации отношений.
   Возможно наиболее важное значение книги Gittell не в описании особенностей методов в Southwest Airlines, то есть их способ действия, а в способе в котором эти методы во взаимодействии друг с другом предоставляют базу для эмпирической модели координации. Модель координации отношений Gittell выведена из сравнительного анализа между Southwest Airlines и American Airlines (глава 3), и была разработана в деталях на ранней стадии исследования. Затем Gittell использовала эту модель как исходные данные для анализа степени координации отношений между четырьмя американскими авиакомпаниями и взаимосвязь координации отношений с продуктивностью при отправке рейсов.

В многих словах, Gittell смогла идентифицировать десять практик используемых в Southwest Airlines которые объясняют уровень координации отношений в авиакомпании. Эти десять практик были разработаны в Southwest Airlines с начала образования авиакомпании, и были использованы для управления уровнем координации отношений в этой компании. Когда Gittell сравнила Southwest Airlines с American Airlines, она обнаружила что за счет координации отношений достигается более высокие показатели эффективности и качества, показанные Southwest Airlines.

Однако, Gittell также обнаружила, что эти десять практик не были необъяснимо по природе, а только по выражению. Так что эти практики могут быть найдены в любой другой авиакомпании (или рабочем секторе), только отличающиеся способом, который они применены. Таким образом, модель координации отношений была изобретена.

Модель координации отношений относительно легко понять с самого начала. Gittell предложила, что модель эффективности и качества отправлений рейсов может быть объявлена качеством взаимоотношений поддерживаемых различными группами работников между собой (основанных на общих целях, общих знаниях и взаимовраждении), и качества общения между ними (основанное на частоте, продолжительности и направленное на решение проблем). Следовательно основа координации отношений базируется на повторяющейся общности между взаимоотношениями и общением.

Десять практик включают в себя последовательные переменные образуют модель: лидерство, заслуживающее доверие с заботливым отношением к другим, инвестиции в лидерство на передней линии производства, наем на работу и тренинг для повышения уверенности во взаимоотношениях, использование конфликтных ситуаций для налаживания взаимоотношений, сглааживание разрыв работы/семья, измеряя производительность в более широком масштабе, организуя работу гибкой в функциональном плане и добиваясь взаимозаменяемости работников, поддерживая партнерские отношения с профсоюзами и налаживая взаимоотношения с поставщиками.
Любая организация может применять эти практики для того чтобы улучшить уровень взаимоотношений между работниками. Более высокий уровень координации отношений в свою очередь повысит уровень производительности и количество отправленных рейсов в обоих категориях-качестве и эффективности.

Обоснованность модели было проверена посредством сравнения Southwest Airlines с остальными авиакомпаниями по отношению к этим десять практикам, а так же используя обратный анализ чтобы оценить как каждая практика влияет на производительность. Делая это, Gittell составила график всех девяти мест где проводилось исследование определила "как координация взаимоотношений привела к уменьшению задержек рейсов, снизила количество потерянного багажа, более быстрого возвращения самолета на базу для выполнения следующего рейса, и более высокой производительности продемонстрированной работниками" (p.25).

Кроме того, Gittell также информирует насолько хорошо модель координации отношений показала предсказуемое схожие результаты так же и в системе здравоохранения (глава 4).

3. Что вы получите приобретя эту книгу.

"The Southwest Airlines Way" это больше чем книга о Southwest Airlines. Когда вы купите эту книгу вы приобретете следующее:

- Краткую историю о том как Southwest Airlines были основаны и как они стали самой успешной авиакомпанией в мире (Глава 1, 2 & 17).
- Модель координации отношений (Глава 3).
- Методологию оценки координации отношений (Глава 3).
- Основное исследование как Southwest Airlines применяют координацию отношений для улучшения производительности особенно для сокращения времени обслуживания пассажиров при посадке в самолет и уменьшения времени для возврата самолета на базу (Глава с 5 по14).
- Сравнительные результаты (так же в виде исследования) о том как American Airlines, United Airlines и Continental Airlines применяют координацию отношений и влияние этого на их оперативную деятельность при отправлении рейсов (Главы с 5 по14).
- Результаты полевых исследований координации отношений в системе здравоохранения (Глава 4).
- Приложения со всеми относящимися к теме результатами.

Gittell также помогает понять как десять Southwest Airlines практик усиливают друг друга (Глава 15). Gittell полагает, что эти десять практик взаимосвязаны друг с другом, и они работают в унисон. В этом ключе, глава 15 помогает понять как ход вещей может быть нарушен, если одна из практик в ряду будет потеряна, когда все остальные будут на месте. Мое мнение однако,что Gittell находится за рамки доступной в настоящее время информации то есть в действительности она не убирала одну составляющую в то время когда продолжались использоваться другие. Следовательно выводы, сделанные в этой главе не подтверждены опытным путем, и следовательно не подкреплены доказательствами.

В главе 18, Gittell предлагает рекомендации о том как применять эти десять практик для управления координацией отношений в организациях.

Эти рекомендации подтверждены результатами исследования в двух областях с комментариями в этой книге, то есть авиация и здравоохранение. Не смотря на это читатель должен понимать, что применение этих практик не гарантирует того, что это будут действовать в вашей организации, особенно, если организация работает в другом секторе экономики неизвестны те на основе которых получены результаты.

4. Выводы и послесловие.

Книга Gittell отличная книга о управлении в авиации. Она включает исследовательскую информацию и практические советы в простой и доступной форме. Кроме того эта книга законченная по содержанию поскольку поскольку она представляет и описывает исследовательскую модель, которая может быть использована для сравнения двух показателей – степени координации отношений в различных организациях и ее влияние на производительность в этих организациях.
Книга так же представляет методологические инструменты, которые автор использовала в ее исследовании. Следовательно практикующие управленцы или исследователи могут воспользоваться этой методологией для перекрестной оценки модели координации взаимоотношений в разных местах, секторах экономики и разных культурах. И наконец, относящиеся к данной теме количественные результаты так же доступны, давая отличную возможность для сравнения результатов полученных Gittell с результатами будущих исследований.

В заключении, “The Southwest Airlines Way” это более чем частный случай изучения Southwest Airlines. Это так же важная ссылка для исследований, которые будут произведены позже на эту тему, будь то исследования академическими или практическими. Эти будущие исследования если пользоваться методикой и процедурами, использованными Gittell, будут и далее подтверждать действенность и важность этой модели для современных организаций.

5. Ссылки.
6. Источники для поиска информации о координации взаимоотношений и Southwest Airlines:

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

Amazon.com не является ресурсом информации на тему координации отношений как таковой, но позволяет читателю ознакомиться с отзывами, которые другие читатели разместили на книгу Gittell “The Southwest Airlines Way”, прежде чем покупать эту книгу. Это хорошее место чтобы получить второе и третье мнение, если таковые требуются.


Обзорение книги Gittell сделано в статье выше.

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

В настоящее время не очень много источников информации на тему координации отношений. Координация отношений похоже является моделью, которая не развивается вне сферы исследования проведенного Gittell – которое не привлекло особого внимания исследователей и практиков вне исследовательской группы. Есть несколько исследовательских трудов, опубликованных Gittell и ее исследовательской группой, и самый быстрый путь ознакомиться с этими исследованиями это просто зайти на веб-сайт нажав на ссылку публикации.


По этой ссылке вы попадете на страницу с публикациями авиакомпании Southwest Airlines и что было написано о них до 10 Марта 2004 года-последнее обновление по этой ссылке. Это удобный источник для получения дальнейшей информации для заинтересовавшихся читателей, кто хочет знать больше об этой авиакомпании.


Это скорей удобное пособие, чем источник знаний как таковой. Это пособие содержит инструкции для перевода книги Gittell в отредактированный обзор, с подчеркнутыми наиважнейшими идеями и выделенными основными мыслями. Подчеркнутые места составляют около 15% текста и предлагают сжатую версию книги, фокусируясь на моделях координации отношений и ее результатах для Southwest Airlines, тем не менее поддерживая общую связанность содержания книги в описании результатов достигнутых авиакомпаний. Выделенные места текста составляют около 3 % и предлагают чистое исследование Southwest Airlines. Таким образом это пособие поможет трансформировать книгу в более доступный источник информации предоставляя читателю сжатую, иерархически выстроенную информационную цепочку без потери любой важной информации. Это позволяет читателю (будь он практик или теоретик) быстро перечитать эту книгу фокусируя внимание на выделенных или подчеркнутых местах текста. Это такое же позволяет ему вернуться к нормальному тексту если дальнейшие прояснения необходимы.

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 наконец место, где работа может быть найдена, например веб-страница или издательская компания, которая в свою очередь включает страну, год публикации и ISBN номер.
7. Кто есть кто. Резюме переводчика работы.

Андрей Петрович инженер-механик по эксплуатации летательных аппаратов и двигателей закончил Государственный Иркутский Технический Университет в 1998 г. Имеет опыт работы в Гражданской авиации, в качестве борт оператора самолета An-12 накопил 4500 часов. В настоящее время проходит курс обучения в Школе Авиации Massey 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.

Лист недавних публикаций переводчика:


8. Кто и где. Школа Авиации в Massey Университете, Новая Зеландия. Резюме:

Школа Авиации это часть Бизнес Колледжа, базирующаяся в двух местах в студенческом городе 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.

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An analysis of the Australian Transport Safety Bureau’s mandatory reporting scheme for aviation occurrences

by Jose D. PÉREZGONZÁLEZ (2005)

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Abstract

The main objective of the Australian Transport Safety Investigation (TSI) Act 2003 and associated regulations is to improve transport safety. In the aviation sector, it does so by providing for the mandatory reporting of aviation safety occurrences, the independent investigation of such occurrences, the making of safety recommendations, and the publication of results for feedback and learning purposes. Legislation gets a real corporate body in the manner of the Australian Transport Safety Bureau (ATSB), which manages reporting and investigation in the manner specified by legislation. However, a question remains: do reporting and investigation actually fulfill the ultimately goal of legislation, i.e. aviation safety? The purpose of this paper is to assess how well the Air Safety Accident or Incident Report (ASAIR) mandatory scheme maps onto a generic occurrence management system for the reporting, investigation and correction of aviation occurrences. The results obtained depict both TSI legislation and ATSB’s operations as supporting an investigative system (which is coherent with the objectives expressed in the Act). However, it does not depict them as providing for or managing a comprehensive occurrence management system. Thus, the capability of the ASAIR scheme to improve aviation safety is yet unresolved.

Keywords

Reporting system; Occurrence management system; Safety investigation; Safety legislation; Australian Transport Safety Bureau; Aviation safety; Australia.
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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.
An Analysis of the Australian Transport Safety Bureau’s Mandatory Reporting Scheme for Aviation Occurrences.

1. Introduction.

The Australian Transport Safety Bureau (ATSB) is Australia’s prime agency for the independent investigation of civil aviation occurrences, be these accidents, incidents or safety deficiencies \((\text{ATSB}, \ 2005)\).

The Bureau supports three reporting schemes for aviation occurrences: a mandatory reporting scheme, a wildlife strike reporting scheme, and a confidential self-reporting scheme. A fourth reporting scheme is nowadays under consultation. The latter is also a confidential self-reporting scheme. In any case, these programs are enabled by three different sets of regulations; thus, their operations appear to differ accordingly.

Reporting and investigation procedures in Australia are enabled by specific laws. This particularity helps lay out the objectives and scope of each of above schemes with almost no ambiguity. More importantly, though, such particularity actually ensures that the system functions.

Both the mandatory reporting scheme and the wildlife strike reporting scheme are enabled by the Transport Safety Investigation Act 2003, and the Transport Safety Investigation Regulations 2003. This act and related regulations consider the mandatory reporting of aviation occurrences to the ATSB by using the Air Safety Accident or Incident Report (ASAIR) form. Furthermore, wildlife strikes can be reported either by using the ASAIR form or by using the Australian Aviation Bird & Animal Strike Reporting Form (ABAS). Thus, it is plausible to assume that the ATSB investigates relevant wildlife strike occurrences reported with ABAS in a similar manner than it does investigate any ASAIR occurrence.

The Aviation Self Reporting Scheme (ASRS) is enabled by the Civil Aviation Act 1988–Amended in 2003, and the Civil Aviation Regulations 1988–Amended in 2004. This scheme is geared towards the confidential self-reporting of contraventions to those regulations as well as contraventions to the Civil Aviation Safety Regulations 1998. The ASRS has its own reporting form and reporting procedures, and different responsible personnel within the ATSB. Results and findings from the ASRS scheme are sent to CASA, and are not transparent for assessment with the available information.

The new Report Confidentially scheme (REPCON) would be enabled by the Air Navigation (Confidential Reporting) Regulations 2005, still under consultation. This scheme is geared towards the confidential reporting of safety concerns regarding the broader segment of the aviation macrosystem, concerns which are not yet captured by the ASAIR, ABAS and ASRS schemes. REPCON also has its own draft reporting form and reporting procedures, and it seems that it will be managed by their own personnel, as well. REPCON is complementary to ASAIR and ASRS, and ought not to be used either for mandatory reporting or for reporting of legal non-compliances. Results and findings from the REPCON scheme are sent to CASA or any other relevant agency. At the time of writing this paper, the scheme is still under consultation, and is not yet transparent for assessment with the available information.

Therefore, this paper focuses on reviewing and analysing the ASAIR scheme. However, before moving forward with this topic, it is necessary to describe the systems hierarchy used in this paper, thus gaining understanding of the impact of the ATSB as a safety system within the Australian safety macrosystem.

Illustration 1 summarises such systems hierarchy. The emphasis is on the functional aspects of the system (how it operates) rather than on structural aspects (what it has to perform those operations).

The system level comprises organisations, such as the regulator, the Civil Aviation Safety Authority, etc. The focus of this paper is on the ATSB (aviation branch) as a system.

The ATSB system is composed by two subsystems: an education (training) subsystem and a reporting subsystem. The focus of this paper is on the latter, though, and the paper normally refers to it as the occurrence management subsystem (OMS). Within this subsystem, the reporting process and its operations will be analysed. The paper will also pay special attention to those system inputs and outputs that, still being part of the macrosystem, are nonetheless more related to the occurrence management subsystem.
At higher levels in this hierarchy of systems, the ATSB is thus considered a system within the overall Australian aviation safety management macrosystem. The ATSB participates in this macrosystem with other organisations located either in Australia (Australian aircraft operators, aircraft maintenance and repair organisations, regulators, etc) or outside Australia but still interacting with the ATSB (world regulatory agencies, such as EASA and the FAA; aircraft manufacturers, such as Airbus and Boeing; etc). The Australian macrosystem, in turn, is contained within the broader world aviation safety macro-macro-system.

2. Methodology.

This paper analyses and describes the functioning of the ATSB’s occurrence reporting subsystem from information contained in the available literature. Although this information is not extensive enough—either in content or variety of sources—for an evaluative analysis, it nonetheless has acceptable construct validity for a descriptive analysis of the subsystem and its performance, with at least one other independent source corroborating such description.

The analysis here presented describes ATSB’s occurrence reporting scheme ASAIR by mapping out such scheme against the generic occurrence management model (OMS) developed and validated in Europe within the ADAMS-2 research project (e.g. Pérezgonzález et al, 2003; see also Pérezgonzález et al, 2005).

As the available information is not extensive enough as for assessing how well the ATSB performs, the analysis here presented is a nominal one (Yes/No), suggesting which ASAIR operations are comparable to those in the OMS, according to reasonable evidence. Such mapping is indicative of such operations being performed by ASAIR. An operation that is actively managed by ASAIR will be so described, and will be represented with a colour-filled background in the accompanying illustration 2. An inactive operation, or one whose direct management by ASAIR is not supported by reasonable evidence, will be so described in the text, and will be represented with a blank background in illustration 2.
3. The operation of ATSB’s mandatory reporting scheme (ASAIR) as an occurrence management subsystem (OMS) for aviation safety.

The ADAMS-2 OMS is a generic process map that has been used for assessing the functional layout of the reporting scheme proposed by EASA Part-145 regulations (Pérezgonzález et al., 2005). It has also been used for assessing how well a similar scheme has been implemented by several European maintenance and repair organisations, as well as their effectiveness in managing safety reporting, and their conformity with both the regulated scheme and available knowledge on system management (e.g. Pérezgonzález, 2004; Pérezgonzález et al., 2004).

The generic OMS resulted in a series of 12 steps (i.e. operations) in the processing of reports: (1) reporting; (2) record management, assessment and preliminary investigation; (3) reporting to external organisms (including the Authority); (4) investigation of occurrences; (5) trend analysis; (6) reporting of findings, carrying out risks assessments and making recommendations; (7) implementation of recommendations and taking corrective actions; (8) monitoring of the implementation; (9) control of implementation for overdue corrective actions; (10) assessment of the implementation; (11) closure of the implementation; (12) feedback to reportees and organisational learning (Pérezgonzález et al., 2005).

3.1. Inputs, initiators & occurrence notification forms.

3.1.1. Inputs.

Inputs to the reporting subsystem are twofold. Firstly, there are those occurrences whose reporting is mandatory according to the Transport Safety Investigation Act 2003. Occurrences classified either as “Immediately Reportable Matters” -i.e. accidents and serious incidents- or as “Routine Reportable Matters” -i.e. incidents-, are mandatory, thus being the main inputs to the ASAIR subsystem. Details on reportable matters

Illustration 2: Mapping out of the ATSB’s ASAIR scheme within the ADAMS-2 occurrence management model.

![Illustration 2: Mapping out of the ATSB’s ASAIR scheme within the ADAMS-2 occurrence management model.](image-url)
can be found in the TSI Regulations 2003 (sections 2.3, & 2.4; see also Robbins, undated). In brief, these reportable matters cover aircraft operations (namely safety issues endangering flight operations), and its consequences (i.e. deaths, serious injuries, aircrafts going missing, etc).

Secondly, the ATSB also considers relevant inputs those safety deficiencies that could lead to future accidents. These are normally discovered by means of trend analysis of reported occurrences and research data (ATS, 2005).

### 3.1.2. Initiators

As stated in legislation, reporting initiators can be any of the following: aircraft crew members, aircraft owners and operators, air traffic controllers, rescue or fire brigade personnel, ground handling crew, maintenance engineers or any other person doing work on the aircraft, a staff member of CASA, and the operator of an aerodrome (TSI Regulations 2003, section 2.5).

All initiators are required to report to the ATSB any immediately reportable occurrence as soon as practicable -but before 72 hours of the occurrence-by telephone (TSI Act 2003, section 18.1; ATSB, 20051), followed up by a written report within 72 hours of the occurrence (TSI Act 2003, section 19.1). Any routine reportable matter only requires a written report within 72 hours of the occurrence (TSI Act 2003, section 19.1).

Initiators may be excused from the legal requirement to report if they have reasonable grounds to believe that another responsible person has reported the occurrence -however, they bear the burden of evidencing this in court, if so required (TSI Act 2003, section 18.2).

Written reports can be filled out online (the option preferred by the ATSB) or can be downloaded from the ATSB’s website and filled out offline, then sending it by post to the Bureau. In any case, reporting, be this by telephone or by post, is free of charge for the initiator.

### 3.1.3. Occurrence reporting forms

The content of occurrence reporting forms is regulated by the TSI Regulations 2003 (section 2.6), and so reflected in the ASAIR and ABAS forms available from the ATSB. In the following subsections the content of these two forms are reviewed and assessed according to the type of information they collect. Pérezgonzález’s model of safety management (2005) will be used for the purpose.

#### 3.1.3.1. The Aviation Accident or Incident Notification form (ASAIR).

This is the notification form for mandatory reporting of accidents and incidents. It can be filled out either online or offline (although ATSB prefers the former option to the latter). The form is neither anonymous nor confidential, as the information can be disclosed to third parties for the purpose of enhancing safety.

Information on the following areas is requested by the ATSB:

1. Personal identification of people involved both in the occurrence and the report. Personal particulars are asked about the reporter, aircraft crew and aircraft owner, and operator or renter. This information includes names and contact information, among other data. Furthermore, names and nationalities for both passengers seriously injured and fatalities are also requested.

2. Relevant information on the cabin crew (the human performer). The form requires identifying the type of licence held by cabin crew, as well as the position of the crew at the time of the occurrence. As contributory factors, the form requires to assess several human factor aspects that may have contributed to the occurrence. Only for accidents and serious incidents, the age and flying experience of the pilot in command are also requested.

3. Relevant information on the aircraft (the technological performer). The form requires information on aircraft registration and manufacturer, and on whether the following factors might have contributed to the occurrence: false indications, maintenance failure, component failure, or design failure. Only for accidents and serious incidents, the type, location and performance of the Emergency Locator Transmitter (ELT) are also requested.

4. Relevant information on wildlife (the animal performer). The form only requires identifying whether wildlife was involved in

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1 Telephone reporting according to the web document Aviation Safety. Accident and Incident Reporting, which is an interpretation of the TSI Regulations 2003 by the ATSB. The document was retrieved from http://www.atsb.gov.au/ on October 13th, but it is no longer available after the change to a new web layout. Still, telephone reporting remains as an instruction in the ASAIR reporting form.
the occurrence or not, and, if so, the size, species and amount of animals struck.

5. **Relevant information on environmental factors (the environmental performer).** The form requires information on the environmental factors surrounding the aircraft at the time of the occurrence, namely weather and light conditions.

6. **Flight operation (operation).** The form requires information on flight identification and the type of operation the aircraft was being used for. This information identifies the flight number, flight schedule, amount of people on board, and flight operation of the aircraft, as well as its use at the time of the occurrence.

7. **Occurrence and its consequences (outputs).** The form requires identifying and describing the occurrence, including spatial-temporal location, contributing factors, and consequences to people, aircraft and flight.

8. **Mitigation management (actioning).** The form requires information regarding the results of any investigation carried out on the occurrence by the operator or chief pilot, description of actions carried out by the operator to prevent recurrence, and, even, the reporter’s suggestions for prevention.

### 3.1.3.2. The Australian Aviation Bird & Animal Strike Reporting Form (ABAS).

Wildlife strike reporting may be possible through two forms: the accident or incident notification form (ASAIR), or the bird & animal strike reporting form (ABAS). The latter collects more information on wildlife than the ASAIR form, and requires less personal information, although it is not entirely anonymous for the reporter. There is no information available about its confidentiality.

Information on the following areas is requested by the ATSB:

1. **Identification information.** It identifies the aircraft, its operator and aerodrome, as well as the time of the occurrence. Further information requests direct and indirect estimates of the costs of the occurrence.
2. **Flight operation.** It requires reporting whether the pilot was warned of animals in the proximity, and in which phase of flight the strike occurred.
3. **Consequences of the occurrence (outputs).** It requires reporting how the strike affected the flight operation, the aircraft and the engines, leaving a blank box for other remarks.
4. **Relevant information on wildlife (the animal performer).** It requires describing the species, number and size of animals seen and struck, as well as the bird activity at the time of the occurrence.
5. **Relevant information on environmental factors (the environmental performer).** It requires reporting weather details, and bird control methods used.

### 3.2. Reporting management & preliminary investigation.

The ATSB collects both phone and written reports about mandatory occurrences. However, there is no much information available regarding the manner in which these reports are handled. On the one hand, there is no information regarding the type of data the ATSB collects on the telephone. On the other hand, there is no information whether the ATSB will contact initiators if they find missing or unclear data in the written report.

Upon collecting the mandatory reports, the ATSB decides on whether to investigate or not according to several criteria. Among these criteria are the following: legal compliance with investigation restrictions under the TSI Act 2003, section 22; the potential safety value to be obtained from the investigation; the public profile of the occurrence; available resources; and risks associated with not investigating (*ATSB, 2005*).

ICAO’s audit (2004) found that Australia had filed a difference against ICAO’s Annex 13, paragraph 5.1, which sets an obligation for the State of occurrence to investigate accidents involving aircrafts not registered in the State. There is no information available regarding whether the ATSB may use this criterion for deciding upon occurrences needed of further investigation. However, the ATSB itself responded to another of ICAO’s findings in the following manner: “Section 17 of the Transport Safety Investigation Act 2003 requires the ATSB to exercise powers in a manner consistent with Annex 13 (identified by Regulation) in the latest form that the Annex is in force” (p.21). Thus, it is reasonable to conclude that above difference has also being corrected (or, at least, that more information is needed before assuming it has not being so).

Selection criteria in regard to safety deficiencies are not specified in the online documentation, although it is possible that similar
factors to above account for the decision on which safety deficiencies to investigate.

Occurrences are categorised in a scale of one to five (ATSB, 2005). This categorisation then acts as a guideline for deciding on which occurrences will be investigated further (ICAO, 2004). Among priorities, fare-payer passenger operations take priority over freight operations, and these over priority over passenger operations take priority over freight operations, and these over recreational operations (ATSB, 2005; ICAO, 2004).

For the reader interested in knowing how well the ATSB performed in the year 2004-2005 in regard to this operation of reporting management and preliminary investigation, pages 13, 33 and 34 of DOTARS (2003) will be very informative.

3.3. Report to the authority.

The ATBS’s role in the macrosystem practically sets the Bureau highest in the Australian system hierarchy for aviation safety, together with CASA and AirServices Australia. Therefore, the ATSB may not have a functional Authority to which report, effectively being an independent system (the safety investigator) in the Australian aviation macrosystem. However, the 1999 Memorandum of understanding between the, then, Bureau of Air Safety Investigation (BASI) and CASA (the safety regulator) may still apply to the ATSB today. This memorandum required weekly feedback from ATSB to CASA regarding (a) occurrences, (b) notification of major defects found during investigations, (c) decisions whether or not the ATSB would investigate an occurrence, and (d) the scope of any investigation –this was to be done despite the fact that the ATSB’s powers of investigation take precedence over any other agency but the Australian Federal Police (CAS, 2005). Yet, there is not updated information on whether this operation still exists or not.

ICAO, however, can be considered as a reporting Authority for the purpose of this process. Namely, section 17 of the TSI Act 2003 requires that the ATSB acts in a manner consistent with Australia’s obligations under international agreements –which, in the case of aviation, means in accordance with Annex 13 to the Convention on International Civil Aviation (Chicago Convention 1944) (see also ATSB, 2005; and ICAO, 2004). There is not much information available in order to assess which obligations are those, except for reporting to ICAO’s Accident/Incident Data Reporting system (ADREP). Nor there is enough information to assess which input will the ATSB receive from ICAO after the international organisation uses such information “in developing the world accident statistics, determining safety indicators for aviation, analysing causal factors in accidents and in determining and prioritizing safety initiatives” -ICAO, 2004, section 5.1.3.6.

However, even if this reporting is at the mere level of information exchange, ICAO’s audit (2004) found that Australia had filed a difference against ICAO’s Annex 13, paragraphs 7.1 and 7.5, which sets an obligation to send preliminary reports and data reports to ICAO’s ADREP system. It appears that the main problems were due to the lack of feedback from ICAO to the ATSB in regard to the type and quality of the information reported by the ATSB (see ICAO, 2004, section 5.6.2.2).

3.4. Further investigation.

The main role of the ATSB within the Australian aviation macrosystem is that of investigating civil aviation accidents, incidents and safety deficiencies (CAS, 2005; ATSB, 2005). According to decisions taken during the operation of record management and preliminary investigation, a given occurrence may be investigated further by the ATSB or not. Sections 28 to 71 of the TSI Act 2003 deal with the legal bureaucracy of investigation. However, there is no formal information available either in the regulations or in the ATSB website regarding how an investigation is carried out. A good insight into investigation, however, appears to be McInnis’s editorial (undated), retrievable from the ATSB’s website. Some shortcuts have also being highlighted in ICAO’s audit report (2004, sections 4.5 and 5.5.3.3). Furthermore, ICAO’s audit also found that Australia had filed a difference to ICAO’s Annex 13, paragraph 5.4a, which sets an obligation for gathering, recording and analysing all available information.

In brief, the objective of these investigations is to establish causal paths leading to the occurrence, favouring a systemic modelling of the occurrence and its contributory factors (see, for example, ATSB, undated editorial). The ATSB’s goal and responsibility is that of investigating in order to prevent the recurrence of similar occurrences in the future, not that of apportioning blame or liability (which is the role of CASA’s investigations, in any case) -in fact, the ATSB actively avoids the use of the term “cause” in order to minimise confusion with legal causality (ATSB, 2005; CASA, 2005).
For the reader interested in knowing how well the ATSB performed in the year 2004-2005 in regard to this operation of further investigation, pages 33 and 35 of DOTARS (2005), and section 5.5.4.4. of ICAO (2004) will be very informative.

3.5. Trend analysis.

There is no information available from the Bureau either on how the ATSB analyses trends or on which trends are of relevance to it. However, this operation occurs, as the Bureau informs that safety deficiencies uncovered by trend analysis can trigger an investigation, and, thus, serve as inputs to the system (ATSB, 2005). Furthermore, this is also reported by ICAO (2004, section 5.6.2.4.1): “All data reported to the ATSB as notifications of accidents, serious incidents and incidents and as (mandatory) air safety incident reports are stored in the Occurrence Analysis and Safety Information System (OASIS). The OASIS also contains separate modules for the ASRS and for the Safety Deficiency Management System (SDMS).”

3.6. Reports & recommendations.

The ATSB will issue safety recommendations and safety advisory notices to different agencies, which would then be responsible for their implementation. However, the ATSB does not have power of implementation for its recommendations. Thus, it is up to the different agencies to which these recommendations are issued to deal with the matter. An important constructive aspect of the ATSB’s recommendations is that these recommendations may be made for safety deficiencies that the ATSB have found during the investigation of an occurrence, even if these have not been a significant contributory factor in the occurrence (ATSB, 2005).

A formal response to recommendations is requested within 28 days to within 60 days from a date specified by the ATSB (CASA, 2005; ATSB, 2005; ICAO, 2004). Only CASA and Airservices Australia have formalised memorandums of understanding to respond to the Bureau’s recommendations (ATSB, 2005). Although the Bureau requests a response within 60 days to all its correspondents, it is still possible that agencies other than CASA and Airservices Australia do not respond to such request.

Furthermore, the ATSB encourages the implementing agencies to take corrective actions (and report these to the Bureau) as investigations progress, instead of waiting for recommendations to be made (DOTARS, 2005). This approach has two consequences: on the one hand, implementing agencies are more proactive in taking positive action; on the other hand, this reflects back onto the ATSB, which needs to make lesser recommendations by the time of writing the final report - namely because the problems those recommendations would try to solve have already been corrected.

For the reader interested in knowing how well the ATSB performed in the year 2004-2005 in regard to this operation of reports and recommendations, page 33 of DOTARS (2005), and section 5.5.4.4. of ICAO (2004) will be very informative.

3.7. Action implementation.

The ATSB has no power to implementing its recommendations (ATSB, 2005). Therefore, the correction of deficiencies (and, thus, the restoration of the macrosystem to safety), depends on agencies other than the ATSB (e.g. regulatory authorities, aircraft operators, aircraft manufacturers, etc).

This does not necessarily mean that there is a lack of cooperation between those safety stakeholders and the ATSB for implementing such actions. As DOTARS (2005, p.34) puts it, “Aviation safety messages continued to be well accepted, with operators, manufacturers and regulators undertaking significant safety actions in cooperation with our investigations.”

3.8. Feedback mechanism for implementation.

There is no evidence to suggest that the ATSB seeks to monitor the implementation of its recommendations by third agencies. When it does, however, it seems to prefer a passive feedback mechanism. That is, there is an option in the classification of responses coming from the different implementation agencies to the ATSB, in which the Bureau may classify certain responses with the label “Monitor”. This classification means that the Bureau accepts the response given by the agency (namely, a response for implementation of corrections) and will monitor the proposed corrective actions until their resolution.
3.9. Control mechanism.

There is no evidence that the ATSB has any role in controlling the manner and pace in which corrective actions are implemented.

3.10. Assessment of implementation.

There is no evidence that the ATSB has any role in assessing the resolution of a corrective action, nor its real impact on aviation safety.

3.11. Closure of the occurrence.

The closure of occurrences normally happens at the time when the ATSB classifies the responses given by third agencies to its safety recommendations. It appears that this closure may occur when implementation has been finished for those responses classified with the label “Monitor”, but the information available is not yet clear in this respect. The available information, though, only allows for the reasonable conclusion that the ATSB’s closure of the occurrence management system happens independently of whether the occurrence itself has been satisfactorily resolved or not. Although this action is coherent with the investigative role of the ATSB (i.e. the process finalises once reports have been sent out and formal responses have been received), it does not ensure that the goal of the subsystem itself (i.e. preventing future recurrences) has been reached.

Other possible classifications of responses to occurrences are the following (ATS&B, 2005):

- Closed-accepted, when the response is satisfactory.
- Closed-partially accepted, when the response is only partly satisfactory but further correspondence is not warranted.
- Closed-not accepted, when the response is unsatisfactory but further correspondence is not warranted.
- Open, when the response does not provide a solution to some or all aspects in the recommendation. The Bureau will initiate further correspondence.
- No response, when no response has been sent from the action agency.

Above classifications may be restricted to safety recommendations, as the Bureau does not solicit response from safety advisory notices. Still, if response is not received in 90 days, the safety advisory notice will be closed after such period (ATS&B, 2005).


ICAO (2004) reports that the ATSB feeds back relevant individuals and organizations by providing them with hard copies of final investigation reports. For the most, these reports can also be accessed online.

The ATSB has a relatively well organised learning process, as the most relevant part of the information generated by the subsystem is made available through the internet. Therefore, it is possible to know how many occurrences have resulted in safety recommendations (some 438 aviation records at the time of finalising this paper) or safety advisory notices (some 53 records). The presentation of these records is managed in such a way that users are offered summary information of each recommendation, the date of issue, and the agency addressed to. A link provides the user with the option of accessing the full report, including the response given by the relevant agency, and the classification of such response.

Other information that is available to the user is a weekly summary of occurrences (including ATSB’s decisions whether to investigate them or not), and a set of diverse statistical results -which ought not to be confused with trend analysis- on how the macrosystem is performing.

For the reader interested in knowing how well the ATSB performed in the year 2004-2005 in regard to this operation of feedback and organisational learning, page 36 of DOTARS (2005) will be very informative.


This article has reviewed and analysed the ASAIR, or mandatory occurrence reporting scheme run by the ATSB (aviation branch). The main focus of this article has been that of mapping the ASAIR’s operation against a prototypical occurrence management model in order to assess how much that scheme manages occurrences within the broader context of the Australian aviation safety management macrosystem.

Operationally, the ATSB’s ASAIR scheme functions as a reporting and investigative subsystem for aviation occurrences, and not as an occurrence management subsystem (which would also include implementation of corrective actions and assessment of the recovery of the macrosystem to safety conformity in regards to particular occurrences). Namely because of a
strong support by legislation (TSI Act 2003, and TSI Regulations 2003), the operation of ASAIR is precise in specifying reporting matters, initiators, and content of the reporting forms. Occurrences are selected for deeper investigation according to specific criteria, being safety relevance and available resources but two of those criteria. The ATSB, then, provides information on investigated occurrences, the investigation findings, the recommendations made, and the response to these recommendations by implementing agencies. Furthermore, the ATSB drives feedback and recommendations by implementing agencies.

On the negative side of this analysis, however, the ASAIR scheme is not an occurrence management subsystem, as the ATSB has no power of implementation of its own recommendations.

Therefore, the Australian aviation safety macrosystem needs to rely on either formal memorandums of understanding between agencies or informal commitments and goodwill, in order to translate ATSB’s recommendations into implemented safety actions, thus maintaining or restoring the macrosystem to conformity and safety. This restoration to safety, however, or even the restoration of the macrosystem to safety conformity, is not yet ensured by the ASAIR scheme per se, while its contribution to it, although certain, cannot be easily estimated at present.

5. References.


ABAS – Australian Aviation Bird & Animal Strike reporting form (this is not a recognised acronym, but will be used here for simplicity)

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)

ADREP - Accident/Incident Data Reporting (ICAO)

ASRS – Aviation Self Reporting Scheme
ASAIR – Air Safety Accident or Incident Report form. This is the legal reference and acronym used by the TSI Act and Regulations, although the ATSB names it as Aviation Accident or Incident Notification (the legal term will be used in this paper, though).

ATSB – Australian Transport Safety Bureau, here mostly used to refer to its aviation branch. Sometimes the paper makes reference to the Bureau, instead of to the ATSB.

BASI – Bureau of Air Safety Investigation, antecedent of the ATSB.

CASA – Civil Aviation Safety Authority (Australia)

DOTARS – Department of Transport and Regional Services (Australia).

EASA – European Aviation Safety Agency.

FAA – Federal Aviation Administration (USA).

ICAO – International Civil Aviation Organisation.

OASIS – Occurrence Analysis and Safety Information System (ATSB).

OMS – Occurrence Management System (ADAMS-2).

REPCON – Report Confidentially Scheme (Australia).

SDMS – Safety Deficiency Management System (ATSB).

TSI Act – Transport Safety Investigation Act (Australia).

TSI Regulations – Transport Safety Investigation Regulations (Australia).
7. Sources of knowledge about Australian aviation:

The following web links will bring you to the websites of several important organisations dealing with Australian 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 Australia.

- **AUSTRALIAN SOCIETY OF AIR SAFETY INVESTIGATORS’ (ASASI) website**, retrievable from [http://www.asasi.org/index.htm](http://www.asasi.org/index.htm)
  ASSASI publishes online relevant papers on aviation safety in Australasia by researchers and other aviation professionals. It has a section for cabin safety, but the tab “Past papers” also collates seminar papers and presentations by investigators and researchers beyond cabin safety.

  This is the main website of reference for this paper. Several tabs are of relevance for aviation safety. Thus, feel free to navigate tabs such as forms, reports and grants, for more information on aviation safety related topics.

  This is the website of the aviation safety regulator.

  This is the official Government website for transport and regional services in Australia, within which the ATSB and CASA are contained. Several tabs are of relevance for aviation, of which “Transport Safety” –i.e. ATSB–, and “Aviation” –i.e. CASA– are the most informative.

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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.
8. Who’s who. Author’s updated CV.

Dr. Jose D Pérezgonzález joined the School of Aviation at Massey University (New Zealand) in June 2006. Previously he had 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, knowledge management systems, and communication models. 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 has also set the basis for a Centre of Excellence for Aviation in New Zealand, at Massey University, with two strands – Research & Application, and Junior research (for students)– already active. Among the recent projects 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.

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:


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 on aviation follows:


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Meta-case study: Lowndes’s tricks to talk to anyone

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 paper presents the results of a second published meta-case study that assesses the potential of Pérezgonzález’s (2006a) model as a generic framework that explains the processes of communication and interaction from a social perspective.

This paper assesses the goodness of fit of the ideas expressed in Lowndes’s book on how to talk to anyone (1999), into that communication model. The object of this paper is neither validating nor endorsing Lowndes’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 in this study consists of a content analysis of Lowndes’s book. The recommendations (tips and tricks) contained in the book are categorised according to the element in the communication model they best fit in.

The results thus obtained shows that Lowndes’s recommendations can be explained by that communication model. Namely, the gross of the recommendations are towards managing your end of the communication process (e.g. developing new skills, managing your attractiveness, and keeping the conversation going). However, a sizable chunk of recommendations also look into influencing the other person’s communication (e.g. influencing his acceptance of your communication, and his availability towards you).

Keywords

Modelling; Communication; Social interaction; Social relationships; Case-study; United States of America.
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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.
Meta-case study: Lowndes’s tricks to talk to anyone.

1. Introduction.

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

Leil Lowndes published “How to talk to anyone. 92 little tricks for big success in relationships” in 1999. However, the majority of those tricks are in regards to communicating better rather than managing long term relationships. Thus, her book will be taken as an example of communication.

Lowndes claims to have developed the tricks through personal experience and observation, as well as through receiving anecdotic feedback from businesspeople and seminar participants. Notwithstanding this, many of them are commonly found in other self-help books and basic research in communication and relationships.

Lowndes divides the 92 tricks into nine categories. Some categories group tricks according to their purpose (e.g. how to compliment somebody), while other categories group tricks according to specific situations (e.g. how to communicate on the phone). However, most tricks should work independently of the category they are. Therefore, in this paper all tricks will be considered as stand-alone recommendations for communicating better, independently of the categories in which the author put them initially.

This paper is interested in a meta-analysis of Lowndes’s ideas in order to gather data for testing and validating the model of communication introduced in an earlier paper (see Pérezgonzález, 2006a). It thus continues the research project there described, and represents the second case study in that project—the first case study can be found as Pérezgonzález (2006b).

A note to the reader may be necessary at this point: the object of this paper is neither validating nor endorsing Lowndes’s ideas. However, her ideas 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.

The methodology is similar to that in the first case-study (see Pérezgonzález, 2006b): a content analysis of the recommendations put forward by Lowndes, their clustering according to the main functions described in the theoretical model (see Pérezgonzález, 2006a), and an assessment of how well those recommendations fit into that model. Again, this is an exploratory research, and no specific hypotheses regarding the goodness of fit of Lowndes’s ideas to the model are advanced.

Two main questions will be answered by this content analysis. Firstly, do Lowndes’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 Lowndes’s ideas, the discussion will describe those elements in the communication model that Lowndes emphasises.

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

3. Results regarding the working up of your communication.

3.1. Your needs, beliefs, and strategy.

3.1.1. Your needs.

No needs are explicitly expressed in the book. Namely, you may assume that whatever needs of communication or interaction you may have, these can be fulfilled by using the right techniques.

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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 relate the most, thus simplifying analysis and interpretation without necessarily losing accuracy.
3.1.2. Your beliefs.

3.1.2.1. Basic assumptions underlying Lowndes recommendations.

Although there is not an explicit system of beliefs about communication, Lowndes’s techniques seem to be based on several main assumptions.

Firstly, a major assumption is that being successful in communicating is a skill. This skill can be summarised as having a “bag of tricks” that anybody can learn and use successfully to get whatever he wants in life (page x). Thus, the reader can choose among tricks whenever and wherever he needs them, rather than having to apply all of them all of the time. There are tricks more appropriate for certain interactions (e.g. when on the phone), but most tricks can be used in all social settings at any time.

A second assumption is that non-verbal communication is as critical as, or even more important than, verbal communication in everyday’s interaction. Body language (appearance, posture and movement) tells who you are, immediately. Furthermore, people are so overloaded with information nowadays that they just rely on first impressions, and won’t change it for a long time. Thus, it is important to get it right first time. Actually, everybody you meet makes a subconscious decision whether they want you in their live for how you present yourself (p.1-4). This personal presentation goes beyond how you present yourself visually. It also affects how you present yourself verbally as well (e.g. are you really saying “Welcome” or “Go away!”) (p.41). Therefore, tips for managing non-verbal communication cover a great proportion of the book.

Finally, a third assumption is that there are winners and losers in everyday social contexts. In general, 85% of one’s success in life is dependent on communication skills. Furthermore, everybody is continually assessing everybody else’s communication skills in order to differentiate the winners from the losers (p.87). Thus, a big chunk of the book is also directed towards the non-verbal communication skills of being a “big cat”.

3.1.2.2. Your skills and attitudes.

Some of the techniques proposed by Lowndes are more of an expression of practical beliefs and attitudes than proper techniques. One of those techniques (T33) recommends not teasing anybody as a matter of principle. That is, it recommends the adoption of that attitude towards communication in a semi-permanent or permanent basis.

Another of these techniques (T19) reflects Lowndes’s claim that the more the other person shines or talks about herself in a conversation (and the less you shine and talk about yourself in the same conversation), the more interesting (thus, attractive) you are to that person.

Another technique (T11) is a re-affirmation of the belief that it does not really matter what you say (other than unpleasant remarks) when you need to break the ice in a conversation, thus being more important the fact of doing it than what you really say.

A fourth technique (T73) reflects the belief of being proactive (the chooser) versus reactive in life. Then you will have all the best opportunities to meet the people that will have a real impact in your life.

Finally, a fifth technique (T92) expresses the belief that there is a scorecard that reflects winners’ hierarchy in society. If you want to succeed, you must watch and respect such scorecard, and act accordingly to your position in the hierarchy.

3.1.2.3. Your skills, aptitudes, habits, etc.

Several of Lowndes’s techniques address this element of skills and aptitudes when recommending strategies such as preparing yourself for communications that may occur in the future, or training yourself to be more competent at communicating, in general. Let’s explore this in more detail below.

Firstly, several techniques require the adoption of new routines for more successful communications. For example, planning your interaction and communication strategy before going to parties (p.247-250). Another technique (T60), to be used while on the phone, is to get used to translate into words and audible sounds the body language that you would normally use when in a face-to-face conversation.

Secondly, other techniques focus on gathering knowledge in order to be prepared for possible eventualities that could happen any day (although you cannot know whether they will occur or not). These techniques either will help you strike a
conversation anytime or will help you prevent loosing face in social situations. They are those of being aware of the day’s news (T23), gaining some knowledge from different fields (T31, T38, T39, T40, and T41), learning word synonyms (T26), preparing different answers to describe your job (T25), and being aware of cultural differences when dealing with foreign people (T42).

Thirdly, other techniques work towards gathering relevant information about a person at present which you could use for increasing your social attractiveness in future encounters with the same person (thus, recommending you to acquire some strategic skills in your normal communication). For example, find out about the single deeper aspirations of people so that you can build a compliment around those aspirations in the future (T59), or write down information about people in order to keep yourself updated about their lives (T75), as well as their likes and dislikes (T76).

Fourthly, other techniques focus on the interactive nature of communication, thus on the need for gathering continuous feedback and adjusting your communication strategy to the other person’s reactions (T8, T34, and T77, while T69 is to be used when on the phone).

Fifthly, other techniques recommend using indirect paths to increase your attractiveness to the target person, such as complimenting him through third persons, such as colleagues (T51) or his boss (T90). The hope is that these third persons will bring the news (together with the name of their source) back to the target person, thus helping increase your attractiveness in the eyes of that person, as well. Other indirect techniques recommend complimenting by implying rather than by directly doing so (T53), and complimenting “accidentally” (T54). Another indirect technique (T52) recommends becoming a “pigeon of goods news”.

Finally, some miscellaneous techniques within this element focus on rehearsing the use of some of the techniques before you actually use them (T9), on changing your phone messages frequently in order to promote a more professional image (T66), on preventing yourself from being ripped-off in certain business transactions (T43), on how to behave around celebrities (T36), and on recording and replaying phone conversations in order to grasp non-verbal clues that may have not been understood while on the phone (T70).

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

3.2.1. Assessing the attractiveness of the other person.

This element is not addressed in the book.

3.2.2. Assessing the availability of the other person.

One technique recommends checking the availability of the other person for a conversation (T65) when you phone them, instead of assuming they will simply be open to such conversation when they answer your call.

3.2.3. Contextual circumstances.

One technique (T72) recommends inspecting carefully the social context you are arriving to instead of rushing to the first familiar face you encounter. Proceeding in this fashion will allow you to gather important information about the people that is present in that social context, as well as the conditions of the context itself.

3.2.4. Your personal circumstances.

One technique (T6) is relevant to this element, as it recommends thinking of newly introduced people as old friends. This way, you “trick” your body into following your imagination, thus favouring a more relaxed interaction with that person.

3.3. Deciding on communicating.

3.3.1. Deciding not to communicate.

There are three techniques where Lowndes explicitly recommends not communicating…with serious intent. She recommends not going for serious talk at parties (T83), at the dinner table (T84), or during chance encounters (T85).

A note of clarification may be needed, however. Although Lowndes introduces them as techniques for increasing your social attractiveness as a “big cat”, the underlying logic of those situations is that “big cats” expect those situations to be “safe heavens” were they can relax and enjoy. Thus, you could expect that they will not be “happy” about talking about serious matters in those occasions. Furthermore, the logic could be stretched a bit more to include not communicating
such serious matters even indirectly. Thus, managing your attractiveness or availability for such purpose should also be out of question. Basically, Lowndes recommends not communicating such matters at all.

This above does not necessarily presuppose that you avoid the person or just walk away. You could use communication as a way of building rapport or relationships. This is, effectively, different from communicating (directly or indirectly) your initial interests. Thus, by so doing, you are not communicating the latter—which is what Lowndes recommends—even when you are working out possible rapport at a parallel level.

A further note in regards to not communicating is also necessary. There are several instances in which Lowndes recommends not saying or signalling something (e.g. not showing your skeletons –T22). However, in all those instances the aim is communicating something (e.g. a more positive image of yourself). Thus, those techniques shall not be considered within this category.

3.3.2. Deciding for an indirect communication strategy.

3.3.2.1. Managing your attractiveness.

The majority of techniques in Lowndes’s book are focused on increasing your social attractiveness (actually, most techniques will increase your social attractiveness directly or indirectly, anyway). Ideally, these techniques will make others feel more at easy with you, and make them more prone to communicate with you.

A first group of techniques can be considered as focused on mainly increasing your personal attractiveness by working on “your side of the equation”. For example, the way you present yourself (T4), talking about yourself in positive terms and avoiding any negative information (T22), using the correct verbal and non-verbal language to give the impression of being a social winner (T7, T27, T30, T32, and T37), and leaving attractive phone messages on the other person’s mailbox so that you ensure he will call you back (T67). Other techniques in this group would be those recommendations about correcting your mistakes and pumping your image in the process (T88).

A second group of techniques are focused on increasing your social attractiveness by making the other person “shine”—as they feel pleased with themselves, they will want to come back for more. Some of these techniques focus on providing a warm welcome or encounter (T1, T2, T3, T5, and T29; while T62 is to be used for the same purpose while on the phone). Other techniques focus on making the other person feel well about himself by complimenting him (T55, T56, and T58). Another set of techniques are focused on protecting the other person’s self-image (T24, T78, T81, T82, and T89), or on indirectly pampering it (T91). Other technique focus on showing concern for the other person’s interests (T80).

3.3.2.2. Managing your availability.

Two techniques seem to be more relevant for this element. One of these (T71) recommends not eating (or even drinking) at social gatherings in order to prevent giving away the signal that you are unavailable because you are eating (or you do not have enough free hands to shake hands with the person who wants to talk to you). The other technique (T74) recommends using a body language that conveys that you are both available and receptive.

3.3.3. Deciding for a direct communication strategy.

Lowndes also offers some recommendations for helping you out once you have decided to approach the other person and communicate with him in a more direct manner. Three elements in the model are considered by Lowndes: ice-breakers, conversation keepers, and conversation closings.

3.3.3.1. Ice-breakers.

The ice-breaking techniques recommended by Lowndes to help you out in the crucial first moments of starting a conversation can be considered as preparatory techniques, such as matching the other person’s mood before breaking the ice (T10), and looking for things or information that you can use to start a conversation (T12, T13, T14, and T21).

3.3.3.2. Responding to rejection.

3.3.3.2.1. Fly-away techniques.

This element is not addressed in the book.

3.3.3.2.2. Try again techniques.

This element is not addressed in the book.

3.3.3.3. Working out the relationship.

3.3.3.3.1. Conversation keepers.

Regarding conversation keepers, Lowndes gives the following:
Some of the techniques can be considered as providing helpers to the other person for him to keep questioning you, thus keeping the conversation going until both of you feel more comfortable with each other. Such helpers are in the way of you providing more information than requested so that the other person can use the extra information for subsequent questioning. This pattern is especially relevant when talking about your town city (T15) or profession (T16), or even when introducing someone to somebody else (T17).

Another technique (T18) is about searching for keywords in the other person’s talk, so that you can identify and use in the conversation the topics that are of greater interest for such person.

Another set of techniques are more like technicalities to keep the other person talking. These techniques refer to parroting the other person’s speech (T20), or re-taken a conversation when it has been interrupted by some unforeseen circumstance (T79). Another technique (T61) is aimed to keep the levels of attention of the other person by using his name frequently –in theory, the conversation can continue for longer the more alert he is, thus the logic of the technique.

Finally, two techniques (T47, and T48) recommend using verbal empathisers to create a feeling of smoothness in the conversation, and keep it going.

3.3.3.3.2. Conversation closings.

This element is not addressed in the book.

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.

Two of Lowndes's techniques can be categorised as rejection techniques. The one is applying the assertiveness technique called the broken record (T35). Lowndes, however, uses it for rejecting (or, rather, not accepting) a given topic of conversation, instead of as an assertiveness technique.

The second technique (T63) is for secretaries to use while on the phone. The technique is a screening procedure for rejecting unwanted callers without upsetting them.

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

As communication is interaction, there is also the possibility for working up the other party, instead of yourself –or despise it. That is, communication and interaction can go towards managing –or even manipulating– the other person’s behaviour in order to facilitate communication.

4.1. Their needs and beliefs.

One of Lowndes techniques (T68) works at the level of influencing the other person’s beliefs about you. Recommended to be used while on the phone with an intermediary (e.g. a secretary), who may filter you out and not redirect you to the target person. The technique recommends using familiarity terms when referring to that target person in order to “manipulate” the intermediary into believing that you know that person in familiar terms. This may prevent you being filtered out, or may give you a quicker connection.

4.2. Their attractiveness, availability, context and expectations of approachability.

4.2.2. Their availability.

Two techniques are more strategic in regards to managing the other person's availability. One (T86) recommends letting the other person talk first until they are “emptied out” of themselves, thus being more receptive to your needs. The second technique (T87) is more apt for people who communicate with you in an emotional state. If you empathise with them emotionally, they will calm down, and you can get the underlying facts they are communicating much easily.

4.2.3. Their context.

One technique (T64) is strategically directed towards “managing” the social environment of the other person whenever you cannot reach him directly. The technique suggests saluting the spouse or secretary while using the phone, especially when the other person is not available and you need to leave a message. Obviously, it is assumed that you are interested in talking to that third person (a man, according to Lowndes), not to his secretary or to his spouse. However, because secretaries and spouses are close enough to the
person you want to talk to, managing your attractiveness in the eyes of these people may tilt the balance in your favour or against you when they pass the message (this being the strategic reason of why saluting them in the first place).

4.3. Their decision on communicating.

4.3.3. Their approach.

One technique (T12) recommends you to wear something distinctive, unique or strange, which the other person could use as an ice-breaker when approaching you. This technique, thus, manages the potential approaching of the other person by way of facilitating an ice-breaker. The technique, however, is neither signalling nor a direct communication technique. It is only a potential helper for others who have decided to approach you (not necessarily because of what you are wearing), and who recognize or decide to use what you are wearing to break the ice.

4.3.4. Their acceptance.

A set of techniques are meant to make the other person feel more comfortable with you, thus enhancing your chances of being accepted or preventing an early rejection. Underlying these techniques is the logic of “putting a show” for the other person. This doesn’t mean the techniques are necessarily manipulative, but the focus is on “putting such a show”, rather than on managing your own beliefs, skills or decisions.

One technique (T28) –which can also double as a conversation keeper– recommends using the word “you” instead of “me”, as it may help the other person to personalise better what you are saying, thus accepting it more readily. A second technique (T57) recommends praising people as soon as they finish a feat, even if you have to lie in your praise! The remaining techniques (T44, T45, T46, T49, and T50) recommend creating a feeling of similarity between you and the other person by imitating their verbal and non-verbal communication, and creating rapport or familiarity.

5. Items that do not fit the model.

None.

6. Discussion.

6.1. Results of this study.

As introduced earlier, two main research questions needed to be answered by this meta-analysis. Firstly, do Lowndes’s recommendations fit into Pérezgonzález’s (2006a) communication model? Secondly, are there any ideas that the latter model cannot explain?

In regards to the first research question, Lowndes does not explicitly offer a model of communication. However, the results show that her recommendations fit into Pérezgonzález’s framework.

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

Thus, it appears reasonable to conclude that Lowndes’s ideas fit nicely (that is, can be well categorised) into Pérezgonzález’s communication model.

6.2. Re-interpretation of Lowndes’s ideas.

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

Illustration 1 schematises the elements in Pérezgonzález’s model seemingly covered by Lowndes in her book. The upper half of the model –blue boxes– represents the managing of your own communication. It can be appreciated that Lowndes gives recommendations for all but five 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 69% of your participation in the communication process (i.e. 11 out of 16 operations).

Furthermore, Lowndes also covers five elements in 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 affecting the beliefs of the other person, facilitating his availability to you, influencing his context, facilitating his approaching (icebreaking), and influencing his acceptance of your approach. This represents 31% of the other person’s participation in the communication process (i.e. 5 out of 16 possible operations).
Overall, there is a final count of 97 recommendations in Lowndes’s book (the result of 92 techniques, a double count of technique 12, plus three assumptions and a skill not expressed as techniques). A breakdown of those techniques per operational category means that 45% of the recommendations (i.e. 44) are dedicated to communicating (including direct communication and signalling); 37% of the recommendations (i.e. 36) are dedicated to strategy (including needs, beliefs and skills); 12% of the recommendations (i.e. 12) are dedicated to influencing the other person’s communication (at any level); 3% of the recommendations (i.e. 3) are dedicated to assessing approachability (including assessment of attractiveness, availability, context and personal information); and 2% of the recommendations (i.e. 2) are dedicated to responding to the approaches of others.

Furthermore, a breakdown of the same 97 recommendations according to specific elements in the communication model, shows that there are six main elements that Lowndes’s techniques develop with greater detail. Firstly, developing new skills and aptitudes, with some 29% of the recommendations (i.e. 28) dedicated to it. Secondly, managing your attractiveness (as a sender), with some 26% of the recommendations (i.e. 25) dedicated to it. Thirdly, conversation keepers, with some 9% of the recommendations (i.e. 9) dedicated to it. Fourthly, influencing the other person’s acceptance, with some 7% of the recommendations (i.e. 7) dedicated to it. Fifthly, ice-breaking, with some 5% of the recommendations (i.e. 5) dedicated to it. Finally, adopting new practical beliefs and attitudes, with some 5% of the recommendations (i.e. 5) dedicated to it.

This breakdown allows the following conclusion: Lowndes’s implicit communication model is focused on developing your own communication (versus influencing the other person’s). Eighty five percent of your efforts should go both onto managing your beliefs and skills before an interaction (namely your habits and attitudes towards communication), as well as onto managing your own interaction (namely, managing your attractiveness, conversation keepers, and ice-breakers). Still, a sizable chunk of your efforts could also go onto influencing the other person’s interaction (especially his acceptance of your communication, and his availability to your approach).

Illustration 1. The communication process according to Lowndes (1999).
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. Thus, no changes are recommended.

7. Conclusion.

Lowndes’s book represents the second published meta-case study that assesses the potential of Pérezgonzález’s model as a generic framework for explaining the processes of communication and interrelationships from a social perspective. The results obtained with this second meta-case study continue to support such potential, as did the previous case study (see Pérezgonzález, 2006b).

8. References.


9. Sources of knowledge about communication models:

The following sources of knowledge do not pretend to be either exhaustive about existing information on 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.


  Journal-KAI is the target journal for publishing research progress on the testing and validation of the communication model in this article. Thus, it represents an important source of knowledge for the researcher interested in such progress.

- **LEE Dick (2006).** Developing effective communications. Retrievable online 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).


  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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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.

A recent list of the author’s publications in other fields than aviation follows:


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 Turitea Campus and 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. The School not only researches on aviation, but on other topics of interest to its staff, as well. The following list of recent publications shows research by the School not linked to aviation:


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Una revisión del sistema de auditorías propuesto por EASA Parte-145

por Jose D. PÉREZGONZÁLEZ [traductor] (2007)

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Resumen

El requerimiento de implementar un sistema de calidad en todas las organizaciones de mantenimiento de aeronaves aprobadas bajo la legislación de la Agencia Europea de Seguridad Aérea (EASA), regula la auditoría del cumplimiento de la normativa tanto en lo relativo a los estándares técnicos de las aeronaves y sus componentes, cuanto en lo relativo a la calidad de los procedimientos organizacionales. Con ello se asegurarían por una parte la aeronavegabilidad de las aeronaves y por otra unas buenas prácticas de mantenimiento, lo cual supondría la seguridad de las aeronaves, su tripulación, sus pasajeros y el público en general. Dicho requerimiento no ha sido modificado substancialmente desde, al menos, el año 2001, lo cual subraya la madurez relativa de la legislación en este aspecto. Un sistema de auditorías es una parte necesaria e integral del macro-sistema de retroalimentación de las organizaciones, y juega un papel crítico a la hora de capturar y corregir riesgos antes de que éstos causen un accidente. Es decir, los sistemas de auditoría son importantes a la hora de gestionar tanto la navegabilidad como la seguridad aéreas.

Si bien la legislación actual en lo referente a auditorías está relativamente madura y es bien aceptada por las organizaciones de mantenimiento, aún existen oportunidades de mejora. Por tanto, este artículo tiene dos objetivos: el conducir una revisión crítica del sistema de calidad propuesto por EASA por medio de una comparación del mismo con un modelo prototípico de gestión de auditorías, y ofrecer una serie de requerimientos nuevos para promover un sistema de gestión de auditorías efectivo dentro del ámbito de EASA Parte-145.A.65 (o, más bien, de un apartado nuevo y específico para tal fin, a ser denominado Parte-145.A.67).

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Palabras clave

Sistemas de calidad; Sistemas de gestión de auditorías; EASA Parte-145; JAR-145 Emmienda 5; Organizaciones de mantenimiento aprobadas; Europa.
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Una revisión del sistema de auditorías propuesto por EASA Parte-145.

1. Introducción.

Este artículo traduce al español la versión inglesa del mismo publicada en el año 2006 (véase Pérezgonzález, 2005a). Asimismo, continúa la tarea comenzada con otro artículo anterior, el cual exploró el sistema de notificación de incidencias propuesto por EASA Parte-145 (véase Pérezgonzález et al., 2005). Siguiendo una lógica y estructura similares a este último artículo, el que aquí nos ocupa explora el sistema de auditorías propuesto por la misma legislación (véase DO L 315 de 28.11.2003).

EASA Parte-145.A.65(c) legisla de manera específica el sistema de calidad que deben tener las organizaciones de mantenimiento aprobadas (OMAs) para realizar tareas de mantenimiento y reparación en aeronaves. Sin embargo, otros apartados en la legislación –los cuales se discutirán más adelante–, también parecen ser de importancia a la hora de legislar dichos sistemas de calidad.

Según EASA Parte-145.A.65(c), el sistema de calidad consiste de dos partes: auditorías independientes [Parte-145.A.65(c)(1)] y un sistema de retroalimentación para informar al personal responsable de la organización de la corrección oportuna y adecuada de cualquier problema encontrado por las auditorías [Parte-145.A.65(c)(2)].

Este sistema de calidad mejora cuando los modos de cumplimiento aceptables (AMC – acceptable means of compliance) son tenidos en cuenta. En primer lugar, AMC 145.A.65(c)(1) define el concepto de la auditoría independiente, su objetivo y su extensión, incluyendo el muestreo de productos, las condiciones y calendario de las auditorías, y el personal responsable de las mismas. En segundo lugar, AMC 145.A.65(c)(2) clarifica el rol del sistema de retroalimentación de la calidad tanto en su función de informar al personal responsable de los niveles de cumplimiento organizacionales, como en su función de gestionar la implementación de las medidas correctivas oportunas.

El sistema de calidad de EASA [especialmente cuando AMC 145.A.65(c) se toma en cuenta] contrasta relativamente bien con el sistema de gestión de auditorías (SGA) diseñado y validado dentro del proyecto ADAMS-2 (véase Pérezgonzález et al., 2003; Baranzini et al., 2002; Corrigan et al., 2002).

El sistema de calidad puede ser definido como un sistema de gestión funcional, el cual, según Pérezgonzález (2005b), ofrece las siguientes tres características principales: primero, un grupo de operaciones y tareas que se interrelacionan y coordinan entre sí para formar una unidad mayor (el sistema); segundo, este sistema transforma una serie de inputs en determinados outputs; y, además, gestiona tanto dicha transformación como la efectividad del sistema mismo (esto es la gestión); finalmente, la descripción y el análisis del sistema se centran en las funciones y operaciones del mismo, no en sus características físicas o procedimentales (esto es la perspectiva funcional).

Esta perspectiva funcional aplicada al sistema de auditorías (SGA) desarrollado dentro del proyecto ADAMS-2, estuvo basada principalmente en tres fuentes de información: los requerimientos legales para OMAs vigentes durante el proyecto, los resultados empíricos obtenidos en el proyecto en relación a las prácticas de auditorías de cuatro OMAs europeas, y el soporte teórico y empírico de la literatura científica de sistemas e ingeniería de procesos (e.g. von Bertalanffy, 1968; Cortés et al., 1974; Rummler & Brache, 1995; Skyttner, 1996). Una vez que la investigación fue concluida, el modelo de auditorías fue validado en otras dos OMAs independientes del proyecto ADAMS-2.

El modelo SGA es genérico y sirve para contrastar los sistemas de auditorías de diferentes OMAs, y así evaluar el diseño funcional de los mismos, su efectividad en gestionar las auditorías de seguridad, y su nivel de cumplimiento con las regulaciones de EASA. A partir de dicha evaluación se pueden generar tanto

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1 Los modos de cumplimiento aceptables han sido publicados por EASA como ED Decision No 2003/19/RM of 28/11/2003. Sin embargo, no parece que el Ministerio de Fomento haya realizado una traducción al español de los mismos. Por tanto, dichos modos de cumplimiento son tenidos en cuenta de acuerdo con la versión inglesa de los mismos.

2 Si bien, durante el proyecto ADAMS-2, el SGA contrastaba el cumplimiento de las OMAs con los requerimientos del JAA.
recomendaciones para mejorar el sistema, como indicadores de progreso para evaluar la efectividad de las mejoras.

El modelo SGA (véase ilustración 1) contempla doce elementos (u operaciones): (1) auditoría; (2) gestión de documentos, evaluación de contenidos e investigación preliminar; (3) notificación a terceras partes (incluida la autoridad competente); (4) investigación en profundidad; (5) análisis de tendencias; (6) informe de problemas, evaluación de riesgos, y desarrollo de recomendaciones; (7) implementación de recomendaciones y corrección de problemas; (8) observación del progreso en la implementación; (9) control de retrasos en la implementación; (10) evaluación de la corrección del problema; (11) cierre de la implementación; y (12) retroalimentación y aprendizaje organizacionales.

Si se comparan los requisitos legales de EASA referidos al sistema de calidad con el modelo SGA, la mayoría de dichos requisitos [especialmente si se tiene en cuenta AMC 145.A.65(c)] son semejantes a las operaciones del modelo. Además, dichos requisitos han permanecido prácticamente constantes desde, al menos, el año 2001 (JAR-145, Amendment 4), lo cual parece indicar que la legislación al respecto es lo bastante madura en, y está bien aceptada por, el sector de mantenimiento aeronaval. Es por ello que el resto de este artículo se centra en recomendar pequeños cambios que sirvan para crear una legislación base más comprensiva en cuanto a los sistemas de auditorías.

Tres aspectos principales van a ser discutidos en mayor profundidad. El objetivo es el de mejorar la comprensión e implementación de la ley actual, así como el sentar las bases para un sistema funcional capaz de gestionar auditorías de manera efectiva. El primer aspecto es el de esclarecer el rol y alcance del sistema de calidad, así como proponer un apartado específico y completo para los sistemas de auditorías. El segundo aspecto es el de esclarecer los aspectos relevantes que son necesarios para que la ley pase de regular un sistema de auditorías a regular un sistema de gestión de auditorías (SGA). El tercer aspecto es el de llevar a cabo una evaluación del sistema propuesto por la ley actual, y proponer recomendaciones de mejora del mismo con el fin de asegurar que dicho sistema sea efectivo en las organizaciones de mantenimiento. Estos tres aspectos serán desarrollados progresivamente en los puntos siguientes.

2. Rol y alcance del sistema de calidad.

Tanto el rol como el alcance del sistema de calidad son un tanto confusos en EASA Parte-145. Es decir, la regulación per se no provee una definición del significado o alcance del sistema de calidad. Si lo hace AMC 145.A.65(c)(1), el cual especifica los dos objetivos primordiales del sistema: asegurar que la organización entrega un producto seguro, y asegurar que la organización permanece en cumplimiento con los requerimientos legales de EASA Parte-145. Sin embargo, el concepto de “sistema de calidad” parece referirse a dos aspectos diferentes dentro de la misma ley: por una parte, a prácticas de calidad (tales como las auditorías independientes); por la otra, a una filosofía o cultura de calidad más generalizada y a nivel organizacional (a ser reflejada en las políticas de seguridad y calidad de la empresa). Veamos ambos aspectos con mayor detalle.

Por una parte, EASA Parte-145.A.65(c) refleja cuestiones prácticas del sistema de calidad. Es decir, específica que el rol del sistema es el de supervisar el cumplimiento de la normativa tanto en lo que atañe a los estándares técnicos de la aeronave y sus componentes, como en lo que atañe a los procedimientos organizacionales. El objetivo final es el de asegurar un mantenimiento adecuado así como la aeronavegabilidad del producto final. Dicho rol supone también que cualquier información sobre problemas encontrados es retroalimentada tanto al personal responsable de corregir dichos problemas como al personal responsable de asegurar que cualquier corrección es llevada a cabo de manera oportuna y adecuada. AMC 145.A.65(c) provee más detalles para con ese rol.

Otras indicaciones prácticas del sistema de calidad puede hallarse en otros apartados de la ley. Así encontramos que un segundo rol del sistema es el de supervisar el desempeño mismo del sistema de calidad (es decir, el desempeño de las auditorías independientes y de la retroalimentación) con el fin de asegurar un funcionamiento de seguridad efectivo y eficiente [Parte-145.A.30(c)]. Un tercer rol del sistema de calidad es el de expedir autorizaciones de certificación para el personal de la empresa [Parte-145.A.35(i)].

Por otra parte, Parte-145.A.75(b) describe que uno de los privilegios de las OMA es el de “concertar el mantenimiento de cualquier aeronave o elemento […] con otra organización
que trabaje con arreglo a su sistema de calidad”. Si bien podríamos entender que dicho sistema de calidad hace referencia a las auditorias independientes y a los procesos de retroalimentación, es mucho más lógico el entender que dicho punto hace referencia a la política general de la organización en cuanto a calidad; es decir, a “los procedimientos y el sistema de calidad establecidos por la organización según los apartados 145.A.25 to 145.A.90” [véase Parte-145.A.70(12)]. Esta definición general del concepto “sistema de calidad” es también soportada por AMC 145.A.75(b). En este sentido general, la referencia al sistema de calidad parece apuntar a la filosofía o cultura de calidad de la organización tal y como aparece reflejada en sus políticas y procedimientos –o memoria de la organización de mantenimiento, MOM– (los cuales, por supuesto, incorporan aquellas políticas y procedimientos más específicos relacionados con los procesos de auditorías y retroalimentación).

Por tanto, la definición del sistema de calidad tiene un sentido concreto cuando hace referencia específica a las prácticas de calidad, normalmente restringidas a un departamento (ej. al departamento de calidad) como responsable de la gestión de dichas prácticas. Por otra parte, dicha definición tiene un sentido general cuando hace referencia a la filosofía o cultura de calidad de la organización y empresas subcontratadas. Este sentido general, por tanto, ni se halla restringido a un solo departamento ni restringe la calidad simplemente a la inspección de productos particulares.

Por tanto, si aceptáramos que el sistema de calidad abarca esa filosofía o cultura de calidad de la organización, entonces, y para evitar confusiones, sería necesario el usar un concepto diferente para referirnos a las prácticas concretas de auditoría e inspección de EASA Parte-145. He aquí que este artículo propone el concepto de “sistema de auditorías” para hacer referencia a la gestión de dichas prácticas. Una segunda propuesta es la de crear un apartado específico e independiente en Parte-145 para describir dicho sistema de auditorías y, así, diferenciarlo claramente del sistema de calidad. Esta separación parece necesaria para reforzar la idea de que el sistema de auditorías es otro proceso más dentro del sistema de calidad, y que la calidad organizacional no se halla necesariamente restringida a la mera auditoría de productos y procesos, y a la retroalimentación de información sobre los problemas encontrados por dichas auditorías (de hecho, la notificación de incidentes y accidentes debería ser considerada parte del sistema de calidad organizacional, así como lo es el expedir autorizaciones de certificación [Parte-145.A.35(ij)]). En resumen, la propuesta defendida en este artículo es la de mantener el apartado Parte-145.A.65 para legislar el sistema de calidad (en su sentido general), a la vez que crear un nuevo apartado –llamémoslo Parte-145.A.67– para legislar el sistema de auditorías. Exploraremos esta propuesta en detalle en los siguientes párrafos.

2.1. Un apartado específico y completo para el sistema de calidad.

El rol del sistema de calidad es el de supervisar la organización para asegurar la aeronavegabilidad de los productos que la organización repara, sean estos aeronaves o sus componentes. Este sistema de calidad se comunica con terceras organizaciones (ej. la autoridad competente y los operadores aéreos) con el mismo propósito.

El alcance del sistema incluye regulaciones tanto explícitas como implícitas en la ley actual. Es decir, el sistema de calidad incluye actividades tales como inspecciones (llevadas a cabo por los departamentos de producción) y auditorías (llevadas a cabo por el departamento de calidad). También incluye la gestión de problemas organizacionales hallados por auditores externos tales como la autoridad competente y los operadores aéreos. Además, la gestión de documentos, la corrección de problemas y la verificación de la implementación deberían ser llevadas a cabo por la organización de acuerdo a los procedimientos del sistema de auditorías (introducido más abajo).

Una discusión detallada de este sistema de calidad requiere un artículo propio; por tanto, se halla fuera del alcance de éste. Para concluir, sin embargo, valga decir que el apartado que describa el sistema de calidad permanecería en su emplazamiento actual –Parte-145.A.65–, y los cambios que aquí se proponen afectarían a la sección (c) del mismo, que quedaría como sigue:

145.A.65 Política de seguridad y calidad, procedimientos de mantenimiento y sistema de calidad.

(c) La organización establecerá un sistema de calidad que garanticie:

\[
\begin{align*}
\text{(c) La supervisión del cumplimiento de estándares y procedimientos para con}
\end{align*}
\]
2.2. Un apartado específico y completo para el sistema de auditorías.

La segunda propuesta realizada anteriormente era la de crear un nuevo apartado que contemplara específicamente al sistema de auditorías de la organización. Este sistema incorporaría las tareas de auditoría, la retroalimentación de información y la corrección de problemas. Este sistema formaría parte del sistema de calidad de la organización, pero sería gestionado por un departamento independiente (ej. el departamento de calidad). Este nuevo apartado quedaría como sigue:

**145.A.67 Gestión de Auditorías.**

La organización establecerá un sistema de auditorías interno que incluya:

- Auditorías independientes para supervisar que se cumplan las normas aplicables a las aeronaves o elementos y que existan procedimientos adecuados que aseguren el empleo de buenas prácticas de mantenimiento y la aeronavegabilidad de las aeronaves o elementos. En las organizaciones más pequeñas, el elemento de auditoría independiente del sistema de calidad podrá contratarse con otra organización homologada en virtud de esta parte o con una persona que tenga conocimientos técnicos adecuados y experiencia demostrada en auditorías; y

- Un sistema para comunicar información de calidad a la persona o grupo de personas especificadas en el apartado 145.A.30(b) y en última instancia al gerente responsable, que garantice que se adopten medidas correctivas oportunas y adecuadas en respuesta a los informes derivados de las auditorías independientes establecidas en cumplimento del apartado (1).

Obviamente, los apartados correspondientes a ambos sistemas que se hallan en los modos de cumplimiento aceptables (AMC) y el material de guía (GM) de EASA, reflejarían los cambios propuestos (como se detalla más adelante).

3. **Recomendaciones para transformar el sistema de auditorías de EASA en un sistema de gestión de auditorías (AMS): gestión es la clave.**

Aún si las recomendaciones de los apartados anteriores fueran tomadas en cuenta, el sistema de auditorías resultante no funcionaría necesariamente como un sistema. Para afianzar el role del sistema de auditorías y reforzar la seguridad de los productos y el cumplimiento de la ley, EASA Parte-145 podría describir dicho sistema de tal manera que reflejara el sistema de auditorías desarrollado dentro del proyecto ADAMS-2 (véase ilustración 1) y el sistema de gestión de incidencias descrito en Pérezgonzález et al. (2005). Por tanto, la ley podría ser enmendada de tal manera que favoreciera un sistema de auditorías centrado en la gestión de problemas y el aprendizaje organizacional a partir de los mismos. La enmienda quedaría como sigue:

**145.A.67 Gestión de Auditorías.**

La organización establecerá un sistema de auditorías interno que incluya:

- Auditorías independientes para supervisar que se cumplan las normas aplicables a las aeronaves o elementos y que existan procedimientos adecuados que aseguren el empleo de buenas prácticas de mantenimiento y la aeronavegabilidad de las aeronaves o elementos. En las organizaciones más pequeñas, el elemento de auditoría independiente del sistema de calidad podrá contratarse con otra organización homologada en virtud de esta parte o con una persona que tenga conocimientos técnicos adecuados y experiencia demostrada en auditorías; y

- Un sistema para comunicar información de calidad a la persona o grupo de personas especificadas en el apartado 145.A.30(b) y en última instancia al gerente responsable, que garantice que se adopten medidas correctivas oportunas y adecuadas en respuesta a los informes derivados de las auditorías independientes establecidas en cumplimento del apartado (1).

Obviamente, los apartados correspondientes a ambos sistemas que se hallan en los modos de cumplimiento aceptables (AMC) y el material de guía (GM) de EASA, reflejarían los cambios propuestos (como se detalla más adelante).
145.A.67(a)(10) 3); la evaluación de dichos informes [ej. como se especifica en Parte-145.A.95]; la selección y extracción de aquellos problemas que se han de notificar a la autoridad y otras organizaciones relevantes [ej. como se especifica en Parte-145.A.60(a)], y con intención similar a Parte-145.A.45(c); la investigación detallada de aquellos problemas de etiología desconocida [como se describe en AMC 145.A.67(b)(c)(2) 4]; el análisis de datos para descubrir tendencias en los problemas encontrados; la construcción de recomendaciones; la implementación de medidas correctivas y/o preventivas adecuadas [como se describe en AMC 145.A.67(b)(c)(2), está implícito en Parte-145.A.67(c) 5, y con intención similar a AMC 145.A.60(b)(3)]; la supervisión de dicha implementación [como se describe en AMC 145.A.67(b)(c)(4) 6, y está implícito en Parte-145.A.67(c)]; y la evaluación de la efectividad de dicha implementación para corregir los problemas [ej. con intención similar a la Parte-145.A.45(d)].

- Un método para comunicar información de calidad a la persona o grupo de personas especificadas en el apartado 145.A.30(b) y en última instancia al gerente responsable, que garantice que se adopten medidas correctivas oportunas y adecuadas en respuesta a los informes derivados de las auditorías independientes establecidas en cumplimiento del apartado (1).
- En cuanto a la notificación de problemas a la autoridad, se han de seguir las directrices de los siguientes apartados: Parte-145.A.60(a),(c),(d), (e) [y podría incluirse también GM 145.A.60(a),(c)].

Las secciones AMC y GM reflejarían los cambios oportunos, tal y como sigue (en su versión inglesa, ya que no se hallan traducidos al castellano, todavía):

- AMC 145.A.65(a), AMC 145.A.65(b), AMC 145.A.65(b)(2), y AMC 145.A.65(b)(3) no cambiarían, ya que hacen referencia al sistema de calidad.

- AMC 145.A.65(c)(1) Safety and quality policy, maintenance procedures and quality system se enmiendan como AMC 145.A.67(a) Audit management.
- AMC 145.A.65(c)(2) Safety and quality policy, maintenance procedures and quality system se enmienda como AMC 145.A.67(b)(c) Audit management.
- GM 145.A.65(c)(1) Safety and quality policy, maintenance procedures and quality system se enmienda como GM 145.A.67(a) Audit management.


Esta sección ofrece una revisión crítica de la ley sobre auditorías tal y como aparece recogida en EASA Parte-145. El objetivo es el de analizar los requerimientos actuales y proponer las recomendaciones necesarias para mejorar la estructura del sistema. El apartado de la ley que será revisado es EASA Parte-145.A.65(c) 7, si bien incluyendo AMC 145.A.65(c), y GM 145.A.65(c).

El modelo SGA desarrollado dentro del proyecto ADAMS-2 servirá como modelo de contraste (véase ilustración 1).

4.1. Inputs.

EASA especifica que los dos inputs principales del SGA son el cumplimiento con los estándares establecidos en lo que se refiere a aeronaves y sus componentes, y procedimientos organizacionales adecuados que garantizan tanto buenas prácticas de mantenimiento como la aeronavegabilidad del producto final [Parte-145.A.65(c)(1)]. En general, estos dos inputs [que son desarrollados con más detenimiento en AMC 145.A.65(c)(1)] cubren productos, procedimientos, prácticas laborales y cumplimiento de la legislación Parte-145.

Por lo tanto, en lo que respecta a los inputs del sistema, parece ser que existe una descripción clara y completa. Por consiguiente, no se presentará recomendación de mejora alguna.

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3 AMC 145.A.67(a)(10) es coherente con la nomenclatura recomendada en este artículo. Si bien, es el actual AMC-145.A.65(c)(1)(10) en EASA.


5 Parte-145.A.67(c) sería la actual Parte-145.A.65(c)(2).


7 Con el fin de reducir confusiones al lector, el análisis y las recomendaciones llevadas a cabo en esta sección citan los códigos de la legislación actual (esto es 145.A.65), en lugar de los códigos recomendados en la sección anterior (es decir, 145.A.67).

4.2. La auditoría (primer paso en la ilustración 1).

La auditoría misma parece ser un proceso bien delimitado, si bien sólo cuando se tienen en cuenta los modos de cumplimiento aceptables. AMC 145.A.65(c)(1) describe modos aceptables en relación a cómo llevar a cabo las auditorias e inspecciones, cuándo llevarlas a cabo, quiénes son los responsables de las mismas, y qué ha de inspeccionarse. Además, GM 145.A.65(c)(1) ofrece un ejemplo de un plan de inspecciones que sería aceptable por EASA.

Sin embargo, como cada auditoria particular depende, sobre todo, de su objetivo y alcance, es un tanto difícil legislar sobrelas mismas de antemano. Por consiguiente, no se dará recomendación de mejora alguna para este proceso.

4.3. Gestión de informes (segundo paso).

Este proceso es con relación a la recogida y evaluación preliminar de los informes generados tras una inspección. Un sistema de auditorías adecuado debe asegurar que dichos informes son completos y precisos, y debe catalogar dichos informes como los inputs reales del SGA. Curiosamente, EASA tiene leyes para con los informes de mantenimiento [véase Parte-145.A.55], pero sólo ofrece modos de cumplimiento aceptables para con los informes de auditorías [AMC 145.A.65(c)(2)(5)], aún cuando parecde evidente que las tareas requeridas para la gestión de ambos tipos de informes son similares.

En general, una buena gestión de informes debe asegurar que la información contenida en cada informe es completa, legible y comprensible. También debe asegurar que el informe físico (ej. el informe en papel o electrónico) es archivado de acuerdo a la ley.

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8 El lector haría bien en tener en cuenta que tanto los modos de cumplimiento aceptables (AMC) como el material de guía (GM) pudieran no hallarse traducidos al castellano. Esto enfatiza dos aspectos: primero, que, como se sospecha, los AMC y GM no serán necesariamente tenidos en cuenta por las OMAs, al no ser ley; segundo, que eso sea más patente en aquellas empresas españolas cuyo personal tenga una menor capacidad bilingüe con el inglés.
4.4. Notificación a la autoridad competente (tercer paso).

EASA no regula de manera explícita (ni siquiera implícita) qué problemas son de interés para la autoridad competente. Sin embargo, es plausible que cualquier inspección descubra problemas serios. Si bien es cierto que dichos problemas serán probablemente notificados como incidencias [de acuerdo al apartado 145.A.60], no parece de más que EASA cierre la posibilidad de incertidumbre al respecto, tal y como se recomendó en la sección 3 de este artículo (más recomendaciones al respecto pueden verse en Pérezgonzález et al, 2005).

4.5. Investigación (cuarto paso).

EASA no regula de manera adecuada la posible investigación en profundidad de los problemas encontrados. Si bien, un breve comentario al respecto aparece en AMC 145.A.65(c)(2)(2).


Por tanto, cada investigación debe incluir la evaluación de toda aquella información que es relevante al problema encontrado, así como toda información pertinente acerca de la condición, evaluación y solución de dichos problemas que la organización posee o conoce. Un SGA adecuado también debe requerir que una investigación en profundidad sea llevada a cabo en todos aquellos problemas que son nuevos para la organización o tienen una etiología desconocida.

4.6. Análisis de tendencias (quinto paso).

EASA no regula el realizar análisis de tendencias sobre los problemas encontrados. Sin embargo, dicho análisis de tendencias es tan importante para con estos problemas como lo es para con incidencias. Además, la periodicidad con la que se llevan a cabo las auditorías ofrece una opción más fiable para dicho análisis. Por tanto, leyes ya existentes en lo que respecta al análisis de tendencias de incidentes [Parte-145.A.60(b)] son relevantes para el sistema de auditorías. Además, las recomendaciones hechas por Pérezgonzález y colaboradores (2005) proponiendo que dicho análisis de tendencias sea llevado a cabo por EASA parecen ser también relevantes.

4.7. Problemas encontrados y recomendaciones (sexto paso).

EASA tampoco regula adecuadamente la creación de informes acerca de los problemas encontrados y las recomendaciones propuestas para solucionar dichos problemas. Por una parte, existen modos de cumplimiento aceptables tanto para con la creación de informes de problemas [AMC 145.A.65(c)(1)(10)] como para con la retroalimentación de dichos informes al personal responsable [AMC 145.A.65(c)(2)(3)]. Sin embargo, al ser sólo modos de cumplimiento aceptables en lugar de leyes, las OMAs bien podrían ignorar dichos modos. Por otra parte, EASA no hace mención alguna a la propuesta de recomendaciones para corregir los problemas.

De nuevo, leyes ya existentes al respecto en lo que se refiere a incidencias, así como las recomendaciones para mejorar este paso en el sistema de notificación de incidencias (véase Pérezgonzález et al., 2005), son también relevantes para el sistema de auditorías. Por tanto, dichos informes deben recoger no sólo la evaluación de resultados sino también cualquier otra información relevante encontrada durante las auditorías e investigaciones [Parte-145.A.60]. Dichos informes también deben proveer recomendaciones para la corrección de los problemas encontrados.

4.8. Implementación de acciones correctivas (paso séptimo) y supervisión y control de la implementación (pasos octavo y noveno).

La implementación, supervisión y control de acciones correctivas para solucionar los problemas encontrados están implícitos en la ley, pero no se hallan claramente señalados [Parte-145.A.65(c)(2)]. Si lo están en los modos de cumplimiento aceptables [AMC 145.A.65(c)(2)]. Sin embargo, como éstos no son ley, las OMAs podrían ignorarlos.

Por tanto, la única recomendación a hacer en este punto es el de convertir en ley los apartados 3 y 4 del AMC.
4.9. Evaluación de las acciones correctivas (décimo paso).

EASA no regula la evaluación de las acciones correctivas tomadas. Sin embargo, la actual ley Parte-145.A.45(d) supone este paso cuando requiere que la organización demuestre la calidad de los resultados de cualquier corrección o modificación llevada a cabo en las instrucciones de mantenimiento.

La intención de dicho apartado puede ser duplicada fácilmente en un requerimiento similar para el sistema de auditorías. Dicho requerimiento aseguraría que las correcciones llevadas a cabo bien corrijan los problemas o bien previenen que similares problemas aparezcan en el futuro. Esta evaluación debe ser llevada a cabo por un departamento independiente (ej. el departamento de calidad) y debe asegurar que las correcciones fueron efectivas en recuperar la seguridad de la organización o, alternativamente, debe requerir una nueva implementación con el mismo fin.

4.10. Cierre de las acciones correctivas (paso undécimo).

La ley actual no es clara en determinar cuándo una acción correctiva ha de darse por terminada. Parte-145.A.65(c)(2) parece indicar que las acciones correctivas se cierran una vez que las medidas oportunas y adecuadas hayan sido adoptadas. Sin embargo, esta paso no parece claramente regulado. El model SGA considera que la implementación de correcciones debe concluirse una vez que la evaluación de su efectividad y la recuperación de la seguridad de la organización sean inequívocas.

Además, debería requerirse un informe final de toda aquella información relevante a cada problema (incluyendo la descripción del problema mismo, los resultados de su investigación, las recomendaciones propuestas, las acciones correctivas tomadas y la recuperación de la seguridad alcanzada). Esto es, dicho informe final consideraría toda aquella información relevante tanto al problema inicial como a su gestión efectiva.

4.11. Retroalimentación y aprendizaje organizacional (paso duodécimo).

EASA Parte-145.A.65(c)(2) también requiere un sistema de retroalimentación con el fin de comunicar problemas y su gestión tanto al personal responsable de corregir dichos problemas como al gerente responsable final.

Sin embargo, un SGA adecuado también comunicaría dicha información al resto del personal y a otras OMAs. Esto último permitiría un proceso de aprendizaje intra e interorganizacional (por ejemplo, si se comunicaran la etiología de problemas poco frecuentes, o si se comunicaran soluciones efectivas para solucionar determinados problemas).

5. Conclusiones.

El sistema de auditorías es una parte necesaria e integral del macro-sistema de retroalimentación de la organización (junto con, por ejemplo, el sistema de notificación de incidencias). Por tanto, juega un papel importante a la hora de gestionar la seguridad organizacional y de sus productos. EASA ha reconocido la importancia de las auditorías y establece requerimientos específicos para que todas las organizaciones de mantenimiento aprobadas tengan un sistema de calidad. Dicho sistema ha de realizar auditorías independientes así como informar al personal responsable de cualquier problema hallado y de su corrección. Dichos requerimientos legales no han cambiado substancialmente en los últimos años, lo cual parece subrayar la madurez de la legislación aérea europea actual al respecto, así como la aceptación de la misma por parte de las organizaciones de mantenimiento europeas. Sin embargo, aún queda espacio para mejorar dicha legislación, sobre todo a la hora de enfatizar un sistema de gestión de auditorías que sea efectivo en sus funciones. De ahí nació este artículo, el cual ha explorado la ley EASA actual en lo que concierne a auditorías. También se han explorado críticamente algunos “atajos” que aparecen en la legislación, que pudieran ser utilizados para eludir el espíritu de la ley, y se han sugerido métodos para tapiarlos. Sin embargo, uno es consciente de que cualquier cambio tiende a ser lento, y bien pudiera ser resistido a la par que EASA crece con la incorporación de nuevos miembros y responsabilidades. Es por ello que este artículo también ha sido estructurado con el fin de guiar dichos cambios de manera progresiva, y así pasar de una ley que requiere tareas de auditorías a otra que requiera un sistema de gestión de auditorías a nivel organizacional. Por tanto, la progresión de recomendaciones en este artículo representa el orden en que futuras enmiendas pudieran ser introducidas.


DIARIO OFICIAL DE LA UNIÓN EUROPEA, DO L 315 (de 28.11.2003). Reglamento (CE) Nº 2042/2003 de la Comisión de 20 de noviembre de 2003 sobre el mantenimiento de la aeronavegabilidad de las aeronaves y productos aeronáuticos, componentes y equipos y sobre la aprobación de las organizaciones y personal que participan en dichas tareas. Disponible en http://www.fomento.es/nr/rdonlyres/e5043f64-8e76-4d0c-9e37-3cfadb4bf0be/1730/mantenimiento_aeronaves.pdf


7. Acrónimos.


AMC – Modos de cumplimiento aceptables (A acceptable Means of Compliance (EASA / JAA)).

SGA – Sistema de Gestión de Auditorias.

OMA - Organización de Mantenimiento Aprobada (EASA/JAA).

EASA – Agencia Europea de Seguridad Aérea (European Aviation Safety Agency)

GM – Material de guía (Guidance Material, EASA)

JAA – Joint Aviation Authority

JAR – Joint Aviation Requirements (JAA)
8. Fuentes de conocimiento sobre aviación europea:

Los siguientes portales de Internet ofrecen acceso a varias páginas electrónicas de importantes organizaciones relacionadas con la seguridad de la aviación europea. La mayor parte de estos portales informan acerca de la estructura organizacional y las actividades de dichas organizaciones. Por tanto, no proveen información detallada sobre aviación. Sin embargo, al pertenecer a organizaciones que son una fuente principal de seguridad aérea, bien pudieran ser de interés para el lector.

- **CONFERENCIA EUROPEA DE AVIACIÓN CIVIL (CEAC)**, en [www.ecac-ceac.org](http://www.ecac-ceac.org)
  
  La Conferencia Europea de Aviación Civil (CEAC) es una agencia sin poder legislativo que promueve la seguridad, eficiencia y desarrollo sostenible del transporte aéreo europeo en tiempos de paz. Tiene un rol similar al de la Organización de Aviación Civil Internacional (ICAO).

  
  El Ministerio de Fomento es la autoridad competente en materia de aviación civil en tiempos de paz. Este portal, por tanto, es la referencia principal en lo que respecta a seguridad aérea en el territorio español (si bien, circunscrita dentro del marco europeo representado por EASA).

- **EUROCONTROL**, en [www.eurocontrol.int/index1.html](http://www.eurocontrol.int/index1.html)
  
  Eurocontrol es la organización responsable de la seguridad del tráfico aéreo civil y militar en Europa.

- **EUROPEAN AVIATION SAFETY AGENCY (EASA)**, en [www.easa.eu.int](http://www.easa.eu.int)
  
  El portal de EASA ofrece información sobre leyes aéreas en Europa, y enlaces con diversas autoridades de aviación civil, especialmente aquéllas cuyos estados son miembros de la Unión Europea.

- **JOINT AVIATION AUTHORITY (JAA)**, en [www.jaa.nl](http://www.jaa.nl)
  
  La JAA es la agencia precursora de EASA, que cedió sus requerimientos en el ámbito de seguridad de la aviación civil a EASA para que pasaran a ser ley para los estados miembros de la Unión Europea. La JAA continúa su labor como la autoridad en cuestiones de aviación civil para con aquellos países europeos que no son miembros de la Unión Europea. Sin embargo, sus funciones serán finalmente absorbidas por EASA en un futuro cercano. Hasta entonces, sigue siendo una referencia importante para la seguridad de la aviación civil.

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1 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.
9. QUIÉN ES QUIEN: Currículum del autor.

Dr. Jose D Pérezgonzález trabaja en la Escuela de Aviación de la Universidad Massey (Nueva Zelanda) desde junio del 2006. La mayor parte de su investigación hasta la fecha la ha realizado en Irlanda, tanto con el Aerospace Psychology Research Group del Trinity College de Dublín, participando en diversos proyectos financiados por la Comunidad Europea, como con el Dublin Institute of Technology. Su interés investigador cubre campos tales como eficiencia aérea, gestión de la salud y la seguridad organizacionales, legislación, sistemas de auditorías y de notificación de sucesos, y sistemas de gestión del conocimiento. Hoy por hoy está promoviendo la idea de las Ediciones Gestión del Conocimiento™, y es editor jefe del Journal of Knowledge Advancement & Integration. También está sentando las bases para un Centro de Excelencia sobre Aviación en Nueva Zelanda, que fue iniciado en noviembre del 2006 en la Universidad Massey.

- Publicaciones recientes en relación con un proyecto de investigación que meta-analiza la legislación internacional en el ámbito de la seguridad aérea:


- Publicaciones recientes en relación con un proyecto de información sobre la gestión de la eficiencia y seguridad aéreas en Nueva Zelanda:


10. QUÉ Y DÓNDE:

Escuela de Aviación de 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 de Vuelo Milson en el aeropuerto internacional de Palmerston North. La Escuela ofrece licenciaturas de Aviación (piloto de transportes aéreos) y de Gestión de la Aviación, así como cursos avanzados de master y doctorado de Gestión de la Aviación. La Escuela fue fundada recientemente (en 1990) y su currículo investigador apenas está comenzando a crecer en estos momentos.

Una muestra de publicaciones relacionadas con la aviación es la siguiente:


Una muestra de publicaciones recientes no relacionadas con la aviación es la siguiente:


评《关系与绩效——美国西南航空公司的成功之路》

（“The Southwest Airlines way”）

张恒 [译]（2006）
新西兰 梅西大学 航空学院

摘 要

本书凝聚了乔迪·霍夫·吉泰尔（Jody Hoffer Gittell）对四家美国航空公司八年的研究工作。然而，美国西南航空（以下简称为“西南航空”）在营运效率和质量上的突出表现，使之成为讨论重点。尤其是西南航空在内部关系协调方面与众不同、富有成就的实践。这些实践构成了关系协调模型的基础，作者在她的研究中详细阐述了相关的内容。

西南航空的“十大组织实务”为关系协调模型定下了基调。其核心在于互为作用的两点关键：关系（组织内部共同目标，共有知识和共同的尊重）与沟通（沟通的频率、时机和解决问题的导向性）。吉泰尔认为任何组织都可以合理利用这十条组织实务以提升其雇员间的关系协调能力，进而可以提升整个组织的竞争力（体现于效率和质量上）。

《关系与绩效——美国西南航空公司的成功之路》并不仅仅是一个针对西南航空的个案研究。书中提供的研究模型、方法和结果等等，更使它为民航领域以外的关系协调研究提供了重要的参考价值。而这些根据吉泰尔的方法进行的进一步的研究，也许可以反过来验证其理论的正确性和对于更多不同类型的组织的价值。

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关 键 词

关系协调；美国西南航空公司；美国航空公司；美国联合航空公司；美国大陆航空公司；航空；民用航空；卫生保健；美国
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评《关系与绩效——美国西南航空的成功之路》

1. 引言

这本书综合了作者对联合航空、美国航空、大陆航空和西南航空等四家美国航空公司八年研究的总结。作者分属这四家公司的九个地点进行了研究。本书的重点在于西南航空——很大程度上是因为其与众不同的“关系协调”实践，西南航空在运作质量和效率上的表现都与其他三家公司相比更胜一筹。

作者在书中描述了西南航空的许多做法，并解释了这些做法在什么程度上影响了西南航空的营运表现，并在关系协调和营运表现等方面与其他航空公司作出比较。

尽管作者没有详细说明她开展研究的具体时间，但本书于2002年完成，所以书中讨论的时间段也许就是这之前的八年。

麦格罗希尔国际出版公司（McGraw-Hill）于2003年出版了精装版并于2005年再次出版平装本。

2. 关系协调模型

也许本书最大的贡献并不在于对西南航空与众不同的操作实践作的详细描述，而在于阐述了当这些操作实践综合在一起之后所形成的经验模型——关于关系协调的模型基础。吉泰尔的关系协调模型的雏形最早可以追溯到作者在其研究早期对西南航空和美国航空的比较。其后作者以此为基准，进一步通过研究四家公司在机场的航班周转操作（即飞机降落后打开舱门起，乘客下机，加油，清洁，补充食品，更换机组，下一个航班登机直到飞机重新推出等一系列操作）之绩效来比较分析四家航空公司关系协调状况。

吉泰尔指出，西南航空从建立伊始就开始实行的十大组织实务为其在关系协调方面的成就作好了必要的注解。而与美国航空比较，吉泰尔发现关系协调的水平高低决定了西南航空的运营质量和效率方面的优势。

作者发现西南航空的十大组织实务并非在本质上并无特殊，它们和其他航空公司（或其他行业）的管理模式只具有表现形式的差异。在这个基础上，作者发展出其关系协调模型。

吉泰尔的关系协调模型看上去并不复杂，她提出飞机在的周转操作绩效取决于航空公司之间的关系协调的水平。在这里，关系协调包括各门员工之间的关系（以共同的目标，知识和尊重为基础）和沟通（沟通的频率，时机和解决冲突的导向性）。也就是说，关系协调的核心在于互为作用的这两个重要元素：关系与沟通。


任何航空公司都可以实施这些方针来提升员工的协作水平。而在根据吉泰尔的模型，对于航空公司来说，更好的员工关系协调意味着更出色的航班周转操作绩效。

为了验证这个模型的可靠性，吉泰尔在西南航空和其他三家航空公司之间比较了它们各自施行十大组织实务的情况；又用回归分析来验证每个变量是否能正确预料绩效表现。吉泰尔把在九个实地调查的地点得到的资料作成图表，并发现“优秀的关系协调可以减少航班延误，减少丢失行李；达到更快的周转时间和更高的效率”（第25页）。

吉托尔也在书中说明，和航班周转操作一样，健康管理也使用关系协调模型于绩效表现的预测。（第4章）

3. 您能在这本书上得到什么？

这不仅仅是关于美国西南航空的故事，您能从这本书上得到：

美国西南航空从建立到成为世界最成功的航空公司的简要历程。（第1、第2及第17章）

什么是关系协调和关系协调模型（第3章）。

关系协调的评估方法（第3章）

关于西南航空如何管理关系协调从而达到更佳的营运表现的案例分析（尤其是如何达到飞机在机场更快的周转时间）（第五及第14章）。

西南航空和美国航空、联合航空、大陆航空在关系协调管理方面的比较：包括讨论
关系协调

关系协调

航空学院
新西兰梅西大学
http://aviation.massey.ac.nz

4. 结论和展望

吉泰尔指出西南航空的十大组织实务实际上有相互支持和互补的作用。它们相互关联，协同为航空公司的员工绩效产生正面作用。在这个角度，第 15 章作者在分别逐一假定某项实物缺失的情况下（其他九项同时存在），讨论了由此可能产生的负面影响。但是在我看来，吉泰尔的调查资料并不足以以为此观点做出足够的支持——她从来没有在现实中遭遇或模拟过某一项组织实务缺失的情况。也就是说在本章节中的结论并不是以事实经验为基础的——因此这样的结论也许存在缺失，甚至不能成立。

吉泰尔在第 18 章中为如何在关系协调管理中实现十大组织实务提出了一系列建议。这些建议是基于作者在调查中获得的实际信息，这些经验分别来源于书中讨论的两个领域——民航运作和健康保健。尽管如此，读者应该留意这些建议并非一定是“灵丹妙药”，在书中讨论的领域之外更是如此。

5. 参考书目


6. 关于关系协调、西南航空和本书的一些资料


- 亚马逊在线书店网站“AMAZON.COM”（http://www.amazon.com）
  作为著名的在线书店，“Amazon.com”本身并不提供关于关系协调或者西南航空的知识，但是在您购买吉泰尔这本书之前，您可以在这里读到其他读者对这本书的一些有价值的评价。

- **《美国西南航空》作者吉泰尔的网站**
  (http://heller.brandeis.edu/professors/jodygittell/JHGittellHome.htm)
  吉泰尔的“关系协调”模型并没有引起其他太多学者的兴趣，研究主要只限于吉泰尔和她的研究小组。除此之外，我们找不到太多相关的资料。在她的官方网站上，有一些她和她的研究小组的文章可供您参考（在‘publication’栏中）。

- **美国西南航空的官方网站**
  (http://www.southwest.com/about_swa/press/bibliography.html)
  关于这个航空公司的更多信息。

  而是一个可帮助您和其他读者理解本书的工具。它可以指导您将吉泰尔的书标注为一个编辑过的版本——在重要的部分加上下划线、着重号或者用颜色荧光笔标记出重要的段落等等。下划线部分一般占了全书的15%，基本上算是全书的一个简要版本——在本书中就主要是着重在关系协调模型和西南航空的表现，这基本上和全书的架构相近；用颜色荧光笔标记的段落可占大约全书的3%，这部分可作对西南航空的一个个案分析。这样一来，这可以帮助读者更容易抓住书中得知识重点的，可以让读者很快的浏览全书的重要内容并在必要的时候详细阅读其他的部分。

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1 Estas referencias se ofrecen principalmente por su valor como fuentes de conocimiento, y no por razones comerciales (si bien e nlaces 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. 关于译者

本文译者 张恒 (Zhāng Héng) 为即将毕业的新西兰梅西大学 (Massey University, New Zealand) 航空管理系 (Aviation Management) 学生。曾于澳门直升机 / 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，曾于中国海运集团（China Shipping）属下之东莞船务代理公司为其员工提供海事英语培训课程。

近期的出版书目：


8. 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的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：


新西兰 梅西大学
http://aviation.massey.ac.nz
Thematic bibliography: aviation news in New Zealand during December 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 (starting from June 2006; see, for example, Pérezgonzález, 2006a,b).

During the month of December 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 and accidents, especially at national levels. Nine incidents and accidents occurred during December. Of these, eight were logged into the CAA-NZ’s Occurrence Reporting database: three regarding light aircrafts (the second one with two fatalities and substantial damages reported), another two regarding helicopters (one with two fatalities, the other two with serious damage reported), another three regarding helicopters (all without fatalities, but two with serious damage reported), one regarding a tandem hang-glider (no injuries reported), and a final one regarding a parachute incident (with one person seriously injured). The media also dedicated several articles to some of the important accidents and their aftermath. Furthermore, a ninth incident was publicised by the media, but does not appear in the CAA database: a medium size aircraft emergency landing into a harbour (with no apparent injured or damages). Some attention was also given to an international incident and its aftermath.

Secondly, miscellaneous news on efficiency performance and management at Qantas Airways, especially on its takeover bid, but also on its pulling out of the Christchurch-Wellington route within New Zealand. Thirdly, miscellaneous news on efficiency performance and management at Air New Zealand (including strategy, selection and climate management). Fourthly, miscellaneous news on efficiency performance and management at Auckland International Airport (especially climate management). And fifthly, the chaos produced by fog in London’s airports and on British Airways also call the attention of the media in several articles.

Keywords

Aviation; Management; Efficiency; Health; Safety; Environment; New Zealand.
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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.

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


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This article continues the bibliographic series that documents monthly indicators for aviation management and aviation performance in New Zealand (starting from June 2006; see, for example, Pérezgonzález, 2006a,b). During the month of January 2007, 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 on efficiency performance and management at Air New Zealand, especially the management of strategy and marketing, as well as of industrial relations. Secondly, air incidents and accidents, especially at national levels. Eight incidents and accidents occurred during January. Of these, seven were logged into the CAA’s Occurrence Reporting database: one incident regarding a medium-sized aircraft, 2 incidents involving light aircrafts (one of them suffering substantial damage), and four incidents involving gliders (two of them resulting in their operators being seriously injured). An eighth incident, also involving a hang-glider, was highlighted by the New Zealand Herald, but it does not seem to have been reported to the CAA. Furthermore, another three accidents at international levels also caught the attention of the press: an airplane accident in Indonesia (with 102 people dead or missing, and hull loss), an airplane accident in Bolivia (with 6 people dead, and probably hull loss, as well), and a helicopter accident in France (with three people dead). Thirdly, miscellaneous news on efficiency performance and management at Qantas Airways, especially on its takeover bid, but also on fare management, and its bid for a Vietnamese airline. Fourthly, miscellaneous news on Pacific Blue (and Virgin, in general), most of them regarding Richard Branson’s visit to New Zealand and his plans for operating domestically within the nation. Fifthly, miscellaneous news on efficiency performance and management at Auckland International Airport (especially regarding efficiency, safety and security performance, and related news). Sixthly, miscellaneous news on efficiency performance and weather disruption at Wellington International Airport. And seventhly, news regarding safety concerns at Suvarnabhumi Airport (Bangkok), and related actioning measures taken by Thailand’s CAA.

Keywords
Aviation; Management; Efficiency; Health; Safety; Environment; New Zealand.
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An analysis of the European Union’s legislation on the mandatory reporting of aviation occurrences

by Jose D. PÉREZGONZÁLEZ (2007)

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

The objective of Directive 2003/42/EC of the European Parliament and the Council of the European Union is to improve air safety by way of harmonizing mandatory occurrence reporting across Member States. Still, a question remains: does the Directive actually fulfill its ultimate goal, i.e. aviation safety?

The purpose of this paper is to assess how well the mandatory occurrence reporting scheme regulated by Directive 2003/42/EC maps onto a generic occurrence management system for the reporting, investigation and correction of aviation occurrences.

The results obtained depict Directive 2003/42/EC as supporting a repository database for aviation occurrences across the European Union. The inputs and the outputs of the scheme are relatively well considered, but procedures and operations to transform those inputs into outputs are not. Thus, the Directive does not seem to regulate an effective reporting system, less an occurrence management system. Therefore, the capability of the Directive to improve aviation safety is yet unresolved.

Keywords

Reporting system; Occurrence management system; Safety legislation; Aviation safety; European Union.
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- Occurrence reporting in civil aviation.

- Aviation reporting.
- Aviation quality systems.

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An analysis of the European Union’s legislation on the mandatory reporting of aviation occurrences.

1. Introduction.

Directive 2003/42/EC of the European Parliament and of the Council of the European Union of 13 June 2003 (OJ L 167, 2003, pp.23-36) sets the legal basis for the reporting of non serious incidents –labelled as occurrences– in civil aviation. Directive 94/56/EC of 21 November 1994 (OJ L 319, 1994, pp.14-19), instead, sets the legal basis for the investigation of accidents and serious incidents. Although, in theory, complementary, both directives focus on different types of safety performance (non-serious incidents versus accidents) and on different procedures (reporting versus investigation). This makes them non complementary in practice, although attempts has been made for the former to close the gap regarding reporting, as shall be seen. Whether these directives are complementary or not is of relevance because of a recent public consultation by the European Commission in regards to a possible revision of both directives (public consultation finished on 2 March 2007). The output of such public consultation is yet unknown at the time of publishing this article. However, it offers an opportunity for a quick analysis of reporting and investigation legislation in a manner similar to what it has been done for the Australian TSI Act 2003 (by way of analysing ATSB’s ASAIR scheme –see Pérezgonzález, 2005a), and the reporting and investigation of occurrences within EASA Part-145 (see Pérezgonzález, 2005b).

Because of the different types of performance as well as the different procedures covered by each directive, only Directive 2003/42/EC of 13 June 2003 (OJ L 167/23, 2003) will be commented upon in this article.

However, before moving forward with this topic, it is necessary to describe the systems hierarchy used in this paper, thus gaining understanding of the impact of this Directive within the European safety macrosystem.

Illustration 1 summarises such systems hierarchy. The system level comprises organisations, such as the regulator, the Civil Aviation Safety Authority, airlines, etc. Of special interest for this paper are the national competent authorities of each Member State as managers of

Illustration 1: Systems hierarchy for aviation safety management (ASM).
the mandatory reporting schemes.

The mandatory occurrence reporting scheme is, thus, at the subsystem level. Within this subsystem, the reporting process and its operations will be analysed.

At higher levels in this hierarchy of systems, national aviation authorities are thus considered systems within each Member States’ aviation safety management macrosystem. The operation and performance of Member States represent, when aggregated, the operation and performance on the European Union itself, thus, both are situated at the same hierarchical level in illustration 1. National authorities participate in the European macrosystem together with other organisations located either in Europe (e.g. aircraft operators, aircraft maintenance and repair organisations, regulators, etc) or outside Europe but still interacting with those national authorities (e.g. world regulatory agencies, such as the FAA; aircraft manufacturers, such as Boeing; etc). The European macrosystem, in turn, is contained within the broader world aviation safety macrosystem.

2. Methodology.

This paper analyses and describes the functioning of the occurrence reporting subsystem legislated by Directive 2003/42/EC from information contained in such directive. Although this seems to be a restricted literature, it is, nonetheless, the only one that is required by law, thus sufficing the scope of the research. Furthermore, no further relevant literature was found.

The analysis here presented describes the occurrence reporting scheme proposed in such Directive by mapping out such scheme against the generic occurrence management model (OMS) developed and validated in Europe within the ADAMS-2 research project (e.g. Pérezgonzález et al, 2003; see also Pérezgonzález et al, 2005b).

The ADAMS-2 OMS proposes 12 steps (i.e. operations) for the processing of reports: (1) reporting; (2) record management, assessment and preliminary investigation; (3) reporting to external organisms (including the Authority); (4) investigation of occurrences; (5) trend analysis; (6) reporting of findings, carrying out risks assessments and making recommendations; (7) implementation of recommendations and taking corrective actions; (8) monitoring of the implementation; (9) control of implementation for overdue corrective actions; (10) assessment of the implementation; (11) closure of the implementation; (12) feedback to reportees and organisational learning (Pérezgonzález et al, 2005b).

As the available information is not extensive enough as for assessing how well the EU’s reporting scheme works, the analysis here presented is a nominal one (Yes/No), suggesting which operations in the scheme are comparable to those in the OMS according to reasonable evidence. Such mapping is indicative of the operations required by the law and, in theory, functioning within each Member State of the European Union. An operation that is clearly represented will be so described, and will be represented with a colour-filled background in the accompanying illustration 2. An absent operation, or one whose functioning is not supported by reasonable evidence, will be so described in the text, and will be represented with a blank background in illustration 2.

3. Results. The operation of EU’s mandatory occurrence reporting scheme as an occurrence management subsystem (OMS) for aviation safety.

3.1. Inputs, initiators & occurrence notification forms.

3.1.1. Inputs.

Inputs to the reporting subsystem are twofold. Firstly, there are those occurrences whose reporting is mandatory according to Directive 2003/42/EC. These occurrences are those with an impact (potential or real) on flight safety (Article 2.1), the aircraft, its occupants or any other person (Article 3.1) but that has not resulted in a serious incident or accident (Article 2.1). They could be an operational interruption, defect, fault or any other irregular circumstance (Article 2.1), on a product, part or appliance (Annex I, note 4) –although not merely reduced to those—, arising from aircraft operations, maintenance, repair, or manufacture (Annex I, note 3). Annexes 1 and 2 provide examples of reportable occurrences. Although most examples are related to operational or technical occurrences, the reporting of other human related factors with a potential impact on safety may also need to be reported (Annex I, note 1, & note 4).
Secondly, accidents and serious incidents are also suitable inputs to this reporting subsystem (Annex 1, note 2), even when they have been explicitly considered elsewhere (i.e. in Article 2.1) as being beyond the scope of Directive 2003/42/EC.

The Directive also encourages the setting of voluntary reporting systems (Article 9), although it seems that they will not report or share information through the same channels than the mandatory scheme. Thus, they shall not be considered here.

3.1.2. Initiators.

According to the Directive, reporting initiators can be any of the following: aircraft operators and commanders, maintenance engineers and any other person certifying the maintenance and release of aircrafts, manufacturers, air traffic controllers and flight information officers, airport managers, maintenance personnel for air navigation facilities, and ground handling personnel. On a voluntary basis, other personnel with similar functions to those may also report relevant occurrences (Article 4).

Overall, it seems that the reporting step in the model (that of raising a report) is more or less covered by the Directive. The relevant reportable occurrences are clearly specified, and the initiators have been identified. The reporting procedures and specific information to report has not been regulated, though, and it may depend on each Member State to develop those.

Requirements for how, when and what to report has not been developed by Directive 2003/42/EC. One could assume that such requirements are to be developed nationally.

3.1.3. Occurrence reporting forms.

The content of reporting forms is not regulated by Directive 2003/42/EC. Although reporting consistency is one of the reasons behind the requirements (see Whereas 15), the directive does not provide any further indication of consistency across Member States.
3.2. Reporting management & preliminary investigation.

Directive 2003/42/EC regulates that Member States shall designate competent authorities for collecting, evaluating, processing and storing reported occurrences. However, there are no explicit procedures on how and when such authorities should manage this step, other than storing the relevant information in their databases (Article 5.2), ensuring the confidentiality of the reporting process (Article 8.1, & 8.2), preventing prejudice from employers towards reportees (Article 8.4), and refraining from using reports for instituting legal proceedings (Article 8.3). Furthermore, there are no requirements regarding what information is relevant to store, thus, whether the authority shall seek clarification of missing or incomprehensible information.

Thus, although this step of reporting management is considered by the Directive, it only offers an incomplete procedure for managing the operations of reporting and preliminary investigation.

3.3. Report to the authority.

Directive 2003/42/EC implicitly considers the competent authorities of each Member State at the top of the systems hierarchy for aviation safety. And although the Directive already starts to set the European Commission as a higher authority to which Member States shall report to, the historical and legal framework for a European Union in which Directive 2003/42/EC was developed may not have allowed for such higher authority to be fully expressed. Thus, Article 6 deals with requirements for the exchange of information about occurrences between Member States, but does not set a higher authority to which Member States should report. Notwithstanding this, the Commission would take responsibilities in developing adequate software and facilitating the exchange of information as for fulfilling the purpose of the Directive.

Thus, there seems to be an understanding for sharing information, but not yet for centralising it for the purpose of a more effective sharing.

Nowadays, however, EASA is the European authority for aviation safety, while the Joint Research Centre is developing and managing the ECCAIRS software and database for accident investigation and the reporting and exchanging of information of occurrences at European level. Thus, we could consider ECCAIRS software and database as directly informed by both Directive 94/56/EC and by Directive 2003/42/EC (Baranzini, in behalf of the JRC, personal communication, 2007; and Bourdon, in behalf of EASA, personal communication, 2007). EASA participates in ECCAIRS as end user, especially for entering occurrences notified to EASA and for participating in work groups in order to improve the software (Schöffmann, in behalf of EASA, personal communication, 2007). Thus, future amendments to Directive 2003/42/EC may consider EASA and ECCAIRS (i.e. the JRC), as higher authorities de facto.

3.4. Further investigation.

This step is not developed by Directive 2003/42/EC. The probable reason is because this Directive was developed in order not to conflict with Directive 94/56/EC, which regulates the investigation of accidents and serious incidents. However, in so doing, the investigation of non serious incidents and other occurrences has been left unregulated.

3.5. Trend analysis.

This step is not developed by Directive 2003/42/EC, although it may be implicit in it, as it forms part of the reasons for such Directive (see Whereas 4).

3.6. Reports & recommendations.

This step is not developed by Directive 2003/42/EC.

3.7. Action implementation.

This step is not developed by Directive 2003/42/EC.

3.8. Feedback mechanism for implementation.

This step is not developed by Directive 2003/42/EC.

3.9. Control mechanism.

This step is not developed by Directive 2003/42/EC.

3.10. Assessment of implementation.

This step is not developed by Directive 2003/42/EC.
3.11. Closure of the occurrence.

This step is not developed by Directive 2003/42/EC.


Directive 2003/42/EC regulates relatively well the need for a European-wide learning process on aviation occurrences. It requires that each Member State makes safety-related information available to other Member States and the Commission (Article 6.1, & 6.2), while entrusts the Commission with taking appropriate measures to facilitate such exchange (Article 6.4) in a way that help improve civil aviation safety while ensuring confidentiality.

Furthermore, Article 7.3 requires of Member States to publish national safety performance information and make it available to the public on, at least, an annual basis.

Thus, it seems that this step is relatively well developed by the actual Directive.


This Article has reviewed and analysed the mandatory occurrence reporting scheme regulated by Directive 2003/42/EC of the European Union.

Operationally, this Directive regulates a scheme that functions as a reporting tool for non-serious aviation occurrences within the European Union, although it does not necessarily exclude the recording of serious incidents and accidents in the database. It also functions as a mechanism for sharing the information gathered with the different stakeholders in the aviation sector.

On the negative side of this analysis, however, there is not an occurrence management subsystem underlying the Directive. That is, beyond reporting occurrences and sharing the information, there are no explicit requirements for carrying out further investigation, carrying out trend analysis, implementing corrections, feeding back completion of corrections, or reporting successful and unsuccessful solutions. In fact, it can be said that only the inputs and outputs of the subsystem are considered, while the reporting procedure itself is rather ignored. Still, perhaps the most important aspect of the inputs –i.e. the information that needs to be collected– is not regulated. While, at the outputs end, the information that is to be shared is potentially limited in the learning opportunities it provides.

Certain recommendations can be made in order to improve the present regulations in a manner that facilitates the operation and performance of the mandatory reporting scheme. Many of these recommendations have been made elsewhere to EASA Part-145. Others are based on similar regulations elsewhere that seem to be more comprehensive than in Europe. Finally, a third set of recommendations are proposed exclusively for Directive 2003/42/EC.

One important recommendation is to make Directive 2003/42/EC and Directive 94/56/EC compatible. This may be facilitated if the results from the recent public consultation are favourable to a revision of both directives. Otherwise, compatibility in their ‘spirit’ may suffer. Such compatibility should seek an integration of both directives in such a manner that occurrences are re-defined as for also including accidents and serious incidents, thus making them relevant within the scope of Directive 2003/42/EC.

Furthermore, investigation (i.e. Directive 94/56/EC) should be considered an element of the occurrence management subsystem, thus widening its scope to include the investigation of less serious incidents and trends, if need be.

A second recommendation is to populate Directive 2003/42/EC with more explicit requirements regarding reporting procedures, timings and forms. In this sense, procedures already established by the TSI Act 2003 of Australia and the TSI Regulations 2003 may serve as guidelines (see also Pérezgonzález, 2005a).

A third recommendation is to regulate an occurrence management subsystem instead of just a reporting scheme. Recommendations made to EASA in this respect (see Pérezgonzález, 2005b) may prove relevant for such purpose.

5. References.


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)

ASAIR – Air Safety Accident or Incident Report form. This is the legal reference and acronym used by the TSI Act 2003 and TSI Regulations 2003, although the ATSB refers to them as Aviation Accident or Incident Notification.

ATSB – Australian Transport Safety Bureau, here mostly used to refer to its aviation branch.

EASA – European Aviation Safety Agency.

CAA – Civil Aviation Authority.

OMS – Occurrence Management Subsystem (ADAMS-2).

TSI Act – Transport Safety Investigation Act (Australia).

TSI Regulations – Transport Safety Investigation Regulations (Australia).
7. 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.

  
  This is the European Commission portal for public consultations regarding aviation.

- **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.
8. 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 he is developing is a meta-analysis of aviation safety legislation at international levels. The following is the author’s list of recent publications in regards to such research:


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


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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.
Thematic bibliography: aviation news in New Zealand during February 2007

by Jose D. PÉREZGONZÁLEZ (2007)

School of Aviation, Massey University, New Zealand

Abstract

This article continues the bibliographic series that documents monthly indicators for aviation management and aviation performance in New Zealand (starting from June 2006; see, for example, Pérezgonzález, 2006, 2007). During the month of February 2007, there were some 85 pieces of aviation-related performance indicators. The most important 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, news on air incidents and accidents, especially at national level. Seventeen incidents and accidents occurred during February. Of these, fifteen were logged into the CAA’s Occurrence Reporting database: eight incidents involving light aircrafts (four reporting serious damage, and two reporting injuries), two involving helicopters (without negative consequences being reported), three involving parachutists (one dead, and two injured), and two incidents involving gliders (one reporting serious injuries). The New Zealand Herald also comments on two other incidents that seem not to have yet been reported to the CAA: an emergency landing of a medium-size aircraft (no safety outcomes ensued), and a light aircraft incident (no outcomes described). Furthermore, another two accidents at international levels also caught the attention of the press: an aircraft accident in Fiji (three people dead, and the aircraft written-off), and a gliding accident in Australia (one person dead).

Secondly, miscellaneous news on efficiency performance and management at Qantas Airways, especially on its takeover bid, but also on the air fling of one of its flight attendants. Thirdly, miscellaneous news on efficiency performance and management at Air New Zealand, especially on its efficiency performance during 2006, cooperation management to avert a union strike, the future opening or a route to Vancouver, and onboard service-related news. Fourthly, miscellaneous news on aviation efficiency performance during 2006 in other sectors of aviation, especially immigration and airport performance at national levels, and no-frills airlines performance in Europe. Finally, news regarding manufacturers’ performance, especially regarding a booming Boeing in contrast to a failing Airbus.

Keywords

Aviation; Management; Efficiency; Health; Safety; Environment; New Zealand.
### TYPE OF WORK
- Research proposal, project...
- Methodology paper
- Results paper, recommendations...
- Thematic bibliography

### RESEARCH APPROACH
- Pilot study
- Exploratory study
- Confirmatory study
- Replicating study

### 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

### METODOLOGY
- Survey/Questionnaire
- Interview
- Test/Scale
- Observation
- Content analysis/Data archives

### SAMPLING
- Anecdote-s
- Case-s
- Convenient sample
- Representative sample

### DATA ANALYSIS
- Qualitative analysis
- Univariate quantitative analysis
- Bivariate quantitative analysis
- Multivariate quantitative analysis

### GENERALIZATION ANCHORS
- New Zealand
- Aviation management
- Aviation efficiency
- Aviation health, safety and the environment

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6 February 2007


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NZPA (2007b). Air NZ and Qantas scrap alliance plan. The New Zealand Herald, 2007-

15 February 2007


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21 February 2007


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25 February 2007


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27 February 2007


28 February 2007


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.

  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.
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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:


4. Which & where.

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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:


An analysis of the European Union’s legislation on the investigation of aviation accidents and incidents

by Jose D. PÉREZGONZÁLEZ (2007)

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


The purpose of this paper is to assess how well the mandatory occurrence investigation scheme regulated by Council Directive 94/56/EC maps onto a generic occurrence management system for the reporting, investigation and correction of aviation occurrences.

The results obtained depict Council Directive 94/56/EC as an outdated legislative framework for investigating aviation occurrences within the European Union. Investigation, report assembly, construction of recommendations and feedback are operations more or less contemplated by the Directive. However, the Directive’s priority seems to be the setting of a legislative framework to make investigations possible rather than regulating specificities of such process. Thus, the Directive alone does not seem to regulate an effective investigation system, less an occurrence management system. Therefore, the capability of the Directive to improve aviation safety is yet unresolved.

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Keywords

Air investigation; Occurrence management system; Safety legislation; Aviation safety; European Union.
### Knowledge Management Space

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An analysis of the European Union’s legislation on the investigation of aviation accidents and incidents.

1. Introduction.

In Pérezgonzález (2007), Directive 2003/42/EC was discussed. Thus, this second paper will only comment upon Directive 94/56/EC. For the sake of brevity, the same systems hierarchy and methodology used in that article applies to this.

2. Methodology.
To put it briefly, this paper analyses and describes the functioning of the investigation process legislated by Directive 94/56/EC from information contained in such directive. Such analysis will describe the investigation process as if it were part of a larger occurrence management system. This way the ADAMS-2 occurrence management model (OMS) can be used as a generic standard for evaluation purposes. The results will thus render a description of the investigation process similar to the one done for the Australian Transport Safety Investigation Act 2003 (see Pérezgonzález, 2005).

As the available information is not extensive enough as for assessing how well the EU’s reporting scheme works, the analysis here presented is a nominal one (Yes/No), suggesting which operations in the scheme are comparable to those in the ADAMS-2 OMS according to reasonable evidence. Such mapping is indicative of the operations required by the law and, in theory, functioning within each Member State of the European Union. An operation that is clearly represented will be so described, and will be represented with a colour-filled background in the accompanying illustration 1. An absent operation, or one whose functioning is not supported by reasonable evidence, will be so described in the text, and will be represented with a blank background in illustration 1.

3. Results. The operation of EU’s mandatory accident investigation scheme as an occurrence management subsystem (OMS) for aviation safety.

3.1. Inputs, initiators & occurrence notification forms.

3.1.1. Inputs.
Inputs to the investigation process are twofold. Firstly, there are those occurrences whose investigation is mandatory according to Council Directive 94/56/EC. These occurrences are accidents and serious incidents in civil aviation (Article 2.1), normally covering people that have been fatally or seriously injured, aircrafts that have been seriously damaged, hull-loss (Article 3), and serious operational or technical occurrences (Annex).

Secondly, non-serious incidents from which safety lessons could be learnt are also suitable inputs for investigation, at the discretion of the investigative body (Article 4.1).

3.1.2. Initiators.
Initiators who may report accidents or incidents have not been identified by the Directive. However, one could assume that the investigative body will be informed of relevant occurrences by other agencies, such as national civil aviation authorities. Still, there are no legal provisions on who will inform whom, or how it should be done.

3.1.3. Occurrence reporting forms.
Reporting forms and procedures associated with reporting of accidents or serious incidents have not been identified by this Directive.

In summary, Council Directive 94/56/EC identifies the inputs that are relevant for investigation, but does not make any further provisions on who will report an accident or serious incident, or which reporting forms, if any, to use for the purpose.
3.2. Reporting management & preliminary investigation.

This step is not developed by Council Directive 94/56/EC.

3.3. Report to the authority.

The Directive provides a legislative framework for setting independent investigative bodies within each Member State. Such investigative bodies, in virtue of their independence, have no higher authority whom to report to. Although they are required to circulate investigation reports to their national aviation authorities as well as to the European Commission (Article 9), this could be interpreted as a requirement for feedback and system learning, instead.

Thus, although it is not clearly specified in the regulations, the reporting of occurrences to any authority seems to be beyond the competencies of investigative bodies.

3.4. Further investigation.

Council Directive 94/56/EC mostly deals with regulating this specific step within an occurrence management system. Notwithstanding this, it focuses on setting the legislative and structural frame that will allow such investigation by each Member State, while ensuring the independence of the investigative bodies (Articles 5, and 6). However it does not detail neither the extent of the investigations nor appropriate investigation procedures, explicitly leaving such matters to each investigative body (Article 4.2).

Therefore, accident and incident investigations are mandatory according to Council Directive 94/56/EC. However, investigative procedures and standards are not regulated, which may allow for heterogeneous practices across the European Union. Thus, neither the fit for purpose nor the potential effectiveness of this step seems to be ensured by Council Directive 94/56/EC.
3.5. Trend analysis.

This step is not developed by Council Directive 94/56/EC.

3.6. Reports & recommendations.

Two types of reports are regulated by the Directive: accident reports and incident reports. The structure and contents of such reports are left to the discretion of the investigative body, pending that the reports are written in a “form appropriate to the type and seriousness” of the accident or incident, and that contain safety recommendations, whenever appropriate (Articles 7, & 8).

Regarding time management, only accident reports have a maximum required time limit of 12 months to be compiled and made public (Article 7.2).

Thus, although reports and recommendations are required, the content of such reports and other procedural issues are, again, left unregulated. This poses a threat to the quantity and quality of the information contained within a report and to the effectiveness of this step within an occurrence management system. Notwithstanding this, the requirement for recommendations will probably help ensure that enough information regarding findings, the drawing of conclusions, and the determination of causes (Article 3e) is also provided as background literature to any recommendation made. Thus, it seems that this step may be functionally effective (albeit not well developed) as per the Council Directive.

3.7. Action implementation.

Article 9 explicitly requires of Member States to consider safety recommendations made to them, and act upon them as for enhancing aviation safety. However, no further provisions are made regarding the effective implementation of such recommendations.

Therefore, the Directive does not seem to provide for a functionally effective process of action implementation.

3.8. Feedback mechanism for implementation.

This step is not developed by Council Directive 94/56/EC.

3.9. Control mechanism.

This step is not developed by Council Directive 94/56/EC.

3.10. Assessment of implementation.

This step is not developed by Council Directive 94/56/EC.

3.11. Closure of the occurrence.

This step is not developed by Council Directive 94/56/EC. It is possible to assume that the writing up of occurrence reports and recommendations (and their circulation) effectively closes the occurrence as per the investigation process, as far as this Directive is concerned. However, this does not necessarily fulfil the ultimate aim of investigations, that of enhancing aviation safety. Thus, this step seems not to have been well developed by this Directive yet.


Investigative bodies are required to circulate investigation reports and safety recommendations (in principle, once those reports and recommendations have been written up) to the respective national aviation authorities and the European Commission (Article 9). Furthermore, accident reports ought to be made public within 12 months of the occurrence (Article 7.2), while incident reports ought to be circulated to the parties likely to benefit from the investigation findings (Article 8.2).

Therefore, two feedback standards are evident—one for accident reports and the other for incident reports—, while no further provisions are made regarding such feedback by the investigative body nor regarding any other related feedback by implementing bodies.

Therefore, this step seems to be partially developed by the actual Directive (at least, as far as investigation outputs are concerned), thus ensuring the circulation of information among the relevant stakeholders.


This article has reviewed and analysed the mandatory incident and accident investigation scheme regulated by Council Directive 94/56/EC of the European Union.

Operationally, this Directive regulates a scheme that functions as an investigative tool for aviation accidents and incidents in the European Union, although it does not necessarily exclude the investigation of less serious incidents.

On the negative side of this analysis, however, two issues deserve attention. Firstly, Council
Directive 94/56/EC seems to have been relevant in that historical period in which the European Union was consolidating its regulatory framework on aviation safety beyond the national boundaries of Member States. Therefore, the Directive rather focuses on setting such a framework rather than on detailing procedural aspects. Thus, it is vague and underdeveloped in the latter aspect.

Secondly, it does not regulate an occurrence management subsystem—it will start doing so nine years later with Directive 2003/42/EC. Thus, the Directive only provides a patchy framework for accident and incident investigations. Furthermore, it is potentially flawed in today’s European Union, as it does not cater for an effective and homogeneous approach to the management of aviation occurrences.

As it was discussed in Pérezgonzález (2007), certain recommendations can be made in order to improve the present regulation in a manner that facilitates the management of an overall occurrence management subsystem, including the investigation of relevant occurrences. Practically, all recommendations made in that article are applicable to this, as well, and shall not be repeated here.

More specifically, however, Europe could look onto Australia’s TSI Act (2003) and TSI Regulations (2003) for a sounder legislative framework in regards to accident and incident investigations.

5. References.


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)

OMS – Occurrence Management Subsystem (ADAMS-2).

TSI Act – Transport Safety Investigation Act (Australia).

TSI Regulations – Transport Safety Investigation Regulations (Australia).
7. 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.

  This is the European Commission portal for public consultations regarding aviation.

- EUROCONTROL’s website, retrievable from 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
  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
  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
  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.

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.
8. 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 he is developing is a meta-analysis of aviation safety legislation at international levels. The following is the author’s list of recent publications in regards to such 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. As a token of it, in March 2007 it reached its 50th Academic Output (which includes peer-reviewed and non-peer-reviewed publications and conference papers).

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:


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Thematic bibliography: aviation news in New Zealand during March 2007

by Jose D. PÉREZGONZÁLEZ (2007)

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 the bibliographic series that documents monthly indicators for aviation management and aviation performance in New Zealand (starting from June 2006; see, for example, Pérezgonzález, 2006, 2007).

During the month of March 2007, there were some 128 pieces of aviation-related performance indicators. The most important 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, news on air incidents and accidents, especially at international level: the Garuda accident (with twenty one dead and an aircraft written-off), a military incident in Iraq, a Chilean near-miss while on route to New Zealand, and an incident in Japan. At national level, seven incidents occurred during March: three incidents involved helicopters (two of which sustained either substantial damage or hull loss, but no personal injuries ensued), another three incidents involved light aircrafts (two of which sustained substantial damage), and, finally, one incident involving a skydiver (who suffered only minor injuries).

Secondly, miscellaneous news on efficiency performance and management at Air New Zealand, especially regarding cooperation management to avert a union strike, the end of the free biscuit, and other news on strategy management within the airline. Thirdly, miscellaneous news on efficiency performance and management at Qantas Airways, especially on its takeover bid, but also on strategy management. Fourthly, miscellaneous news regarding Airbus, especially regarding restructuring plans within the manufacturer. Fifthly, news on national policy on overbooking. And, finally, miscellaneous news on passenger numbers and efficiency performance at international airports within New Zealand.

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.

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.
Thematic bibliography: aviation news in New Zealand during March 2007

1 March 2007


2 March 2007


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References


2. Sources of knowledge about Aviation in New Zealand¹:

  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).

  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.

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.
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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:


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:


Thematic bibliography: aviation news in New Zealand during April 2007
by Jose D. PÉREZGONZÁLEZ (2007)
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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 the bibliographic series that documents monthly indicators for aviation management and aviation performance in New Zealand (starting from June 2006; see, for example, Pérezgonzález, 2006, 2007).

During the month of April 2007, there were some 69 pieces of aviation-related performance indicators. The most important 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, news on air incidents and accidents, especially at national level: eight incidents occurred, while six of them were reported to the CAA. These included four incidents involving light aircrafts (one with minor damage, and three with serious damage), one involving a microlight aircraft (no injuries but minor damages ensued), and one involving a gyrocopter (only serious damages were reported). Another two incidents were captured by the New Zealand Herald but not yet by the CAA’s database. One was a military incident involving a light aircraft (no injuries or damages reported). The second one was a near-miss at Auckland Airport. At international levels, a mid-air collision involving two helicopters occurred in Iraq (2 dead, 5 injured, and 2 helicopters written off), while a jet crashed in the US (but no other outcomes were reported). Furthermore, three news commented on March’s Garuda accident, two commented on an incident in the UK where a pilot was prevented from flying for fear of being under the influence, and another news commented on an attempted hijacking in Turkey.

Secondly, news on Qantas were also of interest, especially those related to its proposed takeover bid. Thirdly, miscellaneous news regarding Air New Zealand, especially on efficiency performance, coordination management to avert a union strike, and a claim that its latest advertising incited suicide in Samoa. Fourthly, Jetstar’s stranding passengers in Hawaii, but also its plans for operating domestically in New Zealand. Fifthly, the achievements of a blind pilot. Sixthly, miscellaneous news regarding British Airways’s performance. Seventhly, miscellaneous news regarding national and international immigration issues. Eighhtly, miscellaneous news regarding national airports, specially Auckland International. And, finally, miscellaneous news regarding manufacturers, especially Airbus’s continued woes.

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

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<tr>
<td>Other (biographical, phenomenological…)</td>
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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.
Thematic bibliography: aviation news in New Zealand during April 2007

1 April 2007


2 April 2007


3 April 2007


4 April 2007


5 April 2007


7 April 2007


8 April 2007


9 April 2007


10 April 2007


11 April 2007


12 April 2007


14 April 2007


15 April 2007


16 April 2007


17 April 2007


18 April 2007


19 April 2007


20 April 2007


21 April 2007


22 April 2007


24 April 2007


26 April 2007


27 April 2007


28 April 2007


30 April 2007


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 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, up to then having worked 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 is 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:


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:


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Television health promotion in New Zealand (February-March)

by Jose D. PÉREZGONZÁLEZ (2007)

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

Society is growing more conscious of the benefits of a balanced lifestyle (including nutrition, nutritional supplements, exercising and dieting). Notwithstanding this, information and persuasion through televised advertising may not be reflecting such balance, thus promoting a health climate biased towards a particular lifestyle. This research was set up in order to establish a baseline of the advertising balance offered on New Zealand’s free-to-air television as a precursor of the health climate which is both reflected and promoted by such advertising. Several observations of health advertising were carried out on five free-to-air television channels, amounting to an estimated 230 hours. The two main dependent variables were the type of product being advertised and the nutritional balance of specific food products. The main independent variable was the channel in which the products were advertised. Statistical analysis focused on means differences between channels by way of t-test analysis.

The results show that the existing marketing efforts in New Zealand reflect and/or sustain a health climate whereby nutritional content is advertised six times more often than fitness content. This nutritional content is not balanced, either. The quality of the food products is poor, although similar for all channels. However, it gets amplified by a differential advertising across channels. Overall, TV1, TV2 and TV3 seem to be the channels preferred by manufacturers and retailers, and tend to promote a less unbalanced health climate. Channel 4 and Prime, however, are the channels preferred by selected manufacturers and retailers, and offer the most unbalanced health climate. Furthermore, food quality is also similar for type of product advertised and for target population, but significant differences appear when marketing efforts are taken into account. All in all, recommendations are made to manufacturers and retailers to better manage the nutritional climate advertised in New Zealand by way of advertising more balanced products and advertising these more often than the most unbalanced alternatives.

Keywords

Health promotion; Nutrition; Fitness; Weight-loss; Televised advertisement; New Zealand.
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<td>☑  Bivariate quantitative analysis</td>
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<td>☑  Multivariate quantitative analysis</td>
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Televised health promotion in New Zealand (February-March)

1. Introduction

Society is growing more conscious of the benefits of both a balanced diet (i.e. focused on nutrition) and a balanced lifestyle (which also includes exercising). A good example of this is the ever more frequent reference to such a balanced diet and balanced lifestyle in both media advertising and the packaging of nutritional and fitness products.

Strong evidence of the relationship between televised health advertising and consumer behaviour has been found for food and children, indicating a positive relationship between the advertising of food and children’s preference for that food and/or levels of obesity (e.g. Lobstein & Dibb, 2004; Hitchings & Moynihan, 1998; Wilson, Signal, Nicholls & Thomson, 2005; Harrison & Marske, 2005). Strong evidence has also being found regarding the advertising of exercise and its impact on adult fitness (e.g. Bauman, Bellew, Owen & Vita, 1998; Berry & Howe, 2004; Wimbush, Macgregor & Fraser, 1998). Finally, evidence is also available for the advertising of a healthy lifestyle and its impact on behavioural and attitudinal change (Beaudoin, Fernandez, Wall & Farley, 2005).

Notwithstanding the above, televised advertising may not yet be informing and/or persuading in a balanced manner. That is, it may be promoting a health climate biased towards a particular diet or a particular lifestyle.

The importance of televised promotion rests on the role of television in both reflecting the prevalent ‘lifestyle’ –products favoured by the population have more chances of being developed, marketed and advertised–, and in promoting such a ‘lifestyle’ –advertising helps create or maintain the favour of the population to the advertised products.

This correlated role of televised advertising may help inform of and sustain a particular health climate. This construct of a health climate can be defined as an attitude towards health reflected, promoted and sustained through advertising (normally by the manufacturers themselves). This climate can be estimated for particular products (e.g. nutritional climate), but can also be aggregated into a more generic construct (e.g. health climate, which includes all health products).

2. Methodology

The objective of this research was exploratory and descriptive in nature. That is, to establish a baseline of the advertising balance offered on New Zealand’s free-to-air television as a precursor of the health climate which is both reflected in and promoted by such advertising.

Health products of interest were those related to nutritional promotion –specific food products, nutritional supplements (other than medicines), and generic nutritional brand advertising– and fitness promotion –fitness products, weight-loss products and generic fitness brand advertising.

The construct ‘climate’ was calculated as the quality of the health products being advertised times the amount of their advertising. However, two strategies were followed in this estimation. Firstly, because the quality of health products other than food is rather subjective and difficult to estimate, such quality was homogenised to ‘1’. Therefore, only the amount of advertising counted towards the calculation of climate. This strategy is the one followed when discussing health climate.

Secondly, because objective data existed for food products (i.e. data as per nutritional labels), the nutritional balance of those products was used as an indicator of the quality of the food products. The nutritional balance value is that provided by the “Balanced Nutrition Index™ –BNI™” (see Pérezgonzález, 2007), which categorises each product according to how much their macronutrients deviate from a standard nutritional formula. Thus, it provides a single nutritional value that accounts for all the main macronutrients of a typical nutritional label –i.e. protein, carbohydrate, sugar, fat, saturated fat, sodium and fibre. This strategy is the one followed when discussing food products and nutritional climate.

Food products included ingredients (i.e. they need to be combined with other products, e.g. taco shells), basic food products (i.e. they can be eaten as such, although they are normally eaten in combination with other products, e.g. cheese), and finalised food products (i.e. they are manufactured as ready-to-it food products, e.g. chocolate bars or sweets). Meals (such as pizzas, hamburgers, and other recipes) can also be considered as finalised food products. However, their nutritional content is not so readily available while, at the same time, is more prone to variation. Thus, they were not included in this issue.
Several hours of observations were carried out on five free-to-air New Zealand television channels, amounting to an estimated 230 hours and 1,138 health-related advertisements.

The research was also interested in controlling the time of observation as a possible intervenient variable. Therefore, the sample period was established between February and March 2007. Observations were scheduled so that different days of the week as well as the different hours of the day were captured. Overall, six days of observations were carried out between the 11\textsuperscript{th} and the 26\textsuperscript{th} of February, and the remaining six observations between the 1\textsuperscript{st} and the 10\textsuperscript{th} of March. Repeated measures were obtained for all days except Friday and Tuesday.

Observations were also controlled by the hour, initially running from 8:00 to 24:00. However, the morning hours had generally very few advertisements, most of them infomercials (e.g. a half hour advertisement on a given gymnastic product). That is, advertisements yielding relevant comparative data for the six categories of health variables of the study started from 12:00. Therefore, data from observations carried out between 12:00 and 24:00 was the one used for this study. Repeated measures were obtained for all hours. A total of 46 hours of television were observed across five channels, yielding an estimated 230 hours in total (approximately 20 hours per day observed).

Observations were carried out for all five channels at the same time. In order to do so, the procedure followed was to zap between channels at an approximate rate of 2 seconds, thus ensuring that all commercial advertising was captured. The actual viewing or taping of commercials was not considered to be necessary as no content analysis was needed. Identification of each commercial offered no problems as many of the commercials were either known to the researcher previously to the commencement of the research, or would be known after repeated appearances during and after the research. The two-second viewing procedure still allowed for the reliable coding of advertisements across the five channels due to several reasons which allowed for modifying the zapping ratio so that coding could take place: channels did not advertised at the same time –thus, channels with normal programs were zipped quicker–, channels did not advertised health products at the same time –thus, channels not advertising health products were zipped quicker–, or channels actually advertised similar health products (or products already known) –thus, coding was may quicker, as information about the sponsor, for example, could be added after the daily observation.

Observations were carried out by the researcher. As no threat of bias was envisaged when coding objective data, inter-observers reliability was not considered to be necessary and thus, not procured. The categorization of advertisements into categories was carried out after each day’s observation.

Advertisements related to health promotion were allocated to one of two categories: nutritional promotion and fitness promotion. Nutritional promotion includes three subcategories: specific food products, nutritional supplements (e.g. vitamins, but excluding medicines), and a miscellaneous category for the self promotion of brands, its manufacturers or retailers (e.g. generic promotion of Bluebird’s chocolate bars, the brand Pam, or supermarkets). Fitness promotion includes another three subcategories: fitness promotion, dieting promotion (normally for weight-loss), and a miscellaneous category for the self promotion of fitness and weight-loss manufacturers, retailers and promoters.

The two main dependent variables were the type of health product being advertised and the nutritional balance of specific food products. The main independent variable was the channel in which the products were advertised. Statistical analysis focused on means differences between channels by way of t-test analysis. Results were statistically controlled by month, day and time of observation as possible intervenient variables.

3. Results

3.1. Screening of results

A total of 1,138 advertisements related to health promotion were registered during the sampling period. An initial screening of potentially intervenient variables was performed using the BNI as dependent variable. The screening process rendered the following results:

A total of 54\% of advertisements were captured in February, with the remaining ones in March. However, no significant difference in BNI variance was found.

All days of the week were observed. Overall, Sundays had the most advertisements (65\%), and Tuesdays the least (21\%). When observations were grouped into weekdays and weekends, 64\% of the advertisements were captured during weekdays,
while 36% were captured during the weekend. No significant differences in BNI variance were found between these groups.

Finally, the greatest number of health advertisements (13.4%) occurred between 19:00 and 20:00, and the least (4.4%) occurred between 22:00 and 23:00. The period with the greatest number of health advertisements was between 17:00-20:00, and 21:00-22:00 (those four hours accounting for 48% of total advertisements). No significant differences between hours appeared, either.

Therefore, the main possible interventient variables seem to have had no significant effect on the oncoming results.

### 3.2. Health promotion results

#### 3.2.1. Overall health promotion results

The results indicate that 90% of health promotion was related to the nutritional promotion category. Overall, food products represented 70% of the advertisement load, followed by the miscellaneous advertising of food brands, manufacturers and retailers (16%).

In comparison, only 10% of advertising was concerned with fitness promotion. Overall, specific fitness products only represented 4.3% of the advertisement load, followed by the miscellaneous advertising of fitness brands, manufacturers, retailers and promoters.

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
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<td><strong>Nutritional promotion</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Food product</td>
<td>794</td>
<td>66.8%</td>
<td>66.8%</td>
</tr>
<tr>
<td>Nutritional supplement</td>
<td>51</td>
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<td>71.3%</td>
</tr>
<tr>
<td>Miscellaneous nutrition</td>
<td>102</td>
<td>8.7%</td>
<td>79.9%</td>
</tr>
<tr>
<td><strong>Fitness promotion</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Fitness product</td>
<td>49</td>
<td>4.3%</td>
<td>84.2%</td>
</tr>
<tr>
<td>Weight-loss product</td>
<td>28</td>
<td>2.4%</td>
<td>86.6%</td>
</tr>
<tr>
<td>Miscellaneous fitness</td>
<td>54</td>
<td>4.6%</td>
<td>91.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1189</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

### 3.2.2. Health promotion results broken down by channel

Overall, television advertising appeared unbalanced towards nutritional promotion, with food-related advertisements ranging from 81% to 98%, according to channel.

Among channels, TV1 offered a significantly more balanced promotion than any other channel [i.e. more than TV2 (t=4.99 (df 218), p<.01), TV3 (t=3.20 (df 268), p=.01), Channel 4 (t=3.11 (df 265), p<.01), and Prime (t=5.09 (df 249), p<.01)].

Also, TV3 was significantly more balanced than TV2 (t=-2.18 (df 578), p=.03) and Prime (t=2.67 (df 238), p<.01). No significant differences were found between the remaining pairs of channels.

<table>
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<td>64.6%</td>
</tr>
<tr>
<td>TV2</td>
<td>784</td>
<td>69.2%</td>
<td>71.2%</td>
</tr>
<tr>
<td>TV3</td>
<td>794</td>
<td>69.2%</td>
<td>80.4%</td>
</tr>
<tr>
<td>Channel 4</td>
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<tr>
<td>TV1</td>
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<td>64.6%</td>
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<tr>
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<td>784</td>
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<td>794</td>
<td>69.2%</td>
<td>80.4%</td>
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<tr>
<td>Channel 4</td>
<td>812</td>
<td>70.8%</td>
<td>88.2%</td>
</tr>
<tr>
<td>Prime</td>
<td>54</td>
<td>4.6%</td>
<td>92.8%</td>
</tr>
</tbody>
</table>

#### 3.3. Food promotion results

##### 3.3.1. Overall results based on the BNI

This research allowed for a comparison between the products that were being advertised and the frequency of marketing. During the sampling period, a limited amount of 81 food products (other than meals and alcoholic drinks) were advertised on New Zealand’s free-to-air television. Their nutritional balance ranged from BNI 36.26 to BNI 239.96 (plus four low-calorie drinks which were analysed only in regards to water and sodium content and, thus, appeared as having a balanced index). The average nutritional balance was BNI 112 (± 54).

In regards to specific nutrients, those 81 products were more unbalanced towards excess of sugar (mean=30% ± 35%), excess of carbohydrate (mean=12% ± 27%), deficiency of protein (mean=-11% ± 9.2), and deficiency of fibre (mean=-9% ± 12), followed by excess of saturated fat (mean=2% ± 15), and deficiency of fat (mean=-1% ± 24). The average for sodium was within recommended maximum limits (mean=0 ± 23%).

When marketing efforts were taken into account (i.e. when the appearance of each product was counted towards the final results), there were a total of 450 advertisements for those products, providing an average nutritional balance of BNI 114 (± 53). These were specially unbalanced towards excess of sugar (mean=30% ± 2%), excess of carbohydrate (mean=13% ± 1%), deficiency of protein (mean=-12% ± 1%), and deficiency of fibre (mean=-8% ± 1%), followed by deficiency of fat (mean=-2% ± 1%) and excess of saturated fat (mean=2% ± 1%), but adequate sodium intake (mean=-1% ± 1%).

These results parallel each other, and seem to indicate that television advertising is only

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*Journal of Knowledge Advancement & Integration, 2007, issue 1, pp.135-147. ISSN:1177-4576.*

Available at www.lulu.com/Journal-KAI
reflecting the original balance of the advertised food products, overall.

### 3.3.2. Results broken down by channel

#### 3.3.2.1. TV1

TV1 advertised 12 food products, yielding an average nutritional balance of BNI 89 (± 38), particularly unbalanced towards excess of sugar and carbohydrate, and deficiency of fibre. The total marketing load was of 57 advertisements – almost 5 advertisements per product–, which further promoted a more unbalanced climate, yielding an average BNI 102 (± 39), particularly unbalanced towards excess of sugar and carbohydrate, and deficiency of protein.

In comparison to other channels, TV1 promoted a similar nutritional climate than TV2 and TV3, but a significantly less unbalanced nutritional climate than Channel 4 (t=-4.78 (df 220), p<.01) and Prime (t=-2.59 (df 46), p<.05).

More specifically, it promoted a significantly lesser deficiency of protein, and a lesser excess of carbohydrate and sugar than Channel 4 (although the latter promoted an adequate intake of sodium, which TV2 did not). TV2 also promoted a lesser deficiency of protein and fat, and a lesser excess of carbohydrate, sugar and saturated fat than Prime (although the latter promoted lesser deficiency of fibre).

<table>
<thead>
<tr>
<th>Product</th>
<th>Market N</th>
<th>Market Mean</th>
<th>Market SD (Dev)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNI</td>
<td>30</td>
<td>114.8</td>
<td>7.02</td>
</tr>
<tr>
<td>Protein</td>
<td>35</td>
<td>-11.86</td>
<td>7.02</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>35</td>
<td>27.89</td>
<td>9.53</td>
</tr>
<tr>
<td>Fat</td>
<td>35</td>
<td>34.35</td>
<td>9.53</td>
</tr>
<tr>
<td>BNI</td>
<td>35</td>
<td>114.8</td>
<td>7.02</td>
</tr>
<tr>
<td>Protein</td>
<td>35</td>
<td>-11.86</td>
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</tr>
<tr>
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<td>35</td>
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<tr>
<td>Fat</td>
<td>35</td>
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<tr>
<td>BNI</td>
<td>35</td>
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<td>Protein</td>
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<td>Carbohydrate</td>
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<td>27.89</td>
<td>9.53</td>
</tr>
<tr>
<td>Fat</td>
<td>35</td>
<td>34.35</td>
<td>9.53</td>
</tr>
</tbody>
</table>

#### 3.3.2.2. TV2

TV2 was the channel that advertised the most products (n=35), yielding an average BNI 114 (± 50), particularly unbalanced towards excess of sugar and carbohydrate, and deficiency of protein. It was also the channel with most food related advertisements (n=171, almost 5 advertisements per product), although, in so doing, it lessened its nutritional balance to BNI 111 (± 52), being particularly unbalanced towards excess of sugar and carbohydrate.

In comparison to other channels, TV2 promoted a similar nutritional climate than TV1 and TV3, but a significantly less unbalanced nutritional climate than Channel 4 (t=-3.95 (df 220), p<.01) and Prime (t=-2.59 (df 46), p<.05).

More specifically, it promoted a significantly lesser deficiency of protein, and a lesser excess of carbohydrate and sugar, and a more balanced fat promotion than Channel 4 (although the latter promoted a lesser deficiency of fibre, and an adequate intake of sodium, which TV3 did not). TV3 also promoted a lesser deficiency of protein,
a lesser excess of carbohydrate and sugar, a more balanced promotion of fat, and an adequate intake of salt than Prime (although the latter promoted a lesser deficiency of fibre, and an adequate intake of saturated fat).

3.3.2.4. Channel 4

Channel 4 was the channel which advertised the least products (n=2), yielding an average BNI 124 (± 86), especially unbalanced towards excess of sugar and carbohydrate, and deficiency of fat. Its total marketing load, however, was of 51 advertisements – an average of 25 advertisements per product, which increased its unbalanced to BNI 143 (± 51), especially unbalanced towards excess of sugar and carbohydrate, and deficiency of protein.

Channel 4 promoted a similar nutritional climate than Prime, but a significantly more unbalanced nutritional climate than TV1, TV2 and TV3, as already discussed.

The main differences between Channel 4 and Prime were that the former promoted a significantly lesser deficiency of fibre and an adequate intake of saturated fat, while the latter promoted an adequate intake of sodium, which Channel 4 did not.

3.3.2.5. Prime

Finally, Prime advertised three food products, yielding an average BNI of 131 (± 80), especially unbalanced towards excess of sugar and carbohydrate, and deficiency of fat and protein). Its total marketing load was of 36 advertisements – an average of 12 advertisements per product, which increased its unbalanced to BNI 139 (± 60), especially unbalanced towards excess of sugar and carbohydrate, and deficiency of fat and protein.

As already discussed, it promoted a similar nutritional climate than Channel 4, but a significantly more unbalanced nutritional climate than TV1, TV2 and TV3.

3.3.3. Results broken down by food type

3.3.3.1. Ingredients

Ingredients were fairly advertised, with 17 products being advertised a total of 112 times (an average of 7 adverts per product).

Ingredients and basic food products shared a similar nutritional climate when promoted on television. Notwithstanding this, the promotion of ingredients rendered a significantly more balanced fat intake and an adequate intake of saturated fat and fibre than the promotion of basic food products (but also a higher intake of carbohydrate and sugar).

On the other hand, the promotion of ingredients rendered a nutritional climate significantly different to that of finalised food products (t = -5.46 (df 197), p < .01). More specifically, ingredient promotion became more prominent in marketing a lesser deficiency of protein, a lesser excess of sugar and an adequate intake of saturated fat and fibre, but also a greater deficiency of fat, and excess of sodium.

3.3.3.2. Basic food products

Basic food products shared a similar nutritional climate when promoted on television than that of both ingredients and finalised food products. Nonetheless, as it was discussed above, basic food products promoted a more balanced intake of carbohydrate and sugar than ingredients, but a worse intake of fat, saturated fat and fibre.

When compared with finalised food products, a similar pattern also appeared: basic food products were significantly more prominent in marketing a lesser deficiency of protein, and a lesser excess of carbohydrate and sugar than finalised products, but also excess of fat and sodium.
3.3.3.3. Finalised food products

Finalised food products, as already discussed, shared a similar nutritional climate when promoted on television than basic food products, but was significantly different to the climate promoted by ingredients —although with a more balanced promotion of fat and sodium than ingredients did.

### Table 1: BNI Analysis for Finalised Food Products

<table>
<thead>
<tr>
<th>Product</th>
<th>Product Mean</th>
<th>Product Median</th>
<th>Market Mean</th>
<th>Market Median</th>
<th>Market StdDev</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNI</td>
<td>102.94</td>
<td>86.18</td>
<td>93</td>
<td>83.05</td>
<td>12.11</td>
</tr>
<tr>
<td>ProBalance</td>
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<td>-0.50</td>
<td>35</td>
<td>-1.48</td>
<td>0.53</td>
</tr>
<tr>
<td>CarbBalance</td>
<td>107.33</td>
<td>107.33</td>
<td>93</td>
<td>83.05</td>
<td>12.11</td>
</tr>
<tr>
<td>SigBalance</td>
<td>-0.76</td>
<td>-0.04</td>
<td>35</td>
<td>-1.48</td>
<td>0.53</td>
</tr>
<tr>
<td>FullBalance</td>
<td>-0.19</td>
<td>-0.04</td>
<td>35</td>
<td>-1.48</td>
<td>0.53</td>
</tr>
<tr>
<td>FatBalance</td>
<td>92.70</td>
<td>92.70</td>
<td>93</td>
<td>83.05</td>
<td>12.11</td>
</tr>
<tr>
<td>FibBalance</td>
<td>-10.00</td>
<td>-10.00</td>
<td>35</td>
<td>-1.48</td>
<td>0.53</td>
</tr>
<tr>
<td>SodiumBalance</td>
<td>-8.37</td>
<td>-8.37</td>
<td>35</td>
<td>-1.48</td>
<td>0.53</td>
</tr>
</tbody>
</table>

4. Discussion

Television marketing has enough influence on the population as to both inform of available products and encourage their consumption. Therefore, it is possible to label such influence as a persuasion tool that may also promote a particular set of attitudes among the population, namely the attitude that certain characteristics of nutrition and fitness are common (which may get translated into adequate) and desirable. This particular set of attitudes can be labelled as a ‘climate’, which is managed by the quality of the products being advertised and the frequency of their advertising.

In the period sampled for this research, results shows that free-to-air television in New Zealand promoted a healthy climate where nutritional advertising was way greater than fitness advertising. This suggests an unbalanced promotion of a healthy climate on television, with greater efforts put into promoting nutrition than into promoting fitness. TV1 was the channel that offered a significantly less unbalanced health climate than any other channel, with 85% of advertisements promoting nutrition and 15% promoting fitness. TV3 followed, with a distribution of 91% advertisements promoting nutrition and 9% promoting fitness (however, TV3 only promoted a significantly less unbalanced health climate than TV2 and Prime).

Overall, specific food products were the most advertised —ranging from 49% to 78% of total...
health promotion, depending on the channel. The promotion of nutrition-related brands, manufacturers and retailers—which also advertise nutritional content, albeit indirectly—was the second most advertised category, ranging from 8% to 25%. In contrast, the advertising of fitness products ranged from 2% to 8%, and the advertising of weight-loss products ranged from 0% to 6%.

Paralleling results found by other researchers, this study also found similar trends whereby food promotion tends to be biased towards unhealthy foods. This further suggests that television advertising actually discourages a climate of health by way of promoting a climate of nutritionally unbalanced foods which surpass that of potentially equilibrating forces from fitness and dieting.

Subsequently, the category of specific food products was analysed according to the nutritional balance provided by each of the food products. For this research, each food product was described as per the “Balanced Nutrition Index™”, which provides a single nutritional value per product, thus reducing the need to ‘juggle’ the values of seven macronutrients independently.

Overall, 81 food products were advertised in all five channels, rendering a heavily unbalanced nutritional content in average (BNI 112, in contrast to a balanced value of BNI 0). These products were particularly characterised by providing too much sugar and carbohydrate, and too little protein and fibre. These products were advertised a total of 450 times—ranging from 1 advertisement to 23 advertisements, depending on the product, across all five channels. When marketing efforts were taken into account, the results paralleled those of the food products themselves, with an average BNI of 114.

Although these marketing results may initially suggest that televised advertising is only reflecting the original balance of the advertised food products, when results are broken down by channel it becomes evident that advertising normally promotes a more unbalanced nutritional climate by way of advertising more the most unbalanced food products.

TV2 advertised more variety of food products (product n=35) than the remaining channels, followed by TV3 (product n=29) and TV1 (product n=12). The same hierarchy appeared for frequency of advertising, with TV2 advertising more frequently (market n=171), followed by TV3 (market n=137) and TV1 (market n=57). Overall, the ratio product / frequency was relatively similar for all three channels, with an average of 5 advertisements per product.

On the other hand, Prime advertised a restricted variety of food products (product n=3), as so did Channel 4 (product n=2). Notwithstanding this, these two channels advertised more frequently, with a higher ratio product / frequency. Prime advertised 36 times (an average of 12 advertisements per product), and Channel 4 advertised 51 times (an average of 25 advertisements per product).

Therefore, TV2 and TV3 seem to be the channels that food manufacturers or retailers prefer, while Prime and Channel 4 seem to be the channels which selected manufacturers use to heavily advertise their food products.

Differences between channels did not appear when results were controlled by frequency of advertising, which means that the BNI of the specific food products was similar for all five channels. That is, differences between channels only appeared when frequency was taken into account. This favours the interpretation of a differential promotion of nutritional climates according to channel.

Above preferences draw a peculiar map in the managing of the nutritional climate in New Zealand. That is, although such nutritional climate is substantially unbalanced for all channels, two main groups were significantly different in promoting such climate: on the one hand, Channel 4 (BNI 143) and Prime (BNI 138) promoted a more unbalanced nutritional climate than the remaining channels—TV2 (BNI 110), TV3 (BNI 106) and TV1 (BNI 101)—even when they promoted less food products.

Of the food products advertised, 21% were ingredients, 7% were basic food products and 72% were finalised food products. Again, the ‘quality’ of the products did not differ significantly across type, but the frequency of advertising did help promote a significantly different climate for ingredients (BNI 92) and finalised food products (BNI 122). Basic food products (BNI 117) were situated somewhere in between those two types.

Finally, and according to target population, the results showed that most food advertising was directed to an adult population instead of children (probably a reflection of current legislation regulating advertisements directed to the latter population). Notwithstanding this, the nutritional quality of the food products was quite similar for both populations, being heavily unbalanced, a bit
more so for children (BNI 114) than for adults (BNI 103). When marketing efforts were taken into account, adults were bombarded four times more frequently than children. This portrayed a significantly more unbalanced nutritional climate for adults (BNI 119) than for children (BNI 94). Food products targeted to adults were significantly more prominent in marketing excess of sugar and saturated fat, and deficiency of fibre, but also lesser excess of carbohydrate and an almost adequate intake of fat.

5. Conclusions

The existing marketing efforts in New Zealand reflect and/or sustain a health climate where nutritional content is advertised six times more often than fitness content. This nutritional content is not balanced, either. The nutritional quality of food products is poor, although similar across channels, type of food and target population. However, this lack of quality gets amplified by advertising. Across channels, TV1, TV2 and TV3 seem to be the channels preferred by manufacturers and retailers, and tend to promote a less unbalanced health climate. Channel 4 and Prime, however, are the channels preferred by selected manufacturers and retailers, and offer the most unbalanced health climate. Finalised, ready-to-eat products (such as snack bars, meals and drinks) are heavily advertised in comparison to other food products, also promoting a more unbalanced nutritional climate. Finally, adults are the main target population.

Although the focus of the research has been on televised advertising, recommendations are rather made to the manufacturers and retailers of food products. On the one hand, the nutritional quality of the advertised products is poor, and a better health climate can be achieved by way of offering more balanced alternatives. On the other hand, the specific product being advertised as well as the frequency of advertising could also be controlled by the manufacturer or retailer. In both cases, it is the manufacturer or the retailer producing and stocking the product, as well as paying for the advertisement, the one who is in the best position to provide both a more balanced health climate and more nutritionally balanced food products to the population.

6. References


7. Sources of knowledge about health promotion:

The following web links will bring you to the websites of sources thought of enough relevance regarding health and nutrition. As far as practicable, these sources of information have been selected for their relevance, but the list is not necessarily exhaustive.

  
  This website offers an easily navigable website and lots of information on nutrition, with some on exercising and well-being.

- **NUTRITION.GOV website**, retrievable from [http://www.nutrition.gov](http://www.nutrition.gov)
  
  A very useful portal for information regarding food, nutrition and physical activity in the US. It links to relevant sites of different departments in the States, and it is relatively easy to navigate (although this also depends on the different websites which the reader is redirected to).

  
  This website is the portal to the Balanced Nutrition Index serial, aimed to publish information in regards to a balanced approach to nutrition. Issues relating to diverse aspects of such approach are published as they become available. However, an issue related to the research project of this paper has already being published in the site.

- **THE EUROPEAN FOOD INFORMATION COUNCIL’s (EFIC) website**, retrievable from [http://www.eufic.org/index/en](http://www.eufic.org/index/en)
  
  A European portal for information regarding food and nutrition, and some on exercising. It perhaps offers too much information packed in a relatively small print. This makes the site not too rewarding for the general public, but rather oriented to the conscious reader and the researcher.

- **THE FOOD STANDARDS AGENCY’s (FSA) website**, retrievable from [http://www.food.gov.uk](http://www.food.gov.uk)
  
  Perhaps the most useful portal for information regarding food and nutrition in the UK. It seems to offer too much information, as well, thus being a site more relevant to the conscious reader and the researcher than to the general population.

- **THE WORLD HEALTH ORGANIZATION’s (WHO) website**, retrievable from [http://www.who.int/en/](http://www.who.int/en/)
  
  This is the official website of the World Health Organization. You will find plenty of information regarding health issues, including nutrition.

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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.
8. Who’s who. Author’s updated CV.

Dr. Jose D Pérezgonzález joined the School of Aviation at Massey University (New Zealand) in June 2006, up to then having worked 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 (ISSN: 1177-4576), and The Balanced Nutrition Index™ (ISSN 1177-8849). 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; a meta-analysis of communication models in the available literature; and analysis of the nutritional balance of commercially available food products.

The following two articles are the first inputs into the latter project:


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. As a token of it, in March 2007 it reached its 50th Academic Output (which includes peer-reviewed and non-peer-reviewed publications and conference papers).

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:


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