

The Senate

Rural and Regional Affairs
and Transport
References Committee

Aviation accident investigations

May 2013

© Commonwealth of Australia 2013

ISBN 978-1-74229-832-0

This document was prepared by the Senate Standing Committee on Rural and Regional Affairs and Transport and printed by the Senate Printing Unit, Department of the Senate, Parliament House, Canberra.

Membership of the committee

Members

Senator the Hon. Bill Heffernan, Chair	New South Wales, LP
Senator Glenn Sterle, Deputy Chair	Western Australia, ALP
Senator Sean Edwards	South Australia, LP
Senator Fiona Nash	New South Wales, NATS
Senator the Hon. Lin Thorp	Tasmania, ALP
Senator Peter Whish-Wilson	Tasmania, AG

Substitute members for this inquiry

Senator David Fawcett	South Australia, LP
to replace Senator Fiona Nash on 15 February, 18 and 21 March 2013	

Participating members participating in this inquiry

Senator David Fawcett	South Australia, LP
Senator Fiona Nash	New South Wales, NATS
Senator Nick Xenophon	South Australia, IND

Secretariat

Mr Stephen Palethorpe, Secretary

Ms Lyn Beverley, Inquiry Secretary (from 13 September 2012)

Dr Chris Curran, Principal Research Officer

Mr Terry Brown, Principal Research Officer (from 14 January 2013)

Ms Natasha Rusjakovski, Principal Research Officer (from 3 December 2012)

Ms Meg Banfield, Principal Research Officer (from 13 September to 21 December 2012)

Ms Trish Carling, Senior Research Officer

Mr Nick Craft, Senior Research Officer (from 26 November 2012)

Ms Kirsty Cattanach, Research Officer (from 7 January 2013)

Ms Cassimah Mackay, Research Officer (to 12 December 2012)

Ms Lauren Carnevale, Administrative Officer (from 24 September 2012)

Ms Carol Stewart, Administrative Officer (from 13 March to 21 September 2012)

PO Box 6100

Parliament House

Canberra ACT 2600

Ph: 02 6277 3511

Fax: 02 6277 5811

E-mail: rrat.sen@aph.gov.au

Internet: www.aph.gov.au/senate_rrat

Table of Contents

Membership of committee.....	iii
Acronyms and Abbreviations	ix
List of Recommendations	xiii
Executive Summary	xix
Chapter 1.....	1
Introduction	1
Inquiry terms of reference	1
Conduct of the inquiry	1
Order for the production of documents	1
Acknowledgements	2
Scope and structure of this report.....	3
Chapter 2.....	5
Background	5
Aviation safety.....	5
Role of the ATSB	5
Role of CASA.....	9
The Miller Review and the MoU between the ATSB and CASA	12
Airservices Australia	13
Bureau of Meteorology.....	14
Chapter 3.....	17
The ATSB investigation and methodology	17
Background.....	17
Accident investigation analysis model	17
Compliance with ICAO guidelines/structure	21

How the ATSB report falls short.....	23
The CASA special audit	26
The Chambers Report.....	27
Retrieval of the flight data and cockpit voice recorders.....	28
Time taken to produce the ATSB report	31
Chapter 4.....	35
The ATSB's accident investigation processes	35
Overview of the investigation process	35
The ATSB risk matrix	39
Downgrading of the critical safety issue	45
Information withheld from the ATSB	47
How the issue was downgraded	48
Did CASA and the ATSB collude?.....	48
The way forward.....	50
Effect of change from BASI to ATSB	50
Expertise of Commissioners.....	51
Industry experience and risk-based aviation support	53
Chapter 5.....	57
System failures	57
Introduction	57
Scope of the investigation	58
Organisational/operator deficiencies	58
Operational control	61
Fatigue management.....	65
Conclusions of the Special Audit	67
Other operator issues	70

Chapter 6.....	75
Regulatory issues	75
Surveillance by CASA of Pel-Air	75
The Chambers Report.....	76
Comparison with overseas reports.....	81
Conclusion.....	84
Other issues	86
Chapter 7.....	89
Communication between CASA and the ATSB	89
Background.....	89
Withholding of key information.....	89
Breaching the Memorandum of Understanding	89
Breach of the Transport Safety Investigation Act?	90
Chapter 8.....	93
Human factors.....	93
Importance of human factors.....	93
Lack of human factors information in the ATSB report	94
Factors influencing decision making.....	94
Changing weather reports.....	96
Fatigue	99
Retrieval of the CVR/FDR	103
Chapter 9.....	107
Key issues around recommendations and ensuring action.....	107
Fulfilling legislative requirements.....	107
Minister's requirements	107
Why are there no formal recommendations included in the ATSB report?.....	107
Ability to track action taken in relation to safety issues.....	109

Safety issues only relevant to specific operators.....	111
Significant delays implementing ATSB recommendations	112
Areas where recommendations are necessary to ensure actions are taken	117
Passing on relevant weather	118
Critical weather information not passed on.....	118
Known difficulties in forecasting weather on Norfolk Island.....	125
Conclusion.....	131
Chapter 10	133
Changes to mandatory and confidential reporting	133
Mandatory reporting	133
Confidential reporting	134
Issues raised with the committee.....	134
Response from CASA	137
Response from the ATSB.....	138
Additional Comments by Senator Nick Xenophon.....	141
APPENDIX 1	147
Submissions Received.....	147
APPENDIX 2	151
Public Hearings and Witnesses	151

Acronyms and Abbreviations

AAT	Administrative Appeals Tribunal
AFTN	Aeronautical Fixed Telecommunication Network. This transmits observations and weather forecasts by the Bureau of Meteorology to neighbouring countries
AIP	Aeronautical Information Package
AIPA	Australian and International Pilots Association
Alternate Minima	A set of cloud base and visibility conditions which are published for each airfield that has a published instrument approach procedure. They are higher than the landing minima.
AOC	Air Operator's Certificate
ARP	Aerodrome Reference Point
ATC	Air Traffic Control
ATSB	Australian Transport Safety Bureau
AWIS	Aerodrome Weather Information Service
AWS	Automatic Weather Station
BASI	Former Bureau of Air Safety Investigation
BoM	Bureau of Meteorology
CAA	UK Civil Aviation Authority
CAR	Civil Aviation Regulations (note: CARs are gradually being replaced by Civil Aviation Safety Regulations)
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations
CAO	Civil Aviation Order
CVR	Cockpit Voice Recorder
DIP	Directly Involved Party

EMS	Emergency Medical Services
ERSA	En Route Supplement Australia. A document published by Airservices Australia which contains information for flight planning and for the pilot in flight. Information includes aerodrome physical characteristics, hours of operation, visual ground aids, air traffic services, nav aids, lighting etc.
ETA	Estimated Time of Arrival
FAA	US Federal Aviation Administration
FAID	Fatigue assessment tool
FDR	Flight Data Recorder
FIR	Flight Information Region
FOI	Flying Operations Inspector
FRMS	Fatigue Risk Management System
HF	High Frequency
ICAO	International Civil Aviation Organization
Landing minima	Minimum conditions for landing
METARs	For many aerodromes, sets of meteorological observations called Meteorological Aerodrome Reports (METARs) are issued regularly, usually every 30 minutes
MoU	Memorandum of Understanding
NOTAM	An abbreviation of a 'Notice to Airmen'. It is distributed by means of telecommunication and contains information concerning the establishment, condition or change in any aeronautical facility, service, procedure, or hazard.
NTSB	US National Transport Safety Board
PIC	Pilot-in-command
RCA	Request for Corrective Action
RPT	Regular Public Transport

RVSM airspace	Reduced Vertical Separation Minima is a range of airspace that lets appropriately equipped aircraft operate there and operate closer to each other than they would otherwise be able to do
SMS	Safety Management Systems
SPECI	A special report of meteorological conditions, issued when one or more weather elements meet specified criteria significant to aviation and in particular when cloud or visibility drops below the specified alternate minima conditions
TAF	Aerodrome forecast
TSI Act	<i>Transport Safety Investigations Act 2003</i>
Unicom	Non-Air Traffic Service communications service at a non-towered aerodrome that is provided to enhance the value of the information normally available about that aerodrome
UTC	Coordinated Universal Time. Local time at Norfolk Island was UTC + 11:30.
VHF	Very High Frequency

List of Recommendations

Recommendation 1

3.68 The committee recommends that the ATSB retrieve VH-NGA flight data recorders without further delay.

Recommendation 2

4.41 The committee recommends that the minister, in issuing a new Statement of Expectations to the ATSB, valid from 1 July 2013, make it clear that safety in aviation operations involving passengers (fare paying or those with no control over the flight they are on, e.g. air ambulance) is to be accorded equal priority irrespective of flight classification.

Recommendation 3

4.43 The committee recommends that the ATSB move away from its current approach of forecasting the probability of future events and focus on the analysis of factors which allowed the accident under investigation to occur. This would enable the industry to identify, assess and implement lessons relevant to their own operations.

Recommendation 4

4.69 The committee recommends that the ATSB be required to document investigative avenues that were explored and then discarded, providing detailed explanations as to why.

Recommendation 5

4.78 The committee recommends that the training offered by the ATSB across all investigator skills sets be benchmarked against other agencies by an independent body by, for example, inviting the NTSB or commissioning an industry body to conduct such a benchmarking exercise.

Recommendation 6

4.79 The committee recommends that, as far as available resources allow, ATSB investigators be given access to training provided by the agency's international counterparts. Where this does not occur, resultant gaps in training/competence must be advised to the minister and the Parliament.

Recommendation 7

4.87 The committee recommends that the *Transport Safety Investigation Act 2003* be amended to require that the Chief Commissioner of the ATSB be able to demonstrate extensive aviation safety expertise and experience as a prerequisite for the selection process.

Recommendation 8

4.101 The committee recommends that an expert aviation safety panel be established to ensure quality control of ATSB investigation and reporting processes along the lines set out by the committee.

Recommendation 9

4.103 The committee recommends that the government develop a process by which the ATSB can request access to supplementary funding via the minister.

Recommendation 10

6.41 The committee recommends that the investigation be re-opened by the ATSB with a focus on organisational, oversight and broader systemic issues.

Recommendation 11

6.52 The committee recommends that CASA processes in relation to matters highlighted by this investigation be reviewed. This could involve an evaluation benchmarked against a credible peer (such as FAA or CAA) of regulation and audits with respect to: non-RPT passenger carrying operations; approach to audits; and training and standardisation of FOI across regional offices.

Recommendation 12

6.55 The committee recommends that CASA, in consultation with an Emergency Medical Services industry representative group (eg. Royal Flying Doctor Service, air ambulance operators, rotary wing rescue providers) consider the merit, form and standards of a new category of operations for Emergency Medical Services. The minister should require CASA to approve the industry plan unless there is a clear safety case not to. Scope for industry to assist as part of an audit team should also be investigated where standardisation is an issue. This should be completed within 12 months and the outcome reported publicly.

Recommendation 13

6.58 The committee recommends that a short inquiry be conducted by the Senate Standing Committee on Rural and Regional Affairs and Transport into the current status of aviation regulatory reform to assess the direction, progress and resources expended to date to ensure greater visibility of the processes.

Recommendation 14

7.15 The committee recommends that the ATSB-CASA Memorandum of Understanding be re-drafted to remove any ambiguity in relation to information that should be shared between the agencies in relation to aviation accident investigations, to require CASA to:

- advise the ATSB of the initiation of any action, audit or review as a result of an accident which the ATSB is investigating.
- provide the ATSB with the relevant review report as soon as it is available.

Recommendation 15

7.16 The committee recommends that all meetings between the ATSB and CASA, whether formal or informal, where particulars of a given investigation are being discussed be appropriately minuted.

Recommendation 16

8.35 The committee recommends that, where relevant, the ATSB include thorough human factors analysis and discussion in future investigation reports. Where human factors are not considered relevant, the ATSB should include a statement explaining why.

Recommendation 17

9.18 The committee recommends that the ATSB prepare and release publicly a list of all its identified safety issues and the actions which are being taken or have been taken to address them. The ATSB should indicate its progress in monitoring the actions every 6 months and report every 12 months to Parliament.

Recommendation 18

9.40 The committee recommends that where a safety action has not been completed before a report being issued that a recommendation should be made. If it has been completed the report should include details of the action, who was involved and how it was resolved.

Recommendation 19

9.42 The committee recommends that the ATSB review its process to track the implementation of recommendations or safety actions to ensure it is an effective closed loop system. This should be made public, and provided to the Senate Regional and Rural Affairs and Transport Committee prior to each Budget Estimates.

Recommendation 20

9.44 The committee recommends that where the consideration and implementation of an ATSB recommendation may be protracted, the requirement for regular updates (for example 6 monthly) should be included in the TSI Act.

Recommendation 21

9.45 The committee recommends that the government consider setting a time limit for agencies to implement or reject recommendations, beyond which ministerial oversight is required where the agencies concerned must report to the minister why the recommendation has not been implemented or that, with ministerial approval, it has been formally rejected.

Recommendation 22

9.77 The committee recommends that Airservices Australia discuss the safety case for providing a hazard alert service with Fijian and New Zealand ATC (and any other relevant jurisdictions) and encourage them to adopt this practice.

Recommendation 23

9.104 The committee recommends that the relevant agencies review whether any equipment or other changes can be made to improve the weather forecasting at Norfolk Island. The review would include whether the Unicom operator should be an approved meteorological observer.

Recommendation 24

9.106 The committee recommends that the relevant agencies investigate appropriate methods to ensure that information about the incidence of, and variable weather conditions at, Norfolk Island is available to assist flight crews and operators managing risk that may result from unforeseen weather events.

Recommendation 25

9.108 The committee recommends that the Aeronautical Information Package (AIP) En Route Supplement Australia (ERSA) is updated to reflect the need for caution with regard to Norfolk Island forecasts where the actual conditions can change rapidly and vary from forecasts.

Recommendation 26

10.35 The committee recommends that in relation to mandatory and confidential reporting, the default position should be that no identifying details should be provided or disclosed. However, if there is a clear risk to safety then the ATSB, CASA and industry representatives should develop a process that contains appropriate checks and balances.

Executive Summary

On the night of 18 November 2009, Pel-Air VH-NGA ditched into the ocean in bad weather off Norfolk Island following several aborted landing attempts. The aeromedical retrieval flight was en route to the Australian mainland from Apia, Samoa, and planned to refuel on Norfolk Island as it had done on the first leg of its journey, from Sydney to Samoa. Six people were on board: the patient, her husband, a doctor, a nurse, the pilot in command and his co-pilot. All six survived.

Their survival is testament to skill and luck. The committee appreciates that the accident has affected their lives in ways that are impossible to fully understand. What allowed the accident to happen, however, should not be.

Although this inquiry had at its heart an Australian Transport Safety Bureau (ATSB) report into a single aviation accident, the committee's primary focus throughout was the adequacy of the ATSB's investigation and reporting process, rather than the particulars of the accident itself. The committee is not comprised of aviation experts, and although it is fortunate to have the benefit of several members who have extensive flying experience, it did not set out to conduct another investigation of the accident.

The committee accepts that the pilot in command made errors on the night, and this inquiry was not an attempt to vindicate him. Instead, the committee's overriding objective from the outset was to find out why the pilot became the last line of defence on the night and to maximise the safety outcomes of future ATSB and Civil Aviation Safety Authority (CASA) investigations in the interests of the travelling public. This report does so by asking:

- why errors were made;
- why, given that a pilot works within a system, the flight crew became the last line of defence;
- what deficiencies existed in the system, with regard to the operator (Pel-Air) and the regulator (CASA), which were not explored as fully as they could have been by the ATSB; and
- whether the travelling public can have confidence in ATSB processes, the agency's interaction with CASA and the systems in place to ensure safety.

The findings of the ATSB's investigation report are the starting point in untangling and addressing these questions. The ATSB's firm position is that the ditching was a one-off event due predominantly to the actions of the pilot, and the agency has defended this stance without, in the committee's view, a solid evidentiary base. Over the course of this inquiry the ATSB repeatedly deflected suggestions that significant deficiencies with both the operator, (identified in the CASA Special Audit of Pel-Air), and CASA's oversight of Pel-Air, (identified in the Chambers Report), contributed to the accident. The committee takes a different view and believes that ATSB processes have become deficient for reasons to be detailed in the following chapters, allowing this narrow interpretation of events to occur.

The committee also focuses on the appropriateness and effectiveness of the interaction between the ATSB and CASA. The committee notes that a systemic approach to the investigation was initially pursued, but that systemic issues were scoped out of the investigation early in the process. This led the committee to ask whether CASA exerted undue influence on the ATSB process. What is clear is that CASA's failure to provide the ATSB with critical documents, including the Chambers Report and CASA's Special Audit of Pel-Air, which both demonstrated CASA's failure to properly oversee the Pel-Air operations, contravened the Memorandum of Understanding (MoU) in place between the two agencies and may have breached the terms of the *Transport Safety Investigations Act 2003* (Chapter 7). The committee takes a dim view of CASA's actions in this regard.

The survival of all six people on board VH-NGA means that a lot went right—this should result in lessons for the wider industry, particularly operators flying to remote locations. At the same time, many things could have worked better, and industry should also learn from these. Many submitters and witnesses asserted that the ATSB's report is not balanced and includes scant coverage of contributing systemic factors such as organisational and regulatory issues, human factors and survivability aspects. Given the ATSB's central role in improving aviation safety by communicating lessons learned from aviation accidents, the committee is surprised by the agency's near exclusive focus on the actions of the pilot and lack of analysis or detail of factors that would assist the wider aviation industry. The committee notes warnings that the omission or downgrading of important safety information has the potential to adversely affect aviation safety.

The committee was understandably troubled by allegations that agencies whose role it is to protect and enhance aviation safety were acting in ways which could compromise that safety. It therefore resolved to take all appropriate action to investigate these allegations in order to assure itself, the industry and the travelling public that processes currently in place in CASA and the ATSB are working effectively.

The committee recognises that Australia has been a leader in aviation safety for a number of years through its robust adoption of the accident causation model developed by Professor James Reason (Chapter 3).¹ This approach recognises that people work within systems – the individual actions of the pilot in command have a role to play, as do the actions of the operator and the regulatory environment they work within. Each layer provides a barrier to prevent an accident and each must be examined for deficiencies when incidents occur.

Furthermore, the committee has strong concerns about the methodology the ATSB uses to attribute risk (Chapter 4). The methodology appears to defy common sense by not asking whether the many issues that were presented to the committee in evidence, but not included in the report, or not included in any detail, could:

- help prevent such an incident in the future;

1 This strong reputation was earned by the ATSB's predecessor, the Bureau of Air Safety Investigation (BASI), in particular in terms of accident reporting and its 'no-blame' approach.

- offer lessons for the wider aviation industry; or
- enable a better understanding of actions taken by the crew.

The committee examines how this methodology contributed to the downgrading of an identified safety issue from 'critical' to 'minor', and finds that the process lacked transparency, objectivity and due process (Chapter 4). The committee finds that the ATSB's subjective investigative processes are driven in part by ministerial guidance prioritising high capacity public transport operations over other types of aviation transport.

The committee considers (Chapter 8) whether the lack of formal recommendations in the ATSB report led to a lack of action on important safety issues. This absence of recommendations stems back to the Memorandum of Understanding (MoU) between the ATSB and CASA, which encourages concurrent safety action rather than action in response to recommendations. The committee believes both are necessary. It is regrettable that a Senate inquiry has had to make recommendations which should have been made by the ATSB.

A number of changes have been made by the operator (Chapter 5) and the regulator (Chapter 6) since the ditching. The committee is convinced that having these measures in place before the ditching would have significantly reduced the risk of the accident occurring. To simply focus on the actions of the pilot and not discuss the deficiencies of the system as a whole is unhelpful. It is disappointing that CASA and the ATSB continue to assert, in the face of evidence to the contrary, that the only part of the system with any effect on the accident sequence was the pilot.

It also emerged in the course of the inquiry that the previous system of mandatory and confidential incident reporting to the ATSB has been altered. Pilots have expressed concern that CASA now appears to have access to identifying information, which may inhibit pilots reporting incidents and will therefore undermine the important principle of just culture within the aviation industry (Chapter 10).

Finally, the committee notes that many submitters and witnesses provided evidence *in camera* due to fear of retribution, particularly from CASA, were they to go public with their concerns. Many who chose to give *in camera* evidence did so in the knowledge of protections provided by parliamentary privilege. The committee also notes that this reticence to speak in public has been apparent for each inquiry this committee has conducted in this area over several years, and finds this deeply worrying. Given the positive statements made about the inquiry by CASA Director of Aviation Safety, Mr John McCormick, the committee trusts that concerns about retribution are unwarranted. There is an obligation on CASA to allay these concerns that retribution could follow speaking out, which appear to be widespread within the aviation industry. The committee stresses that it takes the protection of witnesses under parliamentary privilege very seriously. Witnesses—whether public or *in camera*—should suffer no adverse consequences from providing evidence to the committee. Given the numerous concerns expressed, the committee will be monitoring this situation carefully.

If Australia is to remain at the forefront of open, transparent and effective aviation safety systems, then the goal of this committee is to help our organisations to work transparently, effectively and cooperatively. Ensuring that a systemic approach to aviation safety is in place is the best way to maximise outcomes.

Chapter 1

Introduction

Inquiry terms of reference

1.1 On 13 September 2012, the Senate referred the following terms of reference to the Regional and Rural Affairs and Transport References Committee for inquiry and report by 29 November 2012:

- (a) the findings of the Australian Transport Safety Bureau into the ditching of VH-NGA Westwind II, operated by Pel-Air Aviation Pty Ltd, in the ocean near Norfolk Island airport on 18 November 2009;
- (b) the nature of, and protocols involved in, communications between agencies and directly interested parties in an aviation accident investigation and the reporting process;
- (c) the mechanisms in place to ensure recommendations from aviation accident investigations are implemented in a timely manner; and
- (d) any related matters.

Conduct of the inquiry

1.2 Notice of the inquiry was posted on the committee's website. The committee also advertised the inquiry in *The Australian* and wrote to key stakeholder groups, organisations and individuals to invite submissions.

1.3 The committee received 22 public submissions as well as supplementary submissions which are listed at Appendix 1. The committee also received several *in camera* submissions.

1.4 The committee received a large volume of material from the Australian Transport Safety Bureau (ATSB) and the Civil Aviation Safety Authority (CASA), as well as a number of late submissions. The reporting date for this inquiry was extended several times to enable the committee to further consider the written evidence received and to hold a number of additional hearings.

1.5 The committee held public hearings in Canberra on 22 October, 19 November and 21 November 2012, as well as 15 and 28 February 2013. The committee also held several *in camera* hearings. A list of witnesses who gave evidence at the public hearings is available at Appendix 2. A Hansard record of the committee's public hearings is available on the committee's website at www.aph.gov.au.

Order for the production of documents

1.6 The committee decided that there was a need to access relevant information from the ATSB and CASA to be able to judge for itself the internal processes undertaken by each agency and the inter-agency dealings. Many thousands of internal ATSB and CASA documents were received through an order for the production of

documents.¹ This material was received confidentially and the committee takes the protection of such material very seriously.

1.7 Before deciding whether to publish any of the documentation, the committee discussed the ramifications at length. In doing so it weighed up the request for confidentiality against the public interest of the aviation industry and the travelling public having confidence in the key agencies responsible for civil aviation safety in Australia. Wherever possible, the committee sought the views of the ATSB or CASA prior to publication. The committee also considered that it needed to be able to support its analysis and conclusions as the internal documents appeared at odds with the evidence given publicly. The committee also wanted to provide the agencies with the opportunity to explain key documents in public. For these reasons the committee took the decision in the public interest to publish a small number of documents but did so with care, selecting only those documents needed to support its conclusions.

1.8 Of the thousands of documents received from the ATSB and CASA, the committee published 12. At the conclusion of this inquiry, the committee decided to return all unpublished documents to their respective agencies.

Acknowledgements

1.9 The committee thanks those organisations and individuals who made submissions and gave evidence at the public hearings.

1.10 The committee recognises the ATSB and CASA for their cooperation with the committee's order for the production of documents.

1.11 The committee in particular acknowledges the contributions of the VH-NGA flight crew and passengers, and thanks them for their time and effort. Their ordeal was traumatic, and rebuilding their lives has not been easy. The committee wishes to single out the nurse who kept the patient afloat until they were rescued, despite difficulties with her own lifejacket, which has unfortunately resulted in a painful and permanent disability. The committee hopes to see her receive the assistance she needs and deserves as soon as possible.

1.12 The committee extends its appreciation to the Department of Defence for facilitating the two-week secondment of an officer with extensive aviation accident investigation experience. The committee thanks the officer, the department and the minister for making the officer available. The committee emphasises that the secondment served purely to assist the committee in understanding issues which required technical expertise.

1.13 Finally, the committee is always grateful for the hard work and diligence of the secretariat. In this inquiry, the enormous volume of material and its highly

1 See correspondence between the committee and the ATSB regarding request for documents, received 3 October 2012, available at http://aph.gov.au/Parliamentary_Business/Committees/Senate_Committees?url=rrat_ctte/pel_air_2012/submissions.htm (accessed 9 April 2013).

technical nature put additional demands on the secretariat, who rose to the challenge in an exemplary fashion.

Scope and structure of this report

1.14 The report is comprised of 10 chapters as follows:

- Chapter 2 Background
- Chapter 3 The ATSB investigation and methodology
- Chapter 4 The ATSB's accident investigation processes
- Chapter 5 System failures
- Chapter 6 Regulatory issues
- Chapter 7 Communication between CASA and ATSB
- Chapter 8 Human Factors
- Chapter 9 Key issues around recommendations and ensuring action
- Chapter 10 Proposed changes to mandatory and confidential reporting

1.15 The committee notes that additional comments or reports in relation to this inquiry may be tabled in the Senate at a future time.

Chapter 2

Background

Aviation safety

2.1 Aviation transport, albeit the safest form of transport in Australia, requires ongoing vigilance to remain safe. To protect and maintain public safety, every facet of Australia's aviation safety system must operate and cooperate in an environment which enables and encourages constant learning and improvement.

2.2 Mistakes in the aviation safety system, however rare, have the potential to produce catastrophic consequences. The ditching of Pel-Air's aircraft, VH-NGA, into the ocean off Norfolk Island following several aborted landing attempts placed six lives in jeopardy. That none were lost on impact is attributable to the skill exhibited by the pilot in command in those critical moments—but clearly something went wrong in the lead up to that moment.

2.3 In the interest of public safety it is imperative for the aviation industry to understand what went wrong and why. However, the findings of the investigation that followed the accident, culminating in a report on its causes issued almost three years later, were and remain highly contentious. It was this report, and the controversy surrounding it, that provided the impetus and focal point for the committee's inquiry.

2.4 In looking at this report and the way in which it was produced, the committee gained an insight into Australia's aviation safety system, within which different agencies play individual roles whilst working together towards a common goal. This chapter sets out the roles of key agencies and legislation which governs the conduct of aviation accident investigations, and in doing so provides context for subsequent chapters.

Role of the ATSB

2.5 As an independent Commonwealth statutory agency, the role of the Australian Transport Safety Bureau (ATSB) is to improve safety and public confidence in the aviation, marine and rail modes of transport. It does this, the ATSB advised the committee, through:

- a) investigation of transport accidents and other safety occurrences
- b) safety data recording, analysis and research
- c) fostering safety awareness, knowledge and action.¹

2.6 The ATSB's functions are best understood by referring to the legislation under which it was established, the *Transport Safety Investigation Act 2003* (TSI Act). The TSI Act clearly sets out the agency's functions:

1 Australian Transport Safety Bureau (ATSB), *Submission 2*, p. 4.

(1) The ATSB's function is to improve transport safety by means that include the following:

- (a) receiving and assessing reports of transport safety matters, reportable matters, and other safety information that is prescribed by the regulations;
- (b) independently investigating transport safety matters;
- (c) identifying factors that:
 - (i) contribute, or have contributed, to transport safety matters;
 - or
 - (ii) affect, or might affect, transport safety;
- (d) communicating those factors to relevant sectors of the transport industry and the public in any way, including in any one or more of the following ways:
 - (i) by making safety action statements;
 - (ii) by making safety recommendations;
 - (iii) by issuing safety advisory notices;
- (e) reporting publicly on those investigations;
- (f) conducting public educational programs about matters relating to transport safety;
- (g) any other means prescribed by the regulations.²

2.7 To this end, the ATSB investigates accidents and other transport safety issues involving civil aviation, marine and rail operations that fall within Commonwealth jurisdiction. The ATSB also participates in overseas investigations involving Australian registered aircraft and ships.³

2.8 The extent to which ATSB investigations enhance aviation safety is limited by the extent to which any safety recommendations made are actioned. The ATSB has no enforcement powers.

2.9 ATSB accident and incident investigations are conducted independently of transport regulators such as the Civil Aviation Safety Authority (CASA), the Australian Maritime Safety Authority, Airservices Australia, rail authorities and other parties. The independence of the ATSB is paramount to fulfilling its functions and is discussed in the context of this inquiry in the next chapter.

2.10 The TSI Act underpins the ATSB's independence but emphasises the importance of cooperation between Australian Government and state bodies. Furthermore, the Act provides the ATSB with a mandate to conduct 'no blame'

2 *Transport Safety Investigation Act 2003*, subsection 12AA(1).

3 ATSB, *Submission 2*, p. 4.

investigations, also discussed in the next chapter in the context of this inquiry. Briefly, under the Act, it is not the ATSB's function to:

- a) apportion blame or provide a means for determining liability for transport safety matters;
- b) assist in court proceedings between parties, except as provided by the Act; or
- c) allow any adverse inference to be drawn from the fact that a person was involved in a transport safety matter.⁴

2.11 As well as setting out the ATSB's functions, the TSI Act also provides the legal basis and requirement for these functions to be performed in accordance with relevant international agreements.⁵

Obligations under international agreements

2.12 The principal relevant international agreement, the *Convention on International Civil Aviation* (the Chicago Convention), binds 191 member states, including Australia, to the requirements of the International Civil Aviation Organization (ICAO).

2.13 Established in 1944 with the advent of the Chicago Convention, ICAO is a specialised agency of the United Nations (UN) and the global forum for civil aviation:

It sets standards and regulations necessary for aviation safety, security, efficiency and regularity, as well as for aviation environmental protection.⁶

2.14 Article 26 of the Chicago Convention obligates Australia to investigate all accidents involving international carriers, while ICAO standards and recommended practices (SARPS) in Annex 13 extend this responsibility to accidents involving Australian aircraft.⁷

2.15 Australia's duty to conduct aviation accident investigations in accordance with international agreements is clearly set out in section 12AD of the TSI Act, which states:

- (1) The ATSB must ensure that the ATSB's powers under this Act are exercised in a manner that is consistent with Australia's obligations under international agreements (as in force from time to time) that are identified by the regulations for the purpose of this section.
- (2) The Chief Commissioner must ensure that the Chief Commissioner's powers under this Act are exercised in a manner that is consistent with Australia's obligations under international agreements (as in force from time to time) that are identified by the regulations for the purpose of this section.

4 See www.atsb.gov.au/media/1371655/mou_atsb-casa.pdf (accessed 3 April 2013).

5 *Transport Safety Investigation Act 2003*, section 12AD.

6 See www.icao.int/Pages/icao-in-brief.aspx (accessed 19 March 2013).

7 ATSB, *Submission 2*, p. 4.

- (3) In exercising powers under this Act, the ATSB and the Chief Commissioner must also have regard to any rules, recommendations, guidelines, codes or other instruments (as in force from time to time) that are promulgated by an international organisation and that are identified by the regulations for the purposes of this section.

2.16 In light of this, the ATSB's accident investigations and reports must be assessed against its obligations under the Chicago Convention. The committee received considerable evidence suggesting that the ATSB did not comply with ICAO guidelines and standards in completing its investigation and report on the Norfolk Island ditching. Examples are analysed in later chapters of this report. The committee recognises that the ATSB has filed some differences with ICAO but this recognition does not equate to agreement in all cases.

Role of the Chief Commissioner

2.17 In terms of organisational governance, the ATSB Commission comprises of the Chief Commissioner, currently Mr Martin Dolan, and two Commissioners. The Commission oversees three branches, including Strategic Capability, Safety Investigations and Enabling Services. The Aviation section of the Safety Investigations branch is headed by a General Manager, currently Mr Ian Sangston.

2.18 The Chief Commissioner is appointed by the minister and must have 'a high level of expertise in one or more areas relevant to the ATSB's functions.'⁸

Report approval processes

2.19 Under section 25 of the TSI Act, ATSB investigation reports are approved by the Commission for release to the public. The responsibility for approval cannot be delegated to other officers. Once reports are approved for release, they are dispatched to directly involved parties (DIPs) by way of 'advanced release', before being made public.⁹

2.20 In the case of the VH-NGA report, once approved by the Commission the ATSB dispatched the advanced release report to DIPs and 'other parties' on 21 August 2012. It was then released to the public on 30 August 2012. The ATSB's submission itself did not shed much light on the extent of the comments and reactions of DIPs, but did say:

In the intervening period [between the advance release and publication], comments were received from another of the parties in respect of how the report might be misinterpreted or misunderstood by readers. As with all other comments, they were also fully considered and changes were made to the final report.¹⁰

8 Subsections 13(1) and (3), TSI Act.

9 ATSB, *Submission 2*, p. 43. The advanced release of reports to DIPs is separate from an earlier stage of the report drafting process, where DIPs are given the opportunity to comment on any perceived factual inaccuracies, as outlined in Chapter 4 of this report.

10 ATSB, *Submission 2*, p. 43.

2.21 Evidence received by the committee over the course of this inquiry suggested that several DIPs were strongly dissatisfied with the content of the report when it was released, and that lines of inquiry had been scoped out during the process.¹¹ Consequently, the committee went to some lengths to understand the development of the report.

2.22 The ATSB advised the committee that responsibility for the development of an investigation report rests with the relevant investigator-in-charge (IIC). The IIC works with investigation team members to complete a draft report ready for peer review. The ATSB's submission did not go into detail about the process as it related to the accident and report in question, but did have this to say regarding peer review:

In the case of the Norfolk Island investigation, the peer review was carried out by an investigator from the ATSB's Brisbane regional office. This was later supplemented by an operations investigator and the Team Manager from that office. After the IIC and peer review(er) have worked through any points of contention, addressed any need for additional evidence or work to analyse evidence already held, or considered the amendment of the draft report, the draft report progresses to management review.¹²

Concerns regarding the ATSB report drafting process

2.23 The committee was concerned by this process as it related to the VH-NGA ditching off Norfolk Island. Evidence received by the committee would appear to suggest that senior ATSB staff may have intervened to alter the final report in order to secure a desirable outcome for both the ATSB and CASA. An excerpt from an internal email outlining an early discussion reads:

We [ATSB Officer and ATSB Chief Commissioner] were discussing the potential to reflect the intent of our new MoU that describes the 2 agencies as 'independent but complementary'. We discussed the hole that CASA might have got itself into by its interventions since the ditching, and how you [Mr Martin Dolan, ATSB Chief Commissioner] might have identified an optimum path that will maximise the safety outcome without either agency planting egg on the other agency's face.¹³

2.24 The committee is concerned that the ATSB's independence and the quality of its investigation report may have been compromised during this process. These concerns are discussed in later chapters of this report.

Role of CASA

2.25 CASA is Australia's aviation safety regulator, established on 6 July 1995 as an independent statutory authority. Its key role is to conduct the safety regulation of civil

11 See Mr Gary Currall, *Submission 9*; Mr Mick Quinn, *Submission 11*, p. 18; Mr Bryan Aherne, *Submission 10*.

12 ATSB, *Submission 2*, p. 42.

13 Internal ATSB email regarding the ATSB and CASA's approach to the Pel-Air investigation (dated 9 February 2010), *Additional Information 12*, received 10 October 2012.

air operations in Australia and the operation of Australian aircraft outside Australian territory by:

- Developing and promulgating appropriate, clear and concise aviation safety standards;
- Developing effective enforcement strategies to secure compliance with aviation safety standards;
- Issuing certificates and licences;
- Conducting comprehensive aviation industry surveillance, including assessment of safety-related decisions taken by industry management at all levels; and
- Conducting regular reviews of the system of civil aviation safety in order to monitor the safety performance of the aviation industry, to identify safety-related trends and risk factors and to promote the development and improvement of the system.¹⁴

2.26 CASA is headed by the Director of Aviation Safety, currently Mr John McCormick. The Director is appointed by, and responsible to, the minister. Although CASA is an independent body, the minister has the power to issue written directions of a general nature.¹⁵

2.27 CASA is responsible for ensuring that Australian airspace is administered and used safely.¹⁶ To achieve this, CASA works as part of an integrated system within a tripartite structure along with Airservices Australia and the Department of Infrastructure, Transport, Regional Development and Local Government.¹⁷

2.28 In performing its functions, CASA must act in a manner consistent with Australia's obligations under the Chicago Convention. Except where CASA has given ICAO notice under Article 38 of the Chicago Convention, it must comply with international obligations Australia has accepted.¹⁸

Investigative activities

2.29 Like the ATSB, CASA conducts investigative activities. Although their respective investigations into a given incident or accident may at times unfold concurrently, the purpose and practical outcomes of these activities can be quite different. As explained by Mr John McCormick:

14 Civil Aviation Safety Authority (CASA), *Submission 1*, pp 1–2.

15 Civil Aviation Act, subsections 12(1), (1A) and (2).

16 CASA, *Annual Report 2010-2011*, p. 4.

17 CASA, see www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_91621 (accessed 22 March 2013). The committee notes that the Department of Infrastructure, Transport, Regional Development and Local Government preceded the Department of Infrastructure and Transport, and the Department of Regional Development, Local Government, Arts and Sport.

18 ATSB/CASA Review, Report to the Minister for Infrastructure, Transport, Regional Development and Local Government (the Miller Review), Appendix 1, p. 18.

CASA and the ATSB perform different but decidedly complementary roles in the interests of air safety with a view to the prevention of aircraft accidents. From the time of CASA's establishment in 1995, it has been one of our statutory functions to cooperate with the ATSB and its predecessor, the Bureau of Air Safety Investigation or BASI, as it was known at the time. Similar functions appeared in the Civil Aviation Act at the time of CASA's predecessor, the Civil Aviation Authority, which was established in 1988 and corresponding provisions appear in the ATSB's governing legislation.

In keeping with our complementary safety related objectives—and CASA and the ATSB are the only government agencies whose organisational activities relate exclusively to the enhancement of aviation safety—CASA has consistently endeavoured to support and assist the ATSB in their investigative efforts to the extent we can do, remaining cognisant of the difference in our respective roles and functions and in a manner that accords with the applicable legislation.¹⁹

2.30 Unlike ATSB investigations, CASA's may result in enforcement action where appropriate in order to 'minimise the likelihood that a particular individual, organisation or aircraft may place others at risk of harm.'²⁰

2.31 The interplay between CASA and ATSB investigative activities is complex. Although conducted with complementary safety-related objectives in mind, their respective investigations require both independence and a degree of cooperation. Striking the right balance, that is, ensuring independence whilst navigating a largely shared space, is imperative. To this end, CASA and the ATSB have developed and worked to the terms of a series of memoranda of understanding (MoUs) which intend to define the space within which the agencies operate and cooperate:

Without a clear understanding of the nature and purpose of these parallel investigations, there is a potential for confusion about these matters in the minds of those people with whom CASA and the ATSB must deal, and a risk that, in conducting its own investigation, CASA or the ATSB may complicate and possibly compromise the other's investigation. Much of the content of the interagency MOU is to avoid that confusion and to mitigate that risk.²¹

2.32 The current MoU was the source of some consternation for the committee over the course of this inquiry. The implications and requirements of the current MoU, as well as whether these were met, are discussed in later chapters of this report. The general terms and objectives of the MoU are outlined below.

19 Mr John McCormick, Director of Aviation Safety, CASA, *Committee Hansard*, 22 October 2012, p. 27.

20 Mr John McCormick, Director of Aviation Safety, CASA, *Committee Hansard*, 22 October 2012, p. 27.

21 Mr John McCormick, Director of Aviation Safety, CASA, *Committee Hansard*, 22 October 2012, p. 27. See also www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_91621 (accessed 22 March 2013).

The Miller Review and the MoU between the ATSB and CASA

2.33 The current MoU between the ATSB and CASA came into effect in February 2010, with the aim of addressing a series of objectives:

- a) maximisation of beneficial aviation safety outcomes
- b) enhancement of public confidence in aviation safety
- c) support for the adoption of systemic approaches to aviation safety
- d) development of knowledge of the operations and the safety impact of each organisation's actions
- e) promotion and conduct of ATSB independent no-blame safety investigations and CASA regulatory activities in a manner that assures a clear and publicly perceived distinction is drawn between each agency's complementary safety-related objectives, as well as CASA's specialised enforcement-related obligations
- f) to the extent practicable, the avoidance of any impediments in the performance of each other's functions
- g) acknowledgement of any errors and a commitment to seeking constant improvement
- h) fostering strategic discussion between both organisations.²²

2.34 The origins of this MoU, and its emphasis on cooperation between the two agencies, can be traced to concerns expressed by the State Coroner of Queensland in bringing down his findings after the fatal 2005 airplane crash at Lockhart River. Questions were raised then about evident friction in the relationship between the ATSB and CASA, leading the then Minister for Transport and Regional Services, the Hon Mark Vaile MP, to engage Mr Russell Miller AM to conduct a review into this relationship in 2007 and assess whether high level intervention was needed.

2.35 The Miller Review was primarily about improving how CASA and the ATSB work together within the Australian aviation safety system, and was ultimately required to assess whether the agencies' administrative and legislative frameworks were conducive to them playing their roles in this system. Among its terms of reference, the review was also required to assess:

The role and value of the Memorandum of Understanding (MOU) in place between CASA and the ATSB, and areas where the MOU can be strengthened or improved to achieve better working relationships between the agencies.²³

22 Memorandum of Understanding between the ATSB and CASA, available at: www.atsb.gov.au/media/1371655/mou_atSB-casa.pdf (accessed 5 February 2013).

23 ATSB/CASA Review, Report to the Minister for Infrastructure, Transport, Regional Development and Local Government (the Miller Review), Appendix 1, p. 82.

2.36 The Miller Review made nineteen recommendations, of which Recommendation 17 called for a new MoU to be negotiated between the two agencies to foster better communication and improved cooperation.

2.37 The wording of the current MoU reflects this aim. However, the committee received a considerable volume of evidence suggesting that the reality of the relationship between the two agencies may still fall well short of the objective. This is examined in more detail in later chapters of this report.

Airservices Australia

2.38 Airservices Australia is the country's air navigation service provider (ANSP). A Commonwealth statutory authority established under the *Air Services Act 1995*, Airservices:

- provides facilities for the safe navigation of aircraft within Australian-administered airspace;
- promotes and fosters civil aviation in Australia and overseas;
- provides air traffic services, aviation rescue and fire fighting services, and aeronautical information, radio navigation and telecommunications services in line with the Chicago Convention and to ensure the safety, regularity and efficiency of air navigation;
- cooperates with the Australian Transport Safety Bureau in investigating aircraft accidents and incidents;
- adheres to regulations relating to impacts associated with the operation of Commonwealth jurisdiction aircraft; and
- undertakes functions as required under the *Air Navigation Act 1920* and the *Aviation Transport Security Act 2004* or by regulation.²⁴

2.39 Airservices Australia conducts its management of Australia's sovereign airspace on behalf of the Australian Government. Responsibility for air traffic management is assigned to countries by ICAO, which divides the world's airspace into 'flight information regions' (FIRs). Australian airspace consists of two FIRs, known as 'Brisbane' and 'Melbourne', and covers roughly 11 per cent of the Earth's surface.²⁵

2.40 The airspace around Norfolk Island, where events leading to the ditching of VH-NGA culminated, is not included in Australia's FIRs. It belongs instead within the New Zealand FIR, and is managed by the Airways Corporation of New Zealand on behalf of the New Zealand Government. Since the Pel-Air flight in question did not enter Australian airspace, Airservices informed the committee, it was not managed by

24 Airservices Australia, *Submission 17*, p. 2.

25 Airservices Australia, *Submission 17*, p. 2.

Airservices Australia.²⁶ The latter's direct involvement extended to the receipt and distribution of VH-NGA's flight plan and providing pre-flight weather information.²⁷

2.41 The involvement of New Zealand and Fiji air traffic controls as it relates to the accident is discussed in later chapters of this report.

Bureau of Meteorology

2.42 The pre-flight weather information Airservices Australia provided to the pilot in command of VH-NGA came from the Bureau of Meteorology (BoM), which provides aviation meteorological services in accordance with Annex 3 of the Chicago Convention.²⁸

2.43 BoM forecasters produce aerodrome forecasts²⁹ (TAFs) by collating information from past and present *in situ* observations, satellite and radar imagery, climate information and weather forecasting models. Amendments to these TAFs are issued if and when 'one or more the forecast elements...varies by an amount that is significant to operations at the aerodrome.'³⁰

2.44 Other types of meteorological observations BoM issues are Meteorological Aerodrome Reports (METARs) and special reports called SPECIs. METARs are usually issued every thirty minutes at most airports with the necessary instrumentation, while SPECIs are issued 'when one or more weather elements meet specified criteria significant to aviation.'³¹

2.45 SPECIs are routinely issued when visibility drops below specified 'alternate minima' conditions:

Alternate minima are a set of cloud base and visibility conditions...generated for each airfield that has a published instrument approach procedure. The alternate minima are based on the minimum descent altitude and minimum visibility of each of the available instrument approaches.³²

26 Airservices Australia provides operational documentation which pilots can use to find out about hazards prior to planning or operating into a location. See for example: www.airservicesaustralia.com/aip/current/dap/AeroProcChartsTOC.htm#N and www.airservicesaustralia.com/aip/aip.asp?pg=40&vdate=7-Mar-2013&ver=1 (accessed 19 April 2013).

27 Airservices Australia, *Submission 17*, p. 2.

28 Bureau of Meteorology (BoM), *Submission 14*, p. 1.

29 TAFs are statements of meteorological conditions expected for a specific period of time for the airspace within a 5 nautical mile radius of a given aerodrome. See BoM, *Submission 14*, p. 1.

30 BoM, *Submission 14*, p. 1.

31 BoM, *Submission 14*, p. 1.

32 BoM, *Submission 14*, p. 1.

2.46 The committee notes that Australia's State Aviation Safety Program requires BoM to conduct investigations into aviation weather-related incidents.³³

2.47 The committee heard during its inquiry that Norfolk Island, although noted for its incidence of low cloud, nonetheless experienced a rare meteorological event on the night in question.³⁴ The handling of those rare conditions and the effect of this on the flight is discussed in later chapters of this report.

33 Australia's State Aviation Safety Program, April 2012, available at: www.infrastructure.gov.au/aviation/safety/ssp/index.aspx (accessed 1 May 2013).

34 Mr Barry Hanstrum, Regional Director NSW/ACT, BoM, *Committee Hansard*, 19 November 2012, p. 15.

Chapter 3

The ATSB investigation and methodology

Background

3.1 The Australian Transport Safety Bureau (ATSB) produced a report on the ditching of VH-NGA Westwind II, operated by Pel-Air, following a lengthy investigation.¹ The report has generated much debate and attracted considerable criticism.

3.2 In order to assess the ATSB investigation report, its conclusions and criticism of both, the committee sought a great deal of evidence on how investigation reports *should* look.

3.3 This chapter looks at the investigation model used by the ATSB, and what in the committee's view the ATSB report should have covered, with a particular focus on the requirements under Annex 13 of the International Civil Aviation Organisation's (ICAO) Chicago Convention and the ATSB's own procedures, as outlined in the agency's submission.

3.4 The chapter also looks at issues around the agency's decision to not retrieve VH-NGA's flight data recorder, as well as the inordinate amount of time taken to produce the investigation report.

3.5 Finally, this chapter explores the reasons the ATSB report took almost three years to complete.

Accident investigation analysis model

3.6 Investigation analysis models are usually based on the widely-used 'Reason' model of accident causation. The application of the model extends beyond the aviation sector. The Reason model has become an industry standard and includes a broad examination of potential organisational deficiencies, holding that explanations for accidents which focus on individual performance alone are inadequate. Essentially, the model considers the complex interaction between individual and latent organisational factors, which, when aligned in a particular way, allow an accident to occur. In effect, it highlights the system an individual works within.

3.7 The ATSB informed the committee that the Reason model of accident causation consists of five levels of safety factors. These are:

- Occurrence events
- Individual actions

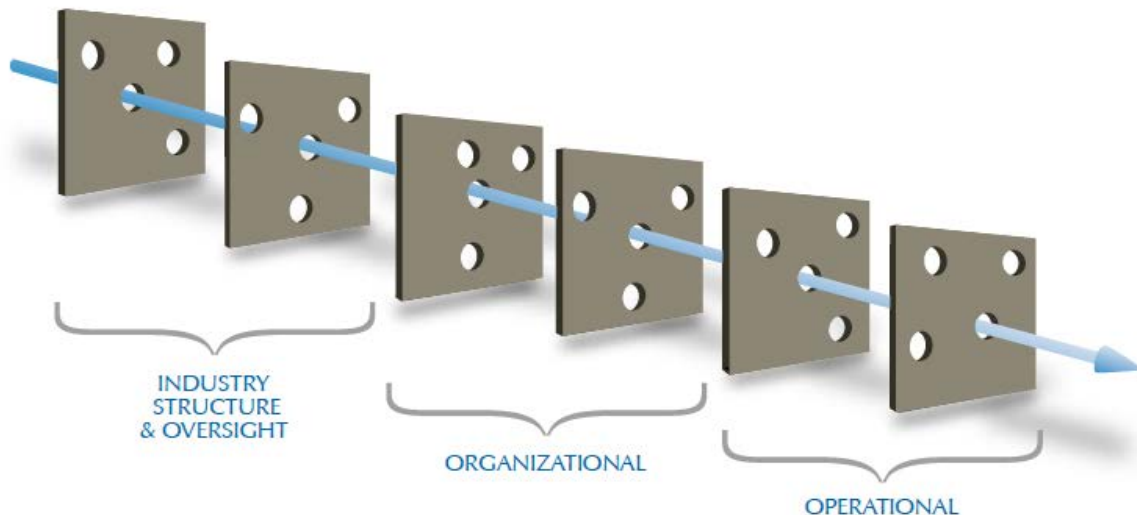
1 Ditching – Israel Aircraft Industries Westwind 1124A, VH-NGA, ATSB Transport Safety Report AO-20090072 (ATSB Report), www.atsb.gov.au/publications/investigation_reports/2009/air/ao-2009-072.aspx.

- Local conditions
- Risk controls (in this instance, Civil Aviation Safety Authority [CASA] regulatory oversight)
- Organisational influences (in this instance, the operator, Pel-Air)

3.8 According to the model, defences against accidents act as a series of barriers, often illustrated by consecutive slices of Swiss cheese. Each hole in each slice—and holes are of varying sizes and may change over time—represents a weakness in a part of the overall system. The system fails when holes—that is, weaknesses—momentarily align, allowing an accident to occur.

3.9 The committee was provided with the following figure² depicting how the Reason model works:

Figure 1—How the Reason model works



3.10 The ATSB report found that individual action, that is, not factors to do with the operator or regulator, caused the accident. The report identified only three contributing safety factors, and all three were concerned with individual action:

- The pilot in command did not plan the flight in accordance with the existing regulatory and operator requirements, precluding a full understanding and management of the potential hazards affecting the flight.
- The flight crew did not source the most recent Norfolk Island Airport forecast, or seek and apply other relevant weather and other information at the most relevant stage of the flight to fully inform their decision of whether to continue the flight to the island, or to divert to another destination.

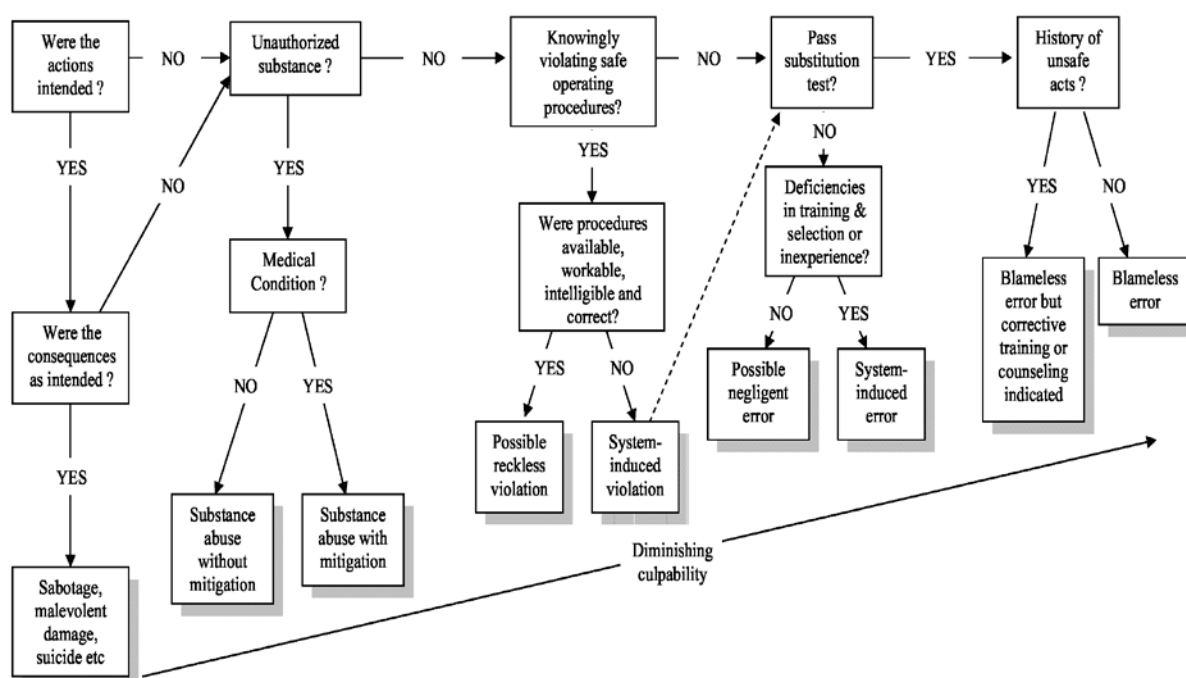
2 Illustration courtesy of Aerosafe Risk Management.

- The flight crew's delayed awareness of the deteriorating weather at Norfolk Island combined with incomplete flight planning to influence the decision to continue to the island, rather than divert to a suitable alternate.³

3.11 The ATSB did not identify any wider systemic issues that affected its conclusions. It is for this reason that the ATSB's report has drawn criticism, as it appears to determine responsibility without analysing context.

3.12 Mr Mick Quinn, an aviation safety consultant, offered the committee a flow chart⁴ explaining diminishing culpability, developed by Professor James Reason:

Figure 2—Diminished culpability



3.13 Examining the large volume of evidence received about the investigation, the committee noted an apparent discrepancy between the findings of the ATSB report and the agency's own submission, which stated:

The most important safety factors to identify are those that occur at the risk control and organisational influence levels. These are the levels where changes can be made which can have a meaningful influence on safety. Safety factors which exist at these levels are safety issues.⁵

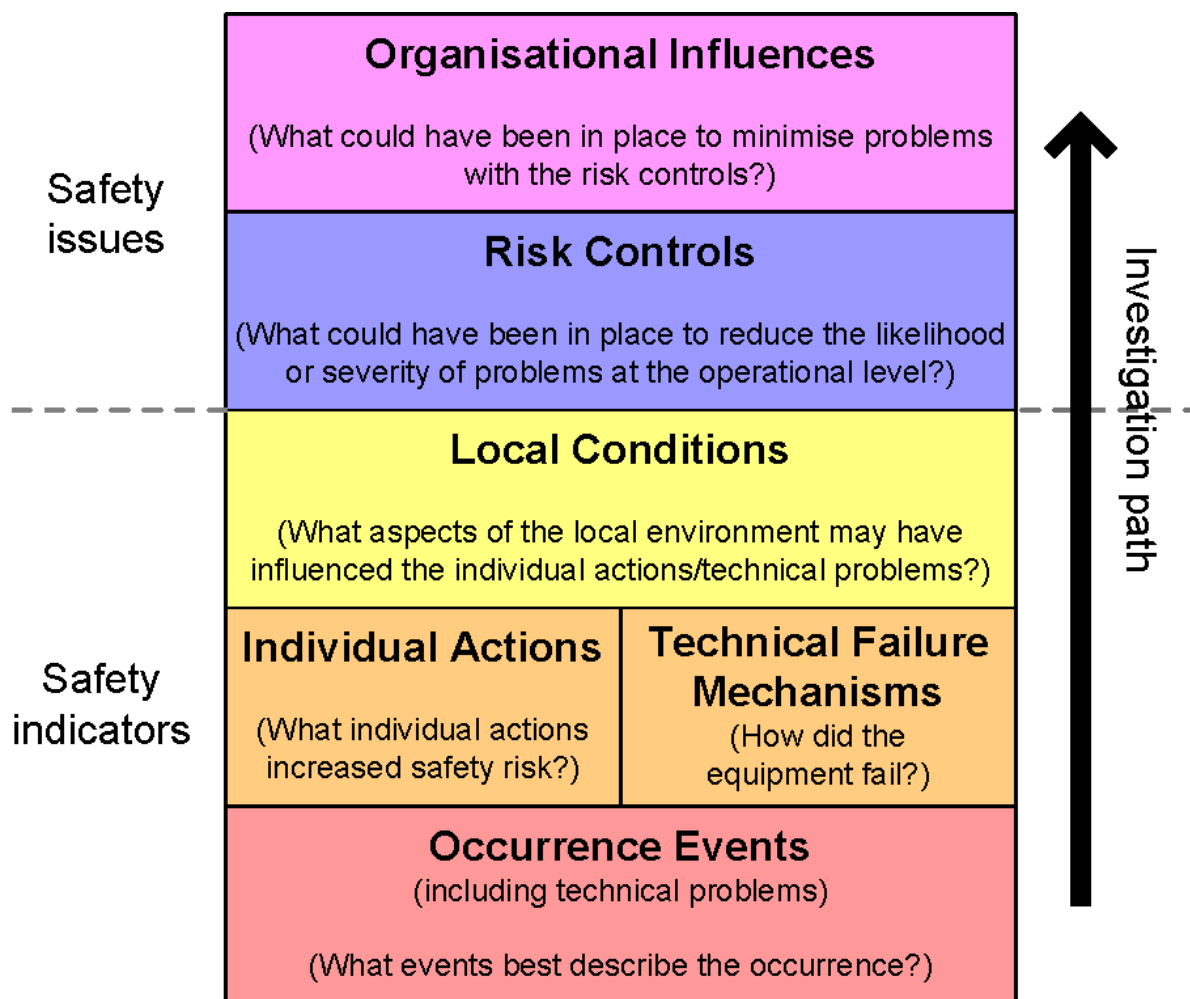
3 ATSB Report, p. 43.

4 Mr Mick Quinn, *Submission 11*, p. 22.

5 ATSB, *Submission 2*, p. 13.

3.14 Despite the widespread use of the Reason model, the ATSB told the committee that its investigation analysis model, although based on the Reason model, 'does not attempt to describe all of the complexities involved in the development of an accident.'⁶ The components of the ATSB model are depicted in the figure⁷ below:

Figure 3—The ATSB investigation analysis model



3.15 However, given that the principal function of an investigation report is to reduce future risk by exposing how an accident was able to occur, the committee believes that a best practice report *should* describe the complexities involved.

3.16 In simplified terms which best explain the context of this particular accident, three separate defences should have been in place to prevent or reduce the likelihood

6 ATSB, *Submission 2*, p. 12.

7 ATSB, *Submission 2*, p. 13.

of the Norfolk Island accident: the flight crew, the operator (Pel-Air) and the regulatory environment (CASA).⁸

Compliance with ICAO guidelines/structure

3.17 The committee is aware that Annex 13 of the International Civil Aviation Organization's (ICAO) Chicago Convention, to which Australia is a signatory, places certain requirements on the ATSB and CASA.⁹ This means that ATSB reports should, in theory, comply with these requirements.

3.18 The annex sets out rules for the notification, investigation and reporting of an accident, who should conduct the accident investigation and how, which parties can be involved and their rights, as well as how results of the investigation should be reported. Accident investigations conducted by member states are required to:

- gather, record and analyse all available information on a particular accident or incident;
- issue safety recommendations where appropriate;
- determine the causes of the accident if possible; and
- produce a final report.¹⁰

3.19 The investigation authority, in this instance the ATSB:

...shall have independence in the conduct of the investigation and have unrestricted authority over its conduct, consistent with the provisions of this Annex.¹¹

3.20 The annex stipulates that final reports should be released as soon as possible in the interest of accident prevention, preferably within 12 months. If reports cannot be produced within 12 months, an interim report is to be released on each anniversary of the accident.¹²

3.21 Once produced, the final report is required to analyse factual information gathered and list findings and causes established over the course of the investigation. This list is required to include 'both the immediate and the deeper systemic causes' of the accident.¹³

3.22 The annex also requires states to re-open an investigation should new and significant evidence become available.¹⁴

8 The committee notes that there are other defences, such as maintenance, but no issues were identified with these.

9 See Annex 13 of the Chicago Convention, 10th Edition, July 2010.

10 Annex 13 of the Chicago Convention, 5.4.

11 Annex 13 of the Chicago Convention, 5.4.

12 Annex 13 of the Chicago Convention, 6.5, 6.6.

13 Annex 13 of the Chicago Convention, Appendix.

14 Annex 13 of the Chicago Convention, 5.13.

3.23 The Australian and International Pilots Association (AIPA) reinforced the need for analysis to focus on systemic issues in order to help stakeholders draw meaningful conclusions, make relevant recommendations and propose any required safety action:

...[A]ccidents and incidents should be seen as organisational, but preferably systemic, rather than individual events. In this context, that system includes not only the groups listed above [individuals] but also the regulators, the clients and even government departments. There should be no sign that any organisation is “touched lightly” by an investigation as a consequence of perceived power in interested party consultation, particularly at the apparent expense of an individual.¹⁵

3.24 AIPA was not of the view that ATSB analysis in this instance helped produce the desired outcome. Asking 'Has the system improved as the result of this investigation?' AIPA suggested the answer is no, or not much. AIPA also asked:

Was this an opportunity missed to examine more broadly the system that placed the flight crew on that aircraft in the belief that they were adequately qualified and competent to achieve the task in whatever circumstances may arise?¹⁶

3.25 This view was held by other submitters as well, who made the point that the lack of systemic issue analysis in the ATSB report stands in stark contrast to the focus placed on individual error.¹⁷

3.26 The committee notes the widely held view that the ATSB has failed to discharge its responsibilities under ICAO guidelines. Mr Bryan Aherne, an independent aviation accident investigator and safety risk adviser to the aviation industry, analysed the requirements and informed the committee that the ATSB's report does not contain an analysis of organisational and regulatory issues:

...I have itemised the ICAO annex 13 format, which CASA and the ATSB have signed up to, and the format [of investigation reports] can be different but the content cannot be different... So I have detailed from ICAO's aviation accident manual the types of things that are required to be in the report which are not in this report, and it is completely devoid of organisational issues and regulatory issues. It is almost as if the flight crew perished. There is no explanation of why this thing happened. I find it quite incredible.¹⁸

3.27 The committee now turns to a significant deficiency identified in the ATSB's report – the absence of systemic issue analysis.

15 Australian and International Pilots Association (AIPA), *Submission 8*, p. 7.

16 AIPA, *Submission 8*, p. 19.

17 *Confidential submissions*.

18 Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 9. The committee notes that the ATSB may hold the view that insufficient evidence existed to suggest that organisational and regulatory issues were primary factors leading to the accident.

How the ATSB report falls short

3.28 The committee heard that the ATSB's report represents a low point in the agency's standard of reporting.¹⁹ It is not a report the ATSB Chief Commissioner himself expressed a great deal of pride in when questioned by the committee:

Senator EDWARDS: Chair, since we have started, there has been mea culpa after mea culpa after mea culpa in this thing. Now you are hearing evidence for the first time of what is supposed to be a forensic investigation. I have heard that this report would be a joke in the international standing—if other reviewers were to have reviewed this. I think that the evidence that Senator Xenophon and Senator Fawcett are drawing out would suggest that. We haven't even got to the black box yet. Are you proud of this report?

Mr Dolan: I certainly would not hold this report as a benchmark. I am still satisfied that the key elements—

Senator EDWARDS: Three years in the making. Mea culpa after mea culpa. Are you proud of this report?

Mr Dolan: No, I am not proud of this report.²⁰

3.29 The committee notes that Mr Dolan was satisfied that the key elements of the report were in place; however, this view was not shared by most other witnesses and submitters. By not dealing with organisational, regulatory and human factor issues, witnesses contended the report fails to meet the standard the aviation community and industry expects to see. It fails against ICAO requirements and the ATSB's own procedures, both of which are discussed in Chapter 4 of this report. One witness stated:

The ATSB public report released on 30 August 2012 is factually incorrect and contains flawed analysis. On reading the first draft [released for DIP comment, dated 26 March 2012], I was of the opinion that the problems with the investigation were due to incompetence, but on seeing the second draft [released for DIP comment, dated 16 July 2012] and subsequent final report I have a different opinion. In light of the CASA special audit now in the public arena, I believe that the ATSB report is partly incompetence but I am now of the opinion that it contains deliberate and intentional omission of safety-critical facts and evidence which would substantially change the findings and analysis. Any aviation safety professional who reads the drafts and the final report alongside the now public special audit can only form the same reasonable conclusions. I believe the committee should determine whether there has in fact been an attempt to breach the TSI Act 2003.²¹

19 This view was put forth by a number of *in camera* witnesses.

20 See discussion between the committee and Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 22 October 2012, pp 64–65.

21 Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 8.

3.30 Similarly, Mr Quinn found the ATSB's report to be seriously flawed and biased.²² In commenting on the report's analysis section, Mr Quinn stated:

Human factors analysis—there is none in this report. Organisational aspects—there basically are none in this report. Aspects regarding crash survivability and such things as life jackets, as we have discussed, are not provided in the report.

The analysis section itself is flawed. The analysis section actually has facts in it not analysis, and it is so brief that—the way accident investigation goes is that your analysis section is basically your proof. That is your argument that you are making, so what is in the analysis needs to be borne out in the factual information, findings, conclusions and recommendations.²³

3.31 These views were put to the ATSB and rejected multiple times. In evidence given before the committee at public hearings, the ATSB asserted that its accident investigation did in fact look at systemic issues, including the operator and regulatory environment involved:

[W]e as an organisation were trying to look at this on a systemic level rather than an individual detail level. We looked at the overall components of the current system to deal with the risks that go with operation to remote islands and the particular case were we were dealing with which was the situation where the weather forecast on departure was for weather suitable for landing at the destination and that changed en route.²⁴

3.32 The committee, however, could not see any evidence of this in the ATSB report.

3.33 When asked by the committee whether, given the evidence of deficiencies with both Pel-Air's operations (the CASA Special Audit) and CASA's oversight of those operations (the Chambers Report), it would be logical to conclude that these factors should have received greater attention in the ATSB's report, Mr Dolan answered:

...The methodology that we have designed for our investigations, which draws, among other things, on the accident causation model of Professor Reason, is essentially an inductive basis of reasoning. We start with the facts of a particular event, to the extent we can reasonably establish them, and then, from those, build possible hypotheses, further test them and so on. So we are building from facts to a bigger picture and seeing what we can assemble there with what certainty...

From our process, we would start with the facts, as we understand them, of the occurrence. We would take account of the layers in the Reason model that get, in the end, to organisational factors but start with individual actions, and therefore, work up—as appropriate, based on the facts we have available to us—towards, potentially, that organisational level. As a general

22 Mr Mick Quinn, *Submission 11*, p. 1.

23 Mr Mick Quinn, *Committee Hansard*, 22 October 2012, p. 16.

24 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 22 October 2012, p. 57.

rule, although it is useful to understand context of how a regulator is doing his job and a range of other things, we do not start with the alternative proposition that there is something wrong at the organisational level and we are trying to find evidence to prove that. That is some context in which I am answering the question.²⁵

3.34 This response from Mr Dolan only served to reinforce the committee's concern that, by starting with a set of facts which did not include all available information, the ATSB investigation could not be anything but flawed. This model would appear to be biased towards establishing contributing factors at the individual level to the potential exclusion of organisational level issues. A more impartial process would see each level—individual, organisational and regulatory—considered in each individual investigation.

3.35 The committee notes Mr Dolan's assertion that what is contained in the final report may not reflect the full scope of the preceding investigation. In this vein, when asked by the committee why the ATSB took such a conservative approach to the range of issues canvassed in its final report, Mr Dolan stated:

...there was a range of lines of inquiry that we went down. We satisfied ourselves that there was not a safety issue involved in it. Among the massive documentation we have provided to you, there is a range of lines of inquiry that clearly we went down. We did not reflect that process in our report and on reflection that is not ideal...²⁶

3.36 The committee also notes however, that in continuing the above statement Mr Dolan in effect argued that systemic issues surrounding the Norfolk Island accident, although examined, did not in the ATSB's view warrant inclusion in its report:

On some of the things you are concerned about [the lack of systemic issues in the report], our view is we did take a look at them and formed the view that they were not directly relevant to the issues we needed to address in the report.²⁷

3.37 In light of evidence contained in the CASA Special Audit and the Chambers Report (both discussed below) the committee does not share this view.

Committee view

3.38 On the basis of evidence received and the committee's own assessment of the ATSB report on the Norfolk Island accident, the committee has formed the view that the investigation report does not provide sufficient information about the system within which the flight crew operated. The ATSB's almost non-existent analysis of the

25 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 15 February 2013, pp 24–25. The ATSB investigation process only allows inclusion of evidence that is linked to a high risk event. As the VH-NGA flight was classified as aerial work, the Pel-Air accident had little chance of being properly assessed. For more on the risk assessment process see Chapter 4.

26 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 22 October 2012, p. 58.

27 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 22 October 2012, p. 58.

organisational and regulatory environment does not provide a balanced report, nor does it appear to comply with the requirements of ICAO Annex 13. Ultimately, the report does not meet the ATSB's own written standards, nor does it help the industry learn from this accident, which is a fundamental and vital aspect of ATSB investigation reports.

3.39 Because of the unbalanced nature of the ATSB report, the only conclusion that a reader could plausibly reach is that the accident in question was caused by pilot error. In turn, this appears to imply that the suspension of that particular pilot's licences by CASA was the only action necessary to enhance safety and reduce future risk.

3.40 On the basis of evidence presented, however, the committee does not accept this analysis or conclusion. Decisions made and actions taken by the crew are certainly important and are often the last line of defence in terms of aviation safety. This instance was no exception, and the committee is aware of errors that may have been made by the pilot. However, all flight crews clearly operate in circumstances significantly structured and influenced by the regulatory and operational environment. As put by the pilot in command on board Pel-Air's VH-NGA:

As the pilot in command, I wish to make it clear that on that night I was not operating by myself in a vacuum. I was licenced by CASA, trained by structures that CASA created and worked for a company [Pel-Air] using procedures CASA had approved, and yet CASA found I was the problem.²⁸

3.41 This view is not unique to a minority of submitters or the committee. The ATSB's report into this accident was controversial from the moment it was publicly released. The committee is reminded of the ATSB's own statement:

The quality of a safety investigation's analysis plays a critical role in determining whether the investigation results are accepted and whether it has been successful in enhancing safety.²⁹

3.42 There are reasons why this investigation and the resulting report have attracted so much criticism from submitters. Having spent over seven months listening to and reviewing arguments put forth by critics of the ATSB's report, as well as the evidence of the ATSB and CASA, the committee is confident that in general this criticism is supported by evidence and sound logic.

The CASA special audit

3.43 In the aftermath of the VH-NGA accident, CASA initiated a special audit of Pel-Air. The audit identified serious deficiencies with the operator and also raised concerns about CASA's oversight. The ATSB only requested the document from CASA in July 2012,³⁰ one month before its investigation report was published. The

28 Mr Dominic James, *Committee Hansard*, 22 October 2012, p. 1.

29 ATSB, *Submission 2*, p. 11.

30 The request came only after a lawyer acting on behalf of the VH-NGA pilot-in-command wrote to the ATSB querying why the CASA Special Audit did not feature in the investigation report.

ATSB was not of the view that information about operational and oversight deficiencies contained in the audit should alter its own report. The audit is discussed later in this report.

The Chambers Report

3.44 Among a large volume of material provided to the committee by CASA following an order for the production of documents, the committee came across an internal CASA report titled 'Oversight Deficiencies – Pel-Air and Beyond'. The document was commissioned by CASA following the Norfolk Island accident, completed and handed to senior CASA management on 1 August 2010, and is known as the Chambers Report.³¹

3.45 The Chambers Report centred on the effectiveness of CASA's oversight of Pel-Air, and considered the effectiveness of Pel-Air's oversight of its line pilots. In essence, it looked at organisational and surveillance factors which may have played a part in the Norfolk Island accident.

3.46 The report unequivocally concluded that indicators existed which 'could have identified that the Pel-Air Westwind operation was at an elevated risk and warranted more frequent and intensive surveillance and intervention strategies.'³² In summary the report continued:

It was also apparent that the data systems, training, surveillance tools, resources and inspector capability showed varying degrees of inadequacy and contributed to Bankstown Operations and CASA's inability to fully understand the operator's risk exposure and consequently to intervene to ensure the operator reduced the risk appropriately.

The Oversight review has identified the need for improvement in Surveillance methodology; Inspector recruitment, training, standardisation and assessment; and Oversight Information management. The present level of Inspector resourcing allocated to front line surveillance requires review as the indicators are that current resources may not be adequate for the task.³³

3.47 In other words, Pel-Air was lacking, CASA's oversight of Pel-Air was lacking, and the accident occurred in an environment of serious aviation safety deficiencies. In the committee's view, the CASA Special Audit and the Chambers Report are evidence that there were systemic issues at play.

3.48 Presented with this information, the ATSB remained firm in its position and defence of its Norfolk Island investigation report:

31 The Chambers Report, Additional Information number 11. Available at: www.aph.gov.au/Parliamentary_Business/Committees/Senate/Committees?url=rrat_ctte/pel_air_2012/submissions.htm.

32 The Chambers Report, p. 2.

33 The Chambers Report, p. 2.

...the principal purpose of an accident investigation, or an occurrence investigation, is to understand 'cause', which in our case we do by way of identification of safety factors and safety issues...Our mandate is really to look at, and to understand to the extent necessary, the context and the relevance of the context within which the occurrence happened. There is still nothing in our assessment that we could see, acknowledging that there were deficiencies in CASA's surveillance and activities, and acknowledging that there were problems with the way Pel-Air operated its safety management system, that was going to lead us to the question of contributing safety factors and, more particularly, to the identification of areas for safety improvement. We were conscious that CASA, for its regulatory purposes, was undertaking steps in relation to the pilot, in relation to Pel-Air as the operator and, indeed, in relation to itself in terms of those improvements, so the question was: if there is an intervention from CASA in terms of rectifying some problems of noncompliance, what is the extent to which we have to retrace that territory in the interests of safety improvement? They are the balances we are undertaking in the course of scoping and re-scoping our investigations.³⁴

Committee view

3.49 The committee was and remains deeply concerned by this response of the ATSB Chief Commissioner. The ATSB report contains not the merest hint of oversight deficiencies, deficiencies which in the committee's view must have increased the risks to aviation safety. That the ATSB would maintain its position despite evidence of serious operational, oversight and regulatory deficiencies is extremely concerning.

3.50 The committee can only conclude that, in the absence of analysis of systemic issues involved in the Norfolk Island accident, this report contributes little if anything to the enhancement of aviation safety in Australia. As a result it fails to comply with its own purpose and function.

3.51 Furthermore, the committee has no confidence that the systemic issues raised in the CASA Special Audit, the Chambers report and elsewhere, have been adequately addressed since the 2009 accident. If any changes have been made to the regulatory environment within which this accident took place, the catalyst for such changes was certainly not the ATSB's report.

3.52 The CASA special audit, the Chambers Report and CASA's decision to withhold the later from the ATSB, as well as why the ATSB chose to scope systemic issues out of its investigation are matters discussed in greater depth later in this report.

Retrieval of the flight data and cockpit voice recorders

3.53 In its submission the ATSB informed the committee that 'work commenced to examine the capability and need to recover the aircraft's cockpit voice (CVR) and flight data recorders (FDR)' after an initial interview of the captain on 23 November

34 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 28 February 2013, p. 3.

2009.³⁵ Retrieval of the recorders, the committee notes, is an important opportunity for safety learning for the aviation sector. From evidence provided, the committee understands that retrieval of the recorders would be particularly useful in this instance, as there may not be another example of a night ditching where all passengers survived.³⁶ Recorded data is less subjective than witness accounts.

3.54 The committee understands that the ATSB has certain responsibilities, set out in ICAO Annex 13, when it comes to retrieval of aircraft involved in accidents. It is an assumption throughout Annex 13 that, where a FDR exists, the accident investigation body will prioritise its retrieval:

The aftermath of a major accident is a demanding time for any State's investigation authority. One of the immediate items requiring a decision is where to have the flight recorders read out and analysed. It is essential that the flight recorders be read out as early as possible after an accident.³⁷

3.55 The committee approached the ATSB on this particular point, asking Mr Dolan whether he was comfortable that the agency had complied with the requirements of the annex in choosing not to recover the VH-NGA FDR because of the associated cost. The committee received the following response:

That was why I drew your attention to that paragraph that I just read [paragraph 5.4 of ICAO Annex 13]. With the decision I made in relation to the value as opposed to the cost of recovering the recorders, I was viewing it in the framework of 'where feasible.' I consider cost as opposed to benefit to be relevant to the question of feasibility.³⁸

3.56 During the course of the committee's hearing on 28 February 2013, an issue emerged relating to the wording of paragraph 5.4. Mr Dolan, explaining that he was reading from the current version of the paragraph in question, challenged the committee's reading of the annex, according to which an investigative body would be required to gather, record and analyse all available information on an accident or incident. This would include the flight data recorder.

3.57 Mr Dolan asserted that the copy of the annex in his possession, being more current and dated 18 October 2010, contained slightly different wording. This version does not say that investigations 'shall', but rather 'shall normally', gather, record and analyse all available information.³⁹

35 ATSB, *Submission 2*, p. 35. FDRs and CVRs are two different types of recorders used for incident and accident investigation purposes. CVRs are typically used to record audio in the aircraft flight deck, while FDRs record parameters such as altitude and airspeed with respect to time. The committee uses the term FDR to refer to both.

36 Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 12.

37 See *Committee Hansard*, 28 February 2013, p. 9.

38 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 28 February 2013, p. 9.

39 See discussion between Senator David Fawcett and Mr Martin Dolan, *Committee Hansard*, 28 February 2013, p. 8.

3.58 However, although the version of the document Mr Dolan relied upon before the committee to support his decision not to retrieve the VH-NGA FDR may have been more current, it was not the version in force at the time of the accident or its immediate aftermath, when such decisions were being made.

3.59 Furthermore, the ATSB had no disagreement with the committee's reading of paragraph 5.7 of the annex, which clearly sets out a state investigation body's responsibilities in this regard:

Effective use *shall* be made of flight recorders in the investigation of an accident or an incident. The State conducting the investigation *shall* arrange for the read-out of the flight recorders without delay.⁴⁰

3.60 Despite this, the Chief Commissioner maintained that, according to his reading of the paragraph, the ATSB was not required to retrieve VH-NGA's FDR:

What I read that [paragraph 5.7] in the light of, in the structure of this document [Annex 13], is that 5.4 is a general paragraph setting the context with the others, and so we have the question of whether to retrieve them in the first place—had we retrieved them, we would agree: effective use shall be made, and we have to arrange for the read-out, without delay. As I say, the decision I made was in that general context of feasibility.⁴¹

3.61 The ATSB position remained that the relevant paragraph of Annex 13 provided the agency 'the necessary discretion...in its conduct of the investigation.'⁴²

3.62 The committee does not accept this argument. At the time the decision against retrieving the FDR was made the imperative existed for the ATSB to do so. To ignore this imperative by arguing that the benefit did not justify the cost appears disingenuous. To imply that the revised wording in the current version of Annex 13 was the basis for the ATSB's decision in 2009/2010, before this version was in force, is even more disingenuous.

3.63 This is not the only example of a FDR which has been under water for some time being retrieved and useful data being produced. Furthermore, the ATSB appears to be of the view that the data is not worth the cost of retrieval as information could be obtained from the flight crew, both of whom survived the accident.

Committee view

3.64 The committee finds the ATSB's refusal to retrieve the FDR incongruous and questionable. Furthermore, the committee takes a dim view of the ATSB's reliance on a version of ICAO Annex 13 that only came into force in late 2010, nearly a year after the accident, to justify this decision. Mr Dolan's evidence in this regard is questionable and has seriously eroded his standing as a witness before the committee. Flight data recorders are routinely recovered around the world despite the existence of surviving crew. They provide objective records of how events transpired, and allow speech

40 Paragraph 5.7, ICAO Annex 13, emphasis added.

41 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 28 February 2013, p. 9.

42 ATSB, answer to question on notice 8, 28 February 2013, p. 3.

specialists and psychologists to determine stress levels and what was going on in the cockpit at the time.⁴³ This could offer valuable lessons for the whole aviation industry, not just about why an accident occurred, but, in this case, how such a successful ditching was executed under extremely difficult circumstances.

3.65 The committee is of the view that the ATSB is taking a very loose interpretation of its obligations under ICAO Annex 13. Furthermore, the committee has evidence indicating that by early 2010 two lines had been attached to VH-NGA which were strong enough to raise the wreckage. This evidence calls into question whether the ATSB's argument concerning cost or associated occupational health and safety concerns was valid, and reflects the fact that the ATSB was not overly concerned to robustly examine options and costs.⁴⁴

3.66 Having received *in camera* evidence on the likelihood of VH-NGA's flight data recorder yielding useful information about the accident despite more than three years passing since the event, the committee supports calls for the recorder to be retrieved.

3.67 The fact is, the primary consumer of ATSB investigation reports is the aviation industry. There is much to be learned about what led to this accident, and how injuries were minimised upon impact.

Recommendation 1

3.68 The committee recommends that the ATSB retrieve VH-NGA flight data recorders without further delay.

Time taken to produce the ATSB report

3.69 The ATSB's statement of intent, available online, includes an undertaking to conduct investigations in a timely manner and 'aim to issue final reports on investigations within one year from commencement.'⁴⁵

3.70 The aspirational goal certainly did not translate into reality in this instance. Instead, the ATSB's report on the ditching of VH-NGA took nearly three years to complete. The committee is not aware of any suggestions that this was a reasonable, or indeed helpful, timeframe within which to produce a report meant to allow the industry to learn lessons from this accident.

3.71 On the contrary, witnesses called the three year timeframe unreasonable and described it as being 'outside the performance expectations set by the ATSB and other international agencies.'⁴⁶

43 *Committee Hansard, in camera.*

44 *Confidential document.*

45 See www.atsb.gov.au/about_atsb/ministers-expectations/statement-of-intent.aspx (accessed 25 March 2013).

46 Mr Mick Quinn, *Committee Hansard*, 22 October 2012, p. 14.

3.72 ATSB Chief Commissioner Dolan admitted that the time taken to produce the report was unsatisfactory:

I should say up front that there are two areas where we think we could have done better with this investigation and report. The first and obvious one is that it took us far too long by anyone's standards, including our own, to get to a completion of the investigation. There are reasons for that, which I would be happy to discuss, but they do not excuse the three-year time frame for the report.⁴⁷

3.73 Mr Dolan's explanation for the time taken to produce the report essentially revolved around resource allocation and prioritisation:

When, nearly 3½ years ago, I joined the newly independent ATSB as chief commissioner, we had over 100 aviation investigations on hand, including four that we classified as level 2—so substantial investigations requiring major and continuing use of our resources. We were averaging about 18 months for the completion of investigations, with some serious outliers in that. We had more work on hand than we knew how to deal with, and we would normally expect in any given year to get one of those level 2 investigations. So we had a lot more work than we were used to. That led to delays in a range of reports and, as new investigations came in, the shifting of resources to different priorities as they arose. It is clear that, in managing that allocation of resources to always-shifting priorities, we did not give enough attention to getting to an expeditious conclusion of this Norfolk Island report. However, that is the context in which that happened.⁴⁸

3.74 The committee understands that strategic guidance from the minister leads the ATSB to prioritise investigations into what are referred to as 'fare-paying passenger operations'.⁴⁹ These generally exclude the type of flight VH-NGA was undertaking at the time of the accident, which is categorised as aerial work. The Australian and International Pilots Association (AIPA) suggested that the non-fatal nature of this accident suggests that its investigation was not accorded a high level of priority.⁵⁰

3.75 Like AIPA, the committee understands that the ATSB, like most organisations, has to prioritise its workload.

3.76 When the committee asked whether the ATSB had considered outsourcing any of its work, or insourcing extra capacity to expedite the production of reports, Mr Dolan replied in the negative:

Our resources are largely tied up in maintaining our existing investigative capability, who are permanent staff of the organisation. We have a

47 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 22 October 2012, p. 54.

48 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 22 October 2012, p. 55.

49 Although the ATSB is an independent body, the TSI Act obliges the agency to 'have regard' to strategic guidance from the minister. Prioritising fare-paying passenger operations has been bipartisan policy for some time. See discussion between the committee and Mr Martin Dolan, *Committee Hansard*, 28 February 2013, p. 4.

50 Australian and International Pilots Association, *Submission 8*, p. 9.

longstanding view that in almost all circumstances it is better to have, if possible, the range of expertise available to us on a permanent basis and therefore immediately available than to rely on potentially risky external outsourcers.⁵¹

3.77 The committee confirmed with Mr Dolan that this was the case even when the ATSB budget was underspent and its workload was clearly excessive:

Senator FAWCETT: I am not talking about normal [ATSB] operations. I am talking about a situation where you have a budget underspend and a clear excess of work. Was it [outsourcing or insourcing] even considered? That is all I am asking.

Mr Dolan: In that small underspend, no, we did not consider it.⁵²

Committee view

3.78 The committee does not believe that an adequate explanation for the delay has been provided.

3.79 Given that the ATSB could not, or certainly should not, have known that it was only going to identify two relatively minor safety issues at the onset of its three-year investigation, the delay itself had the potential to risk lives by not alerting the industry to the causes of this accident in a timely fashion.

3.80 The committee considers the fact that it took the ATSB close to three years to produce its investigation report following the November 2009 ditching of VH-NGA unreasonable. The committee also believes that the ATSB made a significant oversight by not considering external assistance despite a budget surplus of \$0.3 million in 2009-10.⁵³

3.81 Furthermore, the quality and complexity of the final report once it was produced—as will be discussed in later chapters of this report—certainly would not appear to readily justify a three-year timeframe. This being the case, the committee is firmly of the view that the stated aim of producing reports within one year of an incident or accident is attainable and should be met in all but the most extraordinary and justifiable of circumstances. During the course of its investigation, if it becomes apparent to the ATSB that it will not meet its one year timeframe, the ATSB should release an interim report, as required by ICAO, which would include a public timing update to ensure that the aviation industry is kept informed of progress and expected timing.

51 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 22 October 2012, p. 55.

52 See discussion with Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 22 October 2012, p. 55.

53 For information on the ATSB's financial performance in 2009-10 see ATSB Annual Report 2009-10, p. 28, available at: www.atsb.gov.au/publications/2010/ar_2009-2010.aspx (accessed 19 April 2013).

Chapter 4

The ATSB's accident investigation processes

Overview of the investigation process

4.1 The safety investigation process is geared towards improving safety by shedding light on factors which led to a given occurrence and making safety-related recommendations, thus reducing future risk.

4.2 Following an occurrence, investigations are conducted in order to improve safety by determining what confluence of events or factors led to the event. As put by the Australian Transport Safety Bureau (ATSB):

The purpose of a safety investigation is to enhance safety, not to apportion blame or liability.¹

4.3 An occurrence is defined as an accident or incident. Standard terminology used to refer to key safety and risk concepts includes but is not limited to:

- Safety factor: an event or condition that increases safety risk.
- Contributing safety factor: a safety factor without which the occurrence would not have happened.
- Other safety factor: a safety factor that, while not meeting the above definition, nonetheless is important enough to warrant inclusion in an investigation report.
- Safety issue: a factor that has the potential to compromise the safety of future operations, or is characteristic of a system or operational environment.
- Risk level: the level of risk associated with a particular safety issue.²

4.4 The ATSB advised the committee that, due to the emphasis it places on future safety, the agency employs what it calls a 'link-by-link' approach during its safety factor analysis and investigations. This means that judgements about whether a particular safety factor contributed to an occurrence are made in terms of the factor's relationship to another contributing safety factor. Other types of investigations, the ATSB posited—particularly those aiming to determine responsibility for an event—generally employ what is called a 'relative-to-occurrence' approach, whereby judgements about the extent to which a factor contributed are made in terms of the factor's direct relationship to the occurrence in question. The ATSB contended that its approach sets it apart from other proceedings:

The ATSB analysis framework involves a higher standard of proof than in Australian coronial inquests or civil legal proceedings or factors relatively

1 The Australian Transport Safety Bureau (ATSB), *Submission 2*, p. 11.

2 For more detail see ATSB, *Submission 2*, p. 6.

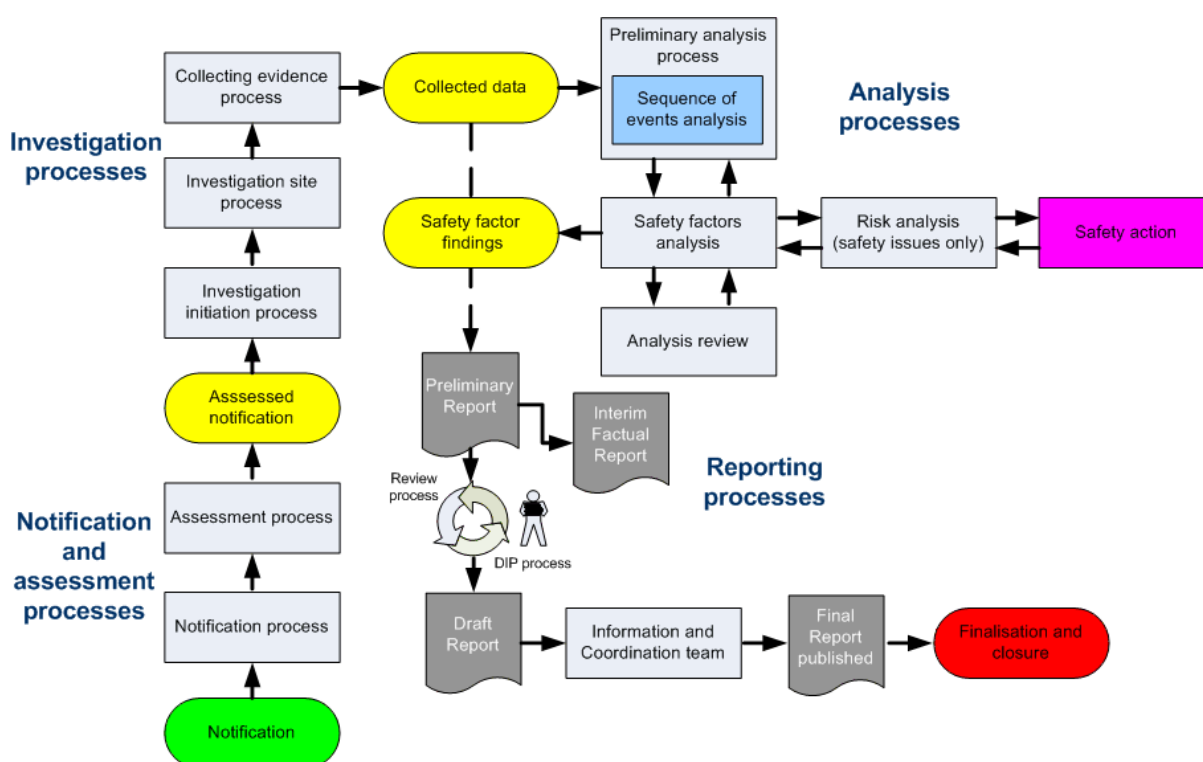
close in proximity to the occurrence (that is, more than 66 per cent versus more than 50 per cent).³

4.5 Based on the ATSB's submission, the committee understands that the agency follows a fairly prescriptive investigative approach. As put by the ATSB, the process applied in each instance follows defined procedures and protocols:

The ATSB Safety Investigation Quality System (SIQS) provides policy, procedures, guidelines and tools for the conduct of all key investigation activities.⁴

4.6 These procedures and protocols are 'designed to ensure consistency in methodology and implementation of the provisions of the TSI Act'.⁵ Broadly speaking, the processes consist of notification and assessment of the accident or incident in question, investigation, analysis and reporting.⁶ The ATSB provided the following figure depicting a high level view of the principal processes involved.

Figure 4—ATSB investigation process



3 ATSB, *Submission 2*, p. 11.
 4 ATSB, *Submission 2*, p. 8.
 5 ATSB, *Submission 2*, p. 8.
 6 ATSB, *Submission 2*, p. 8.

Investigation and analysis

4.7 The investigation aspect of the process above involves an initial response following an occurrence, the initiation of an investigation and data collection. The ATSB advised that its investigation processes 'may or may not involve an on-site visit'.⁷

4.8 Collected data typically involves coverage of a wide range of topics applying different techniques. Data can be physical, testimonial, documentary or recorded. Information and evidence is gathered on the sequence of events, the personnel, organisations and equipment involved and environmental factors, but may also include a wider range of material as deemed necessary.⁸

4.9 Following the information gathering stage the process moves to the analysis stage, where data are reviewed and converted into a series of arguments, or excluded, if the ATSB assesses via its risk matrices that the future risk to high capacity operations is low.⁹ These in turn produce a series of conclusions, which are primarily concerned with safety issues and contributing factors. The ATSB advised the committee that 'analysis relies on informed judgement and is, to some extent, subjective'.¹⁰

4.10 Once a draft report is prepared by the investigator-in-charge and the investigation team, it is subject to a review and approval process. This process comprises several stages:

- internal, peer and management reviews of the draft report;
- approval of the draft report for release to directly involved parties (DIPs);
- assessment of DIP comments by the investigation team and/or the investigator-in-charge;
- finalisation of the final report;
- review and approval of the final report by the ATSB commissioners;
- advance release of the final report version to DIPs and other relevant parties; and
- finally, public release of the report.¹¹

DIP process

4.11 DIPs are individuals or organisations that were directly involved in an occurrence or may have influenced the circumstances involved in its creation. They may also include individuals or organisations whose reputations could be affected

7 ATSB, *Submission 2*, p. 9.

8 ATSB, *Submission 2*, p. 9.

9 The matrix the ATSB uses to assess future risk is discussed later in this chapter.

10 ATSB, *Submission 2*, p. 10.

11 ATSB, *Submission 2*, p. 10.

following the public release of an ATSB investigation report. These typically include the regulatory authority, in this case the Civil Aviation Authority (CASA), the crew and the operating organisations, in this case Pel-Air.¹²

4.12 The DIP process provides these individuals and organisations an opportunity to make submissions on the factual accuracy of an investigation report prior to its public release. Reports are distributed to DIPs according to the matrix below:¹³

Figure 5—Advanced release of ATSB reports

Party	Preliminary Report	Interim Factual Report	Draft Report	Final Report
Directly Involved Party (DIP)	In advance	In advance	In advance for comment	In advance
Party with an Involvement (PWI)	In advance	In advance	In advance for information	In advance
Interested Party (IP)	In advance	In advance	N/A	In advance
Other Party (OP)	Notified on issue	Notified on issue	N/A	Notified on issue

4.13 Should DIPs believe that an investigation report contains factual inaccuracies or omissions, they may provide evidence in support of this view. Their submissions and evidence are assessed and the information is either ‘noted’, ‘accepted’, ‘partly accepted’ or ‘rejected’ along with a written justification for the assessment. The ATSB may decide that no further action is required, or that the information warrants further investigation or that changes be made to the final report.¹⁴

4.14 This process, the ATSB advised the committee, provides an opportunity for natural justice to these parties.¹⁵

4.15 The committee understands, however, that the *Transport Safety Investigation Act 2003* (TSI Act) does not provide for transparency in the DIP process, and questions how ATSB decisions regarding the inclusion or omission of DIP information can be assessed.

4.16 The committee notes that other jurisdictions, such as the United States, apply a higher degree of transparency in this regard. The committee recommends a course of action later in this chapter to ensure that DIPs have access to a fair and valid process, and that appropriate checks and balances are in place.

¹² For more detail see ATSB, *Submission 2*, p. 31.

¹³ ATSB, *Submission 2*, p. 32.

¹⁴ ATSB, *Submission 2*, p. 32.

¹⁵ ATSB, *Submission 2*, p. 31.

ATSB report approval and release

4.17 Once the DIP process has been finalised, the report is reviewed by the Manager and General Manager before being approved for publication. Under section 25 of the TSI Act, this approval can only be given by the Commission and cannot be delegated.¹⁶

4.18 Should new information come to light following the public release of the final investigation report, the ATSB advised the committee that its policy 'provides for the reactivation of any transport safety investigation in circumstances where new and significant information (in relation to the matter that was investigated) is brought to the attention of the ATSB.'¹⁷

4.19 The committee noted that relevant new information may include information presented during the course of a coronial inquiry that was not previously made available to the ATSB, new physical evidence, or the results of research which may be directly relevant.¹⁸

The ATSB risk matrix

4.20 As previously stated, the term 'risk level' refers to the risk ascribed by the ATSB to a particular safety issue. Under the ATSB's classification system there are three categories of safety issue:

- Critical safety issue: associated with an intolerable level of risk.
- Significant safety issue: associated with a level of risk that is acceptable if kept as low as reasonably practicable.
- Minor safety issue: associated with a level of risk that is broadly acceptable.¹⁹

4.21 Risk levels are noted in the 'Findings' section of ATSB investigation reports.²⁰

4.22 The ATSB advised the committee that its risk analysis process was consistent with the Australian and international standard,²¹ and summed up its methodology in the following manner:

The ATSB risk methodology examines the worst credible occurrence scenario in terms of its likelihood and consequence to establish the safety risk associated with the identified safety issue. Likelihood and consequence tables are used to inform this assessment. Application of the worst credible scenario accounts for the effect of in-place risk controls and management

16 ATSB, *Submission 2*, p. 33.

17 ATSB, *Submission 2*, p. 34.

18 ATSB, *Submission 2*, p. 34.

19 ATSB, *Submission 2*, p. 7.

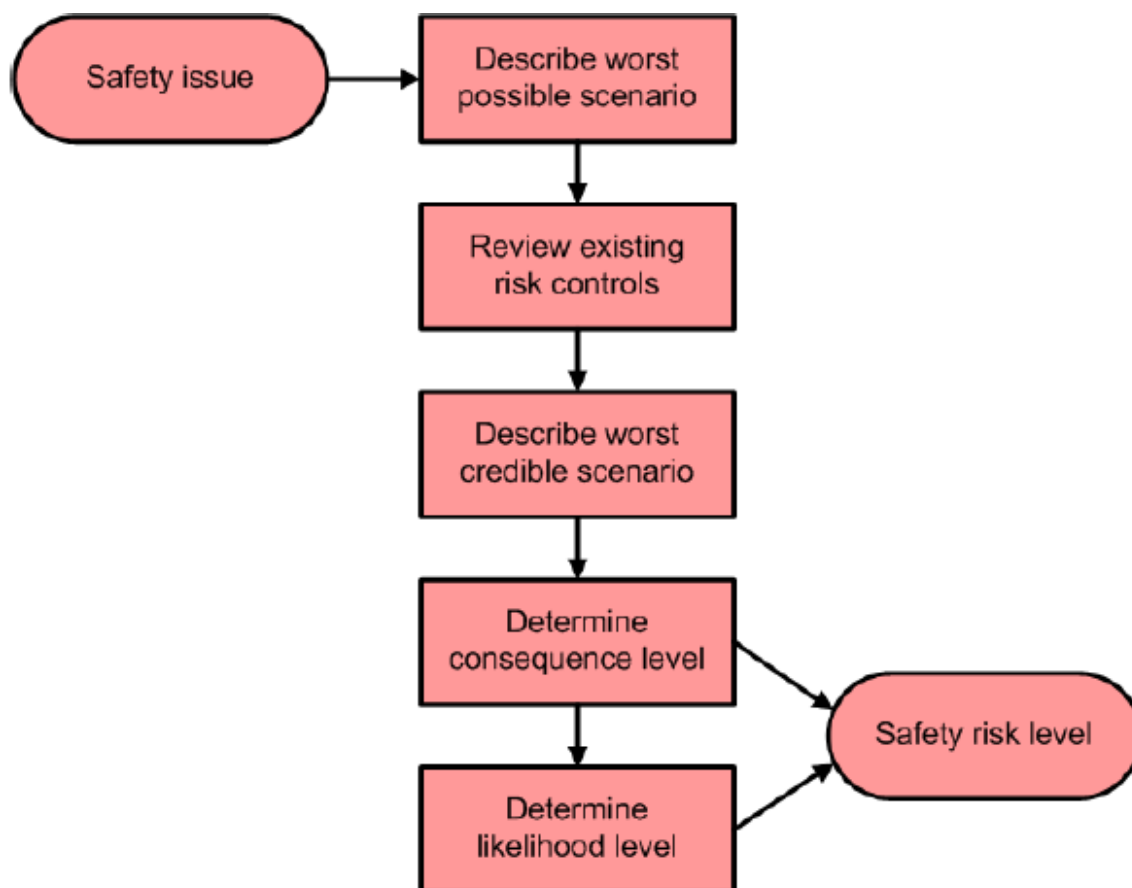
20 ATSB, *Submission 2*, p. 7.

21 ATSB, *Submission 2*, p. 19.

processes that generally act to reduce the level of adverse consequences associated with the worst possible scenario.²²

4.23 The classification of safety issues as 'critical', 'significant' or 'minor' determines the effort which the ATSB will apply towards facilitating safety action. The process is depicted by the figure below:²³

Figure 6—ATSB risk analysis process



4.24 Currently, any prospective aspect of the ATSB risk assessment process will only have validity if the agency is correct in its highly subjective analysis, as there is no opportunity for others to make that same assessment. Explaining what went wrong in the instance under consideration allows the whole industry to assess which lessons may apply to future operations.

4.25 The committee notes that assessing risk is not an exact science, but is rather an attempt to predict the likelihood and possible consequences of an event occurring

22 ATSB, *Submission 2*, p. 41.

23 ATSB, *Submission 2*, p. 20.

on the basis of limited data of uncertain quality. Risk assessments are therefore often by necessity conservative.²⁴

4.26 In this vein, the ATSB advised the committee that safety investigations assess situations as they existed at the time of an accident, considering the risk involved as it relates to one of two possible scenarios:

- Worst possible scenario: the worst and most severe occurrence that could eventuate as a result of a safety issue.
- Worst credible scenario: the worst and most severe occurrence that could eventuate as a result of a safety issue, determined after consideration has been given to the risk controls and management processes in place.²⁵

4.27 To explain how the agency employs the above scenarios in estimating consequences and likelihood levels, the ATSB submitted:

Using the worst possible scenario as the basis of estimates of consequence and likelihood levels will generally lead to the selection of the highest level of consequence in the risk matrix. It is technically possible that almost any safety issue could result in a catastrophe. Even in the worst credible scenario, regard needs to be given to the normal expectation of compliance with existing risk controls, such as rules and standard operating procedures.²⁶

4.28 A table²⁷ describing how the ATSB decides the scale of consequence ratings during safety risk assessments was also provided:

Figure 7—ATSB scale of consequence

	Minimal	Moderate	Major	Catastrophic
Aviation				
Air transport > 5,700 kg (fare-paying passengers)	Minor incident only (e.g. birdstrike)	Incident	Accident; Serious incident; Incident with many minor injuries	Accident with multiple fatalities, or aircraft destroyed plus fatalities / serious injuries
Air transport > 5,700 kg (freight); Air transport < 5,700 kg (fare-paying passengers)	Incident	Accident; Serious incident; Incident with many minor injuries	Accident with multiple fatalities, or aircraft destroyed plus fatalities / serious injuries	N/A
Other commercial operations	Accident; Serious incident; Incident with many minor injuries	Fatal accident; Accident with aircraft destroyed or multiple serious injuries	N/A	N/A
Private operations	Accident with aircraft destroyed or multiple serious injuries	Fatal accident	N/A	N/A

24 Confidential submission.

25 For more detail see ATSB, *Submission 2*, p. 20.

26 ATSB, *Submission 2*, p. 21.

27 ATSB, *Submission 2*, p. 21.

4.29 Likelihood is rated into one of four categories:

- Frequent – expected to occur at least once per year.
- Occasional – would probably occur in the medium term, approximately once per decade.
- Rare – could occur in certain circumstances, possibly once per 100 years.
- Very rare – would only occur in exceptional circumstances, possibly once per 1000 years.²⁸

4.30 Scales of consequence and likelihood are then used to inform the risk rating matrix. The matrix²⁹ takes the following form:

Figure 8—ATSB risk rating matrix

		<i>Consequences</i>			
		Minimal	Moderate	Major	Catastrophic
<i>Likelihood</i>	Frequent	Significant	Significant	Critical	Critical
	Occasional	Minor	Significant	Significant	Critical
	Rare	Minor	Minor	Significant	Critical
	Very rare	Minor	Minor	Minor	Significant

Risk analysis and the Norfolk Island accident

4.31 In the context of the VH-NGA accident, the ATSB advised the committee that the worst credible scenarios examined were 'significantly influenced by the in-place risk controls and management processes.'³⁰ These controls and processes included the requirements and guidance set out in Pel-Air's operations manual.

4.32 Essentially this means that, adhering to what appears to be a fairly rigid process of risk assessment, the ATSB chose to work on the assumption that proper

28 ATSB, *Submission 2*, p. 22.

29 ATSB, *Submission 2*, p. 22.

30 ATSB, *Submission 2*, p. 41.

risk controls, such as adequate operating procedures and their oversight, were in place.³¹

4.33 Looking at the ATSB's consequence table (Figure 7), the committee observes that according to the ATSB's assessment processes, even if all six people on board VH-NGA had died, the highest possible consequence attributable to the accident would have been 'moderate'.

4.34 The committee put this proposition to the ATSB. Chief Commissioner Dolan responded:

That is a simplification of the purpose of that table. We will do a risk assessment of an identified safety factor. This is not about assessment of evidence, this is about assessment of safety issues—a safety factor that is seen to have a continuing effect on risk to assess the likelihood and the consequence of that factor coming into play in the future. That is our basis for establishing the significance of a safety issue. It is not the basis on which we will assess evidence.

If you are looking for the philosophical underpinnings of how we deal with evidence and a range of other things, there is a document, *Analysis, causality and proof in safety investigations*, which was a publication of Dr Walker and Mr Bills in 2008. That shows the philosophical underpinnings of how we deal with facts, evidence, analysis and so on. It is reflected in our policies and procedures in the organisation. The risk assessments largely draw on or are compressed versions of international safety organisation risk management standards. We are trying to bring all that to bear on a diverse range of operations, while bearing in mind the guidance from the government that our attention should primarily be on the safety of the travelling public.³²

Committee view

4.35 The ATSB's response notwithstanding, the committee remains concerned by the fact that the highest consequence the ATSB would attribute to the safety issues for those involved with emergency medical flights—in this particular case the patient, her family, the medical staff and flight crew—is 'moderate'. This would be the case even if all six on board had died in the accident.

4.36 The committee is highly sceptical of a risk analysis process which can produce such a result. If the application of this methodology continues, the systemic and oversight deficiencies which allowed the VH-NGA pilot-in-command to be the last line of defence would remain unchanged.

4.37 It is important to note that current regulations include 'ambulance functions' under the category of 'aerial work', as outlined in Civil Aviation Regulation (CAR)

31 The committee came to this conclusion on the basis of the ATSB report and evidence before the committee. See, for example, committee's discussion with Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 15 February 2013, pp 23–24.

32 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 28 February 2013, p. 8.

206. CAR 206 sets out what is referred to as the "classification of operations" and establishes three broad classes of commercial aviation: aerial work, charter and regular public transport (RPT). Those classes of operations reflect two things: the exposure of the general public to the inherent risks; and the presumed knowledge of and acceptance of risk by the participants. The class specific regulatory requirements, set out in Part 82 of the Civil Aviation Orders (CAOs), become more demanding as more people are at risk and as they have less control over individual outcomes. Aerial work has the lowest compliance requirements and RPT has the highest.

4.38 The ATSB has codified the allowable thoughts and actions of its investigators to the extent that common sense and intuition appear to be extinguished. This codification appears to be based on a false premise that the ATSB can correctly predict future risk and is in fact the only organisation that can or should have access to the facts of an incident where such application to other current or future operations is made. The ATSB is so far removed from the many and varied operations of Australia's Air Operator's Certificate (AOC) holders that such a premise is demonstrably flawed.

4.39 It is therefore imperative that the ATSB mitigate the unintended consequences of the interaction between its risk assessment processes and the strategic guidance from the minister.³³ Separately, the minister should review the strategic guidance to ensure it does not elicit these unintended consequences.

4.40 The committee considers the ATSB's approach to this investigation a lost opportunity for industry to learn. Given that the minister's current Statement of Expectations is valid until 30 June 2013, the committee considers this a good opportunity for mitigating any unintended consequences.

Recommendation 2

4.41 The committee recommends that the minister, in issuing a new Statement of Expectations to the ATSB, valid from 1 July 2013, make it clear that safety in aviation operations involving passengers (fare paying or those with no control over the flight they are on, e.g. air ambulance) is to be accorded equal priority irrespective of flight classification.

4.42 The committee also believes that ATSB should move away from its current approach of trying to forecast the probability of future events and conduct thorough examinations of the reasons for accidents. This would allow the industry to make its own assessment of the factors and their relevance to their own operations.

Recommendation 3

4.43 The committee recommends that the ATSB move away from its current approach of forecasting the probability of future events and focus on the analysis of factors which allowed the accident under investigation to occur. This would

33 See Minister's Statement of Expectations for 1 July 2011 to 30 June 2013, available at: www.atsb.gov.au/about_atsb/ministers-expectations/ministers-statement-of-expectations.aspx (accessed 19 April 2013).

enable the industry to identify, assess and implement lessons relevant to their own operations.

Downgrading of the critical safety issue

4.44 The committee learned of the existence of a critical safety issue identified early on by the ATSB, and considered how the safety issue and risk assessment processes outlined above may have watered down the outcome of the ATSB's investigation into the VH-NGA accident.

4.45 The committee expended considerable effort in trying to piece together how and why the downgrading happened. A synopsis is offered below.

4.46 Initially classified as a critical safety issue, the final ATSB report identified the following minor safety issue:

The available guidance on fuel planning and on seeking and applying en route weather updates was too general and increased the risk of inconsistent in-flight fuel management and decisions to divert.³⁴

4.47 With the information available to them once they became aware of the deteriorating weather conditions, the crew perceived that diversion carried a greater risk than continuing to Norfolk Island.³⁵ The committee understands that regulatory and guidance material did not require the crew to divert in the particular circumstances they faced.³⁶

4.48 CASA conceded this point, but was nonetheless of the view that a diversion should have occurred:

CASA's position with respect to the diversion issue was and remains that, in all the circumstances of the accident flight, good airmanship should have resulted in a diversion, even if there was no explicit, mandatory requirement that the accident pilot do so.³⁷

The ATSB position

4.49 Early on in its investigation, the ATSB formed the provisional view that the inadequate en route guidance was a key issue, and drew this to CASA's attention:

Because we take a prudent view of these things, we very strongly stated what we saw as provisionally the risk that was involved here—the risk that

34 ATSB Report, p. 43.

35 ATSB Report, p. 33. Had the crew requested information at this point, it may have been too late. When the crew did actually realise how bad the weather was, they had no option to divert.

36 It was pointed out that neither the regulations nor the AIP requires a pilot to provide for an alternate based on weather reports. See Mr Bryan Aherne, *Submission 10*, p. 3. The company operations manual also did not required a diversion in the circumstances. See ATSB report, p. 31.

37 CASA, Answers to questions taken on notice from 22 October 2012 hearing, number 2.

the guidance about en route management of these flights was not adequate.³⁸

4.50 The ATSB examined the guidance available to the flight crew in the Aeronautical Knowledge Syllabus (ATPL(A)), asked a group of 50 ATPL students what they would do under similar circumstances, examined a number of operations manuals from similar operators and interviewed a sample of pilots. They did not find consistent knowledge or processes.³⁹

4.51 Evidence indicates that the ATSB was right to highlight this lack of guidance; it was something that pilots and CASA's Approved Testing Officers had grappled with for years.⁴⁰ It was also posited that clearer guidance might have helped avoid the VH-NGA accident.⁴¹

CASA's response

4.52 The committee understands that CASA officers responded positively to the ATSB's initial assessment of the issue in meetings held at the officer level in February 2010.⁴²

4.53 What transpired in discussions at the CASA senior management level is not known to the committee. The committee does know however, that concerns were raised within CASA about the possible ramifications of the identification of the critical safety issue on CASA's legal actions against the pilot in command.⁴³ Nevertheless, in its formal written response to the ATSB, CASA indicated that the current legislative regime and aeronautical knowledge training requirements were, in its view, sufficient to ensure that pilots make appropriate in-flight decisions.⁴⁴

4.54 CASA's Director of Aviation Safety, Mr John McCormick, denied that his agency had at any point agreed with the ATSB's assessment of the safety issue as 'critical'.⁴⁵ It was, however, his understanding that the ATSB initially planned to make a recommendation on the issue.⁴⁶

38 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 21 November 2012, p. 8.

39 ATSB report, pp 34-36.

40 *Confidential submission*.

41 Mr Mick Quinn, *Committee Hansard*, 22 October 2012, p. 19.

42 Letter from ATSB to CASA, 26 February 2010, additional information, number 2. See also Mr Gary Currall, *Submission 9*, p. 2.

43 CASA, Additional information, number 14.

44 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 29. CASA also indicated it was reviewing regulation and guidance material related to fuel planning and the identification of alternate aerodromes with a view to seeking appropriate amendments.

45 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 37.

46 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 36.

Information withheld from the ATSB

4.55 In informing the ATSB that it did not consider the identified safety issue 'critical', CASA did not communicate the results of an internal survey of its Flying Operations Inspectors (FOIs).⁴⁷ The six⁴⁸ FOIs, all pilots, were asked what they would have done in a similar situation. The result was anything but conclusive:

Our FOI population seem to be evenly split about the need, nor not, to mandatorily divert to an alternate from the last point of possible diversion if the destination weather falls below alternate minima. Indeed the material prepared to go to the AAT [Administrative Appeals Tribunal] in response to the James [VH-NGA pilot in command] matter currently makes the statement that, because the weather at Norfolk had fallen below alternate minima, a diversion at or before the latest diversion point was mandatory. The basis for this split seems to be a statement in the AIP [Aeronautical Information Package] suggesting that this is a 'legal' requirement. The other half believe that this is not the case and that the aircraft commander could continue to destination, even of the aircraft was not carrying alternate fuel. This is a position we must settle definitively, along with a number of other planning and in-flight decision making issues.⁴⁹

4.56 Another senior CASA officer concluded that this could reflect badly on CASA:

...[T]here is one group of pilots that have one view which leads to a mandatory diversion and another group with the opposite view. Putting aside the practicalities, both groups believe they are legally correct. If we find ourselves in an AAT, or a court we once again look a bit foolish if we, the regulator, find ourselves in a position were [sic] we have to say there are two conflicting views, one of which has to be wrong, and we have done nothing to rectify that over the years. Very untidy.⁵⁰

4.57 Irrespective of the absence of consensus among CASA's own pilots on what they would do in circumstances like those faced by the VH-NGA crew, Mr McCormick held firm in his view that VH-NGA's crew should have diverted.⁵¹ When discussing the FOI split he did, however, conceded that 'there is work to be done in that area,'⁵² but also rejected the proposition that clear guidance could be written.⁵³

47 The ATSB confirmed that CASA had not shared the results or existence of the survey. See Mr Martin Dolan, *Committee Hansard*, 22 October 2012, p. 57.

48 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 14.

49 CASA, Additional information, number 4; CASA, Answers to questions taken on notice from the 22 October 2012 hearing, number 2.

50 CASA, Additional information, number 4.

51 Mr John McCormick, *Committee Hansard*, 22 October 2012, pp 37–38. See also CASA, Answers to questions taken on notice, 22 October 2012 hearing, number 2.

52 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 14.

53 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 40.

4.58 Evidence provided to the committee argued that other jurisdictions, for example in Europe⁵⁴ and Hong Kong, have, unlike CASA, been able to draft relevant guidance.⁵⁵

4.59 The committee heard that proposed Civil Aviation Safety Regulation (CASR) Part 135 may assist in dealing with this issue.⁵⁶ It was argued that proposed Part 135 is a positive development but this guidance was not available at the time of the accident and therefore it was rightly categorised by the ATSB initially as having a critical effect on safety.⁵⁷

How the issue was downgraded

4.60 The ATSB advised the committee that having a) considered CASA's position when downgrading the safety issue, and b) conducted its own risk assessment (following processes outlined earlier in this chapter), the agency's view of the criticality of the safety issue changed.⁵⁸ In effect, the ATSB subsequently satisfied itself that sufficient guidelines were in place, and the risk level attributed to this type of flight did not warrant deeper investigation.⁵⁹

4.61 Chief Commissioner Dolan explained that the risk assessment—likelihood and consequence—and report review process led to the issue being downgraded:

What we tend to do is have a series of review steps—peer review, managerial review, and finally review by myself and my fellow commissioners, of reports at various stages...on the way through, as we checked and reviewed the position according to our methodology, progressively we were less convinced in our framework that this was as significant an issue as we first thought.⁶⁰

4.62 The agency's initial categorisation of the issue as 'critical' was, Mr Dolan explained, the result of preliminary fact-gathering and erring on the side of caution.⁶¹

Did CASA and the ATSB collude?

4.63 Documentation made available to the committee raises questions about the level of influence CASA may have had during the ATSB investigation.⁶² It is clear that the ATSB Chief Commissioner, Mr Martin Dolan, knew that CASA did not

54 *Confidential submission.*

55 Mr Bryan Aherne, *Supplementary submission*, 8 February 2013, pp 10–11.

56 See www.casa.gov.au/scripts/nc.dll?WCMS:PWA::pc=PARTS135, (accessed 16 May 2013).

57 *Confidential submission.*

58 Mr Martin Dolan, *Committee Hansard*, 2 October 2012, p. 67.

59 Mr Dolan informed the committee that the investigator in charge of the VH-NGA case did not support this position. See *Committee Hansard*, 15 February 2013, p. 32.

60 Mr Martin Dolan, *Committee Hansard*, 22 October 2012, pp 56–57.

61 Mr Martin Dolan, *Committee Hansard*, 22 October 2012, pp 56–57.

62 ATSB, additional information, number 12; CASA, addition information, number 13.

support a broad systems approach to the inquiry despite earlier indications to the contrary from Mr John McCormick, head of CASA.⁶³ Furthermore, early in the investigation there appears to have been cross checking of the CASA investigation report with the ATSB draft to ensure they were consistent.⁶⁴ In addition, at least one high level meeting was supposed to have occurred between the two agencies on the safety issue but was not minuted.⁶⁵ The committee is also aware that both the ATSB's General Manager, Mr Ian Sangston, and Chief Commissioner Dolan personally reviewed the report draft. ATSB documents provided to the committee indicate that an evidence table was reworked in order to reflect Mr Sangston's final assessments that the identified safety matters were 'minor safety issues'.⁶⁶

Committee view

4.64 The committee can draw no firm conclusions regarding allegations of collusion, as high level meetings and review processes were not minuted or documented. The committee notes, however, that the safety issue was downgraded after Mr Sangston's meeting with CASA. While the committee cannot be conclusive, in the absence of more transparency from the agencies concerned the committee appreciates the unease voiced as to the motivations behind changes made to the report.

4.65 In the committee's view there is sufficient evidence to conclude that the ATSB's 'consequence and likelihood' risk assessment process had the effect of trivialising the risk posed by inadequate guidance available to the flight crew. This was the matrix used to downgrade the safety issue from 'critical' to 'minor'.

4.66 The committee notes support for the ATSB's initial categorisation of the issue as 'critical'. The committee also notes the view of Mr McCormick against prescriptive guidance as an effective risk control is surprising given his position as CASA's Director of Aviation Safety. Mr McCormick appears to lack confidence that his organisation can write regulations and guidance material that is simple, clear and unambiguous.

4.67 The committee does not intend to second-guess CASA on technical detail as to whether pilots should divert, but notes evidence indicating that clearer guidelines can, and have been, drafted by other overseas aviation safety agencies. What is incontestable however, is that pilots are divided in their reading and understanding of

63 ATSB, additional information, number 12.

64 CASA, Additional information, number 13.

65 *Committee Hansard*, 15 February 2013, p. 19. CASA minutes from 18 November 2011 indicate that there was potentially an issue with the ATSB and CASA difference of opinion in relation to the safety issue identified. The action was for Mr Farquharson and Mr Boyd to talk to the ATSB to work through the implications of the safety issue identified.

66 Mr Martin Dolan and Mr Ian Sangston, *Committee Hansard*, 15 February 2013, p. 32.

the current guidelines,⁶⁷ and the question of whether guidelines were adequate is certainly not black and white. CASA's decision to withhold this fact during discussions with the ATSB, and to instead offer assurances that the guidelines were sufficient, could be seen as a misrepresentation of reality. It certainly affected the severity and scope of the identified safety issue.

4.68 The committee is concerned by the fact that no paper trail exists clearly documenting the ATSB's decision to downgrade the issue. Should a similar accident occur in future, this fact will surely be seen as a missed opportunity to enhance safety. The reasoning behind the downgrade, and the process and evidence leading to it, appears at the least unclear.

Recommendation 4

4.69 The committee recommends that the ATSB be required to document investigative avenues that were explored and then discarded, providing detailed explanations as to why.

The way forward

4.70 Given the suboptimal effect of the ATSB's rigid and subjective processes on the VH-NGA investigation report, the committee considered a number of ways to encourage improvements in the conduct of safety investigations and production of reports. These revolve around the remit of the agency, the expertise of its leaders and quality control of its product.

Effect of change from BASI to ATSB

4.71 The ATSB was formed in 1999 following the amalgamation of the Bureau of Air Safety Investigation (BASI), the non-regulatory parts of the Federal Office of Road Safety (FORS) and the Marine Incident Investigation Unit (MIIU). Prior to this amalgamation, the air safety investigator, BASI, focused exclusively on aviation transport.

4.72 Given that BASI was specifically tasked to investigate aviation accidents, whereas the ATSB has a much broader modal remit, the committee sought views on the effect of the amalgamation of three separate agencies into one.

4.73 The committee heard that this approach was not standard practice internationally. Investigation agencies in the United States (NTSB), the United Kingdom (AAIB) and New Zealand (TAIC) all have aviation accident investigation as their primary, and in one case only, function. Whilst these agencies cover modes of transport other than aviation, the difference appears to be that they have retained the higher standards of the aviation accident investigations community rather than allowing standards to decrease toward the other modes. All of these agencies are also

67 It was submitted that, given awareness of this division among the professional pilot community, it is difficult to imagine that the safety issue could be downgraded based on consequences. The submitter concludes that the downgrade must have come about by ascribing an extremely low probability to the likelihood that such a gap in the guidance material available to pilots could have a bearing on the accident outcome. *Confidential submission.*

tasked with determining causes of accidents, whereas the TSI Act tasks the ATSB with identifying factors which contribute to transport safety matters.⁶⁸

4.74 The committee was informed that BASI had pioneered a high standard of work internationally in its time.⁶⁹ Up until the mid-1990s, the agency also had a sound depth of experience in technical aviation-related matters. This began to suffer as a consequence of regional office closures and the ensuing loss of highly experienced investigators.⁷⁰

Training

4.75 The competence and training of accident investigators working for the ATSB are also of concern.

4.76 Australia has a very limited aircraft construction industry, and has for a long time struggled to retain technical investigators with a depth of experience with large aircraft operations.⁷¹

4.77 To address these shortcomings, the committee was told that the theoretical internal investigator courses the ATSB conducts simply cannot replace technical experience, and should be supplemented with training offered by the NTSB and AAIB.⁷² The committee supports this view.

Recommendation 5

4.78 The committee recommends that the training offered by the ATSB across all investigator skills sets be benchmarked against other agencies by an independent body by, for example, inviting the NTSB or commissioning an industry body to conduct such a benchmarking exercise.

Recommendation 6

4.79 The committee recommends that, as far as available resources allow, ATSB investigators be given access to training provided by the agency's international counterparts. Where this does not occur, resultant gaps in training/competence must be advised to the minister and the Parliament.

Expertise of Commissioners

4.80 The committee is of the view that the quality of the ATSB's work in aviation safety is significantly tied to the expertise of its commissioners. The importance of such expertise is highlighted when commissioners are reviewing investigation reports.

68 *Confidential submission.*

69 *Committee Hansard, in camera.*

70 *Confidential submission.*

71 *Confidential submission.*

72 *Confidential submission.*

4.81 At present, the ATSB is not being led by individuals with a high degree of aviation expertise, which could, in part at least, explain the questionable quality of the Norfolk Island report.

4.82 For his part, Chief Commissioner Martin Dolan has worked as a Commonwealth public servant for 30 years. His aviation experience prior to joining the ATSB is limited to his 2001–2005 role as Executive Director of the Aviation and Airports section of the Department of Transport and Regional Services, where he had responsibility for airport sales and regulation, aviation security, aviation safety policy and international aviation negotiations.⁷³ It is unlikely that this role would have furnished him with significant technical knowledge, aviation operational or investigative experience. In turn this means that the value added by report reviews is limited to ensuring that the process had been followed, rather than providing any insight into whether the result of the process is logical.

4.83 The other two Commissioners, Ms Carolyn Walsh and Mr Noel Hart, have no aviation experience. They do however have experience in the other two areas of the ATSB's remit.

Committee view

4.84 The committee notes BASI's strong reputation for aviation investigation expertise, and that this reputation might have begun its current period of decline in the years since BASI was amalgamated with two other agencies. The committee has to ask whether the amalgamation had the unintended consequence of eroding BASI standards and expertise down to the relatively lower level of FORS and MIU.

4.85 Although the committee accepts that the move from BASI to the ATSB was well-intentioned, the possible impact on the time and proportion of resources that can now be attributed solely to aviation safety matters is concerning. With aviation now being just a part of a larger organisation led by people without world's best practice expertise in aviation systems safety, it should come as no surprise that, over time and without an informed leader advocating for adequate resources or focus, ATSB standards have fallen short of international peer organisations. The committee is not suggesting that a separate agency with responsibility for aviation safety investigations should be established, but is of the view that improvements could be made which would bolster the ATSB's aviation credentials.

4.86 To this end, the committee is of the view that knowledge has to start at the top. This requires commissioners to have the appropriate competence, in terms of both qualifications and experience, in safety management systems, which, the committee notes, is predominantly found in individuals with expertise in aviation and petrochemical fields. Furthermore, the lack of aviation expertise in the upper echelons of the ATSB would certainly appear to be directly in conflict with annual report statistics which suggest that 80 per cent of all investigations instigated by the ATSB

73 See www.atsb.gov.au/about_atsb/commissioners.aspx, (accessed 3 April 2013).

are aviation related.⁷⁴ The committee therefore has to conclude that the current Chief Commissioner's aviation safety experience is not adequate for the task at hand.

Recommendation 7

4.87 The committee recommends that the *Transport Safety Investigation Act 2003* be amended to require that the Chief Commissioner of the ATSB be able to demonstrate extensive aviation safety expertise and experience as a prerequisite for the selection process.

Industry experience and risk-based aviation support

4.88 The committee was deeply concerned by the consequences of the ATSB's rigid risk assessment processes, noting specifically the adverse effect these processes had on the Norfolk Island investigation.

4.89 As previously outlined, the risk matrix the agency employs looks at the consequence of an accident, and only accidents involving large aircraft carrying fare-paying passengers can reach the highest consequence level. This is something the committee rejects. There is no excuse for lapses in regulatory oversight, and the ATSB should be obliged to investigate fully any accident with passengers involved—passengers who have reason to believe that they are being transported by a professional organisation (whether that be an airline, charter operator, rescue helicopter, flying doctor service or international rescue service paid for by their travel insurance). There is no sense in partial investigations or patchy surveillance.

4.90 Air Operator's Certificate (AOC) holders who conduct a range of operations which include non-standard mission profiles and routes, often flown at short notice, require a greater degree of review and regulation than they appear to be subject to at present. A shift in this direction is an option the committee believes should be explored, and one which would be in line with the current global trend towards a risk-based approach to reviewing aviation operations.

4.91 The committee notes with interest a submission from the Flight Safety Foundation, drawing attention to the Basic Aviation Risk Standard (BARS), an industry-based aviation standard originally developed to address higher risk aviation operations in the mining and resources sector.⁷⁵

4.92 In brief, the BARS program tests operators' internal systems and processes against the risk standard, notes deficiencies and establishes correction action plans with defined close-out dates, after which their status is tracked. The second part of the process is an operational review:

...by the member organization of end-point high-risk activities. Rather than include these in a broad based audit once per year, these may be conducted

74 ATSB 2010-2011 Annual Report, p. 3. Available at: www.atsb.gov.au/publications/2011/annual-report-2010-2011.aspx, (accessed 3 April 2013).

75 Flight Safety Foundation, *Submission 21*, p. 1.

independently of the BARS audit and at a suitable frequency. Combined with a BARS audit, this becomes a more effective means of identifying and reviewing key operational risks.⁷⁶

4.93 The resulting controls, the committee was informed, can often be higher than those prescribed by national regulations.⁷⁷

4.94 The ATSB currently assesses whether operators comply with rules when deciding the scope of accident investigations and what action to take, with no attempt to assess or report on whether the rules are appropriate for the nature of the operation.⁷⁸ The committee believes that the agency would do better if it had access to operator risk profiles, which would in turn produce a better investigative outcome for all passengers. This, the committee believes, is where agreed standards derived from industry and CASA could be useful by providing an accepted standard against which both operational audits and accident investigations could be conducted.

Quality control

4.95 Given that the ATSB investigation and reporting process is currently open to subjective analysis and review by the ATSB executive, the committee is of the view that an independent quality control system is desirable and should be established. Such a system would go a long way to increasing public and industry confidence. It would also provide an independent advocate to indicate to the government when budget pressures, combined with workloads, are putting pressure on the ATSB to take shortcuts which are in breach of best practice and Australia's international obligations.

4.96 The committee does not wish to be overly prescriptive about the design of the quality control system, merely to recommend that one be implemented consistent with certain parameters outlined below.

Expert panel

4.97 The quality control mechanism should ideally have a panel of subject matter experts to draw from, which, to reduce the potential for conflicts of interest, would comprise recently retired practitioners who are well regarded by key stakeholders in the sector for their experience in the aviation industry, aviation accident investigation or aviation safety management. Since panel members' level of expertise must obviously be appropriate, recruitment processes would be stringent and regular refreshment of expertise mandatory. A regular turnover of panel members would ensure that experience is recent enough to be relevant and well regarded by industry. Such a system would provide a sustainable pool of expert knowledge. Panel members should be required to sign confidentiality agreements.

4.98 Establishing such a panel would provide an alternative to involving a new organisation such as the office of the Commonwealth Ombudsman or the

76 Flight Safety Foundation, *Submission 21*, p. 2.

77 Flight Safety Foundation, *Submission 21*, p. 2.

78 This was not the case a decade ago, when the ATSB recommended a change emergency medical service (EMS) operations are categorised. For more on this see Chapter 9 of this report.

Administrative Appeals Tribunal (AAT), and would be a more cost effective way of providing quality control, as has been proven in other aviation regulatory systems.

4.99 Following an incident or accident that triggers ATSB involvement, one or more panel members would provide advice about the appropriate scope of the ensuing ATSB investigation. At the end of the investigative process, the same panel members would review the resulting report and provide comments to the ATSB, prior to its being publicly released. It would ultimately remain the ATSB's responsibility to determine the scope of its investigation and the content and recommendations contained in its report. However, should a substantial difference of opinion arise, the panel's advice would be made available to the minister and the Parliament on request. This panel would also provide ATSB personnel and those involved in the DIP process a channel through which serious concerns about scope and evidence could be reviewed.

Parliamentary scrutiny

4.100 The system sketched out above would serve to provide the Parliament with a level of confidence by requiring the expert panel to, on request, provide their advice to the ATSB to both the minister and the Parliament for review. The committee envisages that this would only occur if a serious difference of opinion arose but it also provides the minister or the Parliament with a means of review.

Recommendation 8

4.101 The committee recommends that an expert aviation safety panel be established to ensure quality control of ATSB investigation and reporting processes along the lines set out by the committee.

4.102 The committee was not made aware of any significant budget shortfall.⁷⁹ However, this approach outlined above will expose any resourcing gaps or issues. To address any resourcing issues which may arise, a process should be developed by which the ATSB could claim supplementary funding when the task load of accident investigation exceeds planned figures by an agreed margin.

Recommendation 9

4.103 The committee recommends that the government develop a process by which the ATSB can request access to supplementary funding via the minister.

79 Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 22 October 2012, p. 55.

Chapter 5

System failures

5.1 This chapter and the next will cover some of the systemic issues omitted from the report and the Australian Transport Safety Bureau (ATSB) processes that allowed this to occur. While the Civil Aviation Safety Authority (CASA) and the ATSB continue to argue that organisational and regulatory deficiencies that existed at the time of the accident had no bearing on the sequence of events that led to the accident, the committee believes the evidence shows these systemic deficiencies had a role to play. The identification of these organisational and regulatory factors should be a key part of the report so that the whole industry learns and improves from the accident.

Introduction

5.2 As discussed in Chapter 3, a systems-based approach to investigation examines all potential contributory factors. It looks at how the system (including the operator and regulator) took human fallibilities into account when designing the task, and workplace policies and procedures.

5.3 Witnesses highlighted that in the 1970s and 1980s accident investigation pointed out pilot errors, mechanical errors and maintenance errors while organisational and regulatory issues were largely ignored. However, over the past two to three decades, Australia has been seen to be ahead of International Civil Aviation Organization (ICAO) standards in terms of not focussing on individual cases but looking at systemic issues.¹ The fear expressed to the committee was that this report, by singling out the pilot's actions is signalling a return to that former era.²

5.4 Mr McComick appeared to acknowledge a systems approach to safety:

I can stand here and guarantee that the safety in the Australian system will stand the test of scrupulous probity anywhere in the world. There have been unfortunate accidents: I agree with that. Could we have done better? Yes. Could operators have done better? Undoubtedly. Could pilots have done better? Absolutely. But it is a system approach, as you said yourself, Senator Fawcett. It has to be everyone doing their bit and pulling their weight.³

5.5 The statement by Mr McCormick appears to acknowledge that other barriers were imperfect resulting in the flight crew becoming the last line of defence. The committee therefore found it difficult to comprehend his argument and that of the ATSB that the deficiencies in the system at the time of the accident had no effect on the outcome.

1 Mr Whyte, AIPA, *Committee Hansard*, 22 October 2012, p. 23.

2 Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 12.

3 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 21.

5.6 The State Aviation Safety Program makes it very clear that the responsibility for safety risk management of the Australian aviation industry is shared between industry/operators and government:

...a modern approach to aviation safety management necessitates a systematic approach to managing safety risks, encompassing organisational structures, policies and procedures – the SMS [Safety Management Systems] approach.

Safety risk management of the Australian aviation industry is a shared responsibility between industry and government aviation agencies.⁴

5.7 Witnesses were of the view that the ATSB report should have included more analysis of systemic issues because the predominant focus on the pilot means that it contains no lessons for the wider aviation industry.⁵

Scope of the investigation

5.8 The ATSB report stopped short of investigating systemic issues such as the possible effect of deficiencies in the operator and regulatory environment and whether they could have contributed to the accident. It appears from the documentation available to the committee that the ATSB officers involved at the start of the investigation wanted and expected to look at systemic issues but management did not agree with this approach. In the committee's view this was a mistake which means there is little for the aviation industry to learn from this report. It also shows that internal processes within the ATSB broke down very early in the investigation and it ignored information that appears to call for a systemic approach.

5.9 The Australian and International Pilots Association (AIPA) drew attention to the scope of the ATSB report and submitted that it:

Provides little or no insight as to the nature of the organisational, legislative and human factors surrounding the accident. We do not believe that the Report reflects the product expected by the industry in contributing to the improvement of aviation safety.⁶

Organisational/operator deficiencies

5.10 ICAO Annex 13 at the time of the accident indicated that a state's accident investigations body report will include organisational and management information as follows:

Pertinent information concerning the organizations and their management involved in influencing the operation of the aircraft. The organizations include, for example, the operator; the air traffic services, airway, aerodrome and weather service agencies; and the regulatory authority. The information could include, but not be limited to, organizational structure

4 Australian Government, Australia's State Aviation Safety Program, April 2012, p. 6.

5 AIPA, *Submission 8*, p. 19.

6 AIPA, *Submission 8*, p. E2.

and functions, resources, economic status, management policies and practice and regulatory framework.⁷

CASA Special Audit

5.11 The operator, Pel-Air was subject to CASA surveillance prior to the accident. Between 1 June 2005 and 18 November 2009 CASA issued 34 requests for corrective action and one safety alert. The key findings related to deficiency with the operator's fatigue risk management and training and checking systems.⁸

5.12 It is important to note that the full extent of Pel-Air's lack of compliance with regulations was only discovered after the accident, when CASA undertook a Special Audit of the company (as discussed below). It appears that Pel-Air chose to put commercial imperatives ahead of safety. Despite the fact that CASA issued requests for corrective action and a safety alert, serious systemic issues and a lack of compliance were found within the company after the ditching.

5.13 This raises the obvious question of why CASA was seemingly unaware that its requests for corrective action and its safety alert were not being followed. The committee also considers that, in this context, the relative severity of CASA's action against the pilot when compared with its action against the company is curious.

5.14 The CASA Special Audit of Pel-Air was conducted over the period 26 November to 15 December 2009. The final report is dated 8 January 2010.⁹ This was intended to be a confidential document but was made public as part of the ABC's *Four Corners* story on the accident, which screened on 30 August 2012.¹⁰

5.15 The CASA Special Audit discovered significant deficiencies within the Pel-Air operations which were drawn to the attention of Regional Express¹¹ and Pel-Air on 7 December 2009. Pel-Air voluntarily suspended its Westwind Operations pending the completion of the special audit.¹² The committee will include some of the 32 findings below because, although CASA publicly acknowledges that the operator and regulator could have done better,¹³ the deficiencies have not been outlined in any detail.

Fuel policy and practice

5.16 The CASA Special Audit included the following deficiencies in the area of fuel policy and practice:

- inadequate fuel policy for Westwind operations;

7 ICAO Annex 13, Ninth edition, App-2.

8 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 31.

9 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 33.

10 See www.abc.net.au/4corners/stories/2012/08/30/3579404.htm (accessed 4 March 2013)

11 Pel-Air Aviation Pty Ltd is a wholly owned subsidiary of Regional Express Pty Ltd (REX).

12 CASA Special Audit, 8 January 2010, pp 4–5.

13 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 9, 10 and 21.

- pilots use their own planning tools and there is no control exercised by Pel-Air Aviation Pty Ltd to ensure the fuel figures entered are valid;
- no policy exists to ensure that flight and fuel planning is cross-checked to detect errors;
- no alternate requirements specified for remote area and remote island operations;
- operations manual specifies 30 minute fuel checks – this is largely ignored by operating crew;
- criteria to obtain weather updates not specified in the operations manual; and
- practice of obtaining weather varies among pilots and does not appear to be conducted at appropriate times to support decision making.¹⁴

5.17 The committee notes that Civil Aviation Regulation (CAR) 234 states that it is the responsibility of the operator of the aircraft as well as the pilot-in-command to ensure there is sufficient fuel for the flight.¹⁵ CAR 220 also states that an operator shall include in its operations manual specific instructions for the computation of the quantities of fuel to be carried on each route, having regard to all the circumstances of the operations, including the possibility of failure of an engine en route. A Request for Corrective Action (RCA) was issued in relation to CAR 220.¹⁶

5.18 The PIC reported that his practice and the practice of others was to allow for an amount of fuel to cover abnormal operations (depressurisation and single engine failure) rather than a specific calculation to determine a particular additional figure to be carried.¹⁷ Mr Aherne pointed out that as noted in the CASA Special Audit, there was no method in the operations manual to assist with this.¹⁸

5.19 The committee heard that the ATSB correctly recognised that not uplifting sufficient fuel in Apia to cater for the possibility of depressurisation and engine failure did not contribute to the accident.¹⁹ It is listed as a safety factor but not a contributing safety factor as the aircraft did not suffer depressurisation or engine failure.²⁰

14 CASA Special Audit, 8 January 2010, p. 5.

15 See www.casa.gov.au/scripts/nc.dll?WCMS:PWA::pc=PC_93397 (accessed 22 March 2013)

16 See CASA Special Audit, p. 13.

17 Mr Dominic James, *Committee Hansard*, 22 October 2012, p. 5.

18 Mr Bryan Aherne, *Submission 10*, p. 40.

19 *Confidential submission*.

20 ATSB report, p. 43.

Committee view

5.20 The committee notes that at the time of the accident CASA took the view that the company was non-compliant in the area of fuel planning guidance.²¹ The committee also notes that CASA regulations specify that it is the responsibility of the operator as well as the pilot-in-command to ensure there is sufficient fuel for the flight.²²

5.21 Pel-Air issued a revised fuel policy on 7 December 2009 noting that it had been identified and deemed appropriate that a more prescriptive company fuel policy and standardised flight planning procedure was required to guard against inadvertent application and/or miscalculation. Flights bound for Norfolk Island required an alternate at all times (regardless of the category or aircraft) and all fuel requirements were detailed. In addition, software for fuel planning was made available.²³ The ATSB report notes only that the Pel-Air Westwind fuel policy was reviewed and amended.²⁴

5.22 In the committee's view, had the ATSB included more detail about these operational aspects, it could have provided valuable learning for similar operators.

Operational control

5.23 The CASA Special Audit included the following deficiencies regarding operational control:

- no operational decision-making tools provided to support crew in balancing aviation vs medical risks;
- once tasked, the pilots operate autonomously and make all decisions on behalf of the AOC [Air Operator's Certificate]. The AOC exercises little, if any, control over the operation once a task commences;
- the company does not provide domestic charts or publications to pilots and does not ensure that the pilots maintain a complete and current set;
- in many cases inadequate flight preparation time is provided (normally pilots are notified two hours prior to departure regardless of when the company becomes aware of the task);
- failure to maintain required flight records and no apparent checking by the company; and

21 A Request for Corrective Action was issued in relation to CAR 220. CASA Special Audit, p. 13. Note: In 2012 CASA changed Request for Corrective Action (RCA) to Non-Compliance Notice (NCN) to clearly reflect that CASA believes regulations have been breached. See http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD:1001:pc=PC_100847 (accessed 19 April 2013).

22 ATSB report, p. 25.

23 *Confidential document*. See also CASA Special Audit, p. 12.

24 ATSB report, p. 48.

- pilots use their own planning tools and there is no control exercised by Pel-Air Aviation Pty Limited to ensure the data entered is valid.²⁵

5.24 The CASA Special Audit noted there was a lack of procedures relating to the company's required Standard Operating Procedures:

Despite the existence of a comprehensive Operations Manual suite, the Westwind Operations...do not have appropriate procedures in place or adequate documentation relating to the company's required Standard Operating Procedures (SOPs). This lack of articulation in policy and procedures had led to a range of deficiencies that includes deficient fuel policy; pilots using unapproved flight and fuel planning figures, inconsistent and undocumented training practices and lack of internal compliance or Quality audits.²⁶

5.25 Findings around flight/fuel plans included the comment that pilot workload and potential for error is increased without the provision of standards plans where practicable:

Interviews with Westwind pilots revealed that the company does not provide any standard plans or alternate information for international flights. Pilots reported creating their own standard plans after they had flown the route. Without the provision of standard plans, where practicable, the workload and potential for error is increased.²⁷

5.26 Regarding weather, the Special Audit noted that if the operator had provided additional information this could have resulted in a different outcome:

Interviews with Westwind pilots revealed the company does not provide destination local information on remote islands including items such as terrain, services and local weather conditions. This information may have been of assistance in the situation of aircraft registration VH-NGAs fuel exhaustion. Specific information on the location of Navigation Aids (VOR) in relation to the runway and predicting local weather conditions based on Aviation Routine Weather Reports (METAR) trends could have resulted in a different outcome.²⁸

5.27 Another comment was that the company allowed two hours from call-out to time of departure. The CASA Special Audit found this amount of time inadequate to plan for an international flight to a new destination without assistance from the company. As a result of the CASA Special Audit, this was increased to three hours as well as providing flight planning support until new planning software was provided.²⁹

5.28 Mr Aherne stressed that given the reactive nature of the aeromedical evacuation work and the high risk environment, he would have expected more support

25 CASA Special Audit, 8 January 2010, p. 6.

26 CASA Special Audit, 8 January 2010, p. 16.

27 CASA Special Audit, 8 January 2010, p. 13.

28 CASA Special Audit, 8 January 2010, p. 14.

29 CASA Special Audit, 8 January 2010, p. 16.

from the operator to determine in advance the risks and threats and put in place appropriate procedures and this was not done until after the accident.³⁰

5.29 AIPA also noted its expectation that the organisation must match the complexity of the intended operations. It stated:

An operation of that reach and capability would inevitably require robust training, supervision, operational support and fatigue management and very careful risk management – an area apparently unexplored by the [ATSB] investigation.³¹

Committee view

5.30 The ATSB report noted Pel-Air's lack of standardisation for flight planning but appears to indicate it was a pilot problem. The statement that the variation in procedures between crews made it difficult for the operator to oversee consistent conduct of flights is perverse.³² In the committee's view ensuring standardisation of crew procedures should be the operator's responsibility to be addressed via the operations manual, training guidance and check flights.

5.31 The ATSB report noted that following the accident an approved system for flight and fuel planning was implemented.³³ It is clear that the CASA Special Audit found poor oversight and inadequate assistance from the operator. Software to assist with flight planning (fuel, weather, NOTAMS) as well as satellite phones has subsequently been provided. En route software has been provided to monitor fuel burn and guidance has been issued on fuel burn and obtaining weather updates.³⁴ As a result of the CASA Special Audit all these actions have now been put in place to ensure flight crews are well supported by the operator. It is the view of the committee that these deficiencies had a role to play in the development of the accident.

5.32 Again, in the committee's view, had the ATSB included more detail about these operational aspects, it could have provided valuable learning for similar operators.

Training

5.33 The CASA Special Audit found the following training deficiencies:

- inadequate Civil Aviation Order 20.11 training (life raft refresher and emergency exit training deficient);
- inadequate documentation of training programs;
- no formal training records for pilot endorsement and progression;

30 Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 10.

31 AIPA, *Submission 8*, p. 10. See also Mr Mick Quinn, *Committee Hansard*, 22 October 2012, p. 19.

32 ATSB report, pp 37–38.

33 ATSB report, p. 48.

34 Confidential document.

- inadequate records of remedial training;
- endorsement training is the minimum required (five hours) and relies on regular operations to consolidate training;
- no mentoring program for First Officer to Command; and
- deficiencies in training records identified.³⁵

5.34 AIPA emphasised that techniques studied to pass the theory exam are extremely perishable unless reinforced in operational use and practiced regularly:

In our view, for long-range limited-option flights such as the accident flight, the operator has a responsibility, through the training and checking regime, to convert any residual theory knowledge into demonstrated operational competence.³⁶

5.35 The Special Audit noted that annual proficiency checks ('wet drills') had not been completed for all crew of aircraft carrying life rafts. In addition, a review of crew training records indicated there were no certificates for the completion of Emergency Procedures training as required.³⁷

5.36 The special audit found that in relation to training flights:

The structure of training flights appears to be a series of unstructured checks rather than a period of mentoring or training. The company needs to review the training requirements of the Captains and Co-pilots to ensure that a structured training program is implemented and training is conducted only by approved Training or Checking captains.³⁸

5.37 Mr Aherne argued that lack of evidence of training is evidence that training was not conducted. He added that records are a central part of aviation safety. The lack of training and ongoing supervision is dismissed by the ATSB by suggesting (incorrectly) that the operator was not required to record this training because it was consistent with the operations manual procedure not to do so. Mr Aherne was sceptical that the ATSB found it acceptable that there was no requirement in the operations manual to record such training as it effectively allows operators to claim that the training was conducted and not have to offer any evidence.³⁹ AIPA also stressed that it was a 'curious omission not to make clear in the report if the operator was not meeting its training and checking responsibilities and CASA had not previously detected it'.⁴⁰

35 CASA Special Audit, 8 January 2010, p. 6.

36 AIPA, *Submission 8*, p. 14.

37 CASA Special Audit, 8 January 2010, p. 18.

38 CASA Special Audit, 8 January 2010, p. 19.

39 Mr Bryan Aherne, *Submission 10*, p. 10, 21; See also AIPA, *Submission 8*, p. 14.

40 AIPA, *Submission 8*, p. 12.

5.38 The ATSB has since acknowledged that there was a requirement in the operations manual for the content of any training to be recorded and this error will be corrected as soon as possible.⁴¹

Fatigue management

5.39 The CASA Special Audit found the following deficiencies in relation to Pel-Air's management of fatigue:

- over-reliance on FAID⁴² as the primary fatigue decision making tool;
- inadequate adherence to FRMS [Fatigue Risk Management System] policy and procedures;
- excessive periods of 24/7 standby;
- lack of FRMS policy regarding fatigue management for multiple time zone changes; and
- fatigue hazard identification, risk analysis, risk controls and mitigation strategies not up-to-date and documented (advice provided during the FRMS review indicates that Pel-Air Aviation Pty Ltd considered the ad hoc aero-medical operations to be its highest fatigue risk and yet there is no recent documented evidence to confirm these risks are being actively managed).

5.40 CASA's Human Factors team conducted the FRMS section of the Special Audit and produced a separate report which was not provided to the ATSB. This report, dated 21 December 2009, has been made public by the committee.⁴³ It noted that:

Previous CASA oversight did not provide sufficient evidence to confirm the Pel-Air FRMS had ever been managing fatigue risk to a necessary standard. Much of the correspondence and closure of RCAs [Request for Corrective Action] was based on planned actions but no evidence was collected to confirm appropriate corrective actions had been completed.⁴⁴

5.41 Although CASA noted the findings were reproduced in the CASA Special Audit,⁴⁵ the FRMS report contains much more information than the Special Audit. In particular the comments about the lack of CASA oversight were not included in the special audit. On this issue the FRMS report stated:

It is considered that the oversight by CASA has been inadequate as there is evidence to support that many of the problems identified by CASA during

41 ATSB, *Supplementary submission*, 19 October 2012, p. 1. The ATSB indicated that this oversight was due to a typographical error.

42 FAID is a fatigue assessment tool.

43 CASA, Additional information, number 19.

44 CASA Human Factors Section Special Audit of Pel Air Express Fatigue Risk Management System, 21 December, 2009, p. 3.

45 Mr Greg Hood, *Committee Hansard*, 15 February 2013, p. 5, 10; *CASA Supplementary submission*, 1 March 2013, p. 3.

surveillance (Nov 04–Mar 08) were never appropriately actioned. There is a lack of any clear evidence to support corrective actions had been implemented and confirmed by CASA that they were effective. If this process is indicative of broader practices of CASA it is considered CASA is exposed to unnecessary risk, particularly if required to provide evidence to support how it approved an operator's system, in this case, their FRMS.⁴⁶

5.42 CASA also sought advice from the UK Civil Aviation Authority which, using a more advanced fatigue management system (SAFE), showed the flight would not have been able to take place under the UK regulatory system.⁴⁷ This material, which has also been published by the committee, was also not provided to the ATSB. The ATSB report only noted that enhanced fatigue risk management procedures were developed by the operator.⁴⁸

5.43 Mr Aherne pointed out that as an independent safety investigator, the ATSB should not assume that a CASA audit will identify all the deficiencies present in the review of an FRMS, particularly those that reflect poorly on itself.⁴⁹

5.44 After reviewing the CASA FRMS audit and acknowledging it provided more detailed information than the CASA Special Audit, the ATSB noted the limitations and concerns about the processes used by the operator to manage fatigue risk to an appropriate standard. However it concluded that:

[I]t is unlikely that, even if the operator had more robust processes, a different decision about whether to conduct this trip would have been made.⁵⁰

Committee view

5.45 Leaving the UK analysis to one side, the CASA FRMS report combined with the evidence received by the committee provides a robust case that the management of fatigue was not adequate. See Chapter 8 for further discussion of fatigue.

5.46 The committee notes the ATSB conclusion that 'with suitable risk controls in place, the risk of these flights [Norfolk Island to Samoa and Samoa to Norfolk Island] could have been reduced to an accepted level for the type of operation'.⁵¹ The committee contends however, that the CASA Special Audit clearly shows these suitable risk controls were not in place.

46 CASA Human Factors Section Special Audit of Pel Air Express Fatigue Risk Management System, 21 December, 2009, p. 6.

47 CASA, Additional information, number 15. Note: The ATSB has since questioned the UK analysis. See ATSB, Answers to written question taken on notice from 15 February 2013 hearing, number 4.

48 ATSB report, p. 48.

49 Mr Bryan Aherne, *Supplementary submission*, 18 March 2013, comments on question 10.

50 ATSB, answers to written questions on notice from 15 February 2013, number 16.

51 ATSB, answers to written questions on notice from 15 February 2013, number 16.

5.47 These clear contradictions and the fact that the ATSB maintains its position in the face of the evidence are grounds to instigate a quality checking process (as outlined in Chapter 4) which informs the Commissioners but is transparent and available to the minister and the Parliament.

Conclusions of the Special Audit

5.48 The CASA Special Audit concluded:

The Special Audit identified significant deficiencies within the Westwind operations in Pel-Air. These deficiencies existed and had not been identified or rectified which is indicative of broader organisational failures. The company's executive management relied upon the Westwind Standards Manager to apply company policy and procedures to ensure the standard of operations were conducted to the appropriate regulatory and safety levels. It was evident that this had not taken place to the regulatory or safety standard required.⁵²

5.49 It also noted:

A lack of formal company guidance in critical areas such as fuel policy, flight planning and defect reporting placed the onus on the individual pilot to apply his/her own personal standard of airmanship.⁵³

5.50 AIPA noted its expectation that if breaches and deficiencies were found during an audit by the regulator that these would be included in the report.⁵⁴ First Officer Ian Whyte questioned why the items from the CASA Special Audit were not found before the accident. He argued that in order to be proactive about preventing accidents, audit processes should be picking them up without an accident to prompt it. He added that the investigation should look at the adequacy of the audit processes before the accident to identify how they could be improved to pick up issues earlier.⁵⁵

5.51 Other witnesses also stressed the serious deficiencies identified in the CASA Special Audit. Mr Aherne noted that the 'deep systemic problems identified by the CASA Special Audit are indicative of the latent conditions within the operator which has shown direct links to the involvement of the accident sequence'.⁵⁶ He elaborated:

I note that in CASA's special audit the operator received a request for correction of action on three failings of the Civil Aviation Act in terms of oversight of the organisation under section 28BE. That is a very serious breach.⁵⁷

52 CASA Special Audit, 8 January 2010, p. 7.

53 CASA Special Audit, 8 January 2010, p. 42.

54 Capt. Geoffrey Klouth, *Committee Hansard*, 22 October 2012, p. 24.

55 First Officer Ian Whyte, *Committee Hansard*, 22 October 2012, p. 24. See also Mr Mick Quinn, *Committee Hansard*, 22 October 2012, p. 19.

56 Mr Bryan Aherne, *Submission 10*, p. 26. See also Mr Mick Quinn, *Submission 11*, pp 4-5.

57 Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 11. See also Mr Mick Quinn, *Committee Hansard*, 22 October 2012, p. 18.

5.52 The committee notes that Pel-Air was cooperative with the investigation and:

While the organisation's failures raised serious concerns for CASA, the actions initiated by Pel-Air's Executive management following the accident for VH-NGA provided confidence to CASA that the Executive is committed to identifying and correcting those failures.⁵⁸

The CASA position

5.53 Mr John McCormick told the committee of CASA's position regarding action required from the operator:

In this connection, the suggestion has been made that CASA has in some way acted to shield this operator from appropriate regulatory action by CASA. This is manifestly untrue. Here too the claim seems to be intended, at least in part, to divert attention away from the actual facts of the matter. Immediately after the accident in November 2009, I directed, and CASA undertook, a multidisciplinary special audit of Pel-Air's operations under its air operator's certificate. As a result of this audit, CASA placed a condition on Pel-Air's operating certificate, requiring the company to implement a management action plan, with 57 action items identified to address deficiencies. By June 2010, Pel-Air had satisfied CASA that all the conditions had been met and, following a further audit, CASA removed those conditions from the air operator's certificate.⁵⁹

5.54 Mr McComick explained that this course of regulatory action is not different from action CASA has taken with a number of other operators.⁶⁰ After prompting, Mr McCormick did acknowledge the operator should have done more to support the crew:

I have said all along that the company could have done better here. We have never resiled from that. The company could have supported the pilot in command more...As for the company supporting him, yes, the company could have supported him more. We have said that all along. I think also the fact that Dominic James rang the company—or attempted to ring them with one phone call—and no-one answered the phone is indicative that Mr James, by his actions, has demonstrated that the company could have been in a position to help him flight plan that flight.⁶¹

What role did the CASA Special Audit play in the ATSB report?

5.55 The CASA Special Audit, was not voluntarily provided by CASA and not formally requested by the ATSB under section 32 of the TSI Act until 4 July 2012. This formal request was prompted after a letter from Mr James' lawyer to the ATSB on 3 July 2012 which noted their expectation that the ATSB would have obtained the CASA report but there did not appear to be any reference to it in the draft ATSB

58 CASA Special Audit, 8 January 2010, p. 7.

59 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 31.

60 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 31.

61 Mr John McCormick, *Committee Hansard*, 22 October 3012, p. 40.

report. The letter asked for confirmation that information from the CASA Special Audit would be included in the ATSB report. On 16 July 2012, the ATSB responded to Mr James indicating that the CASA Special Audit had been reviewed and it did not indicate any significant changes were warranted but some amendments were made.⁶²

5.56 AIPA expressed concerns with the view of CASA and the ATSB that nothing in the CASA Special Audit was relevant to the accident. It stated that while it only has access to information on the public record, that information alone raises serious doubt about the organisational context of the accident.⁶³ It highlighted that:

The timing of the Special Audit conducted by CASA appears to indicate that the identified deficiencies, including an organisational climate that supervenes the compliance issues, existed at the time of the accident and, most likely, for some significant time previously. Consequently, it seems a little disingenuous to suggest that these organisational attributes were inconsequential. This apparent sidelining of the organisational aspects of the accident appears to be at odds with modern human factors theory.⁶⁴

Committee view

5.57 The committee commends the actions taken by Pel-Air to address the deficiencies identified by CASA, some of which were mentioned in the ATSB report.⁶⁵ However, the committee is concerned that the methodology used by the ATSB to only highlight some of the actions taken by the operator since the accident, fails to put forward a true appreciation of the culture and organisation at the time of the accident. The committee is surprised by the view of the ATSB and CASA that the deficiencies identified in the Special Audit would have had no effect on the accident.

5.58 Following the accident the operator was required to revise its fuel policy, flights to Norfolk Island are now required to carry fuel for an alternate, an approved system for flight and fuel planning was implemented, portable satellite telephones were supplied for international flights, enhanced fatigue risk management procedures were developed, both pilots are now required to check flight and fuel plans, regular in-flight weather updates were mandated and contingency planning enforced and a refresher training course for Westwind pilots was implemented.

5.59 The committee notes that the accident occurred within a system that did not impose suitable check and training activities to guard against drift towards unacceptable and potentially unsafe practices. The committee therefore believes that organisational factors should have been key part of this investigation.

5.60 The committee asks itself whether, given the extensive changes taken by the aircraft operator, this accident could occur again. It would seem that is highly unlikely which supports the committee's view that the organisational deficiencies contributed

62 Mr Bryan Aherne, *Submission 10*, p. 36.

63 AIPA, *Submission 8*, p. 17; See also Mr Gary Currall, *Submission 9*, p. 2.

64 AIPA, *Submission 8*, p. 17.

65 ATSB report, pp 48–49.

to the environment that the flight crew was working in and therefore had a role to play in the development of the accident.

5.61 Given the significant deficiencies identified by the CASA Special Audit, it is curious and concerning that the ATSB report contains no analysis and the blithe comment that 'the operator's procedures complied with the relevant regulatory guidance'.⁶⁶ This is false and is grounds to reopen the inquiry (see Chapter 6). It is equally troubling that CASA knowingly allowed the ATSB to make this statement.

5.62 The ATSB's failure to request the CASA Special Audit until the very end of its investigation is serious. It appears this had not been requested earlier as the systemic issues had already been scoped out of the investigation. It is clear that the CASA Special Audit identified serious deficiencies with the operator and included some issues with regulatory oversight. The committee believes that not requesting it earlier was a missed opportunity to check and remedy the scope of the investigation. When the CASA Special Audit arrived, the scope of investigation should have been reviewed.

5.63 In any event, given the MOU between CASA and the ATSB, in particular paragraph 4.4.6:

CASA agrees that if a CASA Officer is known to have information that could assist the ATSB in the performance of its investigative functions, CASA will undertake to advise the ATSB of the existence of the information.

The failure of CASA to provide the report to the ATSB earlier is also concerning.

5.64 It is questionable that the ATSB gave full consideration to the content of CASA's Special Audit of Pel-Air because the request for the audit was made so late in the investigation. In fact, the ATSB's formal request, which was only prompted by the pilot's lawyers, was made more than 2.5 years after the accident occurred and approximately one month before the final ATSB report was published. The document prepared by the ATSB indicating the effect of the CASA Special Audit on the ATSB report⁶⁷ appears to the committee to be joining the dots and making connections after the ATSB report had been written rather than a thorough consideration of the evidence early in the investigation including its possible effect on the scope of the report.

Other operator issues

Organisational culture

5.65 The CASA Special Audit makes mention of cultural issues associated with compliance by Pel-Air's crew. It found:

...the level of commitment to compliance and safety based on the actions of the Standards Manager did not 'set the tone' for the importance of safety or compliance within the organisation. Fundamental to the establishment of a

66 ATSB report, p. 37.

67 ATSB, *Supplementary Submission*, 19 October 2012, Appendix A.

favourable safety culture within an organisation is the role of management. The values and beliefs of the organisation must be driven from 'the top down'. Furthermore, management commitment to achieving regulatory compliance appeared to be lacking. Pilots reported broken hyperlinks on the extra-net for required documentation (International operations), incomplete flight records being compiled (including those compiled by the Westwind Standards manager) and lapses in mandatory training and flight medical status.

5.66 It also highlighted that the lack of formal guidance from the company in important areas such as fuel policy and flight planning effectively placed the onus on individual pilots to apply their own personal standards of airmanship.⁶⁸

Committee view

5.67 An aviation operator has responsibility for the flight standards delivered. The CASA Special Audit appears to indicate that at the time of the accident, Pel-Air did not adequately address the risks in the high risk aero-medical environment and did not adequately guide and support its crew.

Role of co-pilot in flight planning

5.68 We learn nothing about the appropriate role of co-pilots from the ATSB report which ignores the role of first officers in terms of crew resource management (CRM). The ATSB report states that the co-pilot was not required by Pel-Air to participate in the flight planning process.⁶⁹ This is indeed a serious shortcoming in a two-crew environment where a co-pilot could be expected to intervene to prevent an unsafe situation. The ATSB report noted action taken by Pel-Air that both pilots are now required to check flight and fuel plans before departure.⁷⁰ While the committee is pleased to see this issue identified, the diminution of the role of Pel-Air's First Officers should have received more emphasis as may not just an issue for Pel-Air Operations Manual and practice, but may have been an issue for similar operators in the aviation industry.

5.69 Crew resource management is based on the premise that all available resources will be applied to operational decisions to optimise safety and that operators are responsible to institute procedures to ensure consistency and effectiveness. The committee finds it curious that this issue was important enough for the ATSB to mention that Pel-Air has changed its policy but not important enough to discuss whether it has wider implications beyond Pel-Air.

68 CASA Special Audit, p. 42.

69 ATSB Report, p. 3.

70 ATSB report, p. 48.

Issues specific to the accident flight

5.70 In relation to the accident flight the committee heard detail about the effect on fuel planning when using a non-RVSM aircraft in RVSM airspace;⁷¹ the use of Noumea as an alternate;⁷² commercial pressures;⁷³ the suitability of the aircraft for the work;⁷⁴ and the role of the chief pilot.⁷⁵ The committee acknowledges the evidence received on these issues but as they appear to be quite specific to the accident flight and actions of the PIC rather than demonstrating a broader industry learning, they will not be discussed in any detail.

Committee view

5.71 The CASA Special Audit clearly shows serious organisational deficiencies. The committee commends Pel-Air for its actions to improve its safety standards. However the committee believes that organisational factors should have been a key part of the ATSB investigation and that the broader aviation sector would have benefitted from the learnings of this particular incident.

5.72 The committee cannot understand how CASA and the ATSB can continue to claim that these organisational deficiencies made no contribution to the ditching. They are clearly a crucial part of the safety information that the ATSB should have considered and where relevant included in its report so as to inform the broader aviation sector.

5.73 The committee is concerned about the ATSB attempting to predict the future risk for operators. The ATSB should analyse why the accident happened and the industry can draw its own lessons. The operators are best placed to assess how the lessons may affect their current and future operations. The ATSB are even more removed from the everyday operations of an AOC holder who has not suffered an incident than CASA are. The Chambers Report indicated that even with its routine audits, CASA can be quite unaware of the true nature of an AOC holder's operations.

71 For the RVSM (Reduced Vertical Separation Minima) issue see: AIPA, *Submission 8*, p. 14; Mr Gary Currall, *Submission 9*, p. 3; Mr Richard Davies, *Submission 12*, p. 12; Mr Dominic James, *Committee Hansard*, 22 October 2012, p. 5, 7; Mr Mick Quinn, *Submission 11*, p. 31; Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 16; Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 10. See also Mr Bryan Aherne, *Submission 10*, pp 28–33; Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 16. See also ATSB, Answers to questions taken on notice from 21 November 2012 hearing, number 4; Mr Bryan Aherne, *Supplementary submission*, 8 February 2013, p. 7.

72 For Noumea issue see: Mr Bryan Aherne, *Submission 10*, p. 33; Mr Mick Quinn, *Submission 11*, p. 17; CASA, *Supplementary submission*, pp 11-12.

73 Mr Mick Quinn, *Submission 11*, p. 8.

74 For suitability of aircraft see: Mr Dominic James, *Committee Hansard*, 22 October 2012, p. 7.

75 For role of the chief pilot see: Mr John McCormick, *Committee Hansard*, 22 October 2012, pp 33–35; Capt. Geoffrey Klouth, *Committee Hansard*, 22 October 2012, p. 25; Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 10; Mr John McCormick, *Committee Hansard*, 22 October 2012, pp 33, 35 and 36. See also Mr Mick Quinn, *Submission 11*, p. 29.

5.74 The committee will now turn to issues identified regarding oversight by the regulator.

Chapter 6

Regulatory issues

6.1 Part of a system approach to aviation investigations is also looking at the regulatory environment. The committee is of the view that it is relevant to look at the Civil Aviation Safety Authority's (CASA) surveillance activities as they are part of the system and will influence how the operator runs its operation. As an independent investigator it is also the role of the Australian Transport Safety Bureau (ATSB) to review the adequacy of CASA's regulatory arrangements.

Surveillance by CASA of Pel-Air

6.2 The Australian and International Pilots Association (AIPA) pointed out that the organisational climate and the operational culture of Pel-Air existed under the direct supervision of CASA and the assigned inspectors. In the absence of relevant evidence in the ATSB report, the implication is that the system was working well. AIPA highlighted that at the time of the *Four Corners* interview, the Director of Aviation Safety through the CASA Special Audit knew that the system, dominated by the actions of CASA and Pel-Air, contained significant deficiencies. AIPA concluded that the continuation of the 'it's only about the pilot' argument seems a little incongruous in the circumstances.¹

6.3 AIPA also raised the question of whether CASA's role in the system is being adequately scrutinised. It stated:

The complete absence of ATSB commentary on the regulatory regime and CASA's regulatory activities begs the question about the level of scrutiny now being applied to CASA.²

6.4 Mr McCormick informed the committee of the outcome of surveillance conducted by CASA³ prior to the accident:

As an A[O]C [Air Operator's Certificate]-holder, Pel-Air was regularly subject to CASA surveillance prior to the accident. Between 1 June 2005 and 18 November 2009, CASA issued a total of 34 requests for corrective action and one safety alert to Pel-Air, with the key findings relating to deficiency in the operator's fatigue risk management and the training and checking systems. The allegation is made that CASA has kept these actions secret. That is false and misleading. CASA does not publish its ongoing regulatory actions in relation to any operator on the assumption, where such

1 AIPA, *Submission 8*, p. 17.

2 AIPA, *Submission 8*, p. 26.

3 The committee notes that regular surveillance does not provide assurance that the regular audits were effective nor that the standards against which the company was being evaluated were valid. This leads to the recommendation later in the report for industry to be included in the development of standards they should be operating to.

an assumption is reasonable, that a responsive correction action will be taken and effected in a timely manner.⁴

6.5 However, the CASA Special Audit revealed that actions that were assumed to have been taken by the operator were not and this was not checked by CASA. As pointed out by Mr Richard Davies, pilot:

In the events and conditions associated with this accident it is apparent the risk controls were inadequate and unreliable. This in turn identifies a lack of effective regulatory oversight of the operator by CASA.⁵

The Chambers Report

6.6 Completed in August 2010, the Chambers Report was an internal review commissioned by Mr McCormick⁶ in the wake of the ditching and the CASA Special Audit, which identified serious deficiencies within Pel-Air and raised questions about the effectiveness of the regulatory oversight conducted by CASA, surveillance tools and available resources.

6.7 The committee commended the action by Mr McCormick to initiate such a review. One of the committee's concerns, however, is the significant conflict between CASA's rejection of some witnesses' evidence regarding oversight deficiencies and the position of this internal review. This review was not made public and was not made available to the ATSB.

6.8 Several witnesses contended that CASA oversight of the operator has been inadequate.⁷ The response by CASA to these assertions, despite the existence of the Chambers Report, was to strongly reject this criticism.⁸ Yet among other things the Chambers Report noted:

The findings of the [CASA special] audit identified serious deficiencies within the AOC. Further it raised the question of the veracity of the oversight conducted by CASA and also questions the effectiveness of current oversight policies, surveillance tools and available resources.⁹

6.9 It added:

In reviewing the findings of the special audit, it appears as if there were indicators that could have identified that the Pel-Air Westwind operation was at an elevated risk and warranted more frequent and intensive surveillance and intervention strategies. It was also apparent that the data systems, training, surveillance tools, resources and inspector capability showed varying degrees of inadequacy and contributed to Bankstown

4 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 31.

5 Mr Richard Davies, *Submission 12*, p. 14.

6 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 2. See also CASA *Supplementary submission*, 1 March 2013, p. 4.

7 See for example Mr Bryan Aherne, *Submission 10*, p. 49; and Mr Mick Quinn, *Submission 11*, p. 5.

8 See CASA *Supplementary submission*.

9 Chambers Report, p. 1.

Operations and CASA's inability to fully understand the operator's risk exposure and consequently to intervene to ensure the operator reduced the risk appropriately.¹⁰

6.10 The Chambers Report noted CASA's surveillance of Pel-Air from 2005 to 2010, the various breaches issued and the key findings in the areas of Fatigue Risk Management System (FRMS) and the Training and Checking System. The report added that:

The relative familiarity with the company and key personnel resulted in a sense that CASA had detailed knowledge of the actual operations however this clearly was not the case.¹¹

6.11 In particular it noted:

It is likely that many of the deficiencies identified after the accident would have been detectable through interviews with line pilots and through the conduct of operational surveillance of line crews in addition to surveillance of management and check and training personnel.¹²

6.12 Worryingly, the Chambers Report noted:

CASA is concerned that in some of our oversight activities, we may be merely scratching the surface.¹³

6.13 Mr McCormick informed the committee that the information from the Chambers Report was used to seek additional funding from the government to improve surveillance activities.¹⁴

6.14 Mr McCormick took the view that the Chambers Report was an internal CASA document¹⁵ and accordingly it was not provided to the ATSB under the Memorandum of Understanding (MoU). It was also not provided in response to the section 32 request for AOC surveillance.¹⁶

6.15 An important issue is whether the deficiencies outlined could have affected the outcome of the accident. Mr McCormick contended that the Chambers Report 'still does not indicate anything that would have affected the outcome of the accident'.¹⁷ He added:

10 Chambers Report, p. 1.

11 Chambers Report, p. 5.

12 Chambers Report, p. 6.

13 Chambers Report, p. 7.

14 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 8.

15 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 2; See also CASA *Supplementary submission*, 1 March 2013, pp 6–7.

16 The committee notes the request, dated 22 October 2010, appears quite narrow, asking for: electronic copies of AOC surveillance, check and training and ops manual files for Pel-Air between 01 January 2004 and 18 November 2009; and the last surveillance check or audit of the fuel planning and management systems in the Pel-Air ops manual.

17 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 2.

What it indicates is that our procedures and way we went about doing some things needed revision, and we were in the process of doing that. We are a different organisation from what we were in those days.¹⁸

6.16 He further asserted that he didn't want to influence¹⁹ or contaminate the ATSB investigation by providing the document. However, as was noted by the ATSB, this leaves the onus on CASA to determine what is relevant to the ATSB's investigation.²⁰

ATSB position on the effect of the Chambers Report

6.17 The ATSB advised that although it had no knowledge of the Chambers Report,²¹ it was generally aware that CASA was conducting an internal review of its regulatory oversight.²² However, the ATSB report notes that:

Surveillance was carried out by CASA of operator's procedures and operations to ensure that such flights were conducted in accordance with those approvals and the relevant regulations and orders.²³

6.18 This appears to indicate, which was confirmed by Mr Dolan, that in the view of the ATSB the appropriate checks and balances and protections were in place and effective.²⁴

6.19 The committee questioned the ATSB on its views of the significance of the findings contained in the Chambers Report. The ATSB indicated that in its view 'the Chambers Report does not contain any new evidence that organisational factors were likely to have contributed to the accident'.²⁵

6.20 The committee also asked the ATSB whether the regulatory deficiencies contained in the Chambers Report would have changed the scope of the investigation. The ATSB expressed the view that:

In the view of the ATSB, there is insufficient additional material within the Chambers Report to support changes to the existing findings of the ATSB report or to require new findings.

The Chambers Report could have been an indicator to the ATSB of potentially relevant organisational issues within Pel-Air and CASA. The report's availability to the ATSB investigation would likely have led to a review of the scope of the investigation to determine whether there needed to be further examination of possible organisational factors in the accident. That said, it is unlikely that the Chambers report would have led to substantive re-scoping of the investigation, since the CASA accident

18 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 2.

19 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 3.

20 Mr Martin Dolan, *Committee Hansard*, 15 February 2013, p. 23.

21 Mr Ian Sangston, *Committee Hansard*, 15 February 2013, p. 23.

22 ATSB, answers to written questions taken on notice from 15 February 2013 hearing, number 3.

23 ATSB report, p. 24.

24 Mr Martin Dolan, *Committee Hansard*, 15 February 2013, p. 24.

25 ATSB, Answers to questions taken on notice from 15 February 2013 hearing, number 1.

investigation report already indicated the existence of organisational deficiencies and the ATSB safety factor identification processes include the consideration of organisational factors as part of the scope of an investigation.

The ATSB does not consider that lack of access to the Chambers Report was a constraint or limitation to the ATSB investigation and its assessment of factors contributing to the accident.²⁶

Working through the ATSB analysis model with the Chambers Report

6.21 In an effort to understand this position, the committee discussed the ATSB analysis model which is based on the Reason model of organisational accidents and includes five levels of safety factors including organisational influences, preventative risk controls and local conditions, among others.²⁷

6.22 As an example of organisational influences the committee pointed out that in the Chambers Report there is a comment on the special audit where CASA interviewed line pilots to determine if they were familiar with, understood and complied with the company's operating requirements and legislation. This process revealed deficiencies within the Westwind operation and identified key markers for subsequent investigation.²⁸

6.23 Mr Dolan confirmed that the Chambers Report did not change the ATSB view of the scope of its analysis²⁹ and replied that in their view:

All the information available to the investigation led us to the view that it was hard to establish that there was either an ongoing deficiency in the competence of crews or an ongoing problem with compliance with procedures.³⁰

6.24 The committee then pointed out that the Chambers Report identified repeated deviations from the expected standards and that the risk controls were not effective. Mr Dolan responded:

From our perspective, we were trying to understand whether there were deficiencies in that rules set and its applications that were relevant to understanding what contributed to this flight and therefore to arrive at questions of cause, contributing safety factors and, incidentally, to the extent necessary, examine other safety issues. That is the balance that we are always doing in these investigations. It is the separate purposes of a CASA investigation as opposed to one of ours that we would bear in mind.³¹

26 ATSB, Answers to questions taken on notice from 15 February 2013 hearing, number 1.

27 ATSB *Submission 2*, p. 12.

28 Chambers Report, p. 3.

29 Mr Martin Dolan, *Committee Hansard*, 28 February 2013, p. 2.

30 Mr Martin Dolan, *Committee Hansard* 28 February 2013, p. 2.

31 Mr Martin Dolan, *Committee Hansard*, 28 February 2013, pp 2–3.

6.25 The committee further noted that the Chambers Report included the effectiveness of CASA oversight and it also covered the effectiveness of the oversight of the operator of its line pilots. The committee understands that all systems safety models include organisational factors as part of the preventative controls for an accident. The ATSB's own analysis model includes organisational influences and risk controls.³² The Chambers Report identifies that the oversight and safety outcomes were significantly flawed and is an alert that organisational influences and risk controls were not adequate. The committee therefore asked why, given the ATSB's own analysis model, this was not a contributing safety factor. Mr Dolan responded:

There is still nothing in our assessment that we could see, acknowledging that there were deficiencies in CASA's surveillance and activities, and acknowledging that there were problems with the way Pel-Air operated its safety management system, that was going to lead us to the question of contributing safety factors and, more particularly, to the identification of areas for safety improvement.³³

6.26 The committee pointed out paragraph 4.1 of the Chambers Report which states:

It is likely that many of the deficiencies identified after the accident would have been detectable through interviews with line pilots and through the conduct of operational surveillance of line crews in addition to the surveillance of management and check and training personnel...

If a systems audit is conducted with inadequate product checking [the line pilots] CASA is unable to genuinely confirm that the operator is managing their risks effectively.³⁴

6.27 The committee again asked the ATSB to confirm its position that these statements do not indicate an organisational influence or a risk control that was a contributing safety factor in terms of not only the incident pilot but also the fact that the rest of the line pilots indicated similar lack of compliance and lack of understanding. Mr Dolan confirmed this was the case:

It is the influence of those factors on the accident flight in particular which always has to be the principal but not the only focus of our investigation. It is the influence of those known factors in the events of this flight that we always have to come back to, because of the task that we have been given as the accident investigator.³⁵

6.28 The committee then highlighted the ATSB focus on 'known factors' and posited that, had it received the Chambers Report before its final report was published, the information contained in the document would have been 'known factors'. In the ATSB submission it notes when looking at risk controls the relevant question is what could have been in place to reduce the likelihood or severity of problems at the

32 ATSB *Submission 2*, p. 13.

33 Mr Martin Dolan, *Committee Hansard*, 28 February 2013, p. 3.

34 Chambers Report, p. 6.

35 Mr Martin Dolan, *Committee Hansard*, 28 February 2013, p. 4.

operational level.³⁶ The committee explored this aspect in light of the Chambers Report. The committee pointed out the areas in the Chambers Report which contain information about inspector capability and performance:

An inspector needs to have a level of investigative skill to drill down to find the deficiencies that are genuinely serious and often complex. Not all inspectors have this capability and it seems that this characteristic is assumed to exist in an inspector.³⁷

6.29 Looking at the ATSB analysis model³⁸ the committee suggested that in answering the question regarding organisational influences and risk controls that could have been in place, this could be answered by competent and informed inspectors as well as an appropriate oversight program. The ATSB was asked whether those examples would fit with its definition of organisational issues. Mr Dolan responded:

Those sorts of circumstances certainly fit in to the picture of what would constitute organisational issues. Where we appear to be at odds is in the question of the level of contribution of those factors in the particular occurrence that we were investigating. That is why we have the position that we have taken. We carefully reviewed the chamber's report, and the basis on which we responded as we did was the issue of influence, contribution, cause.³⁹

Comparison with overseas reports

6.30 The committee pointed out an investigation report conducted by Indonesia into a Dornier aircraft that had its undercarriage collapse after a heavy landing.⁴⁰ The committee is aware that in the past the ATSB has spent considerable time assisting the relevant Indonesian aviation safety organisations with their ability to conduct aviation accident investigations. The committee noted that despite the finding of pilot error, the Indonesian organisations took the trouble to highlight other issues like the runway, airport facilities, oversight and compliance. The Indonesian organisations made recommendations to other agencies and the operator which can be tracked. The committee noted that other countries appear to take the same basic analysis model the ATSB started with but put quite clear emphasis on organisational and oversight factors. The committee asked if it was of concern that the ATSB appears to be out of step with its near neighbours as well as the world leaders in aviation. Mr Dolan replied:

Important though it is, the Norfolk Island investigation report is only one of a considerable number of reports we produce on an annual basis. Each investigation results in those reports. We have an assessment as to scope, taking account of a range of factors, and in a number of cases, because we

36 ATSB, *Submission 2*, p. 13.

37 Chambers Report, p. 7.

38 ATSB *Submission 2*, p. 13.

39 Mr Martin Dolan, *Committee Hansard*, 28 February 2013, p. 4.

40 Republic of Indonesia, Ministry of Transportation, National Transportation Safety Committee, Aircraft Accident Investigation Report, Dornier 328-100, 6 November 2008.

think it is necessary for the purposes of the investigation to go all the way to organisational factors both at the operator level and the regulator level, we will quite often go there and make quite clear statements and findings in relation to it.⁴¹

6.31 Regarding scope, Mr Dolan said that critical reviews are undertaken as necessary which sometimes result in a variation of scope. It depends on whether it appears that organisational factors have had an influence in this area and if the evidence is available.⁴² The committee notes with interest that ATSB documentation clearly indicates that the early expectation of the working level officers was that systematic issues would be an important part of the investigation.⁴³

Comparison with another ATSB report

6.32 Although it was drawn to the attention of the committee very late in the inquiry, the committee notes some similarities regarding the treatment of organisational and regulatory issues with the ATSB's report on 'Collision with terrain - Piper PA-31P-350, VH-PGW, 6 km NW of Bankstown Airport, NSW, 15 June 2010' or the 'Canley Vale report'.

6.33 Also a medical flight, VH-PGW crashed while the pilot was trying to make an emergency landing after an engine failure. Tragically, both the pilot and the nurse on board lost their lives.

6.34 The ATSB report discusses significant issues within the operator (Skymaster, owned by Avtex), some of which were recognised by CASA prior to the accident. The report also acknowledges that CASA did not detect that the pilot in question, and a number of other pilots, did not receive appropriate training from Avtex.

6.35 However, the ATSB then excuses this lack of oversight by stating that this non-detection by CASA was 'probably due to the two companies having separate Air Operator's Certificates, with different CASA inspectors being assigned to the surveillance of each company',⁴⁴

6.36 The Special Audit conducted by CASA of Skymaster following the accident in June 2010 revealed a large number of safety deficiencies in the systems and work practices in place, including issues with training and checking. The committee notes that in August 2010 CASA cancelled Skymaster's AOC, based on a serious and imminent risk to air safety if operations continued. This decision was upheld by the Administrative Appeals Tribunal (AAT).⁴⁵ The committee also notes that CASA had issued Avtex with a show cause notice on 28 May 2010, just over a fortnight prior to the accident.

41 Mr Martin Dolan, *Committee Hansard*, 28 February 2013, p. 5.

42 Mr Martin Dolan, *Committee Hansard*, 28 February 2013, p. 5.

43 ATSB, Additional information, number 12.

44 ATSB, 'Collision with terrain - Piper PA-31P-350, VH-PGW, 6 km NW of Bankstown Airport, NSW, 15 June 2010'. p. 49.

45 See www.austlii.edu.au/au/cases/cth/aat/2011/61.html (accessed 16 April 2013).

6.37 While the committee acknowledges it has not had the opportunity consider this report, or the transcript of the AAT hearing, in detail, it would like to express concern about the following matters, given what the committee now knows about the Pel-Air incident:

- while the incident occurred in June 2010, the ATSB only issued its final report on 20 December 2012, some two and a half years later. This is a similar timeframe to the Pel-Air report, which is discussed in Chapter 3;
- the ATSB concluded that ‘it was unlikely that any deficiencies in the pilot’s PA-31 endorsement training contributed to the accident’,⁴⁶ despite acknowledging in its report that the pilot had not received training in mid-flight engine failure. The committee notes that the ATSB reports engine surging led to the pilot’s actions, which resulted in the crash⁴⁷;
- the ATSB also concluded that ‘no organisational or systemic issue was identified in respect of CASA’s surveillance that might adversely affect the future safety of aviation operations’⁴⁸. This is despite the fact that a post-incident Special Audit by CASA led to a suspension of Skymaster’s AOC because of a ‘serious and imminent risk to air safety’ [ATA 61, point 5]; and
- the ATSB excused CASA’s lack of oversight on the basis that the companies had two separate AOCs and therefore CASA investigators may not have been aware that Avtex owned Skymaster⁴⁹. However, during the AAT review, CASA justified the cancellation of Avtex’s AOC due to CASA’s opinion that ‘because of the close relationship between Avtex and Skymaster, and the joint resources shared by those companies, if Avtex continued its operations under its AOC, that would also result in a serious and imminent risk to air safety’ [ATA 61, point 5].

6.38 The committee considers that this report, and the associated evidence from the AAT review, could point to a disturbing trend where the ATSB disregards or excuses CASA failures. It appears, from the publicly available material, that there are significant similarities between this and the Pel-Air report. The committee is of the view that the establishment of the independent panel (recommendation 8) should play a vital role in ensuring no such reporting trend continues.

46 ATSB, ‘Collision with terrain - Piper PA-31P-350, VH-PGW, 6 km NW of Bankstown Airport, NSW, 15 June 2010’. p. 49.

47 ATSB, ‘Collision with terrain - Piper PA-31P-350, VH-PGW, 6 km NW of Bankstown Airport, NSW, 15 June 2010’. p. iii.

48 ATSB, ‘Collision with terrain - Piper PA-31P-350, VH-PGW, 6 km NW of Bankstown Airport, NSW, 15 June 2010’. p. 53.

49 ATSB, ‘Collision with terrain - Piper PA-31P-350, VH-PGW, 6 km NW of Bankstown Airport, NSW, 15 June 2010’. p. 49.

Committee view

6.39 The committee finds it particularly disappointing that CASA chose to strongly reject the assertions from witnesses about the adequacy of CASA oversight when the evidence in its own documents makes clear that it was deficient.

6.40 The committee is left bewildered as to why, in the face of clear and incontrovertible evidence the ATSB continues to ignore the obvious and relevant facts identified in the Chambers Report that the oversight and safety outcomes were significantly flawed and organisational influences and risk controls were not adequate. The ATSB itself recognises that when assessing risk 'even in the worst credible scenario, regard needs to be given to the normal expectation of compliance with existing risk controls'.⁵⁰ The Chambers Reports shows this was not the case. It is a key reason that the inquiry should be reopened. The committee stresses that this would not be about going over the actions of individuals again but would focus on the organisational, oversight and broader systemic issues.

Recommendation 10

6.41 The committee recommends that the investigation be re-opened by the ATSB with a focus on organisational, oversight and broader systemic issues.

6.42 The committee is concerned that the ATSB report ATSB's report on 'Collision with terrain - Piper PA-31P-350, VH-PGW, 6 km NW of Bankstown Airport, NSW, 15 June 2010' could demonstrate a trend where organisational and regulatory factors are not considered appropriately or in sufficient detail by the ATSB, despite post-accident investigations by CASA indicating there were significant deficiencies with the operator and appearing to indicate insufficient oversight by CASA. As highlighted in Chapter 5, the committee is also concerned about ATSB attempts to predict future risk for operators. The ATSB should analyse why the accident happened but operators are best placed to assess how the lessons may affect their current and future operations.

Conclusion

6.43 CASA's internal reports indicate that the deficiencies identified would have had an effect on the outcome of the accident in several areas. It is inexplicable therefore that CASA should so strongly and publicly reject witnesses' evidence that they did not think surveillance was adequate, when CASA's own internal investigations indicate that CASA's oversight was inadequate. CASA even admitted that on the basis of the information contained in the Chamber's Report, it went to government for additional resources which were provided. In a resource constrained environment the deficiencies must indeed have caused serious concern for the funding to have been provided.

6.44 The committee is pleased that steps have been and are being taken to correct this situation. It is in the public interest for this information to be voluntarily divulged through the ATSB investigation process rather than have it become known through a subsequent Senate inquiry. The ATSB should have been provided with the

50 ATSB *Submission 2*, p. 21.

information about CASA's surveillance deficiencies so that the public can have confidence that safety issues are being appropriately reported on and corrective actions undertaken. The public need to have confidence that CASA is a responsive organisation, that it is transparent about that and the actions being taken to address it.

6.45 To reject any assertion that oversight may have been inadequate when the internal reports are damning is not in the public interest and does not inspire public confidence.

6.46 The committee recognises that action has been and is being taken to address these deficiencies. The committee argues that not disclosing this information influenced the ATSB report. The ATSB report does not identify any regulatory and organisational issues:

Surveillance was carried out by CASA of operators' procedures and operations to ensure that such flights were conducted in accordance with those approvals and the relevant regulations and orders.⁵¹

6.47 However, the committee notes there is no objective measure to determine whether the findings from the Special Audit of Pel-Air or the Chambers Report have been implemented, or whether either of these documents has affected CASA operations.

6.48 Statements such as this from the ATSB report appear entirely contradictory to the information contained in the Chambers Report.

6.49 The ATSB indicated it was not looking at systemic issues and it seemed to accept that the regulator was doing its job. CASA had in its possession information that would have indicated that its oversight was not adequate. By not disclosing that information the committee believes CASA shaped the outcome of the ATSB report.

6.50 The Chambers Report highlighted surveillance deficiencies which concern the committee.

6.51 The committee believes that CASA processes in relation to matters highlighted by this investigation be reviewed. This could involve an evaluation benchmarked against a credible peer (such as FAA or CAA) of regulation and audits with respect to:

- non-RPT [regular public transport] passenger carrying operations;
- approach to audits (eg. the need to evaluate line aircrew for effectiveness of Safety Management System (SMS) not just elements of SMS itself); and
- training and standardisation of FOI [Flying Operations Inspector] across regional offices.

Recommendation 11

6.52 The committee recommends that CASA processes in relation to matters highlighted by this investigation be reviewed. This could involve an evaluation benchmarked against a credible peer (such as FAA or CAA) of regulation and

51 ATSB report, p. 24.

audits with respect to: non-RPT passenger carrying operations; approach to audits; and training and standardisation of FOI across regional offices.

6.53 The committee now turns to industry specific standards. Looking at the categorisation of aeromedical flights the committee notes the challenges of Emergency Medical Services operations. For example, they are short notice, there are unprepared landing strips and long hours of duty. This drives a simultaneous need for flexibility in operations but higher standards of oversight, operational airworthiness and Safety Management Systems. No existing category of operations in Australia provides this.

6.54 Given the complexity of this operation, industry needs to have a voice.⁵² The committee suggests a reference group comprising representatives nominated from industry and CASA to consider the development of a new category and standards for EMS. Particularly where the CASA representative has no operational experience in the type of operations concerned, the industry appointed body must have a strong voice—even potentially a veto.⁵³ Industry is best placed to determine best practice. The minister should require CASA to approve the industry plan unless there is a clear safety case not to. This should be finalised within 12 months and the outcome publicly reported. This new standard would become the basis for self audit and audit of Air Operator Certificate holders by CASA. There could also be scope for industry to assist as part of an audit team with CASA, particularly where standardisation is an issue.

Recommendation 12

6.55 The committee recommends that CASA, in consultation with an Emergency Medical Services industry representative group (eg. Royal Flying Doctor Service, air ambulance operators, rotary wing rescue providers) consider the merit, form and standards of a new category of operations for Emergency Medical Services. The minister should require CASA to approve the industry plan unless there is a clear safety case not to. Scope for industry to assist as part of an audit team should also be investigated where standardisation is an issue. This should be completed within 12 months and the outcome reported publicly.

Other issues

Regulatory reform

6.56 The committee received information that there is concern in industry about the progress and direction of regulatory reform.⁵⁴ It understands that this process has

52 For example see Helicopter Emergency Medical Services (HEMS) USA industry risk profile, published by the Flight Safety Foundation, developed by Aerosafe Risk Management, April 2009.

53 In practice this would mean that if industry and CASA do not agree, the issue would be elevated to the departmental secretary and, if necessary, the minister.

54 AMROBA, *Submission 15; Confidential submission*.

been going on for well over a decade⁵⁵ and this extended timeframe is causing ongoing uncertainty for industry. The committee compares it with the regulatory reform process in New Zealand which has taken far less time and by all accounts has been effective.⁵⁶

6.57 While a certain degree of concern is to be expected, the committee believes it is time to conduct a brief inquiry on the current status of regulatory reform to review the direction, progress and resources expended to date. This would include seeking perspectives from CASA and industry. It would also include benchmarking against the New Zealand reform process and outcomes, including industry acceptance.

Recommendation 13

6.58 The committee recommends that a short inquiry be conducted by the Senate Standing Committee on Rural and Regional Affairs and Transport into the current status of aviation regulatory reform to assess the direction, progress and resources expended to date to ensure greater visibility of the processes.

55 See www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_92098 ; www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_92107; Steve Creedy, 'Civil Aviation Safety Authority close on reform of rules', *The Australian*, 4 November 2011. The article notes that the new regulations may not be in place before the end of 2014; Emma Kelly, InFocus, 'Australia closes in on regulatory reform', 19 February 2013. www.flightglobal.com/news/articles/in-focus-australia-closes-in-on-regulatory-reform-382027/; Paul Phelan, 'To hell with the rules', 6 April 2013, Pro Aviation <http://proaviation.com.au/?p=639> accessed (19 April 2013).

56 AMROBA, *Submission 15*, p. 1; Civil Aviation Authority of New Zealand, *Strategic Direction, October 2011*.

Chapter 7

Communication between CASA and the ATSB

Background

7.1 In Chapter 2 the committee noted the findings of the Miller Review into the relationship between the Australian Transport Safety Bureau (ATSB) and the Civil Aviation Safety Authority (CASA):

It is clear that the relationship between the ATSB and CASA has, in the past, been sub-optimal. The applicable ATSB governance arrangements have, in the Review's opinion, been a significant contributor to this unfortunate state of affairs. CASA's internal arrangements have also contributed significantly. The respective statutory roles and responsibilities of each agency under the TSI [Transport safety Investigation] Act and the CA [Civil Aviation] Act have contributed to an environment in which interaction between the ATSB and CASA is not as it should be.¹

7.2 This relationship remains problematic, and may, as far as the Norfolk Island accident is concerned, have affected the course of the ATSB investigation.

Withholding of key information

7.3 The Chambers Report² is a key document constituting demonstrable evidence that CASA was well aware of serious deficiencies in its oversight of Pel-Air operations prior to the Norfolk Island accident.³ Along with other information known only to CASA and revealed by emails, for example the even split among CASA Flying Operations Inspectors (FOIs) regarding the legal requirement to divert,⁴ the report showed that CASA had withheld potentially critical information from the ATSB.

Breaching the Memorandum of Understanding

7.4 The committee notes that the Memorandum of Understanding (MoU) between the ATSB and CASA is not a legally binding document. It was, however, negotiated in order to guide interaction and cooperation between the agencies with the objective of enhancing aviation safety.

7.5 The intentions of the memorandum, as far as sharing information that could assist ATSB accident investigations is concerned, are unambiguous. Paragraph 4.4.6 of the MoU clearly states:

1 The Miller Review, p. 30.

2 For more detail see chapters 3 and 6 of this report.

3 The Chambers Report, internal CASA report titled 'Oversight Deficiencies – Pel-Air and Beyond, additional information 11.

4 As discussed in Chapter 4 of this report.

CASA agrees that if a CASA Officer is known to have information that could assist the ATSB in the performance of its investigative functions, CASA will undertake to advise the ATSB of the existence of the information.⁵

7.6 It is a fact that a number of people within CASA were aware of the existence and contents of the Chambers Report. It was commissioned by the Director of Aviation Safety, Mr John McCormick, and conducted by a senior CASA manager.⁶

7.7 Although the head of CASA, Mr John McCormick challenged this assertion,⁷ the committee maintains that a reasonable person would interpret paragraph 4.4.6 to mean that CASA *must* advise the ATSB of the existence of anything it has in its possession that could assist an accident investigation. The committee notes the specific use in the MOU of the phrase "could assist" which in the committee's view establishes a wide range of possible information that CASA should bring to the ATSB's attention. Presumably it would then be up to the ATSB to determine whether the information could assist with its investigation and require the information be provided under a section 32 request.

7.8 Despite this, CASA withheld a document which should have had a significant impact on the ATSB's investigation on the basis that it was 'an internal document'.⁸

Breach of the Transport Safety Investigation Act?

7.9 The committee remains very concerned by CASA's actions in this regard, and has cause to ask whether the agency is in fact also in breach of the *Transport Safety Investigation Act 2003* (TSI Act). Section 24 of the Act clearly states that it is an offence to hinder an investigation:

- (1) A person is guilty of an offence if:
 - (a) the person engages in conduct; and
 - (b) the person is reckless as to whether the conduct will adversely affect an investigation:
 - (i) that is being conducted at that time; or
 - (ii) that could be conducted at a later time into an immediately reportable matter; and
 - (c) the conduct has the result of adversely affecting such an investigation (whether or not the investigation had commenced at the time of the conduct); and

5 Paragraph 4.4.6, MoU between the ATSB and CASA.

6 See discussion with Mr John McCormick, Director of Aviation Safety, CASA, *Committee Hansard*, 15 February 2013, p. 2.

7 Mr John McCormick, Director of Aviation Safety, CASA, *Committee Hansard*, 15 February 2013, pp 2–3.

8 Mr John McCormick, Director of Aviation Safety, CASA, *Committee Hansard*, 15 February 2013, p. 2.

(d) the conduct is not authorised by the Chief Commissioner.⁹

7.10 At a public hearing the ATSB confirmed that the agency had no prior knowledge of the existence of the Chambers Report, that is, that it had not been supplied by CASA.¹⁰ The ATSB subsequently had this to say about the likely impact had the Chambers Report been made available to the agency:

The Chambers Report could have been an indicator to the ATSB of potentially relevant organisational issues within Pel-Air and CASA. The report's availability to the ATSB investigation would likely have led to a review of the scope of the investigation to determine whether there needed to be further examination of possible organisational factors in the accident. That said, it is unlikely that the Chambers report would have led to substantive re-scoping of the investigation, since the CASA accident investigation report already indicated the existence of organisational deficiencies and the ATSB safety factor identification processes include the consideration of organisational factors as part of the scope of an investigation.

The ATSB does not consider that lack of access to the Chambers Report was a constraint or limitation to the ATSB investigation and its assessment of factors contributing to the accident.¹¹

7.11 Given evidence on the lack of analysis of systemic issues in the ATSB investigation report, as outlined in previous chapters, the committee questions the plausibility of the statement above. On the weight of evidence reviewed, the committee questions CASA's motivation in withholding the Chambers Report from the ATSB.

7.12 This leads the committee to conclude that CASA may have breached section 24 of the TSI Act by withholding the document. To ensure that any appropriate action is taken, the committee will write to the Australian Federal Police, providing a copy of this report and supporting evidence for review.

Committee view

7.13 Irrespective of how highly either agency head is inclined to speak on the public record when describing the ATSB/CASA relationship, this inquiry exposed not only a predilection by CASA to withhold information when it suited them, but also a willingness to engage the ATSB both formally and informally in ways that have not always been transparent. In both regards, CASA's actions have influenced the conduct of the ATSB investigation to the detriment of aviation safety. Based on the documentation available to the committee, it appears that the two agencies have placed maintaining the veneer of a productive working relationship ahead of public safety.

9 *Transport Safety Investigation Act 2003*, Subsection 24(1).

10 See discussion with Mr Ian Sangston, General Manager, ATSB, and Mr Martin Dolan, Chief Commissioner, ATSB, *Committee Hansard*, 15 February 2013, p. 23 and pp 25–26.

11 ATSB, *answer to question on notice 5*, 15 February 2013, p. 6.

7.14 The committee is of the view that CASA has adopted a rather self-serving interpretation of the MoU, which allows the agency to laud the spirit of the document whilst simultaneously failing to adhere to its contents when convenient. Whilst aware that the MoU between the ATSB and CASA is not a legally binding document, it nonetheless has an intended aim, and therefore fails to serve its purpose if not adhered to. The committee concludes that CASA's decision to withhold important documents from the ATSB has, as outlined in Chapter 6, had a severe impact on the ATSB's investigative process.

Recommendation 14

7.15 The committee recommends that the ATSB-CASA Memorandum of Understanding be re-drafted to remove any ambiguity in relation to information that should be shared between the agencies in relation to aviation accident investigations, to require CASA to:

- **advise the ATSB of the initiation of any action, audit or review as a result of an accident which the ATSB is investigating.**
- **provide the ATSB with the relevant review report as soon as it is available.**

Recommendation 15

7.16 The committee recommends that all meetings between the ATSB and CASA, whether formal or informal, where particulars of a given investigation are being discussed be appropriately minuted.

7.17 The committee emphasises that the recommendation above is intended to complement and clarify paragraph 4.4.6 of the MoU, not replace it.

Chapter 8

Human factors

8.1 The term 'human factors' refers to the study of 'people's performance in their work and non-work environments.'¹ The term denotes both positive and negative aspects of human performance. In the aviation safety context, the term is often used in reference to factors influencing human error.

8.2 The committee heard about the central importance of human factors to an investigation in order to understand why an accident occurred. However, the committee heard that such information was lacking in the ATSB report.² In this chapter the committee will cover some of these areas which witnesses believe should have been included in the ATSB report.

Importance of human factors

8.3 The ATSB acknowledges the importance of human factors:

The purpose of applying Human Factors knowledge to such investigations is to not only understand what happened in a given accident, but more importantly, why it happened.³

8.4 The ATSB's own information notes:

Human Factors are a critical part of the safety investigation process and are at the heart of most aircraft accidents.⁴

8.5 The ATSB website points out the agencies expertise in and contribution to the field of human factors at both the individual and organisational level which is acknowledged as world class.⁵

8.6 The ATSB Chief Commissioner has also personally emphasised the importance of human factors:

The field of human factors is—and always will be—an essential part of the ATSB's investigation process.⁶

1 Civil Aviation Safety Authority, *A practical guide: Human Factors*, available at www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_101005 (accessed 15 April 2013).

2 See for example Mr Bryan Aherne, *Submission 10*, p. 26; Mr Mick Quinn, *Submission 11*, p. 2; and AIPA, *Submission 8*, p. 4.

3 ATSB, Mr David Adams, *A Layman's Introduction to Human Factors in Aircraft Accident and Incident Investigation*, June 2006, p. vi.

4 ATSB, Mr David Adams, *A Layman's Introduction to Human Factors in Aircraft Accident and Incident Investigation*, June 2006, p. 20.

5 See www.atsb.gov.au/about_atsb/international-recognition.aspx (accessed 29 March 2013).

6 Mr Martin Dolan, InFocus Blog, 'Investigating Human Error', 4 December 2012.

8.7 The importance of human factors principles was also stressed to the committee:

As we said in our submission to the committee, we have a comprehensive methodology for doing this [assessing whether existing arrangements for managing safety risk are adequate]. That methodology takes as its starting point, its base, the principles of human factors that were initially enunciated by Professor Reason and have been built on by a range of others. So, rather than seeing human factors as a separate issue in our investigations, we have integrated them into our overall processes.⁷

8.8 Mr Bryan Aherne, an independent aviation accident investigator and safety and risk adviser to the aviation industry, pointed out the international requirements for an investigation which include human factors:

The collection of Human Factors information is an integral part of the investigation. Thus, the Human Factors information should be integrated into the appropriate areas of the factual part of the report, rather than being placed under a separate heading. Human Factors information should be presented in a language that is consistent with the presentation of the other factual information.⁸

Lack of human factors information in the ATSB report

8.9 The Australian and International Pilots Association (AIPA) submitted that from its perspective the ATSB report:

...lacks any significant analysis of why the pilot in command attempted the task in the manner he did. The presentation of 'facts' alone is unhelpful, since the investigators must have some insight into what, at least in the raw form, appear to be an apparently uninformed approach to conducting a potentially risky flight.⁹

Factors influencing decision making

8.10 Witnesses raised a number of examples where in their opinion a greater analysis of human factors was warranted. Unless otherwise indicated, the committee's analysis of specific VH-NGA flight details relies on material drawn from the ATSB investigation report.

The effect of incorrect weather information provided and weather not provided

8.11 After entering Fijian airspace at 0716,¹⁰ at 0756 Capt. James requested the weather for Norfolk Island. Fijian ATC provided an observation (METAR) that was an hour-and-a-half old (METAR are issued every 30 minutes) (0630) which Capt. James queried by asking for confirmation of the time of issue. It also contained the

7 Mr Martin Dolan, *Committee Hansard*, 2 October 2012, p. 54.

8 Mr Bryan Aherne, *Submission 10*, p. 26.

9 AIPA, *Submission 8*, p. 14.

10 Time references are to Coordinated Universal Time (UTC), the primary standard used to regulate clocks and time worldwide.

wrong cloud height which was read out as 6000 instead of 600 ft.¹¹ This was not corrected by Fijian ATC (Air Traffic Control) at the time. It was also not corrected in the ATSB final report until the day after it was published.¹² There is therefore no discussion in the ATSB report of the possible effect of this incorrect cloud height on the decisions made subsequently by Capt. James.

8.12 Very shortly after the METAR with the incorrect cloud height was read out, the controller advised the availability of the latest weather observation for Norfolk Island. The SPECI (0800) was provided by Fijian ATC at 0802 and was only read out because Capt. James queried the time of the 0630 weather report.¹³ It reported an observed visibility of greater than 10 km and overcast cloud at 1100 ft above the aerodrome reference point (ARP). The ATSB noted that these conditions were less than the alternate minima but above the landing minima. The report then goes on to say that Capt. James acknowledged the information.¹⁴ The report does not discuss this matter further and the reader is left to conclude for themselves whether or not the information is received and understood by Capt. James.

8.13 To clarify, the two reports read out to Capt. James were issued an hour and a half apart but were provided less than a minute apart.

8.14 At 0803 an amended forecast (TAF) was issued by the Bureau of Meteorology (BoM) which had broken cloud at 1000 ft above the ARP.¹⁵ It indicated conditions below the alternate minima but above the landing minima at the ETA. This also was not passed on to the crew.¹⁶ The ATSB notes that this information was not required to be passed on¹⁷ and this issue is discussed further in Chapter 9. An 0830 SPECI not requested showed a marked deterioration but this also was not passed on.¹⁸

8.15 The ATSB report mentions that the pilot did not enquire about the availability of an updated forecast.¹⁹ Mr Davies pointed out that they were not required to make this enquiry and they had no compelling reason to do so. At this time they had a valid TAF for Norfolk Island with forecast conditions above the alternate minima and were not aware of the significance of the SPECI that had been passed on.²⁰

11 Mr Martin Dolan, *Committee Hansard*, 21 November 2012, pp 11–12.

12 Mr Bryan Aherne, *Submission 10*, p. 42.

13 Mr Bryan Aherne, *Submission 10*, p. 41.

14 ATSB Report, pp 6–7.

15 Mr Davies, *Submission 12*, p. 9; and Mr Bryan Aherne, *Submission 10*, p. 18 indicated that should be 1000 ft, not 1100 ft as indicated in the ATSB report, p. 7. In a supplementary submission dated 19 October 2012, on p. 1, the ATSB acknowledged that the figure on p. 7 of the ATSB report should read 1000 ft and not 1100 ft.

16 ATSB report, p. 7.

17 ATSB report, pp 7 and 16.

18 Pel-Air, *Submission 7*, p. 3.

19 ATSB report, pp 7 and 16.

20 Mr Richard Davies, *Submission 12*, p. 9.

8.16 The mental picture the crew would have developed as a result is discussed later in this chapter. Discussion around the reasons for the crew not being aware of the information contained in the SPECI is below.

Changing weather reports

8.17 As an example, witnesses highlighted that the crew did not have an awareness or appreciation of the 0800 SPECI²¹ so its influence on their in-flight decision making was nugatory. It was argued that the reasons for this lack of awareness or appreciation are not adequately examined in the ATSB report.²²

8.18 The contention by the ATSB appears to be that the pilot-in-charge was alert to the wrong timing of the requested (0630) observation but then after hearing about the deteriorating conditions in Norfolk shortly afterwards via the SPECI, took no action. The contrasting view would be that because the pilot queried the issue time of the 0630 METAR but did not query the SPECI and took no further action, that this shows the transmission was never heard or assimilated in its entirety. The ATSB report indicates that the crew reported that they were either not aware of or did not recognise the significance of the SPECI, and if they had, would have planned in case an en route diversion was necessary.²³ However, the report does not discuss possible scenarios regarding why the crew were not aware of the relevant information in the SPECI.

High frequency radio issues

8.19 The committee noted some conjecture around whether the pilot-in-command heard the SPECI transmitted by high frequency (HF) radio. Further detail on this is provided below.

8.20 The reliability issues with HF were recognized by the ATSB at a committee hearing but not in any detail in its report. Any possible influence is dismissed by the ATSB report in noting that no difficulties were identified by the flight crew with their radio communications during the flight.²⁴ However, when discussing the provision of weather information at a hearing Mr Dolan acknowledged that the reliability of HF 'can vary, depending on the time of the day, among other things'.²⁵ Mr Dolan also admitted that despite the pilot's acknowledgement of the information, the receipt could have been distorted by HF.²⁶ Mr Dolan added that although the transmission to and from the aircraft that was recorded by Auckland does not appear to show any distortion he recognised that it may have been different in the cockpit.²⁷

21 It should be noted that a SPECI is issued when there has been a significant change to the conditions which could be a deterioration or improvement.

22 For example Mr Richard Davies, *Submission 12*, p. 9; Mr Mick Quinn, *Submission 11*, p. 6.

23 ATSB Report, p. 7.

24 ATSB Report, p. 17.

25 Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 9.

26 Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 11.

27 Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 12.

8.21 At the 21 November 2012 hearing when asked about the number of times the crew asked for information to be repeated, Mr Dolan's response was that it occurred once to Fijian ATC.²⁸ In answering this question on notice the ATSB maintained that the pilot only used 'say again' once at 0630 to query the time associated with the 0630 METAR.²⁹ Overall the ATSB indicated that the flight crew used the term 'say again' a total of three times during the conduct of the flight.³⁰

8.22 Mr Aherne pointed out that according to the partial transcript provided to Capt. James the words 'say again' appear seven times—five times between Auckland ATC and the aircraft in the period 0600–0637 and twice between the aircraft and Fijian ATC and the aircraft in the period 0716–0801.³¹

8.23 With the transcripts available, which were the same as those referenced by Mr Aherne, the committee concurs with Mr Aherne that the term 'say again' was used at least seven times. As these transcripts were obtained from the ATSB the committee concludes that, in this regard, the ATSB report is factually incorrect.

Expectations/state of mind

8.24 There was no analysis in the ATSB report on what effect the error of the cloud height had on the crew's understanding and mental picture of the weather³² and subsequent decision making. The information in the 630 METAR and the incorrect cloud base at 6000 instead of 600 ft may have contributed to a mindset or expectation that with an hour and a half until the ETA and cloud at 6000 ft nothing could happen in that time that would close the airfield.

8.25 The mental picture from the initial forecast would have been reinforced by the incorrect cloud height information from the METAR that conditions were good, in fact even better than the original forecast. It would have had the effect of confirming the pre-flight forecast that weather was unlikely to be a problem. Even if the SPECI had been heard clearly and in full, the pilot may already had a mental model of a 6000 foot cloud base. It would be understandable human nature to underestimate or disregard information that does not fit with the model of good weather already developed in the pilot's mind. He may have heard the information but not understood it clearly because he already had a mental picture that conditions were good and so he acknowledged the information without acknowledging the changing weather conditions. He also may have had a picture developed in his mind that replicated his experience of the previous evening when he flew into Norfolk Island on the outbound leg, where the poor weather forecast on departure from Sydney did not match the actual fine conditions on arrival.

28 Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 13.

29 ATSB answer to question on notice from 21 November 2012 hearing, number 1.

30 ATSB answer to question taken on notice from 21 November hearing, number 2.

31 Mr Bryan Aherne, *Supplementary submission*, 8 February 2013, p. 21.

32 Mr Bryan Aherne, *Submission 10*, p. 40.

8.26 There is no discussion of these possibilities in the ATSB report. Other weather information that may have ensured the crew comprehended the deteriorating conditions earlier was not passed on and this is discussed below.

Fatigue

8.27 Another possibility that may have contributed to the information not being heard or assimilated correctly could have been fatigue. The ATSB report has no detailed discussion of fatigue. It concluded that 'there was insufficient evidence available to determine the level of fatigue, or the extent to which it may have contributed to him [the pilot] not comprehending the significance of the 0800 SPECI'.³³ As the timing of the 0630 METAR was questioned by Capt. James, it appears that fatigue alone cannot explain the lack of action. This however should not have precluded the ATSB from analysing the issue of fatigue but adds weight to the need to analyse other factors. A more detailed discussion of the issues around fatigue is below.

8.28 Mr Mick Quinn pointed out there was no Selective Calling³⁴ so the flight crew had to monitor the frequency for the duration of the trip, listening to white noise, which adds to fatigue.³⁵

Committee view

8.29 The committee acknowledges the uncertainty over whether the relevant weather information in the SPECI was received by the flight crew in total and/or assimilated. It too finds it strange that there is no discussion or analysis around the possible reasons for this, particularly given the ATSB re-enactment video of the incident showed that Capt. James was surprised when he heard the word SPECI and was adamant he had not heard it.³⁶

8.30 The committee is aware of the issues around HF radio communications and that its reliability varies considerably depending on the frequency used and range. The committee recognises that there are a range of known technical issues associated with HF radio which can make it a poor form of communication particularly over water at some range.³⁷ While the ATSB report noted that no communication issues were identified by the crew, Mr Dolan acknowledged that the transmissions may have been

33 ATSB Report, p. 15.

34 Selective Calling, or SELCAL, is a radio system used to notify flight crew that a radio station wishes to communicate with them.

35 Mr Mick Quinn, *Submission 11*, p. 8. See also Mr Bryan Aherne, *Supplementary submission*, 8 February 2013, p. 4. The committee notes that many pilots adjust the squelch control to eliminate the white noise until they have to make a call or are expecting a call. However, the committee is unaware of the effectiveness in this instance.

36 ATSB re-enactment video.

37 It can skip so that an aircraft close to the ATC may miss part of a broadcast but an aircraft much further out will receive it. Clarity can be poor with fading in and out requiring elements of transmissions to be repeated.

heard differently in the cockpit and the committee finds it odd that there is no discussion of this in the report.

8.31 Despite acknowledgement of the information by the pilot, the actions of the crew and the reactions in the re-enactment video show that for whatever reason the information was not heard and assimilated correctly or in its entirety. It may have been heard in a way that the crew was unaware it was incomplete. Despite the care taken by the pilot to check the time of the 0630 METAR, the ATSB appear to conclude that less than a minute later the pilot heard of significantly deteriorating weather conditions and took no action. The committee questions the likelihood of such a scenario.

8.32 While the committee acknowledges that using the term 'say again' is usual to clarify information received, there is currently no requirement to repeat critical information³⁸ and perhaps there should be and this report could have provided the opportunity for that discussion.

8.33 In the committee's view it would also be important to include some analysis of the possible effect of the incorrect weather information on decision making. The incorrect cloud height was corrected by the ATSB the day after the report was published but no discussion of the effect on decision making was included.

8.34 The committee considers there is no certainty around the transmission and receipt of the information in the SPECI.

Recommendation 16

8.35 The committee recommends that, where relevant, the ATSB include thorough human factors analysis and discussion in future investigation reports. Where human factors are not considered relevant, the ATSB should include a statement explaining why.

Fatigue

8.36 As mentioned above, the possible contribution of fatigue was not examined in any depth by the ATSB. The ATSB report acknowledged that the flight crew had been awake for over 12 hours before being called on duty at 0900 for the departure from Sydney on the previous day. They had been awake for over 22 hours when they landed in Samoa.³⁹ The report stated:

After having breakfast they had about 8 hours opportunity at a hotel for rest prior to returning to the airport. The captain initially reported to the ATSB that he slept for most of this period and was well rested, but later reported to the Civil Aviation Authority (CASA) that he had only about 4 hours sleep but did not feel fatigued. The first officer advised of having 5 to 6 hours of sleep and feeling well rested.⁴⁰

38 Mr Bryan Aherne, *Supplementary submission*, 8 February 2013, p. 4.

39 ATSB report, p. 14.

40 ATSB report, p. 14.

8.37 The ATSB noted that based on this information 'it is likely that the flight crew were experiencing a significant level of fatigue on the flight to Samoa, and if the captain only had 4 hours sleep then it is likely he was experiencing fatigue on the return flight at a level likely to have had at least some effect on performance.' However, the ATSB concluded:

...there was insufficient evidence available to determine the level of fatigue...⁴¹

8.38 While the ATSB concluded it could not determine the level of fatigue, Mr Quinn pointed out that the crew were still alive and could have been re-interviewed, the crew could have provided a 72 hour history for fatigue analysis and the ATSB could have commissioned an external review by fatigue specialists.⁴²

8.39 Mr McCormick commented that only a pilot knows whether or not they are fatigued.⁴³ Other witnesses highlighted that the individual concerned is usually the worst placed to accurately assess their own level of fatigue which is why best practice involves various tools and systems to support individual and organisational decision making.⁴⁴

8.40 The committee is aware that 'managing fatigue and associated risks are the dual responsibility of employers and employees'.⁴⁵ CASA's guidance to industry on this issue states that an employer's responsibilities include:

- develop work schedules that prevent high levels of fatigue from developing during a work shift.
- develop work schedules that allow for adequate rest and recovery periods during between shifts (that allows for an anchor sleep period of seven to eight hours).
- ensure safe work practices, such as limiting overtime to sensible levels.
- implement appropriate and safe shift duration.
- continuously assess, control, and monitor fatigue-related hazards.
- develop policies, procedures, and practices to manage risks related to fatigue. For example, where napping is allowed, there should be clear instructions on how to deal with sleep inertia.
- provide information on workplace hazards, such as fatigue.⁴⁶

41 ATSB report, p. 15.

42 Mr Mick Quinn, *Submission 11*, p. 21; Mr Bryan Aherne, *Submission 10*, p. 43.

43 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 47.

44 *Confidential submission*.

45 CASA, *Fatigue management strategies for aviation workers: A training and development workbook*, May 2012, p. 80. See also Bryan Aherne, *Supplementary submission*, 18 March 2013, comments on question 4.

8.41 Mr Dolan was questioned about the view that only a pilot can decide if they are fatigued. He clarified that in the context of a Fatigue Risk Management System (FRMS) there is the ultimate decision of a pilot that needs to be made with appropriate knowledge and training as to whether their fatigue levels make them fit for the flight. The committee reminded the ATSB of the deficiencies with the operators' FRMS and training and asked if it had effectively analysed the issue. Mr Dolan argued that the ATSB analysis was adequate for the purposes of its investigation.⁴⁷

8.42 The committee notes that CASA sought independent advice from the UK Civil Aviation Authority (CAA) which indicated that the scheduled flight would never have received UK CAA approval as it would have exceeded its bio-mathematical model (SAFE⁴⁸) fatigue limits. Accordingly to the UK CAA analysis, the crew exceeded the fatigue limit on arrival in Apia from Norfolk Island and would most certainly have exceeded the fatigue limit during the return flight. The UK CAA went further and criticised the culture of Pel-Air based on the extent to which crews were kept on standby.⁴⁹ CASA did not pass this analysis onto the ATSB.

8.43 The ATSB confirmed that it did not obtain any independent analysis of fatigue levels and did not think it necessary to do so. It also questioned aspects of the UK CAA analysis.⁵⁰

8.44 The ATSB's reticence to analyse whether fatigue contributed to the accident was criticised by Mr Aherne who noted:

...the reader cannot ignore that ATSB's reluctance to develop any analytical arguments regarding fatigue and its potential contribution to the accident sequence despite its statement regarding fatigue in the final report, that...it was likely that on the return flight the pilot in command was experiencing fatigue.⁵¹

8.45 The ATSB⁵² and CASA⁵³ both played down the usefulness of fatigue modelling. However, the committee heard this is disingenuous as fatigue models such as SAFE are the most accurate tool available and are very accurate in predicting fatigue and retrospectively analysing fatigue. The committee was told that these

46 CASA, *Fatigue management strategies for aviation workers: A training and development workbook*, May 2012, pp 80–81.

47 Mr Martin Dolan, *Committee Hansard*, 15 February 2013, p. 28.

48 System of Aircrew Fatigue Analysis.

49 CASA, Additional information, number 15.

50 ATSB, answers to written questions on notice, from 15 February 2013 hearing, number 4.

51 Mr Bryan Aherne, *Supplementary submission*, 18 March 2013, comments on question 4, 15 and 16 and comments on written questions on notice, number 1.

52 ATSB, *Supplementary submission*, 11 November 2012, p. 2; ATSB, answers to written questions taken on notice from 15 February 2013 hearing, number 4; Mr Martin Dolan, *Committee Hansard*, 15 February 2013, p. 29.

53 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 4.

fatigue models are not perfect but are a significant step forward when compared with the arbitrary limitations established in CAO 48.0.⁵⁴

8.46 Relying on the crew's recollection of fatigue⁵⁵ should be treated with caution as any admission by flight crew of flying while knowingly fatigued invites a charge of negligence and second, humans are a poor judge of their fatigue levels.⁵⁶

8.47 Mr Aherne also pointed out the obvious learning opportunity which should be a standalone finding regardless of whether it contributed to the accident or not:

It is inadvisable for an operator to place the burden of responsibility on the flight crew to determine their level of fatigue prior to commencing a duty and make a prediction as to their likely level of fatigue many hours hence.⁵⁷

Committee view

8.48 It seems a matter of common sense that if the crew had been awake for 22 hours by the time they landed in Samoa the issue of fatigue and management of it would be analysed by the ATSB. The statement that there was insufficient evidence available to determine the precise level of fatigue, despite acknowledging that the PIC was likely to be experiencing fatigue, should not have prevented the ATSB from analysing this issue.

8.49 The ATSB's own documentation prepared for the investigation noted that 'there is a discrepancy between self-reports of fatigue and actual fatigue levels, with people generally underestimating their level of fatigue'.⁵⁸ The committee believes that the ATSB report is a lost opportunity to have a detailed discussion on the management of fatigue, particularly given the deficiencies in this area identified in the CASA Special Audit (see Chapter 5).

8.50 The committee notes the ability for CASA to outsource or confirm fatigue analysis by going to the UK CAA. It notes the ATSB concerns with the analysis but that this option would have been available to the ATSB as well, or alternatively CASA could have shared the information it received from its UK counterpart. This aside, the CASA FRMS report (Chapter 5) combined with the evidence received by the committee provide a robust case that the management of fatigue was inadequate.

8.51 The Committee notes the early expectation of ATSB officers that human factors, including fatigue, would form part of the investigation. Worryingly, when the ATSB again looked at fatigue, prompted by the DIP process, the ATSB documentation indicated that the officers wanted to review the operator's FRMS, re-interview the crew and take further action⁵⁹ but that ATSB management concluded

54 *Confidential submission*. Civil Aviation Order 48.0 covers flight time limitations.

55 ATSB report, p. 14.

56 *Confidential submission*.

57 Mr Bryan Aherne, *Supplementary submission*, 18 March 2013, comment on number 10.

58 *Confidential document*.

59 ATSB, Additional information, number 16.

that the investigation could not deviate at this point in the investigation and that the investigation team have to work with what they already have.⁶⁰

8.52 The committee considers that there are questions to be answered around why there was no discussion or analysis of degraded performance due to fatigue when decisions were a) being made in Apia regarding fuel load or b) being made en route in response to weather forecasts. With the latter, the committee is concerned with the inexplicable interaction with Fiji where crucial information appears to not have been heard or assimilated.

8.53 The point of the ATSB report should be to cause other pilots and operators to consider how fatigue may affect their safety. It is an example of why the approach taken by the ATSB is flawed and does not optimise safety outcomes from the investigation which should be about *why* this accident occurred.

Retrieval of the CVR/FDR

8.54 As noted in Chapter 3 of the committee's report, which among other matters highlights the importance of information contained in flight data recorders, the ATSB chose not to retrieve the aircraft after the accident.

8.55 Mr Aherne pointed out that the retrieval of the cockpit voice recorder would have assisted to fill in some gaps in terms of the human factors such as: the relationship between the pilot and the co-pilot; their reaction to the ATC's requests or instructions; their lines of thinking; and the conversations they were having on the flight deck.⁶¹

Committee view

8.56 The committee agrees that flight recorders can reveal facts which are surely key assets to an investigator as they provide concrete data and information, helping them avoid theories and assumptions.⁶² The industry has expended significant capital to equip aircraft with FDR and CVR creating the expectation that having made the investment that the ATSB will recover the records so that any lessons will be evidence based.

Other issues around survivability aspects

8.57 The committee heard that there are numerous aspects relating to the ditching that many pilots would find useful. The committee heard that the adequacy and location of emergency equipment should have been more thoroughly examined after the accident.⁶³

60 ATSB, Additional information, number 17.

61 Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 12.

62 As noted in Chapter 3 of this report, this is required by the International Civil Aviation Organisation (ICAO).

63 *Confidential submission*. The committee also heard *in camera* evidence indicating that the aircraft and cabin structures' crashworthiness, as well as the pilot-in-command's operating technique in executing the ditching, should have been examined.

8.58 Mr Aherne pointed out that without the pilot-in-command's waterproof torch this could easily have been a six-person fatality. The role of failed safety equipment on the lifejackets (lights and inflation chambers and whistles) and the incorrect position of the life raft (positioned untethered in the aisle before ditching) are important issues that in the committee's view should have received more attention in the ATSB report.⁶⁴

Lifejackets

8.59 Reports from the crew and passengers were that the lifejackets did not function appropriately. This was not reflected in the ATSB report. The issues were described by the pilot-in-charge:

Only three of us managed to fit life jackets before exiting the aircraft—the doctor, David; the nurse, Karen; and the patient's husband, Gary. Zoe and I were far too busy while flying the aircraft to undo our seatbelts and fit the life jackets. The patient, Bernie, was not fitted with a life jacket as per CareFlight's procedures for someone on a stretcher. During the evacuation, there was also no chance to grab additional jackets to make up the shortfall...

The jackets themselves had issues. The lights were very dim and did not remain illuminated for very long. I understand they are supposed to be seen from some distance and remain on for eight hours or so. The groin strap of David's life jacket was too long or not able to be tightened sufficiently and at times you needed to hold his jacket down with one hand so he could breathe without difficulty. David's ears were also covered up, making him effectively deaf while we were in the water. The lanyards on the signalling whistles were not long enough or were knotted. This meant you could not use your own whistle and instead someone else was required to. The manual inflation and deflation tubes were a similar size and shape to the whistles and a few times they were accidentally activated when they were mistaken for a whistle in the darkness and pulled towards the face of the person wearing the jacket, causing the jacket to deflate.⁶⁵

8.60 Mr Aherne pointed out:

The lifejacket lights did not work for eight hours as they are required to. Miss Casey's [the flight nurse] life jacket only inflated in the left chamber. She held the patient in her right arm for an hour and a half. She has permanent disabling injuries of her hand. If her other chamber had inflated she would have been able to cradle the patient, who did not have a lifejacket. How that information is omitted is bizarre.⁶⁶

8.61 The survivors reported that most of the lifejacket lights had stopped working by the time they were recovered by the rescue vessel.⁶⁷

64 Mr Bryan Aherne, *Supplementary submission*, 8 February 2013, pp 6–7.

65 Mr Dominic James, *Committee Hansard*, 22 October 2012, p. 4.

66 Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 13.

67 ATSB report, p. 24.

8.62 The ATSB report noted that the aircraft was equipped with lifejackets for all on board as well as two life rafts.⁶⁸

8.63 The ATSB said that the reports about the performance of the lifesaving equipment varied from the survivors and some of the performance issues might have been due to the dark night or difficulty exiting the aircraft.⁶⁹

8.64 Mr Aherne questioned why after three years the ATSB have been unable to establish the facts around the lifejackets as they were available and should have been examined.⁷⁰ He submitted that the ATSB should have been able to determine whether the damage occurred during the accident sequence. He pointed out that in the absence of an examination there is a possibility that there is a serviceability issue with the lifejackets which could potentially affect a large section of the industry.⁷¹

8.65 Curiously, ATSB documentation showed that the ATSB assumed that CASA has sufficient information in relation to battery life to take some action in relation to the lifejackets. Internal ATSB documents noted that it is up to CASA to investigate lifejacket deficiencies, as it has sufficient information to act and so a recommendation was not made.⁷² However, it does not appear that any industry advice or caution regarding the failures has been issued.

8.66 Mr Dolan admitted that:

As I understand it having reviewed the various materials, we did examine the question of life jackets—on reflection, perhaps not at the level of detail we should. With the life rafts, I do not recall that there was any examination in detail. In terms of the survivability aspect of the report, it is certainly not comprehensive.⁷³

8.67 The ATSB committed to re-examine the lifejacket safety issues:

We will re-examine that part of the report. In light of the evidence that has now been brought to our attention, and that was not brought to our attention during the investigation or in the factual review of the reports...⁷⁴

Life rafts

8.68 The ATSB report noted:

The life rafts were reported removed from their normal stowed position and placed in the aircraft's central aisle ready for deployment after the ditching.⁷⁵

68 ATSB report, p. 20.

69 ATSB, *Supplementary submission*, 11 November 2012, pp 6–7; ATSB, answers to written questions on notice from 15 February 2013 hearing, number 14.

70 Mr Bryan Aherne, *Supplementary submission*, 18 March 2013, comments on question 14.

71 Mr Bryan Aherne, *Supplementary submission*, 18 March 2013, comments on question 14.

72 *Confidential document*. See also *Committee Hansard*, 15 February 2013, p. 21.

73 Mr Martin Dolan, *Committee Hansard*, 22 October 2012, p. 63.

74 Mr Martin Dolan, Mr Ian Sangston, *Committee Hansard* 22 October 2012, pp 63–64.

8.69 In relation to the life raft the pilot-in-command noted:

The Pel-Air ditching preparation procedures called for the 25-kilo life raft to be placed next to the exit on the floor and left there. Unsurprisingly, during the impact, the life raft tumbled forward and was lost in the darkness. I do not know why someone at Pel-Air or CASA did not question the likelihood of a life raft remaining in place during the violent deceleration of an aircraft ditching and did not suggest an alternative procedure.⁷⁶

8.70 He then suggested:

There needs to be a procedure where the life raft was secured in a fashion which would ensure the raft remained in place during the impact—but allowing it to be recovered without difficulty and put through the exit and deployed on the surface. I understand that is not an easy undertaking, but the processes in place at the time was inadequate.⁷⁷

Committee view

8.71 Again the committee saw in ATSB documentation the expectation from investigation officers that cabin safety, including location of life rafts and the design of lifejackets, would be included.

8.72 After a three-year investigation it seems incredible, given that all on board survived, that some issues with the lifejackets only came to light during the course of this inquiry.

8.73 The committee finds it difficult to comprehend that no caution was issued for the lifejackets, and that the situation and position of the life raft was not discussed as a lesson for the aviation industry. The committee notes the lack of action in relation to lifejackets and battery life appears again to be linked to a decision not to issue a recommendation to CASA. This is yet another disturbing example of an opportunity lost.

75 ATSB report, p. 21.

76 Mr Dominic James, *Committee Hansard*, 22 October 2012, pp 3–4.

77 Mr Dominic James, *Committee Hansard*, 22 October 2012, p. 4.

Chapter 9

Key issues around recommendations and ensuring action

9.1 The ATSB report contains no formal recommendations. Instead it identified two 'minor safety issues'. This chapter will discuss the reasons provided by the ATSB and the concerns raised with the committee in relation to the lack of recommendations. The committee will then outline the areas where it believes recommendations should have been made. It also includes a range of related matters such as the difficulties with tracking actions and recommendations, as well as delays in CASA responding to recommendations.

Fulfilling legislative requirements

9.2 Several witnesses seemed genuinely bewildered at the lack of any formal safety recommendations in the report, expressing the view that it is the function of a safety report to make recommendations for improvements in safety¹ as detailed in the *Transport Safety Investigation Act 2003* (TSI Act). Section 12AA of the TSI Act details the functions of the ATSB which includes 'making safety recommendations' as a way of communicating factors that contribute to or have contributed to or affect or might affect transport safety.²

Minister's requirements

9.3 The committee notes the statement of expectations by the minister issued under section 12AE of the TSI Act which mentions the ATSB making safety recommendations and 'providing [the minister], as part of its Annual report, a status report on formal safety recommendations issued by the ATSB'.³

Why are there no formal recommendations included in the ATSB report?

9.4 The committee notes the Memorandum of Understanding (MoU) with CASA outlines the ATSB's approach towards recommendations for CASA:

The ATSB understands actions may be taken by CASA in response to safety issues during the course of an ATSB or CASA investigation, and the ATSB will include this information in the investigation report to the extent it is practicable to do so. The ATSB encourages safety action that obviates the need to make safety recommendations.⁴

1 See for example Mr Mick Quinn, *Submission 11*, p. 1; and Capt. Geoffrey Klouth, AIPA, *Committee Hansard*, 22 October 2012, p. 23.

2 TSI Act, subparagraph 12AA(1)(d)(ii).

3 Available from: www.atsb.gov.au/about_atsb/ministers-expectations/ministers-statement-of-expectations.aspx (accessed 26 March 2013).

4 MoU between ATSB and CASA, February 2010, p. 8, paragraph 5.3.1.

9.5 The ATSB indicated that in relation to ICAO Annex 13, Paragraph 6.8 requirements, it has filed a difference regarding the use of recommendations arising from safety investigations:

The definition of safety recommendation (Chapter 1): The essence of the definition is adopted in legislation and in policy and procedures documents. However, Australia reserves the term safety recommendation for making formal recommendations which are used as a last resort.⁵

9.6 The ATSB explained the rationale for its position is that the overuse of safety recommendations tends to devalue them and its policy is to reserve them as a tool of last resort for addressing significant safety issues where safety action has not been taken.⁶ Another part of its justification is that the ATSB has no power to enforce the implementation of its recommendations.⁷ The ATSB explained its process around using recommendations as a last resort:

The ATSB has moved away from this traditional view of making recommendations in final reports and instead identifies Safety Issues during the course of an investigation, communicates these issues to the relevant organisations for consideration, and then reports on the safety actions taken to address the issues. In this regard, the ATSB prefers to encourage proactive safety actions that address the safety issues identified in its reports. Other benefits of this approach are that the stakeholders are generally best placed to determine the most effective way to address any Safety Issues and the publication of the Safety Actions undertaken is generally viewed very positively.

This approach has marked benefits in regard to improving safety, in that identified safety issues are usually addressed before the final report is issued, and all safety actions taken by organisations are reported in the ATSB final report. In the event that no, or limited, safety actions are taken, the ATSB can still issue a formal safety recommendation. This process is identified in the ATSB's Annual Plan and forms a part of the ATSB's Key Performance Indicators.⁸

9.7 The ATSB defines a safety issue as:

A safety factor that: can reasonably be regarded as having the potential to adversely affect the safety of future operations, and is a characteristic of an organisation or a system, rather than a characteristic of a specific individual, or characteristic of an operational environment at a specific point in time.⁹

5 Answers to questions taken on notice from 22 October 2012 hearing, number 10.

6 See ATSB, *Submission 2*, p. 24; ATSB, *Supplementary Submission*, 11 November 2012, p. 8; Answers to questions taken on notice from 22 October 2012 hearing, number 10; and Answer to question taken on notice from 21 November 2012, number 18.

7 ATSB, Answers to questions taken on notice from 22 October 2012 hearing, number 10.

8 ATSB *Submission 2*, p. 24.

9 ATSB, Answers to questions taken on notice, 21 November 2012, attachment to the 26 February 2012 ATSB letter to CASA.

9.8 The ATSB highlighted its view that the response to a safety recommendation is unlikely to differ from the response to an identified safety issue which, according to the ATSB is likely to be more proactive and timely. The ATSB advised this was its view regarding the Norfolk Island investigation.¹⁰

Ability to track action taken in relation to safety issues

9.9 Several witnesses expressed concerns about the reduced number of recommendations¹¹ and the effect of the preference of the ATSB not to issue safety recommendations. These concerns centred on the ability to transparently track progress with the actions being taken.

9.10 Capt. Geoffrey Klouth, Australian and International Pilots Association (AIPA), told the committee that the use of safety issues instead of recommendations appears to indicate a reliance on the regulator or operator to devise solutions to any safety issues identified. Also, unlike formal safety recommendations, there would appear to be no formal process in the system to monitor and follow through on safety actions.¹² AIPA noted:

One point worth reinforcing from a previous comment relates to promising to implement something just to avoid a safety recommendation being made – in that case, is the proposed action tracked by anyone?¹³

9.11 First Officer Ian Whyte, AIPA, pointed out that future actions, which have not yet occurred, are being accepted as safety actions:

One of our areas of greatest concern is that there are no formal recommendations that can be opened and then accepted as complete or remain open. And who is reviewing that goes even further in that the safety actions that are listed are not actually actions. They are things that are going to happen sometime. If they were actually in place, I would accept that it is a safety action and can be closed off, but at the moment they are not. It is, 'We are going to issue a notice of proposed rulemaking at some point in the future.' They have not yet, so how can it be a safety action when it has not happened? In terms of improving safety, which is why we are here, certainly one of our greatest concerns is who is developing those recommendations and then monitoring the implementation or accepting that we cannot go there and assessing that process.¹⁴

9.12 The committee notes from the ATSB submission that there appears to be an internal mechanism to review safety actions, however unlike the formal process with recommendations, this appears to be an internal process which is not transparent to the industry, the broader public, other agencies or the Parliament:

10 Answers to questions taken on notice from 22 October 2012 hearing, number 10.

11 See for example Capt. Geoffrey Klouth, AIPA, *Committee Hansard*, 22 October 2012, p. 26.

12 Capt. Geoffrey Klouth, *Committee Hansard*, 22 October 2012, p. 24. See also First Officer Ian Whyte, *Committee Hansard*, 22 October 2012, p. 24.

13 AIPA, *Submission 8*, p. 28

14 First Officer Ian Whyte, AIPA *Committee Hansard*, 22 October 2012, p. 24.

Where the ATSB is advised that safety action is in progress or is proposed to be undertaken, the safety action is placed on 'Monitor' pending finalisation/implementation of the safety action. Tools within the analysis module of SIIMS [Safety Investigation Information Management System] enable recording and monitoring of all aspects of safety issues, including setting of alerts to prompt checking of progress on safety action in circumstances such as when a safety action is on 'Monitor'.

As noted above, once an organisation has taken safety action (whether pro-active after communication of the safety issue by the ATSB or as a result of a recommendation), the ATSB conducts another risk assessment to determine if the level of risk has reduced to an acceptable level. If it has, then no further action is taken. However, if the level of risk remains at the significant level, the ATSB will consider whether there is a realistic prospect of reducing the risk further and if necessary pursue further safety action.¹⁵

9.13 Mr McCormick spoke about CASA's process to track formal ATSB recommendations:

With the tracking of legal outcomes, coroners' recommendations and ATSB recommendations, we are scrupulous about that, and we have the numbers and we can tell you exactly why we have done it. Sometimes we do not implement some recommendations, for various reasons. Sometimes it is overtaken by time, because it is already regulated in that area. Sometime[s] it is just out and out impracticable and not possible, particularly some of the motherhood type statements we occasionally see. But the legal division tracks all of those recommendations, we know the status of every one and we take them very seriously. Whether this was done in the past—and I will go back numerous years, I suppose—I agree with you that that is a question for others. But I can guarantee you we certainly do now.¹⁶

9.14 However, it appears this process was only put in place since 2009¹⁷ and the committee is unclear whether CASA also tracks safety issues.

Committee view

9.15 The committee notes the ATSB's view regarding the overuse of safety recommendations and its policy to use them as a last resort. The committee has concerns with this approach given the lack of ability to rigorously and transparently track actions taken in response to safety issues which are the ATSB's preference to issuing recommendations.

9.16 As an example, with some issues such as those around the safety of lifejackets, ATSB documentation indicated an assumption that the regulator would act so no recommendation was made¹⁸ but no safety issue was identified either. If the

15 ATSB, *Submission 2*, p. 28.

16 Mr John McCormick, *Committee Hansard*, 15 February 2013, p. 21.

17 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 45.

18 Senator David Fawcett, *Committee Hansard*, 15 February 2013, p. 21; *Confidential document*.

ATSB are not making public recommendations, the committee is concerned whether every safety issue is being appropriately documented so that there is a formalised way of tracking identified safety issues that may or may not be passed on to CASA or others. The committee is concerned that there are potentially safety issues being missed or overlooked by the lack of a structured transfer of such information.

9.17 From the evidence received, the committee believes that the formal process used to track recommendations better supports transparency and accountability to assure Parliament and the public that issues of aviation safety are being or have been addressed. This is clearly demonstrated by the fact that it is possible to follow regulatory recommendations made by the ATSB to CASA over 10 years ago that have not been implemented and affected this flight. These are discussed below. The committee wants to assure itself, the Parliament and the travelling public that safety issues/recommendations are appropriately captured and that safety actions can be tracked transparently.

Recommendation 17

9.18 The committee recommends that the ATSB prepare and release publicly a list of all its identified safety issues and the actions which are being taken or have been taken to address them. The ATSB should indicate its progress in monitoring the actions every 6 months and report every 12 months to Parliament.

Safety issues only relevant to specific operators

9.19 Another criticism of the ATSB's approach was that safety actions would only be relevant to a specific operator when the lessons should provide a learning opportunity for the industry as a whole. Mr Mick Quinn highlighted this issue:

The Norfolk Report not only had significant omissions in factual information and analysis, it also contains no recommendations. Instead, the ATSB rely on Safety Actions that have been taken by relevant bodies involved. Part of the reason this takes place is that often by the time a report is released, the industry has made fixes and moved on. I challenge this approach as the Safety Actions are only relevant to a specific operator, in this case Pel-Air. The lessons from Safety Recommendations are relevant to the entire industry and not just the operator in question. Therefore the safety system is improved for the travelling public.¹⁹

9.20 The Pilot-in-Command also voiced his concern that only Pel-Air has changed its operating procedures:

I know Pel-Air has modified their procedures. However, they no longer undertake aeromedical operations, but for all those operators out there that operate in a similar capacity to Pel-Air or operate in an environment that resembles the one that I operated under, none of those operators have been compelled to make changes, and no outcomes have been distributed into the

19 Mr Mick Quinn, *Submission 11*, p. 13.

industry that reflect what has been learnt from the accident. So as for the generic issues that affected me on the night, nothing has been changed.²⁰

Significant delays implementing ATSB recommendations

9.21 A broader issue appears to be that even when recommendations are made, there is no effective closed loop system to track recommendations to ensure they are addressed in a timely fashion. AIPA highlighted concern when CASA does not act in a timely manner or not at all:

AIPA presumes that, if and when the ATSB fails to adequately ‘influence’ CASA to do something that it undertook to do, the matter would be resolved by the Secretary of the Department of Infrastructure and Transport (DIT) in the first instance and eventually by the Minister. Ultimately, given the constant tensions of priorities and resources, the resolution of the issue will be driven only by the politics of the inaction, i.e. as a function of the length and strength of public attention.²¹

9.22 The committee found two regulatory areas, directly relevant to the Westwind flight, where recommendations by the ATSB had been made and over a decade later the issues remained. These two areas are:

- upgrading aeromedical flights from 'aerial work' to 'charter' in order to afford passengers greater protection (recommended by the ATSB in September 2001). CASA has not implemented this change; and
- to be more prescriptive about fuel requirements for remote islands (recommended by the ATSB in February 2000). This was implemented by Pel-Air following the accident and the CASA Special Audit and CASA has undertaken to again look at the issue.

Categorisation of aeromedical flights

9.23 The committee heard that aeromedical evacuations involve many unknowns, variability and a dynamic environment. Such operations:

- are done on the run;
- are reactive to requests such as EMS (emergency medical service) work;
- have crews going into unfamiliar areas and facilities may be basic;
- can involve limited airports in the area;
- have unplanned and unexpected things happen such as no suitable lighting and deterioration of patients.²²

9.24 Given these factors, the committee was surprised to hear the classification of such flights has a long history. The activity was classified as Aerial Work which includes operations such as agricultural spraying. It has lower safety requirements

20 Mr Dominic James, *Committee Hansard*, 22 October 2012, p. 7.

21 AIPA, *Submission 8*, p. 28.

22 Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 11.

than passenger carrying operations. Given the high risk involved in aeromedical flights, the committee was surprised to hear that the reclassification of such operations has been an issue for over 10 years.

9.25 Mr Aherne drew attention to the ATSB recommendation issued 7 September 2001 to CASA regarding improving protections for non-fare paying passengers in aerial work activities.²³ In 2002 CASA advised consultation would take place in 2003. On 2 February 2009, CASA's response,²⁴ indicated the proposed amendment to CAR 206 was 'problematic'. However, under the new Civil Aviation Safety Regulations (CASR) corporate operations will be classified as Aerial work and will be regulated under CASR Part 132. The carriage of patients and other personnel (other than air transport operations) will be regarded as Aerial Work under subpart of Part 136 to be titled Emergency and Medical Services Operations.²⁵ The recommendation was listed as closed – partially accepted.²⁶

9.26 Mr McCormick told the committee that nearly 12 years since the recommendation was issued, such flights are still classified as aerial work under CAR 206.²⁷ CASA indicated that it is currently consulting with relevant stakeholders with a view to the reclassification of aerial ambulance operations as passenger transport operations once the new operational regulation suite is enacted.²⁸ Mr McCormick informed the committee the work in this area continues:

There are significant issues around charter and aerial work. My personal view is that there should be no difference between aerial work and charter when it comes to these matters. Public transport will disappear under its current guise in the new ops regulations.²⁹

-
- 23 Mr Bryan Aherne, *Submission 10*, p. 4. Information available from: www.atsb.com.au/publications/recommendations/2001/r20010195.aspx (accessed 13 March 2013). The recommendation asked CASA to consider proposing an increase in the operations' classification, and/or the minimum safety standards required, for organisations that transport their own employees and similar personnel (for example contractors, personnel from related organisations, or prisoners, but not fare-paying passengers) on a regular basis.
- 24 Information available from: www.atsb.com.au/publications/recommendations/2001/r20010195.aspx (accessed 13 March 2013).
- 25 It is proposed that 'Emergency Services Flights' will cover aerial fire-fighting, law enforcement and search and rescue operations, while 'Medical Services Flights' will cover air ambulance flights, health services flights, and emergency medical services flights. See www.atsb.com.au/publications/recommendations/2001/r20010195.aspx (accessed 13 March 2013)
- 26 Information available from: www.atsb.com.au/publications/recommendations/2001/r20010195.aspx (accessed 13 March 2013).
- 27 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 44.
- 28 CASA *Supplementary submission*, October 2012, p. 7.
- 29 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 46.

9.27 Mr Aherne highlighted that it is over 10 years since the ATSB recommendation was made and change is still some time away. He argued that if the operator had had to comply with the flight as a charter flight, it could not have been conducted in a Westwind as it is not capable of uplifting enough fuel to hold an alternate for Norfolk Island on a flight from Samoa.³⁰

9.28 He also highlighted that passengers on an aeromedical flight do not have the choice of whether they go on an aircraft or not and most of the time they are not in a fit state to make that choice. Medivac passengers assume they are being provided with high safety standards.³¹ CASA informed the committee that following the accident, it audited all aeromedical operators and confirmed that operations manuals were appropriate for these flights.³²

9.29 Mr Quinn advised the committee that he was involved in trying to address the categorisation issue in 2009. A policy was developed by the former CEO of CASA and others including Mr Quinn. The policy paper recognised that:

...in air ambulance flights there are crew, there are task specialists, there are participants and there are passengers, and therefore they should be treated exactly the same whether they are charter or RPT [Regular Public Transport], even. The plan of this policy was to take this type of operation out of the air work category, recognizing that there were participants on board. Unfortunately that policy...never saw the light of day, and we are still in a situation now where this has not been addressed.³³

9.30 The Royal Flying Doctor Service highlighted the operational environment and conditions that need to be taken into consideration for providing aeromedical operations to remote, rural and regional Australia.³⁴ AIPA expressed the view that the investigation was a missed opportunity to examine the appropriateness (as distinct from legal availability) of the aerial work classification for sophisticated air ambulance operations and the operational decision to use a lower standard.³⁵

9.31 Pel-Air supported the change to bring passenger carrying aerial work operations in line with regular public transport operations to remote islands, including the requirement to carry an alternate.³⁶

30 Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 9; and Mr Bryan Aherne, *Submission 10*, p. 7.

31 Mr Bryan Aherne, *Committee Hansard*, 22 October 2012, p. 9; and Mr Gary Currall, *Submission 9*, p. 2.

32 See also CASA, *Supplementary submission*, p. 17.

33 Mr Mick Quinn, *Committee Hansard*, 22 October 2012, p. 19.

34 RFDS, *Submission 20*, p. 1.

35 AIPA, *Submission 8*, p. 11.

36 Pel-Air, *Submission 7*, p. 4.

Fuel requirements for remote islands

9.32 In February 2000, the ATSB made a recommendation for circumstances similar to the Westwind flight, noting the difficulty in forecasting the weather at Norfolk Island. The ATSB recommended that BoM review the methods and resources for forecasting at Norfolk Island to make them more reliable.³⁷ The recommendation was recorded as 'Closed – Accepted'³⁸ and this appears to be on the basis that BoM is 'actively participating in the review of fuel requirements for flights to remote islands being undertaken by CASA'.³⁹ The issue about forecasting weather is discussed further below but the committee asked Mr McCormick about the status of this review of fuel requirements. Mr McCormick explained that CASA has reviewed the fuel requirements for remote islands but not Norfolk Island.⁴⁰ Subsequently, CASA advised that the:

...review of fuel requirements for flights to remote islands referred to a CASA review for flights to remote islands which resulted in an amendment to Civil Aviation Order (CAO) 82.0...Regular Public Transport operations were not included in the amendment to CAO 82.0 as it was already a condition on an RPT [Regular Public Transport] Air Operator's certificate (AOC) that CASA approved both the route over which an RPT was flown and the fuel policy of the operator. Thus for RPT operations, CASA already had in place a means to regulate the carriage of adequate fuel...CASA initiated a project (OS 09/13) in 2009 to address ATSB concerns that fuel quantity issues were becoming problematic. That project remains in place and CASA agreed action in the Pel Air accident report is to review in part the fuel and alternate requirements for operations to remote islands.⁴¹

9.33 The committee notes that as a result of the CASA Special Audit, Pel-Air's fuel policy was revised to require an alternate for Norfolk Island. This appears to be a lesson that would be relevant to the broader aviation industry.

Committee view

9.34 Both of these unaddressed recommendations point to a regulatory issue and it was put to the committee that if either of these had been addressed 10 years ago when recommended, then this accident probably would not have happened. The committee is therefore puzzled as to why these broader regulatory issues are not mentioned in the

37 Information available from:
www.atsb.gov.au/publications/recommendations/2000/r20000040.aspx
(accessed 25 January 2013)

38 Information available from:
www.atsb.gov.au/publications/recommendations/2000/r20000040.aspx
(accessed 25 January 2013)

39 Information available from:
www.atsb.gov.au/publications/recommendations/2000/r20000040.aspx
(accessed 25 January 2013)

40 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 46.

41 CASA, Answers to questions taken on notice from 22 October 2012 hearing, number 4.

report. It also highlights the need for a more robust and proactive system to implement and track recommendations and to ensure recommendations translate into action in a timely manner.

9.35 To illustrate the danger of this process, the committee notes that AIPA pointed out that it appears that none of the safety actions attributed to CASA have yet been completed. While it may be a function of the regulatory review program, it is not apparent what other defences have been put in place. AIPA pointed out that as things stand it is not clear from an industry compliance perspective if any safety improvement has been achieved.⁴²

9.36 As noted above the ATSB has no enforcement powers so the extent to which ATSB investigations enhance aviation safety is limited by the extent to which any safety recommendations made are actioned. Therefore there is a need for a closed loop feedback system to ensure they are all implemented in a timely manner.

9.37 The committee notes the mechanism contained in Section 25A of the TSI Act which is supposed to ensure that ATSB recommendations are responded to in a timely manner. That section requires a person, association or agency to provide a written response to recommendations within 90 days of the report being published. The response is then published on the ATSB website.⁴³ While the front end of the process to receive an initial response to a recommendation appears to be covered, this does not include a robust tracking and follow up process.

9.38 The MoU notes that where consideration and implementation of a recommendation may be protracted, CASA will inform the ATSB of progress at regular intervals.⁴⁴ The ATSB received its initial response from CASA on 4 February 2002, an update on 14 November 2002 and then nothing until 2 February 2009 which resulted in the ATSB assessment of closed – partially accepted.⁴⁵ The committee notes that where the response relegates action to some time in the future, then years could pass before any timely action is taken. This is evidenced by the recommendations which lingered for over 10 years and affected this flight. This timeframe is unacceptable.

9.39 The committee accepts the need for versatility to ensure immediate action is taken, for example, in cases where safety is threatened. However, the issue and the action taken should still be transparent. The committee believes that in order to ensure appropriate tracking, if a safety action is not closed before a report is issued then a recommendation should be issued. Even where a safety action has been completed, a report should indicate what the action was, who was involved and how it was resolved.

42 AIPA, *Submission 8*, p. 16. See also Mr Dominic James, *Committee Hansard*, 22 October 2012, p. 1.

43 TSI Act, Section 25A.

44 MoU, paragraph 5.3.5, p. 9.

45 See www.atsb.com.au/publications/recommendations/2001/r20010195.aspx (accessed 15 April 2013).

Recommendation 18

9.40 The committee recommends that where a safety action has not been completed before a report being issued that a recommendation should be made. If it has been completed the report should include details of the action, who was involved and how it was resolved.

9.41 To ensure actions are addressed in a timely manner the government should consider setting a time limit to implement or reject recommendations, beyond which ministerial oversight is required where the agencies concerned must report to the minister why the recommendation has not been implemented or that, with ministerial approval, it has been formally rejected.

Recommendation 19

9.42 The committee recommends that the ATSB review its process to track the implementation of recommendations or safety actions to ensure it is an effective closed loop system. This should be made public, and provided to the Senate Regional and Rural Affairs and Transport Committee prior to each Budget Estimates.

9.43 The committee considers that the ATSB should institute processes to ensure that there is greater visibility of recommendations that are rejected or remain unactioned for long periods of time.

Recommendation 20

9.44 The committee recommends that where the consideration and implementation of an ATSB recommendation may be protracted, the requirement for regular updates (for example 6 monthly) should be included in the TSI Act.

Recommendation 21

9.45 The committee recommends that the government consider setting a time limit for agencies to implement or reject recommendations, beyond which ministerial oversight is required where the agencies concerned must report to the minister why the recommendation has not been implemented or that, with ministerial approval, it has been formally rejected.

9.46 The committee considers that these new processes should be applied to the closure and acceptance of the recommendations regarding the classification of aeromedical flights and the ability to accurately forecast the weather at Norfolk Island.

Areas where recommendations are necessary to ensure actions are taken

9.47 The committee is also concerned about several areas which are discussed below where it believes the evidence has demonstrated that recommendations (or at the very least the identification of a safety issue) should have been issued to ensure appropriate action was taken to address issues that affected the flight and the outcome.

Passing on relevant weather

9.48 Evidence provided to the committee revealed problems obtaining the most up-to-date and correct weather information on which to base in-flight decisions.

9.49 As background, the ATSB advised that in the interests of efficient management of large areas of contiguous airspace, international agreements have decided which ATC provides air traffic services in blocks of airspace.⁴⁶ Norfolk Island is an Australian territory but the airspace over it is not. Like Christmas Island, the airspace is operated by another jurisdiction. In the case of Norfolk Island it is within the New Zealand flight information region (FIR) which is managed by the Airways Corporation of New Zealand on behalf of the New Zealand Government.⁴⁷ However, the flight in question from Samoa passed through airspace managed by New Zealand⁴⁸ and by Fiji.⁴⁹

Critical weather information not passed on

9.50 The committee received evidence that critical weather information was not passed on to Capt. James at a point where, had he comprehended the deteriorating conditions at Norfolk Island, he could have decided to divert. At 803 an amended forecast (TAF) was issued by BoM but was not provided to Capt. James by Fijian or New Zealand ATC as there was no requirement to do so. The ATSB report indicates this fact and then focuses on the fact that the crew did not ask for any updated forecasts.⁵⁰

9.51 The SPECIs issued after the 0800 SPECI and until arrival at Norfolk Island show the cloud was periodically below the landing minima and that rain was falling.⁵¹ Witnesses were concerned that the ATSB made no comment on the duty of the Air Traffic Service (ATS) to warn of known hazardous conditions.

9.52 Pel-Air submitted that the cause of the ditching was the change of weather en route and that timely notification of the change in the weather would have averted the accident. It called for a review of the role of the ATC to see whether any systemic improvements in this regard could be made.⁵²

46 Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 8.

47 Airservices Australia, *Submission 17*, p. 2.

48 Mr Peter Hobson, Airservices Australia, *Committee Hansard*, 19 November 2012, p 1. See also Airservices Australia, *Submission 16*, p. 1.

49 ATSB Report, pp 5–6. See also Airservices Australia, *Submission 17*, p. 2.

50 ATSB Report, p. 16. The ATSB was unclear whether this was not required by ICAO, the AIP or the Pacific Agreement. The committee asked the ATSB for a copy of the Pacific Agreement to which it replied that it did not have a copy and did not seek one. The committee therefore does not know on what evidence the ATSB claims there was no requirement to pass on the information.

51 ATSB Report, p. 57.

52 Pel-Air, *Submission 7*, p. 2.

Usual arrangements when weather conditions deteriorate en route

9.53 Airservices Australia advised that in Australia when it receives information that differs from the forecast such as a hazardous weather event (or SPECI), there is a hazard alert service where the change in circumstances is proactively notified to all aircraft en route to that destination.⁵³ Mr Jason Harfield, Executive General Manager, Air Traffic Control, Airservices Australia explained what would occur:

What we would do, for example, if an aircraft which had a terminal area forecast for Sydney was flying between Melbourne and Sydney and the weather conditions rapidly changed is issue a hazard alert and notify all aircraft going to that destination of the change in circumstances.⁵⁴

Arrangements for flights to Norfolk Island

9.54 In the case of the deteriorating weather conditions on Norfolk Island, these were not proactively conveyed to the pilot by Fijian Air Traffic Control (ATC) whose airspace the aircraft was in when the updated weather information became available. The information was not passed on either by New Zealand ATC which manages the airspace over Norfolk Island.⁵⁵ As indicated, the ATSB report only notes that it was not required to be passed on.⁵⁶

9.55 Mr Harfield admitted that given what occurred 'that weather information was critical in the sense that if that bit of information was seen, the outcome may have been different...Here was a piece of information that should have been passed to the aircraft which could have prevented this outcome.'⁵⁷

9.56 Surprisingly, when the committee asked whether it had contacted Fijian ATC or New Zealand ATC to discuss this issue, Airservices Australia confirmed that three years on from the incident it had not.⁵⁸ When asked why it had not, Airservices stated that it was not aware of the information contained in the ATSB report until it was published in August 2012.⁵⁹ It was stressed by Airservices Australia that it relies on ATSB reports to provide information about how the system is working and lessons to be learned.⁶⁰

9.57 Documentation provided to the committee by the ATSB indicated that Airservices Australia was not included in the DIP process. The committee asked

53 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 2.

54 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 2.

55 Witnesses were not clear on exactly who should have passed on the information which is concerning in itself but the point is there is no requirement to do so which needs to be addressed by those managing the airspace.

56 ATSB Report, p. 16.

57 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 4.

58 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 5.

59 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 5.

60 Mr Harfield, *Committee Hansard*, 19 November 2012, pp 2–3.

Airservices Australia to check if ATSB had conveyed any information to it during the course of its investigation. It responded that it only received a copy of the final preliminary⁶¹ and final⁶² reports as part of normal processes.⁶³

9.58 Airservices Australia described its normal process to address recommendations or safety factors raised in ATSB reports. The issue is entered into its safety action incident reporting tracking, and responsibility for addressing it is assigned to the relevant area. Airservices Australia also indicated that it conducts its own investigation and if it identified the need for a regulation to change it would make a recommendation to CASA.⁶⁴ However, as this incident occurred in a foreign jurisdiction it would not normally conduct its own investigation and would therefore be heavily reliant on the ATSB report.⁶⁵

9.59 Ms Margaret Staib, Chief Executive Officer, Airservices Australia, admitted there 'is room for improvement in managing the cross-boundary areas of the different jurisdictions, because inevitably it is very difficult to see the line drawn on a map in the air'.⁶⁶ Airservices Australia stressed that although it can speak about these issues with its ATC counterparts, this issue is a matter for the Civil Aviation Authority of New Zealand.⁶⁷

9.60 When asked directly whether there would now be communication with Fiji and New Zealand to ensure that critical safety information is conveyed to pilots en route, Ms Staib replied that it will happen. She added that the first opportunity to discuss the issue would be at the Pacific Forum to be held before the end of 2012.⁶⁸ However, Airservices Australia admitted in that as at 19 November 2012, it had not seen the agenda but it would ensure it is raised in the forum by being placed on the agenda.⁶⁹ In subsequent information, Airservices Australia clarified that the South West Pacific Safety Forum actually met on 8–9 November 2012 and its next meeting is not scheduled until May 2013.⁷⁰ Airservices Australia admitted that the issues were not discussed during the November meeting but will be raised in May 2013.⁷¹

61 Advance copy of finalised Preliminary Report provided three weeks before publication.

62 A copy of the final report was provided upon publication.

63 Airservices Australia, answers to questions taken on notice from 19 November hearing, number 2; Mr Harfield, *Committee Hansard*, 19 November 2012, p. 4.

64 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 10.

65 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 11.

66 Ms Margaret Staib, *Committee Hansard*, 19 November 2012, p. 5.

67 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 3.

68 Ms Margaret Staib, *Committee Hansard*, 19 November 2012, p. 6.

69 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 8.

70 Airservices Australia, Answers to questions taken on notice at 19 November 2012 hearing, number 5.

71 Airservices Australia, Answers to questions taken on notice at 19 November 2012 hearing, number 6.

9.61 It was also pointed out by Mr Aherne that if there is no requirement to pass on hazardous weather conditions, this contradicts the ICAO Annex 11 Air Traffic Services Standards.⁷²

View of ATSB

9.62 When this issue was discussed with the ATSB, Mr Dolan stressed that he sees a broader issue which is the en route support provided to flight crews in terms of assessing their situation, getting access to weather and other related information. Mr Dolan stressed the provisions of the AIP which states that principal responsibility is with the pilot to acquire weather-related information, including forecasts.⁷³ Confusingly, Mr Dolan then stated 'there is some provision for air traffic services to proactively draw attention to the existence of an updated forecast, normally in the case where aircraft are within an hour of their intended destination'.⁷⁴

9.63 Mr Dolan concluded that in the view of the ATSB, it did not see anything that needed to be done to enhance the system.⁷⁵

Committee view

9.64 The committee finds this response by the ATSB disturbing. The ATSB processes appear to deliberately preclude suggestions that another agency could have taken action that may potentially save another flight from repeating this accident.

9.65 To the committee this emphasis on the pilot seeking updates seems designed to avoid the rather obvious issue of whether the more proactive provision of information to pilots flying into hazardous conditions could provide an additional barrier to this incident occurring again. Stressing it is principally the pilot's responsibility, particularly as the proactive provision of information about deteriorating weather is a recognised issue which is addressed in Australia, understates the role of other barriers and ignores whether flight crews can be better supported by available services.

9.66 The committee is of the view that the provision of deteriorating and hazardous conditions would have been of assistance to the flight crew and could have changed the outcome. Australia should take steps to ensure that in future, relevant information is provided across jurisdictional borders to avoid a recurrence of this situation.

9.67 TAFs are issued at routine intervals. If an amended TAF (issued on an ad hoc basis) is not brought to a crew's attention how do they know to ask for it? The committee accepts the need for crews to proactively seek their own information at particular points in their flight and is not suggesting the responsibility for this be abrogated. But surely under such circumstances where a TAF is amended and it

72 Mr Bryan Aherne, *Supplementary submission 2*, 8 February 2013, pp 4–5.

73 Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 8.

74 Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 8.

75 Mr Martin Dolan, *Committee Hansard*, 22 October 2023, p. 57.

fundamentally affects the safety of an aircraft in flight, extra assistance in the form of proactive provision of relevant information would be welcome and should be required.

9.68 The committee finds it worrying that this issue was not raised in the ATSB report as needing to be addressed and to date the committee has received no satisfactory explanation from the ATSB.

9.69 The submission from Airservices Australia following its appearance and answers to questions taken on notice do nothing to assure the committee that the issue is being proactively addressed. Waiting until May 2013 is nine months after the publication of the ATSB report and six months after it was raised with Airservices Australia at the 19 November 2012 hearing. As Airservices Australia informed the committee that it would speak with its counterparts, the committee is disconcerted that progress cannot be achieved more quickly. The committee's concern centres around this situation occurring again and Australia having done nothing to proactively address it.

9.70 The committee accepts that Airservices Australia was not part of the DIP process so the first it would have been aware of this issue would have been when the final ATSB report was issued at the end of August 2012. The committee also concedes it is by no means clear from the ATSB report that anyone needed to take action to address this issue. However, there appears to have been some level of awareness of the issue in Airservices Australia following publication of the final report which was not acted on until it was raised with Airservices Australia by the committee. The committee is concerned that had the inquiry not occurred, current processes mean this issue would never have been highlighted or addressed. Even now the committee has not received any assurance that it is being addressed in a timely manner.

9.71 The committee received conflicting information about whether the requirement to pass on hazardous weather information exists. Given the lack of clarity on this issue there appears to be two, equally concerning possibilities. One is that the requirement to pass on this deteriorating weather information does not exist. The committee is of the view that it should. From the evidence, the committee remains unclear whose responsibility it would have been to pass on the information but it is clear that Airservices Australia needs to address this with Fijian and New Zealand counterparts to ensure that in future such information is proactively provided.

9.72 The second scenario contemplated by the committee, is that the requirement does exist but that it did not occur for some reason. Clearly that would also need to be addressed. The committee heard there is a duty to provide and initiate provision of known hazards. Section 172.93 of the New Zealand AIP was also pointed out to the committee which appears to indicate the requirement to pass on information.⁷⁶

9.73 The committee also notes information in the CASA Special Audit report which may indicate another possibility that would need to be investigated: 'It is reported that Nadi weather updates are extremely difficult to obtain as Nadi ATC only

76 *Confidential submission.*

communicate to the RVSM aircraft'.⁷⁷ If this is the case other, aviation operators should be made aware so they can inform crew. The committee notes that this information also does not appear to gel with the view of the ATSB that (non-RVSM) aeromedical flights are allowed to operate in RVSM airspace.⁷⁸

9.74 Airservices Australia, although not directly responsible for the provision of ATS to the crew, has not proactively tried to address or communicate to the flight crew the different ATS standards that exist in different Flight Information Regions.⁷⁹

9.75 The committee recommends that in order to put in place a barrier to such an event occurring again, Airservices Australia needs to firstly clarify FIS delivery responsibility for Norfolk Island and whether the requirement to pass on non-routine weather information exists, and if it does, where that is stated, whose responsibility it is and why it did not occur on the night in question.

9.76 If the requirement to pass on the information does not exist, Airservices Australia should discuss this practice being adopted by New Zealand and Fijian counterparts. The possibility that non-RVSM aircraft are being treated differently should also be explored.

Recommendation 22

9.77 The committee recommends that Airservices Australia discuss the safety case for providing a hazard alert service with Fijian and New Zealand ATC (and any other relevant jurisdictions) and encourage them to adopt this practice.

Another lost opportunity to pass on information

9.78 At 0833 there was a conversation between the Unicom⁸⁰ at Norfolk Island and Auckland ATC where the Unicom stated that conditions on Norfolk Island were deteriorating and asked what time the aircraft was arriving. Auckland ATC replied the pilot was running a bit late but did not pass the weather information to the pilot.⁸¹ Mr Mick Quinn noted that had the Unicom operator been approved as a meteorological observer he could have contacted the pilot directly instead of having to contact New Zealand ATC. Mr Quinn highlighted that at that time the flight crew could have easily diverted to Nadi.⁸²

77 CASA Special Audit, p. 14.

78 Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 16. See also ATSB, Answers to questions taken on notice from 21 November 2012 hearing, number 4.

79 *Confidential submission*.

80 Universal communications services are non-ATS radio communications services provided on an MBZ frequency or CTAF to enhance the value of information normally available about a non-controlled aerodrome....General aerodrome weather reports provided by a Unicom operator are to be limited to simple, factual statements about the weather, unless the Unicom operator is authorised by CASA to make meteorological observations. See CASA Manual of Standards, Part 139, section 14.4.

81 Mr Bryan Aherne, *Submission 10*, p. 35.

82 Mr Mick Quinn, *Submission 11*, p. 17. See also Mr Bryan Aherne, *Submission 10*, p. 35.

9.79 The committee explored with BoM whether the operator should communicate directly with the pilot. BoM did not see value in its weather observer broadcasting directly to the aircraft. BoM informed the committee that the automatic weather station has an Aerodrome Weather Information Service (AWIS).⁸³

9.80 It was later clarified that at Norfolk Island there is no Automated Weather Information Service (AWIS) radio broadcast. Weather information is broadcast to aircraft by the airport Unicom operator.⁸⁴ It was also clarified that the information can only be accessed by satellite phone⁸⁵ which Capt. James did not have. The Unicom operator at Norfolk Island is not an approved observer recognised by CASA or BoM. The committee heard that in order for this to occur there would be about two weeks' dedicated observer training. Authorisation would be valid for two to three years.⁸⁶

9.81 Mr Quinn noted that BoM, ASA and CASA have ceased training the Unicom officers as approved meteorological observers and argued that Norfolk Island represents no better case for maintaining trained meteorological observers Unicom officers.⁸⁷ Had the Unicom operator been approved as a meteorological observer he could have contacted the aircraft directly at 0833 instead of advising Auckland of the deteriorating conditions.⁸⁸

Committee view

9.82 The committee notes that the pilot did not have a satellite phone to hear the broadcast weather observations from the AWS, a situation which has now been remedied by the operator. The committee believes this action would constitute a useful learning for the industry and should have been included in the report.

9.83 This was another lost opportunity to alert the pilot to the deteriorating conditions and again the information was not passed on which reinforces the need to address this issue as discussed above.

9.84 The committee understands that CAR 120 states that a pilot may not use meteorological reports or forecasts provided by a person who has not been authorised by BoM or approved by CASA.⁸⁹ CASA informed the committee that it has not received any application from the Unicom operators for approval to provide meteorological reports.⁹⁰ In the committee's view CASA must be aware that this

83 Mr Jackson and Mr Hainsworth, *Committee Hansard*, 19 November 2012, p. 18.

84 BoM, Answers to questions on notice, received 3 May 2013.

85 Mr Hainsworth, *Committee Hansard*, 19 November 2012, p. 18, 21. See also Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 9.

86 Mr Gordon Jackson, Head, Aviation and Defence Weather Services, BoM, *Committee Hansard*, 19 November 2012, p. 18. Note: new procedures and validity period are being finalised.

87 Mr Mick Quinn, *Submission 11*, pp. 6–8.

88 Mr Mick Quinn, *Submission 11*, p. 17.

89 CAR 120.

90 CASA, *Supplementary submission*.

limitation could pose a risk to operators given the difficulties with accurate forecasting at Norfolk Island but took no action to mitigate or communicate the risk to industry. The difficulties with forecasting at Norfolk Island are well known and discussed further below.

9.85 While appreciating the need for pilots to check weather conditions, Capt. James clearly was not well supported by the system to achieve a better or more timely understanding of the deteriorating weather conditions. He was given incorrect weather details; he did not hear all or did not assimilate the information contained in the 0800 SPECI and hazardous conditions were not proactively passed on. The system failures left the retrieval and appreciation of the weather conditions entirely with the pilot and again he became the last line of defence. In addition, the difficulty in forecasting weather conditions at Norfolk Island also played a role as discussed below.

Known difficulties in forecasting weather on Norfolk Island

9.86 Norfolk Island is clearly a difficult location for forecasting weather. For example it is prone to the incidence of low cloud, and has a history of problems associated with the accuracy in weather forecasting.⁹¹ The committee heard from the BoM that about 10 per cent of the time the cloud will be below the alternate minima for that airport. On the night in question the cloud base was around 200 feet which is a rare event with the likelihood of encountering this at less than one per cent.⁹² The BoM submission noted that the probability of encountering unforecast adverse weather conditions is 2.7 per cent (for cloud base) and 1.3 per cent for visibility.⁹³

9.87 The ATSB also emphasised that the sequence of events leading to the accident could only have occurred in a very narrow range of circumstances:

Namely, where a flight is aerial work or other general aviation and the weather on arrival at destination has deteriorated significantly from that forecast on departure.⁹⁴

9.88 The rarity of the event should not be a reason not to review processes to see whether further protections can be put in place. Incidents similar to the accident flight were recognised in an ATSB report 13 years ago.

Previous ATSB recommendation regarding weather forecasting at Norfolk Island

9.89 This difficulty in forecasting the weather at Norfolk Island was recognised in the recommendations from an ATSB report 13 years ago on 22 February 2000.⁹⁵ The safety deficiency identified was that:

91 AIPA, *Submission 8*, p. 14.

92 Mr Barry Hanstrum, Regional Director NSW/ACT, Bureau of Meteorology, *Committee Hansard*, 19 November 2012, p. 15.

93 BoM, *Submission 14*, p. 2.

94 Mr Martin Dolan, *Committee Hansard*, 21 November 2012, p. 6.

95 Mr Mick Quinn, *Submission 11*, p. 13.

The meteorological forecasts for Norfolk Island are not sufficiently reliable on some occasions to prevent pilots having to carry out unplanned diversions or holding.⁹⁶

9.90 That ATSB report highlighted:

A pilot flying an aircraft that arrives at a destination **without alternate or holding fuel and then finds that the weather is below landing and alternate minima is potentially in a hazardous situation**. The options available are:

- to hold until the weather improves; however, the fuel may be exhausted before the conditions improve sufficiently to enable a safe landing to be made;
- to **ditch** or force-land the aircraft away from the aerodrome in a area of improved weather conditions, if one exists; or
- attempt to land in poor weather conditions.

All of these options have an unacceptable level of risk for public transport operations.⁹⁷

9.91 The recommendation stated:

The Australian Transport Safety Bureau (formerly the Bureau of Air Safety Investigation) recommends that the Bureau of Meteorology should review the methods used and resources allocated to forecasting at Norfolk Island with a view to making the forecasts more reliable.⁹⁸

9.92 The ATSB recommendation appears to deal with the same issues encountered by the Westwind flight crew and lists a number of examples where aircraft departed with good weather forecasts, reached points where they were committed to continue to Norfolk and discovered the weather was very different from the forecast.

Norfolk Island weather assets

9.93 BoM has a station at Norfolk Island where it has an automatic weather station (AWS) that has a ceilometer⁹⁹ and a visibility meter.¹⁰⁰ Observations are transmitted

96 Information available from:
www.atsb.gov.au/publications/recommendations/2000/r20000040.aspx
(accessed 25 January 2013).

97 Information available from:
www.atsb.gov.au/publications/recommendations/2000/r20000040.aspx
(accessed 25 January 2013). Emphasis added.

98 Recommendation R20000040. Information available from:
www.atsb.gov.au/publications/recommendations/2000/r20000040.aspx
(accessed 25 January 2013).

99 Measures the cloud base.

100 BoM, *Submission 14*, p. 3; Note: Range of the radar, if heavy rain, would be in the order of 150 to 200 km in a radius around the island, Mr Hanstrum, Regional Director NSW/ACT, Bureau of Meteorology, *Committee Hansard*, 19 November 2012, p. 19.

to the Sydney office, to head office in Melbourne, and then distributed to Airservices Australia and internationally to adjoining FIR through the Australian Aeronautical Fixed Telecommunications Network (AFTN).¹⁰¹ Supplementary input is provided by qualified observers when on duty.¹⁰²

9.94 The committee discussed with BoM what changed as a result of the 2000 ATSB recommendation. BoM advised that a weather radar was installed in 2003. BoM further advised:

Other recommendations related to the way in which weather information was passed to weather forecasters. In 2002, a ceilometer [which measures cloud base] and visibility meter facility was installed on the island, which transmits its information automatically and immediately to forecasters. That facility has largely superseded the need for there to be a call to our forecasting office from the observers, as was the case before that instrumentation was available to the forecasters.¹⁰³

9.95 BoM told the committee that there has been no change to the equipment since 2009. In discussion with the committee, BoM said that perhaps observations from all over the island could improve the forecast slightly but the existing observation station is representative of the conditions and reflects the conditions adequately for forecasting.¹⁰⁴

9.96 The 2000 ATSB recommendation was recorded as 'Closed – Accepted'.¹⁰⁵ This appears to be on the basis that BoM is 'actively participating in the review of fuel requirements for flights to remote islands being undertaken by CASA'.¹⁰⁶ Mr Quinn pointed out that at the time of the accident the fuel requirements for flights to remote islands in aerial work passenger-carrying operations had not changed.¹⁰⁷

9.97 Witnesses questioned the accuracy of BoM forecasts at the time of the flight stating that the 0437 TAF was significantly different to the four SPECIs and METARs issued during the flight. In addition the 0803 amended TAF (not received by the crew and which did not forecast that the weather would deteriorate below the landing minima) did not resemble the subsequent METARs or SPECIs.¹⁰⁸ On this issue the

101 Mr Barry Hanstrum, 19 November 2012, *Committee Hansard*, pp 15–16.

102 BoM, *Submission 14*, p. 3.

103 Mr Hanstrum, *Committee Hansard*, 19 November 2012, p. 19.

104 Mr Hanstrum, *Committee Hansard*, 19 November 2012, p. 20.

105 Information available from:
www.atsb.gov.au/publications/recommendations/2000/r20000040.aspx
(accessed 25 January 2013).

106 Information available from:
www.atsb.gov.au/publications/recommendations/2000/r20000040.aspx
(accessed 25 January 2013).

107 Mr Mick Quinn, *Submission 11*, p. 15.

108 Mr Mick Quinn, *Submission 11*, pp. 6–8.

committee heard that as pilots are not forecasters of weather, they should not be held to a higher standard of accountability than BoM:

According to John McCormick it should have been obvious to the PIC that the weather at Norfolk Island was deteriorating such that at the expected time of landing the weather would have been below the landing minima (preventing a landing from being made) then surely it should have been obvious to the forecasting office. Why did it take them approximately 115 minutes to issue a TAF that reflected that the weather would deteriorate below landing minima? The BoM information dissemination processes should have been examined closely by the ATSB.¹⁰⁹

Ensuring awareness of conditions by crew

9.98 AIPA offered the view that the operator is generally best placed to conduct the research and ensure crews are aware of the peculiarities of weather in specific locations where it is problematic.¹¹⁰

9.99 The committee heard that the disclosure of forecast reliability for all aerodromes may be of value to pilots in attempting to determine a safe fuel load or operators trying to develop a safe fuel policy. The committee was informed that the ATSB should have made recommendations as to how forecast reliability information could be best communicated to operators to allow them to manage any risk that may result from that unreliability.¹¹¹

Committee view

9.100 The committee recognises that it is the responsibility of the pilot to seek weather updates and that, apart from the 0830 update, Capt. James did so. CASA and the ATSB believe it should have been obvious to the flight crew that the weather was deteriorating, but from reviewing the forecasts and reports it seems that even the forecasting office was experiencing difficulty. Between 0800 and 0925, depending on what time an update was requested, conditions were fluctuating between being below the alternate minima, above the alternate minima and below the landing minima. At no time did the forecasts indicate that the conditions would be below the landing minima.¹¹² Clearly weather at Norfolk Island is difficult to forecast even for the professionals.

9.101 The committee notes that the forecast available to the flight crew on departing Samoa reported scattered cloud at 2000 feet and no issues but when they arrived it was overcast with cloud at around 200 feet – complete cloud cover, a radical difference from the forecast.

9.102 The committee notes that the conditions encountered by the flight crew were particularly rare but that the ATSB report from 2000 indicates that encountering

109 *Confidential submission.*

110 AIPA, *Submission 8*, p. 14.

111 *Confidential submission.*

112 ATSB report, pp 57–59.

unforecast adverse weather conditions is not unusual at Norfolk Island. In addition to this higher incidence of encountering unforecast adverse weather conditions, the lack of nearby aerodromes present crews with a very different set of circumstances from most aerodromes in eastern Australia where there are other aerodromes fairly close by. Further, given the ATSB can articulate the narrow range of circumstances that occurred on the night of the ditching, the committee believes this is even more reason to look at the system to see what additional assistance can be provided under those circumstances. The rarity of the occurrence and the fact that 'the existing safety arrangements covered all other cases...' ¹¹³ is of little comfort to those affected and any flight crew which may face those circumstances in the future. One of the roles of the ATSB is to improve transport safety by identifying factors that contribute to occurrences or that might affect future ones.

9.103 Given the known and continuing difficulties with forecasting the weather on Norfolk Island, the committee wants to ensure that all feasible steps to improve weather forecasting have been undertaken and any barriers to passing on relevant weather have been addressed. Aircraft carrying more fuel is one way to attempt to address this issue and the committee notes the changes in the Pel-Air fuel policy and that CASA agreed action to review in part the fuel and alternate requirements for operations to remote islands. However, the committee believes it is timely for the relevant agencies to review whether any equipment or other changes at Norfolk Island would be of assistance in improving weather forecasting. The review should revisit the issue of whether the Unicom operator should be an approved meteorological observer, in part due to their local knowledge.

Recommendation 23

9.104 The committee recommends that the relevant agencies review whether any equipment or other changes can be made to improve the weather forecasting at Norfolk Island. The review would include whether the Unicom operator should be an approved meteorological observer.

9.105 The committee heard that Norfolk Island is prone to incidence of low cloud and considers that for a person who has never experienced it, there may be no information (in training manuals for example) to bring this variability to their attention. The committee heard from BoM that current information on Norfolk Island is in the ICAO standard format and there is no annotation to TAFs or SPECIs to indicate that while the information is valid it could, at Norfolk Island, vary considerably without notice. The committee believes that for those who have not experienced the variability, it would be helpful to have this information available. The committee notes that the fact that it is in the ICAO standard format does not prevent Australia from working with ICAO to change that if that would be the most helpful way of ensuring the information is available.

Recommendation 24

9.106 The committee recommends that the relevant agencies investigate appropriate methods to ensure that information about the incidence of, and variable weather conditions at, Norfolk Island is available to assist flight crews and operators managing risk that may result from unforeseen weather events.

9.107 The committee notes that the key AIP document used by aircrew to understand the airport where they are planning to land is the En Route Supplement Australia (ERSA). The Norfolk Island entry in the ERSA meteorological information section only identifies the existence of the AWIS and TAF CAT A. There is no note or caution that forecasts are unreliable and conditions can change rapidly.¹¹⁴

Recommendation 25

9.108 The committee recommends that the Aeronautical Information Package (AIP) En Route Supplement Australia (ERSA) is updated to reflect the need for caution with regard to Norfolk Island forecasts where the actual conditions can change rapidly and vary from forecasts.

9.109 The committee notes that where relevant the recommendations above relating to Norfolk Island should also be applied to other remote destinations such as Christmas, Cocos and Lord Howe Islands.

Other improvements

9.110 Other improvements that were suggested for Norfolk Island include a Global Navigation Satellite System (GNSS) approach would allow a lower minima, had such an approach been published.¹¹⁵ The committee notes a change made at Norfolk Island since the ditching which was not mentioned to the committee but which may have had an effect on the outcome. Documentation provided under the Order to Produce Documents from CASA indicates that a satellite assisted approach (RNP/RNAV [required navigation performance] approach) was pending approval at the time of the accident. This technology allows a more precise approach and would have allowed the pilot to descend lower than the landing minima available at the time in order to achieve visibility of the runway. It seems the aircraft had the required avionics and the pilot was licensed/certified to fly RNP/RNAV approaches. In the documentation CASA's attention was being drawn to the delay in publishing the new plates and being asked whether the process could be expedited to enhance safety.¹¹⁶ Had this been in place at the time of the accident the outcome may have been different. The committee notes that since the accident, this has been implemented by Airservices Australia for Norfolk Island in June (runway 29) and August 2012 (runway 11).¹¹⁷

114 See AIP, ERSA, Norfolk Island, 7 March 2013.

115 Mr Mick Quinn, *Submission 11*, p.10.

116 *Confidential document*.

117 Mr Mick Quinn, *Submission 11*, p. 10; See AIP, Departure and Approach Procedures (DAP), Aerodrome and Procedure Charts, Norfolk Island.

Conclusion

9.111 The committee wishes to assure itself that organisations contributing to Australian aviation have a proactive culture that seeks every opportunity to enhance air safety. The committee was disappointed that some key organisations that gave public evidence, acknowledged the existence of various problems. However, because it was not their direct responsibility, these organisations had done nothing to bring issues to the attention of those who could take action, and in the absence of this inquiry may never have done so.

9.112 This silo mentality has allowed issues to persist for the three years that the ATSB report took to produce and beyond. This is clearly unacceptable. The committee, and more importantly the travelling public expect that in the interests of enhancing air safety, that an issue will be drawn to the attention of the relevant organisation when it becomes apparent. If it affects the safety of the travelling public, our aviation safety organisations have the responsibility to pursue it with the responsible jurisdictions in a timely manner. In addition, if an organisation becomes aware of an issue which is not within its powers or rules they should proactively draw it to the attention of relevant areas so appropriate actions can be taken.

9.113 The committee was not reassured by the responses from Airservices Australia and found them confusing. Airservices Australia reported 'constantly having those discussions with them [neighbouring air navigation service providers] to try to improve the integrity of the system.'¹¹⁸ Yet Airservices Australia decided to wait until a regular forum instead of proactively bringing the issue to the attention of its counterparts.¹¹⁹ Airservices Australia also assumed that the ATSB report would have been provided to New Zealand and Fiji¹²⁰ and that the New Zealand ATC would be doing its own review. However Airservices Australia admitted that it had not spoken with its counterparts on the issue.¹²¹

9.114 The committee finds it odd for Airservices Australia to assume that New Zealand is conducting its own investigation. If Airservices Australia was unaware of the issue until the ATSB report was published and there was no recommendation or safety action on the issue, then why should New Zealand ATC have more awareness if the issue has not been brought to its attention? The committee certainly hopes this is the case but recognises that hope or assumptions are not valid mechanisms for ensuring such safety issues are addressed.

9.115 The committee is also concerned about the lack of clear processes in the absence of recommendations. If there is no mechanism for a foreign jurisdiction to be aware of the issues then we cannot expect them to act. In addition, even if the committee accepts that Airservices Australia knew nothing about the issue until

118 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 3.

119 Ms Margaret Staib, *Committee Hansard*, 19 November 2012, p. 6.

120 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 8.

121 Mr Harfield, *Committee Hansard*, 19 November 2012, p. 4.

August 2012 when the ATSB report was published, the committee is concerned that no timely communication or action has been taken since that time. The committee has no confidence that without this inquiry this issue would have made it onto the agenda for the next South West Pacific Safety Forum or have been addressed at all.

9.116 Documentation provided to the committee by the ATSB indicates that as part of the DIP process the report was not provided to Airservices Australia but it was provided to the Fijian Civil Aviation Authority and the New Zealand Transport Accident Investigation Commission. Given the lack of detail in the report around this issue, that neither organisation had any comment to make and that it was sent to the New Zealand Accident Investigation Commission and not the Civil Aviation Authority, it seems unlikely and understandable that no action in this area has been taken by these jurisdictions.

9.117 The lack of urgency shown by Airservices Australia is both disappointing and remarkable. Given the significance of this issue, the ATSB appears to have provided no information to Airservices Australia during the course of its investigation so Airservices Australia could commence discussions with the relevant jurisdictions. It is even more remarkable that there has been no information or recommendation in the ATSB report around this issue. The committee considers this to be a serious omission from the report which needs to be addressed.

9.118 The committee's greatest concern is that in the three years that it took to produce the ATSB report and the lack of urgent action since, another incident of the same nature could occur again.

9.119 As for the requirement to provide deteriorating weather information itself, the committee notes that this has been identified as an issue which is addressed in Australia. Therefore the committee finds it difficult to comprehend why there would be no recommendation in the ATSB report that it would be an enhancement to safety for a neighbouring service provider to proactively provide the equivalent of a hazard alert. The committee believes that negotiating the provision of a proactive hazard alert approach with the relevant jurisdictions would enhance aviation safety for all using that airspace and provide another barrier or defence to such an incident occurring again.

9.120 Whatever else occurred, if the flight crew had been made proactively aware about the deteriorating weather conditions they may have made a different decision. If the ATSB report had contained a recommendation around this issue which said this action could be a barrier to a future accident and that it should be put in place, then the organisations involved would have known to take action. Without that recommendation, it is conjecture whether the issue would have been addressed. The committee is of the view that without this inquiry to highlight the reliance on such recommendations to ensure appropriate action is taken, it is likely that it would not.

Chapter 10

Changes to mandatory and confidential reporting

10.1 Another key issue raised with the committee was the proposed changes to mandatory and confidential reporting. The Australian Transport Safety Bureau (ATSB) has been consulting on proposed regulatory changes covering mandatory reporting of accidents and incidents and confidential reporting of safety concerns. A consultation paper was issued by the ATSB and comments closed 27 July 2012.

Mandatory reporting

10.2 First, it is being proposed by the ATSB to 'improve the Civil Aviation Safety Authority (CASA)'s access to the information contained in notifications reported in accordance with the *Transport Safety Investigation Act 2003* (TSI Act).' The reasons given for the proposed change is that:

Providing more open access to the regulator will be in line with international practice. CASA will be in a better position to regulate aviation safety with its enhanced knowledge of the hazards and risks encountered by industry.¹

10.3 The consultation paper advises that:

To ensure that the full safety benefit is derived from mandatory reporting of accidents and incidents CASA, in its regulatory role, also needs open access to these reports. CASA has an enforcement function that the ATSB does not have. Depending on the circumstances of an accident or incident, the regulator may need to take legitimate action, in the interests of safety, to ensure compliance with applicable requirements.²

10.4 Following the first consultation period, this proposed change will be developed into a legislative amendment which would be subject to further consultation.³

10.5 Second, it is also being proposed 'to revise the existing list of accidents and incidents that need to be reported as immediately reportable and routinely reportable matters.' The new reporting requirements will be based on an assessment of the risk of death, injury and damage involved with each incident.⁴

1 Information available from: www.atsb.gov.au/aviation_newregs.aspx (accessed 19 March 2013)

2 ATSB, Enhanced Aviation Mandatory and Confidential Reporting, Consultation paper, p. 3.

3 ATSB, Enhanced Aviation Mandatory and Confidential Reporting, Consultation paper, p. 1.

4 Information available from: www.atsb.gov.au/aviation_newregs.aspx (accessed 19 March 2013).

Confidential reporting

10.6 Third, the consultation also includes draft confidential reporting regulations which would replace the existing aviation REPCON⁵ regulations to create 'a multi-modal confidential reporting scheme for the aviation, maritime and rail industries.' The ATSB noted that the purpose of making the scheme multi-modal will be its capacity to assist all three industries to learn from reports of safety concerns that contain transferable lessons.⁶

10.7 The consultation paper noted that the second and third items have already been the subject of consultation so after the current round, a final set of regulations will be drafted and finalised.⁷

Issues raised with the committee

10.8 Mandatory reporting is provided to the ATSB in the interests of improving safety. It is an important source of information about accidents, incidents and safety concerns to identify hazards and risks:

The *Transport Safety Investigation Act 2003* (TSI Act) and the Transport Safety Investigation Regulations 2003 (TSI Regulations) contain the requirements for certain responsible persons (i.e. operators and crew members) to report the occurrence of accidents and incidents to the ATSB. Presently, CASA receives a summary of each occurrence with only a little more detail than in the Weekly Summaries posted on the ATSB's website.

This level of information supply needs to be enhanced to ensure that CASA is in the best position to regulate aviation safety in a manner which fulfils the main objective of the *Civil Aviation Act 1988* (CA Act).⁸

10.9 Concerns raised with the committee centred on the access to occurrence reporting and the potential for misuse of the information. Several witnesses believed that the proposed changes signal a change in access for CASA which, with its 'strict liability' provisions could result in self-incrimination and may result in reporters seeking legal advice prior to submitting a report.⁹

10.10 The Australian and International Pilots Association (AIPA) stated:

AIPA is not convinced that such a substantial policy shift through changes to subordinate legislation provides appropriate Parliamentary scrutiny. We believe that the ATSB is attempting through legislation to abrogate a

5 REPCON is a voluntary and confidential reporting scheme which allows any person who has an aviation safety concern to report it to the ATSB confidentially. See www.atsb.gov.au/voluntary/repcon-aviation.aspx (accessed 15 May 2013).

6 Information available from: www.atsb.gov.au/aviation_newregs.aspx (accessed 19 March 2013).

7 ATSB, Enhanced Aviation Mandatory and Confidential Reporting, Consultation paper, p. 1.

8 ATSB, Enhanced Aviation Mandatory and Confidential Reporting, Consultation paper, p. 1.

9 AIPA, *Submission 8*, Appendix 1, Australian Airline Pilots' Association response to ATSB Enhanced Aviation Mandatory and Confidential Reporting, pp [45–46].

report's common law privilege against self-incrimination. We believe that the current proposal will adversely affect the free flow of safety-related information.¹⁰

10.11 First Officer Ian Whyte, AIPA, elaborated:

Essentially, if CASA is getting full access to these reports, people will not do or will modify their reports, especially where their performance could be questioned. The key thing with most of our regulations with aviation is that they are strict liability provisions. If you are writing something down saying, 'I made a mistake unintentionally' or, 'My performance was not good,' this is information the aviation system needs to improve to find where the humans are not up to speed. If you are writing a report and it goes to the regulator, essentially you are self-incriminating.¹¹

10.12 AIPA pointed out that the US Aviation Safety Reporting System which 'provides protection from civil penalties and certificate suspensions provided the occurrence, which involved the inadvertent regulatory breach is reported'. It also pointed out the Danish occurrence reporting system as a model to learn from.¹²

10.13 The other area of concern centred on the third change, the Voluntary and Confidential Reporting Scheme Regulation and the need for a separate avenue for confidential reporting, given the lack of protection provided to reporters under the mandatory reporting scheme. AusALPA explained:

A major area of concern is ATSB's present authority to reject a REPCON report on the basis that an event is reportable under mandatory reporting requirements. It is easily conceivable, with no protection presently to reports under Australia's mandatory scheme, that a reporter may only be willing to report some information confidentially for fear of sanctions by employers or CASA. Should the REPCON report be rejected, this will probably lead to the event going unreported. Whilst if the REPCON report is accepted, the confidential aspects of an event may well result in two records (the REPCON record, and a minimalist Mandatory Report) which are unable to be combined. The solution is not to amend REPCON; rather AusALPA advocates providing report protections with in the mandatory reporting scheme.¹³

10.14 AusALPA stated that 'improved access [for CASA] should only occur following a comprehensive review of reporting requirements that create adequate

10 AIPA, *Submission 8*, p. 29. See also: Captain Geoffrey Klouth, *Committee Hansard*, 22 October 2012, p. 22.

11 First Officer Ian Whyte, *Committee Hansard*, 22 October 2012, p. 25.

12 AIPA, *Submission 8*, Appendix 1, Australian Airline Pilots' Association response to ATSB Enhanced Aviation Mandatory and Confidential Reporting, p. [46].

13 AIPA, *Submission 8*, Appendix 1, Australian Airline Pilots' Association response to ATSB Enhanced Aviation Mandatory and Confidential Reporting, p. [48].

protections and incentives for reporters to be open and frank regarding their experiences and actions'.¹⁴

10.15 The common concern was whether a person reporting an incident can be easily identified by CASA. The ATSB consultation paper indicates that in regard to mandatory notifications, CASA only receives a summary of each occurrence.¹⁵ The committee heard that when a person reports an incident the information contains details of the aircraft's registration, the location, time and date of the incident. The committee heard that using this information, CASA can identify individuals.¹⁶

10.16 Capt. Geoffrey Klouth, AIPA, advised the committee that currently most pilots would assume that the information is not going to CASA, but rather that it would stay within the ATSB. If pilots thought it was going to CASA with identifying information it could change the amount of reporting.¹⁷

10.17 The Airline Passenger Safety Association (APSA) agreed that the concern over the ability to identify individuals would compromise the important reporting regime:

Indeed, we are of the view that such is the importance of confidential reporting in determining what is going on in "the real world", that safeguards should be further strengthened. This should be the degree that ATSB should de-identify data to the degree that it cannot be used by CASA to identify individual incidents or individuals who may have been the reporter.

Such is the all-pervading nature of (over) regulation in Australia, and aviation regulation in particular; that almost any incident reported will reveal a breach of a regulation.

Thus, extreme reticence about the potential outcomes of honest reporting is resulting in a reporting system, in which the aviation community have lost confidence.

Whether it be a pilot, engineer or anybody else in the aviation community, they are not going to report a safety issue, if they genuinely believe they are just putting their head in a noose. Whether the perception is right or wrong, the perception is the reality, and a serious contribution to improving air safety outcomes is being lost.¹⁸

10.18 The concern expressed is that the proposed changes will lead to a decrease in reporting:

14 AIPA, *Submission 8*, Appendix 1, Australian Airline Pilots' Association response to ATSB Enhanced Aviation Mandatory and Confidential Reporting, p. [49].

15 AIPA, *Submission 8*, Appendix 2.

16 Mr Julian Walsh, *Committee Hansard*, 22 October 2012, p. 62.

17 Captain Geoffrey Klouth, *Committee Hansard*, 22 October 2012, p. 25.

18 APSA, *Submission 4*, p. 5.

The concern with that would be that people would stop reporting incidents. The concern would also be what CASA would do with that information. As a regulator, they are not simply allowed to see something and go, 'We can't touch this, because it's been provided to us by the ATSB.' It is a bit like a check captain in a simulator. He might be your best mate, but he is representing CASA. If he sees you doing something wrong, he has to fail you...

It would also put the ATSB in a bad position because if people do not have faith and trust that the ATSB are keeping that information confidential then they will simply stop.¹⁹

10.19 The committee discussed how to strike the right balance between people reporting incidents in the interests of enhancing a culture of safety and immediate action being required in cases of recklessness or deliberate actions. First Officer Whyte advised:

Where that line is is something that needs to be debated and determined. In an ideal world it would be clear, but unfortunately there will always be grey areas. It needs to be consistent. Certainly we would be saying somebody who intentionally acts recklessly is unacceptable. The grey area comes in with gross negligence versus a simple sort of negligence situation.²⁰

Response from CASA

10.20 The ATSB consultation paper notes:

However, except in those cases where enforcement is necessary, CASA's regulatory response to notification of an accident or incident will normally involve CASA seeking to educate and promote training.²¹

10.21 Mr McCormick was asked whether CASA had ever taken enforcement action on the basis of information provided by the ATSB. He informed the committee CASA have done so once:

One thing that we have reviewed is whether we have ever taken enforcement action on the basis of information we have been given from ATSB that has been identified—in other words, that identifies somebody. We have done that once. The issue was raised with us because the ATSB considered that the information they were getting from the individual constituted fraud. When we looked at the individual, yes, it was, and action was taken. The person was basically lying. We have not taken regulatory action, enforcement action, against anybody else.²²

10.22 Mr McCormick emphasised that the ATSB's accident or incident notification form has the following note at the bottom:

19 Captain Geoffrey Klouth, *Committee Hansard*, 22 October 2012, p. 25.

20 First Officer Ian Whyte, *Committee Hansard*, 22 October 2012, p. 24.

21 ATSB, Enhanced Aviation Mandatory and Confidential Reporting, Consultation paper, p. 4.

22 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 51.

Privacy notice: The Australian Transport Safety Bureau collects information for the purposes of enhancing transport safety. The collection of aviation incident information is required in connection with the *Transport Safety Investigation Act 2003*. Some information may be disclosed to the Civil Aviation Safety Authority (CASA) and other bodies or individuals for the purpose of enhancing aviation safety. Where possible the identity of individuals will be protected. If the information is the subject of an investigation, it will only be used and disclosed in accordance with the *Transport Safety Investigation Act 2003*.²³

10.23 The committee then asked whether CASA could identify a pilot because of the aircraft information. Mr McCormick answered in the following way:

The risk comes—and the invidious situation the ATSB can find itself in—is if it knows of something that is a safety risk that could lead to an accident or a serious incident and withholds that from CASA. That would be an indefensible position.²⁴

10.24 Mr McCormick went on to describe the protections as 'rugged' and 'just'.²⁵ Subsequently CASA provided the following information:

CASA has documents to provide guidance to CASA staff on the use and protection of safety information and the assessment of aviation safety incident reports provided by the ATSB on a daily and weekly basis. This information includes the aircraft registration details, date of the occurrence and a brief description of the event. No pilot details are provided in any report. The ATSB also provides CASA with a regular data report which does not contain any registration details and is used primarily to analyse any trends in occurrences and take appropriate action as necessary for aviation safety.

The details described above are essentially information which is reported to the ATSB as part of the Transport Safety Investigation Act (TSIA) reporting requirements and are not entitled to protection by the ATSB under the TSIA when that information is passed on to CASA.²⁶

Response from the ATSB

10.25 The committee asked whether the following information contained in the ATSB consultation paper is misleading and that identification of individuals is possible:

Presently, CASA receives a summary of each occurrence with only a little more detail than in the Weekly Summaries posted on the ATSB's website.²⁷

10.26 Mr Walsh, General Manager, Strategic Capability advised:

23 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 51.

24 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 51.

25 Mr John McCormick, *Committee Hansard*, 22 October 2012, p. 51.

26 CASA, Answers to questions taken on notice from 22 October 2012 hearing, number 6.

27 ATSB, Consultation paper, p. 2.

We certainly provide CASA with a daily report on all occurrences that the ATSB has received. We remove any overt personal information that identifies any individual from those—²⁸

10.27 The committee received confirmation that the information about the aircraft is retained and through identifying the aircraft the pilot can be identified.²⁹ Mr Walsh added:

We have just completed some face-to-face consultation as part of the consultation package that you have talked about. During that process, we flew around the country and spoke to many operators—all the major airlines, a lot of the regional airlines and the like—and we also met with representatives, as I understand it, from AIPA. During those conversations, we made it quite clear what we provide to CASA currently. Obviously, the reaction by industry to the proposal in that consultation package has been very strong.³⁰

10.28 The committee asked about the current protections given the apparent ease with which CASA can identify pilots. Mr Dolan replied:

On the specific question, the system is designed to provide safety information not just to the ATSB but to the broader system. It is designed to minimise the risk that it will be used by the regulator to identify and take action against individuals.³¹

10.29 Mr Walsh added:

I think the point is that the ATSB, as I think Mr Dolan said, only plays one part in the safety system, and we do not have any responsibility for the management of risk in the aviation industry. That is something that is much more aligned with CASA. For CASA to be able to perform its functions, it must have access to occurrence information, and information that is de-identified to the extent that it does not become usable would not be helpful.³²

10.30 Mr Dolan responded to questions about the risk pointed out to the committee that this proposed change may result in a possible decrease in the amount of reporting:

We have certainly had that risk drawn to our attention as part of our consultation about potential new arrangements. We have paid serious attention to that, and in the light of those comments we are reviewing the proposal we put out for consultation. The existing reporting form makes it clear that information that is reported to us through the current system will be shared with CASA, so it is not operating in a vacuum. I think it is a fair comment that not everyone who is notifying us would be aware of all the

28 Mr Julian Walsh, *Committee Hansard*, 22 October 2012, p. 62.

29 Mr Julian Walsh, *Committee Hansard*, 22 October 2012, p. 62.

30 Mr Julian Walsh, *Committee Hansard*, 22 October 2012, p. 62.

31 Mr Martin Dolan, *Committee Hansard*, 22 October 2012, p. 62.

32 Mr Julian Walsh, *Committee Hansard*, 22 October 2012, p. 63.

details of how that information is shared. And, yes, there is a risk that that will lead over time to some reduction in the extent and the detail of the reporting we receive.³³

10.31 The committee asked the ATSB whether there was any evidence at this point of a decrease in the amount of reporting. It advised there was not:

For the period January to June 2012 the ATSB received an average of 1,306 reports per month. In July 2012, the ATSB briefed industry on the draft mandatory reporting changes. For the period July to December 2012 the ATSB received an average of 1,308 reports per month.³⁴

Committee view

10.32 The committee agrees that the information provided by the ATSB in the consultation paper is potentially misleading because it appears anonymity is guaranteed when in fact CASA can identify the pilot because the aircraft is identified. What is currently being passed on to CASA appears to be beyond the current expectations of the general aviation community and the committee is concerned that the proposed changes may lead to a decrease in the amount of reporting.

10.33 The committee understands the concern that information is provided in good faith in the interests of enhancing the safety of the system and it could be used for an altogether different purpose. In particular this possibility is not transparent to the general aviation community. This leads to a disconnect between the emphasis from the ATSB on 'no blame' and safety outcomes.

10.34 The committee believes that the default position should be that no identifying details (or details that can, with a little effort, identify an individual) should be provided or disclosed. However, if there is a clear safety risk then the ATSB, CASA and industry representatives (eg. AIPA, AOPA), should work on a process that puts appropriate checks and balances in place.

Recommendation 26

10.35 The committee recommends that in relation to mandatory and confidential reporting, the default position should be that no identifying details should be provided or disclosed. However, if there is a clear risk to safety then the ATSB, CASA and industry representatives should develop a process that contains appropriate checks and balances.

Senator the Hon. Bill Heffernan

Chair

33 Mr Martin Dolan, *Committee Hansard*, 22 October 2012, p. 65.

34 ATSB, Answers to questions taken on notice, 28 February 2013, number 5.

Additional Comments by Senator Nick Xenophon

Who guards the guards themselves?

1.1 I would like to acknowledge the many submitters to this inquiry, and in particular the individuals who were involved in the incident itself. Their information and testimonies were invaluable to the committee and I appreciate their contributions, particularly in light of how distressing it was for them to relive the accident.

1.2 As the committee states, this inquiry was not an attempt to re-examine the circumstances of the ditching of Pel-Air VH-NGA, or to conduct an aviation accident investigation. Instead, it focussed on the reporting standards and activities of the ATSB and CASA in relation to the ditching, and general governance, transparency and accountability issues.

1.3 However, what is clear from this inquiry is that, while the pilot of the flight did make some erroneous decisions, he essentially became a scapegoat for serious regulatory failures on the part of CASA and the ATSB.

1.4 I strongly endorse the comments made by the committee in its report. The evidence given by Mr McCormick of CASA and Mr Dolan of the ATSB was both shocking and disturbing.

1.5 What at first seemed a fairly straightforward inquiry, instead turned up evidence of withheld documents, poor reporting standards, institutional blindness and what appears to be CASA's undue and potentially dangerous influence over the ATSB and its investigation processes. It is clear to me that both agencies have been allowed to operate to a sub-par standard with little knowledge or intervention for too long.

1.6 The details of the ditching and subsequent report are complex and technical. However, the core of the issue is that the ATSB produced a report into the ditching over 33 months after the incident that, contrary to world's best practice and the ATSB's own standards, did not even touch on the systemic or regulatory environment in which the pilot was operating. Instead, it focussed primarily on the pilot's actions. It did not examine the organisation for which the pilot was working, or the systems, procedures or environment in that organisation. This is despite the fact that a CASA Special Audit of Pel-Air after the ditching discovered serious regulatory breaches, and an internal CASA report (the Chambers Report) found significant failures in CASA's oversight of the operator. While neither of these documents were provided to the ATSB in a timely manner (the Chambers report was not released to them until after the inquiry had commenced), the ATSB's investigation should have discovered these problems. That there was no indication of this in the report is a serious concern.

1.7 Further, among the many documents provided to the committee by the ATSB and CASA, the committee discovered the following email, from an ATSB officer to Mr Dolan and Mr Sangston. It reads (bold emphasis added):

We were discussing the potential to reflect the intent of our new MoU that describes the 2 agencies as 'independent but complementary'. We discussed **the hole CASA might have got itself into by its interventions since the**

ditching, and how you might have identified an optimum path that will maximise the safety outcome without either agency planting egg on the other agency's face.

Right now, I suspect that CASA is entrenching itself into a position that would be hard to support. **If we were to contemplate an exit strategy, or an 'out', then CASA would need to recognise that it is 'in' something in the first place.** This is my take on how I see their position at the moment.

When the aircraft ditched, both the flight crew and the operator stopped their Westwind Aeromedical operations. **CASA coached and guided the operator very well as they collaborated to develop a much safer process to avoid a repetition of this accident.** This has happened, and Pel-Air are now operating again. **The same thing hasn't happened to the flight crew.** While they may not have been the 'Aces of the base' **they were following the relevant procedure provided by both CASA and the operator.** This is an opportunity for CASA to follow the same approach with the flight crew as they have done with the operator.

...

As we discussed yesterday, following the ditching, everything went (metaphorically) 'up in the air'. CASA has done a good job in realigning Pel-Air while it was still in the air so that it returning to earth with a much better take on how to manage this risk. **Unfortunately, they took action on the flight crew without first contemplating their end-game. If they re-frame their pre-emptive action with the flight crew to show that they had managed all the levels of safety management simply by putting the pilots' permissions to fly on hold until they had found the problem and remedied it, then they would look far better than if they tried to prosecute the probably indefensible and hardly relevant.**

We will be telling this story in our final report (if not earlier;) so why not make the most of this opportunity for both agencies to publicly work harmoniously, in a parallel direction?¹

1.8 It is important to note that 'this story' never made it into the final report, or into any other arena. This email clearly indicates there was a belief inside the ATSB that CASA had 'got itself into a hole', and that the ATSB's priority was avoiding conflict between the two agencies, rather than holding CASA to account. Indeed, the ATSB's report makes no mention of the officer's concerns, and does not even hint at the whole 'story' outlined in the email.

1.9 It also makes it clear that, at least initially, the focus of the investigation was on systemic issues, and that the ATSB officer believed CASA's actions against the pilots were premature and unnecessary. Why the emphasis of the report changed is open to conjecture.

1 Internal ATSB email regarding the ATSB and CASA's approach to the Pel-Air investigation (dated 9 February 2010), Additional Information 12, received 10 October 2012.

1.10 The report itself is of such a poor standard that many believe it could be considered a breach of Australia's international obligations under the International Civil Aviation Organisation's Annex 13 guidelines for accident investigation reporting.

1.11 Without distracting from the excellent work of the committee's report, I believe it is important to draw attention to two issues that the committee, due to time restraints, was not able to examine more closely.

1.12 Firstly, I believe relationship between CASA's Bankstown Office (responsible for the oversight of Pel-Air and run at the time in an acting capacity by the author of the "Chambers Report") and Pel-Air's management in terms of probity, transparency and impartiality deserves further scrutiny.

1.13 Secondly, I believe it would have been beneficial to publicly examine whether the "demonstrably safety-related" actions taken by CASA against the pilot by CASA were appropriate, reasonable and consistent with other such enforcement. I believe these two issues deserve further consideration.

1.14 Both of these issues could have cast some light on why the ATSB's focus shifted from systemic and human factors to the behaviour of the pilot.

1.15 Beyond the ATSB report itself, the committee also considered the regulatory environment in which such flights operate. As discussed in the committee report, there are significant industry concerns about the low safety standards for aeromedical operations, which come under the category of 'aerial work'. This category includes activities such as crop dusting and aerial surveys.

1.16 One of the significant issues in relation to the ditching was whether or not the pilot should have chosen to divert to an alternate destination due to the weather at Norfolk Island. The committee report discusses Mr McCormick's response to whether CASA should provide guidance in these circumstances, and whether the drafting of a new Civil Aviation Safety Regulation would address this.

1.17 The committee report stated that CASA has drafted Civil Aviation Safety Regulation (CASR) Part 135, which may assist in dealing with this issue. However, CASA's website information on CASR 135 states:

A passenger transport operation is a transport operation in an aircraft involving the carriage of passengers, whether or not cargo is carried on the aircraft. A passenger transport operation does not include, cost sharing operations, aerial work operations or an operation for the carriage of passengers in an aircraft with a certificate of airworthiness other than a standard certificate of airworthiness.²

2 Information available from: www.casa.gov.au/scripts/nc.dll?WCMS:PWA::pc=PARTS135 (accessed 7 May 2013).

1.18 Further, the CASA website on CASR 136 indicates that Emergency and Medical Services Operations will remain under the category of aerial work.³ Therefore, it seems that even though CASA has drafted the guidance under CASR 135, it would not have applied to this flight then or indeed in the future. Further, the guidance only states that alternates need to be provided for, not under what circumstances pilots must choose to travel to those alternates.

1.19 It is also important to note the committee's discussion of the ATSB's Canley Vale report. This incident (also a medical flight) tragically resulted in the deaths of both the pilot and the nurse onboard. The ATSB's response to this accident was similar to its report into the Pel-Air ditching. The ATSB also made it very clear in its report that it did not consider CASA's failure to oversee the operator appropriately as relevant. The validity of that view is, I believe, a direct parallel to that exposed by this inquiry for the Pel-Air ditching and equally alarming.

1.20 The committee also recommended the establishment of an expert independent panel to oversee the ATSB's investigations and reporting. Given the circumstances raised in this report, I believe there is merit in expanding the role of this panel to oversee the performance of both CASA and the ATSB as a whole. There is currently no system to measure the activities of these agencies in an objective manner, and the need for expert oversight and monitoring has been made abundantly clear.

1.21 It is my view that the panel should instead take the form of an Inspector-General of Aviation Safety. Such a body would have the appropriate resources, expertise and powers to oversee the ATSB and CASA to a greater degree. The current Inspector-General of Taxation would be an excellent model to follow as an independent office aimed at conducting systemic reviews and providing recommendations to government.

Recommendation 1

That the Government establish, as a matter of urgency, the role of Inspector-General of Aviation Safety, with the necessary powers, resources and expertise to oversee and independently review the activities of CASA, the ATSB and other relevant organisations to an appropriate level.

1.22 Ultimately, this inquiry has exposed serious and significant flaws in Australia's aviation safety systems. The general industry attitude towards both the ATSB and CASA is incredibly concerning; it is a mixture of fear, suspicion, disappointment and derision.

1.23 It is my view that CASA, under Mr McCormick, has become a regulatory bully that appears to take any action available to ensure its own shortcomings are not made public. This poses great risks to aviation safety, and the safety of the travelling public. Equally, the ATSB—which should fearlessly expose any shortcomings on the part of CASA and other organisations to improve aviation safety—has become institutionally timid and appears to lack the strength to perform its role adequately.

3 Information available from: www.casa.gov.au/scripts/nc.dll?WCMS:PWA::pc=PARTS136 (accessed 7 May 2013).

Both agencies require a complete overhaul, and I believe it is only luck that their ineptness has not resulted in further deaths so far. There is an urgent need for an Inspector-General of Aviation Safety, entirely independent of the Minister and his department, to be a watchdog for these agencies.

1.24 In the end, this report raises many questions. But if we wish to bring about change and improve aviation safety, we will clearly need to look beyond our inept regulators and ask: who will guard the guards themselves?

Senator Nick Xenophon
Independent Senator for South Australia

APPENDIX 1

Submissions Received

Submission Number	Submitter
1	Civil Aviation Safety Authority
2	Australian Transport Safety Bureau
3	Mr Spencer Ferrier
4	Airline Passenger Safety Association
5	Mr Stan van de Wiel
6	Ms Karen Casey
7	Pel-Air Pty Ltd
8	Australian and International Pilots Association
9	Mr Gary Currall
10	Mr Bryan Aherne
11	Mr Mick Quinn
12	Mr Richard Davies
13	Office of the Australian Information Commissioner
14	Bureau of Meteorology
15	AMROBA
16	Mr Shane Urquhart
17	Airservices Australia
18	Mr John Lyon
19	Mr Ian McPhee
20	Royal Flying Doctor Service
21	Flight Safety Foundation
22	Mr Dominic James

Additional Information Received

- Received on 3 October 2012, from the Australian Transport Safety Bureau (ATSB). Correspondence between the Committee and the Australian Transport Safety Bureau (ATSB) regarding a request for documents.
- Received on 10 October 2012 from the Civil Aviation Safety Authority (CASA). Internal Civil Aviation Safety Authority (CASA) report titled "Oversight Deficiencies- Pel-Air and Beyond" also known as the Chambers report (dated 1 August 2010).
- Received on 10 October 2012 from the Australian Transport Safety Bureau (ATSB). Internal Australian Transport Safety Bureau (ATSB) email regarding the Australian Transport Safety Bureau (ATSB) and the Civil Aviation Safety Authority's (CASA) approach to the Pel-Air investigation (dated 9 February 2010).
- Received on 10 October 2012 from the Civil Aviation Safety Authority (CASA). Internal Civil Aviation Safety Authority (CASA) email regarding the discussion with the Australian Transport Safety Bureau (ATSB) over the content of the Australian Transport Safety Bureau (ATSB) report (dated 18 August 2010).
- Received on 10 October 2012 from the Civil Aviation Safety Authority (CASA). Internal Civil Aviation Safety Authority (CASA) email (dated 4 February 2010) Australian Transport Safety Bureau (ATSB) identification of a 'critical safety issue' may have ramification for the Civil Aviation Safety Authority (CASA) actions in relation to Mr James.
- Received on 10 October 2012 from the Civil Aviation Safety Authority (CASA). Advice from the UK Civil Aviation Authority to the Civil Aviation Safety Authority (CASA) providing an assessment of the fatigue scores for the accidental flight (dated 11 December 2009).
- Received on 10 October 2012 from the Australian Transport Safety Bureau (ATSB). Internal Australian Transport Safety Bureau (ATSB) email- reviewer wanting to look more closely at FRMS and re-interview pilots (dated 24 May 2012).
- Received on 10 October 2012 from the Australian Transport Safety Bureau (ATSB). Internal Australian Transport Safety Bureau (ATSB) email- reviewer indicating they can't deviate at this point and they have to work with what they have (dated 24 May 2012).
- Received on 10 October 2012 from the Australian Transport Safety Bureau (ATSB). Internal Australian Transport Safety Bureau (ATSB) email regarding the inconsistency in safety knowledge of Australian Transport Safety Bureau (ATSB) staff (dated 6 August 2012).
- Received on 10 October 2012 from the Civil Aviation Safety Authority (CASA). Civil Aviation Safety Authority (CASA) Special Audit of Pel-Air Fatigue Risk Management System.

-
- Received on 22 October 2012, from the Civil Aviation Safety Authority (CASA). Correspondence from the Australian Transport Safety Bureau (ATSB) to the Civil Aviation Safety Authority (CASA) regarding a critical safety issue.
 - Received on 22 October 2012, from the Civil Aviation Safety Authority (CASA). Correspondence from the Civil Aviation Safety Authority (CASA) to the Australian Transport Safety Bureau (ATSB) regarding the classification of air ambulance flights.
 - Received on 22 October 2012, from the Civil Aviation Safety Authority (CASA). Emails from Civil Aviation Safety Authority (CASA) officials regarding fuel planning and in-flight decision making.
 - Received 1 November 2012, from the Civil Aviation Safety Authority (CASA). Correspondence from the Civil Aviation Safety Authority (CASA) to the Committee clarifying statements made at 22 October 2012 hearing.
 - Received on 12 November 2012, from the Civil Aviation Safety Authority (CASA). Correspondence from the Civil Aviation Safety Authority (CASA) to the Committee clarifying statements made at 22 October 2012 hearing.
 - Received on 12 November 2012, from the Civil Aviation Safety Authority (CASA). Answers to Questions taken on Notice on 22 October 2012.
 - Received on 12 November 2012, from the Australian Transport Safety Bureau (ATSB). Answers to Questions taken on Notice on 22 October 2012.
 - Received on 30 November 2012, from the Civil Aviation Safety Authority (CASA). Correspondence from the Civil Aviation Safety Authority (CASA) to the Committee clarifying statements made at 21 November 2012 hearing.
 - Received on 12 December 2012, from the Office of the Australian Information Commissioner (OAIC). Answers to Questions taken on Notice on 21 November 2012.
 - Received on 14 December 2012, from the Australian Transport Safety Bureau (ATSB). Answers to Questions taken on Notice on 21 November 2012.
 - Received on 16 December 2012, from the Civil Aviation Safety Authority (CASA). Correspondence from the Civil Aviation Safety Authority (CASA) regarding available guidance for diversion.
 - Received on 18 December 2012, from the Civil Aviation Safety Authority (CASA). Answers to Questions taken on Notice on 19 November 2012.
 - Received on 18 December 2012, from the Civil Aviation Safety Authority (CASA). Answers to Questions taken on Notice on 21 November 2012.
 - Received on 4 January 2013, from Airservices Australia. Answers to Questions taken on Notice on 19 November 2012.
 - Received on 31 January 2013, from the Office of the Australian Information Commissioner (OAIC). Answers to written Questions taken on Notice on 21 November 2012.
 - Received on 1 February 2013, from the Australia Transport Safety Bureau (ATSB). Answers to written Questions taken on Notice on 21 November 2012.
 - Received on 1 February 2013, from the Civil Aviation Safety Authority (CASA). Answers to written Questions taken on Notice on 21 November 2012.

- Received on 25 February 2013, from the Australia Transport Safety Bureau (ATSB). Answers to Questions taken on Notice on 15 February 2013.
- Received on 25 February 2013, from the Australia Transport Safety Bureau (ATSB). Answers to written Questions taken on Notice on 15 February 2013.
- Received on 14 March 2013, from the Civil Aviation Safety Authority (CASA). Answers to written Questions taken on Notice on 15 February 2013.
- Received on 18 March 2013, from the Australia Transport Safety Bureau (ATSB). Answers to Questions taken on Notice on 28 February 2013.
- Received on 18 March 2013, from the Australia Transport Safety Bureau (ATSB). Answers to written Questions taken on Notice on 28 February 2013.
- Received on 26 March 2013, from the Civil Aviation Safety Authority (CASA). Answers to Questions taken on Notice on 15 February 2013.
- Received 26 April 2013, from the Civil Aviation Safety Authority (CASA). Correspondence from the Civil Aviation Safety Authority (CASA) to the Committee clarifying statements made at 15 February 2013 hearing.
- Received on 3 May 2013, from the Bureau of Metrology. Answers to Questions taken on Notice on 19 November 2012.
- Received on 3 May 2013, from Mr Michael Quinn. Answers to Questions taken on Notice on 22 October 2012.

TABLED DOCUMENTS

22 October 2012, Canberra, ACT:

- Tabled by Mr Mick Quinn.
 - Regulatory Policy- CEO-PN001-2004: CASA's Industry Sector Priorities and Classification of Civil Aviation Activities.
 - Additional Information.
 - Bureau of Air Safety Investigation Report, 11 June 1993.
- Tabled by Mr John McCormick, Director of Aviation Safety, Civil Aviation Safety Authority. Opening Statement.
- Tabled by Senator Nick Xenophon. Aviation Safety issues and actions: Recommendations issued to the Bureau of Meteorology.

21 November 2012, Canberra, ACT:

- Tabled by Mr Martin Dolan, Chief Commissioner, Australian Transport Safety Bureau. Pilot Responsibilities for Obtaining Information In-Flight.

APPENDIX 2

Public Hearings and Witnesses

22 October 2012, Canberra, ACT

- AHERNE, Mr Bryan,
Private capacity
- ALECK, Dr Jonathan, Associate Director of Aviation Safety,
Civil Aviation Safety Authority
- ANASTASI, Mr Adam, Executive Manager, Legal Services,
Civil Aviation Safety Authority
- BOYD, Mr Peter, Executive Manager, Standards,
Civil Aviation Safety Authority
- DOLAN, Mr Martin, Chief Commissioner,
Australian Transport Safety Bureau
- FARQUHARSON, Mr Terry, Director of Aviation Safety,
Civil Aviation Safety Authority
- HOOD, Mr Greg, Executive Manager, Operations Regulations Implementation,
Civil Aviation Safety Authority
- JAMES, Mr Dominic,
Private capacity
- KLOUTH, Captain Geoffrey Steven,
Australian and International Pilots Association
- McCORMICK, Mr John, Director of Aviation Safety,
Civil Aviation Safety Authority
- QUINN, Mr Michael David,
Private capacity
- SANGSTON, Mr Ian, General Manager, Aviation Safety Investigations,
Australian Transport Safety Bureau
- WALSH, Mr Julian, General Manager, Strategic Capability,
Australian Transport Safety Bureau
- WHYTE, First Officer Ian Richard,
Australian and International Pilots Association

19 November 2012, Canberra, ACT

- HAINSWORTH, Mr Alasdair Horace William, Assistant Director Services, Bureau of Meteorology
- HANSTRUM, Mr Barry Norman, Regional Director NSW/ACT, Bureau of Meteorology
- HARFIELD, Mr Jason, Executive General Manager, Air Traffic Control, Airservices Australia
- HOBSON, Mr Peter, Acting Manager, Network Management Services, Airservices Australia
- JACKSON, Mr Gordon Edward, Head, Aviation and Defence Weather Services, Bureau of Meteorology
- STAIB, Ms Margaret, Chief Executive Officer, Airservices Australia

21 November 2012, Canberra, ACT

- DOLAN, Mr Martin, Chief Commissioner, Australian Transport Safety Bureau
- McMILLAN, Professor John, AO, Australian Information Commissioner, Office of the Australian Information Commissioner
- SANGSTON, Mr Ian, General Manager, Aviation Safety Investigations, Australian Transport Safety Bureau
- WALSH, Mr Julian, General Manager, Strategic Capability, Australian Transport Safety Bureau

15 February 2013, Canberra, ACT

- ALECK, Dr Jonathan, Associate Director, Aviation Safety, Civil Aviation Safety Authority
- ANASTASI, Mr Adam, General Counsel and Executive Manager, Legal Services Division, Civil Aviation Safety Authority
- BOYD, Mr Peter, Executive Manager, Standards Division, Civil Aviation Safety Authority
- CROMARTY, Mr Peter, Executive Manager, Airspace and Aerodrome Regulation, Civil Aviation Safety Authority
- DOLAN, Mr Martin, Chief Commissioner, Australian Transport Safety Bureau

- FARQUHARSON, Mr Terry, Deputy Director of Aviation Safety, Civil Aviation Safety Authority
- HOOD, Mr Greg, Executive Manager, Operations Regulations Implementation Division, Civil Aviation Safety Authority
- McCORMICK, Mr John Francis, Director of Aviation Safety, Civil Aviation Safety Authority
- SANGSTON, Mr Ian, General Manager, Aviation Safety Investigations, Australian Transport Safety Bureau

28 February 2013, Canberra, ACT

- DOLAN, Mr Martin, Chief Commissioner, Australian Transport Safety Bureau
- SANGSTON, Mr Ian, General Manager, Aviation Safety Investigation, Australian Transport Safety Bureau
- WALSH, Mr Julian, General Manager, Strategic Capability, Australian Transport Safety Bureau

