The Senate

Rural Affairs and Transport References Committee

Pilot training and airline safety; and

Consideration of the Transport Safety Investigation Amendment (Incident Reports) Bill 2010

June 2011

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Membership of the committee

Members

Senator the Hon. Bill Heffernan, Chair	New South Wales, LP
Senator Glenn Sterle, Deputy Chair	Western Australia, ALP
Senator Steve Hutchins (to 9 February 2011)	New South Wales, ALP
Senator Julian McGauran	Victoria, LP
Senator Christine Milne	Tasmania, AG
Senator Fiona Nash	New South Wales, NATS
Senator Kerry O'Brien (from 9 February 2011)	Tasmania, ALP

Participating members participating in this inquiry

Senator Chris Back	Western Australia, LP
Senator Doug Cameron	New South Wales, ALP
Senator the Hon. Ian Macdonald	Queensland, LP
Senator Nick Xenophon	South Australia, IND

Secretariat

Ms Jeanette Radcliffe, Secretary
Mr Ivan Powell, Principal Research Officer/Acting Secretary 4-29 April 2011
Ms Trish Carling, Senior Research Officer
Ms Lauren McDougall, Executive Assistant

PO Box 6100
Parliament House
Canberra ACT 2600
Ph: 02 6277 3511
Fax: 02 6277 5811
E-mail: rat.sen@aph.gov.au
Internet: http://www.aph.gov.au/senate/committee/rat_ctte/index.htm

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Recommendation 1

2.278 The committee is of the view that an ATPL should also be required for first officers in high capacity regular public transport (RPT) jet aircraft such as Boeing 737, A320 and other aircraft of similar or greater capacity, and that consideration be given to implementing this as a standard.

Recommendation 2

2.279 The committee recommends that for non-jet operations which employ low-experience first officers, operators be required to provide enhanced supervision and mentoring schemes to offset such lack of experience.

Recommendation 3

2.280 The committee recommends that Air Operators Certificate (AOC) holders be required to develop and implement 'green on green' policy positions relating to the use of low experience pilots in RPT operations, to maximise, wherever possible, the collective experience level of flight crew.

Recommendation 4

2.281 The committee recommends that Civil Aviation Safety Regulation (CASR) Part 61 ensure that all prospective regular public transport (RPT) pilots be required to complete substantial course-based training in multi-crew operations and resource management (non-technical skills) and human factors training prior to, or in reasonable proximity to, initial endorsement training; the committee recommends that the Civil Aviation Safety Authority (CASA) expedite, and assign the highest priority to, the implementation of CASR Part 61.

Recommendation 5

2.282 The committee recommends that the Civil Aviation Safety Authority (CASA) ensure that Part 61 of the Civil Aviation Safety Regulations currently being reviewed place sufficient weight on multi-engine aeroplane experience as opposed to the current recognition of glider and ultra-light experience.

Recommendation 6

2.283 The committee recommends that the Civil Aviation Safety Authority (CASA) be required to undertake a risk assessment of current simulator training to assess whether the extent, aims and scope of such training is being utilised to achieve optimum safety outcomes rather than minimum compliance objectives.

Recommendation 7

2.288 The committee recommends that the Civil Aviation Authority (CASA) expedite, and assign the highest priority to, the implementation of Civil Aviation Safety Regulations (CASR) Part 141 'Flight Training Operators' and Part 142 'Training and Checking Operators'.

Recommendation 8

2.296 The committee recommends that the Government require the Productivity Commission or another suitable body to undertake a review of the current and future supply of pilots in Australia, with particular reference to the general aviation and cadet training pathways, and HECS HELP and VET FEE-HELP arrangements.

Recommendation 9

2.299 The committee recommends that the Civil Aviation Safety Authority (CASA), the Australian Transport Safety Bureau (ATSB) and Australian aviation operators review the final findings of France's Bureau of Investigation and Analysis into Air France 447, including consideration of how it may apply in the Australian context. Subject to those findings, the committee may seek the approval of the Senate to conduct a further hearing in relation to the matter.

Recommendation 10

3.146 The committee recommends that the Minister for Infrastructure and Transport provide a report to Parliament every six months outlining the progress of the Civil Aviation Safety Authority's (CASA) regulatory reforms and specifying reform priorities, consultative processes and implementation targets for the following 12-month period.

Recommendation 11

3.147 The committee recommends that the Government undertake a review of the funding to the Civil Aviation Safety Authority (CASA) to ensure that there is sufficient specific funding to support an expedited regulatory reform process.

Recommendation 12

3.149 The committee recommends that, as an ongoing measure, the Government provide the Civil Aviation Safety Authority (CASA) with specific funding to enable it to offer salaries that are competitive with industry; in addition, or as an alternative, the Government should consider implementing formal mechanisms for the sharing of expertise between industry and CASA.

Recommendation 13

3.158 The committee recommends that the Transport Safety Investigation Amendment (Incident Reports) Bill 2010 not be passed.

Recommendation 14

3.163 The committee recommends that the current prescriptive approach needs to be supplemented with a general obligation to report whenever the 'responsible person' believes that there is an urgent safety risk that must be addressed.

Recommendation 15

3.164 The committee recommends that the Australian Transport and Safety Bureau (ATSB) review its approach to the investigation and publication of human factors with a view to achieving a more robust and useful learning tool for the industry.

Recommendation 16

3.165 The committee recommends that the Australian Transport and Safety Bureau (ATSB) review existing processes for the categorisation of aviation events to ensure that miscategorisation is minimised and opportunities for system improvement are not lost.

Recommendation 17

3.166 The committee recommends that the Civil Aviation Safety Authority (CASA), in concern with Australian Transport and Safety Bureau (ATSB), consider developing and publishing guidance on model reporting to minimise understatement of the actual or potential significance of aviation events.

Recommendation 18

3.169 The committee recommends that Civil Aviation Safety Authority (CASA) require operators to observe the highest standards of incident reporting from their personnel and provide appropriate training as part of the safety promotion function of their SMS.

Recommendation 19

The committee recommends that, in order to enhance 'just culture' and open reporting of incidents, aviation operators should ensure that their relevant managers are adequately trained in procedural fairness.

Recommendation 20

4.89 The committee recommends that, following the release of the International Civil Aviation Organization (ICAO) fatigue guidelines, the Civil Aviation Safety Authority (CASA) should expedite necessary changes and/or additions to the regulations governing flght and cabin crew fatigue risk management as a priority

Recommendation 21

4.90 The committee recommends that, in the event that the International Civil Aviation Organization (ICAO) fatigue guidelines do not extend to cabin crew duty limits and fatigue risk management more broadly, the Government should amend the *Civil Aviation Act 1998* to include cabin crew fatigue risk management under the Civil Aviation Safety Authority's (CASA) regulatory oversight.

Recommendation 22

4.92 The committee recommends that the Civil Aviation Safety Authority (CASA) specify the type of training and amount of training required for cabin crew, including mandatory English language standards.

Chapter 1

Introduction

The inquiry

1.1 On 30 September 2010, the Senate referred the following matter to the Senate Rural Affairs and Transport References Committee (the committee) for inquiry and report by 17 November 2010:

(a) pilot experience requirements and the consequence of any reduction in flight hour requirements on safety;

(b) the United States of America's Federal Aviation Administration Extension Act of 2010, which requires a minimum of 1500 hours before a pilot is able to operate on regular public transport services and whether a similar mandatory requirement should be applied in Australia;

(c) current industry practices to recruit pilots, including pay-for-training schemes and the impact such schemes may have on safety;

(d) retention of experienced pilots;

(e) type rating and recurrent training for pilots;

(f) the capacity of the Civil Aviation Safety Authority to appropriately oversee and update safety regulations given the ongoing and rapid development of new technologies and skills shortages in the aviation sector;

(g) the need to provide legislative immunity to pilots and other flight crew who report on safety matters and whether the United States and European approaches would be appropriate in the Australian aviation environment;

(h) reporting of incidents to aviation authorities by pilots, crew and operators and the handling of those reports by the authorities, including the following incidents:

(i) the Jetstar incident at Melbourne airport on 21 June 2007, and

(ii) the Tiger Airways incident, en route from Mackay to Melbourne, on 18 May 2009;

(i) how reporting processes can be strengthened to improve safety and related training, including consideration of the Transport Safety Investigation Amendment (Incident Reports) Bill 2010; and

(j) any other related matters.

1.2 On 17 November 2010, the Senate granted an extension to the committee's reporting date until the second sitting day of March 2011. A subsequent extension was

granted until 4 May 2011. The committee tabled an interim report on 4 May 2011, indicating that it required additional time to seek further evidence and intended to table its final report on 15 June 2011.

Conduct of the inquiry

1.3 Notice of the inquiry was posted on the committee's website and advertised in *The Australian* on 13 October 2010. The committee also invited submissions from individuals, organisations and agencies involved in the Australian aviation industry. The committee received 55 submissions, including 34 in camera (confidential) submissions. A list of public submissions is provided in Appendix 1.

1.4 The committee held public hearings in Sydney on 1 December 2010 and Canberra on 15 and 25 February 2011, and 18 and 31 March 2011. A list of witnesses is provided in Appendix 2.

1.5 The *Hansard* transcript of the committee's hearing is available through the Parliament's website at www.aph.gov.au. References to the *Hansard* throughout the report are to the proof transcript. Page numbers may vary between the proof and the official transcript.

Privilege matter

1.6 The Senate Standing Orders and Privilege Resolutions provide a number of important protections for witnesses who provide evidence to the Senate or Senate committees.

1.7 The entitlement of a witness to the protection of the Senate derives from Senate Standing Order 181 (SO181), which provides that:

> A witness examined before the Senate or a committee is entitled to the protection of the Senate in respect of the evidence of the witness.

1.8 The obligation to ensure the protection of witnesses, as outlined in SO181 above, is augmented by Senate Privilege Resolution 6(11) (PR 6(11)), which provides that:

> A person shall not inflict any penalty or injury upon, or deprive of any benefit, another person on account of any evidence given or to be given before the Senate or a committee.

1.9 Further, under Senate Privilege Resolution (PR1(18)), in any circumstances where the committee has reason to believe that a person has been subjected to or threatened with any penalty or injury in respect of any evidence given, the committee must take all reasonable steps to ascertain the facts of the matter. If the committee considers that the facts disclose that a person may have been subjected to or threatened with penalty or injury in respect of evidence given before the committee, the committee must report the facts and its conclusions to the Senate.

1.10 During the course of the inquiry, the committee received a report from a witness, who had provided evidence to the committee on an in camera basis, that the person had been subject to a penalty or disadvantage on account of the evidence that person provided to the committee.

1.11 As a consequence of this information, the committee determined that there was a possibility that the witness in question had indeed been subjected to a penalty or injury by virtue of having provided evidence to the committee in connection with the inquiry. In accordance with PR 1(18), the committee is therefore taking steps to investigate the matter by writing to a number of parties to ascertain the relevant facts of the matter.

Structure of the report

1.12 The report consists of three main chapters which consider the ten specific terms of reference for the inquiry.

1.13 Chapter 2 considers terms of reference (a), (b), (c), (d) and (e), concerning airline safety in connection with the issues of pilot experience requirements, recruiting and training and pilot retention. These terms of reference were considered together due to the inter-related nature of the issues involved.

1.14 Chapter 3 considers term of reference (f), (g), (h) and (i), concerning airline safety in connection with the issues of the capacity of the Civil Aviation Safety Authority and incident reporting and immunity, including the Transport Safety Investigation Amendment (Incident Reports) Bill 2010. As above, these terms of reference were considered together due to the inter-related nature of the issues involved.

1.15 Chapter 4 considers term of reference (j), which invited the committee to consider any other related matters. The issues considered in this chapter primarily relate to fatigue, cabin crew and flight crew.

Scope of the report

1.16 The committee notes that, given the nature of the airline industry, in which accidents and safety incidents can have such profound consequences, safety is an issue that, both in theory and practice, cuts across every aspect of airline operations.

1.17 Given this fact, and in light of the practical limitations applying to the conduct of the committee's work, it was necessary for the committee to limit its consideration of the issues raised through the inquiry. Consequently, the committee restricted the focus of the report to the central issues of pilot experience and the reporting of safety incidents.

1.18 The committee acknowledges that a number of significant issues, relating to such important areas as aviation maintenance and general aviation, are not therefore

addressed in detail in the report. However, the committee notes that such matters may be subject to inquiry by this committee or another appropriate body in future.

Acknowledgements

1.19 The committee acknowledges the contribution of all those individuals and organisations who prepared written submissions and those who appeared as witnesses. Their work assisted the committee considerably in its inquiry.

Chapter 2

Pilot experience requirements;

Pilot recruitment and training; and

Pilot retention

2.1 This chapter discusses a number of terms of reference concerning airline safety in connection with the issues of pilot experience requirements, recruiting and training and pilot retention (terms of reference (a), (b), (c), (d) and (e)). The specific terms of reference are:

- pilot experience requirements and the consequence of any reduction in flight hour requirements on safety;
- the United States of America's Federal Aviation Administration Extension Act of 2010, which requires a minimum of 1500 flight hours before a pilot is able to operate on regular public transport services and whether a similar mandatory requirement should be applied in Australia;
- current industry practices to recruit pilots, including pay-for-training schemes and the impact such schemes may have on safety;
- retention of experienced pilots; and
- type rating and recurrent training for pilots.

2.2 The issue of pilot experience requirements was one of the main issues addressed in the submissions and evidence received by the committee, particularly in relation to the current experience levels of commercial airlines—that is, regular public transport (RPT)—pilots and co-pilots, and the proficiency levels achieved through modern pilot training methods.

Pilot experience requirements and the consequence of any reduction in flight hour requirements on safety

Regulatory requirements relating to pilots' minimum flight experience

2.3 The committee heard that, in Australia, the Civil Aviation Safety Authority (CASA) is responsible for 'setting the minimum requirements for flying experience and knowledge standards necessary for gaining Australian pilot licences and endorsements and ratings that may attach thereto'.[1]

1 *Submission 12*, p. 6.

2.4 There are three legislatively based elements governing pilot experience requirements for obtaining a pilot's licence and any related endorsements or ratings. These are:

- the minimum experience (flight hours) and knowledge standards specified in the [Civil Aviation Regulations 1988 (CARs)] for the purposes of gaining various pilot licences and any additional ratings that may subsequently attach to a licence;
- the minimum periodic currency standards specified in the CARs to ensure the holder of a licence or rating maintains the proficiency necessary to safely continue to exercise the privileges of [that] licence or rating; and
- the regulatory requirement for airlines to have in place a training and checking system.[2]

2.5 Airlines may establish experience requirements in addition to the legislative elements outlined above. These are 'often expressed in terms of a total number of flying hours, which…[are set] as a minimum entry level to a particular airline'.[3]

Current experience requirements for regular public transport airline pilots

2.6 The committee heard that, with the exception of pilots (captains) of low capacity RPT,[4] CASA does not prescribe minimum experience requirements for co-pilots or pilots of RPT flights in Australia. However, the requirements for obtaining pilot licences operate as a de facto minimum experience requirement.

2.7 There are two licence types which are the basis of qualification to act as a co-pilot or pilot for a commercial RPT flight. These are, respectively, the Commercial Pilot Licence (CPL) and the Air Transport Pilot Licence (aeroplane) (ATPL).[5]

2.8 A third type of licence, the Multi-crew Pilot Licence (MPL), may also qualify a person to act as co-pilot for a commercial RPT flight. While there are currently no co-pilots operating in Australia on an MPL issued under the CARs, a number of submissions discussed these licences, given their potential to be issued in future.

Commercial Pilot Licence requirements

2.9 In simple terms, a CPL qualifies the holder to:

- fly a single pilot aeroplane as pilot in command (captain) while the aeroplane is engaged in any operation;

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2 *Submission 12*, pp 5-6.

3 *Submission 12*, pp 5-6.

4 Australian and International Pilots Association, *Submission 6*, p. 3.

5 Civil Aviation Safety Authority (CASA), *Submission 12*, p. 6.

- fly a multi-pilot aeroplane as pilot in command while the aeroplane is engaged in any operation other than a charter operation or RPT operation; and
- fly an aeroplane as co-pilot while the aeroplane is engaged in any operation (including RPT operations).[6]

2.10 To qualify for a CPL via a commercial training course, a person must have, inter alia, a minimum of 150 hours of flight time flown as a pilot during the training course. The regulations specify the amount of particular types of experience that may count towards the total 150 hours.[7]

2.11 To qualify for a CPL via general aviation, a person must have a minimum of 200 hours of flight time. The regulations specify the amount of particular types of experience that may count towards the total 200 hours.[8]

Air Transport Pilot Licence requirements

2.12 In simple terms, an ATPL qualifies the holder to:

- fly an aeroplane as pilot in command (captain), or co-pilot, while the aeroplane is engaged in any operation (including RPT operations).[9]

2.13 To qualify for an ATPL, a person must have, inter alia, a minimum of 1500 hours of flight time that includes 750 hours as pilot of a registered, or recognised, aeroplane. The regulations specify the amounts of particular types of experience that may count towards the total 1500 hours.[10]

2.14 CASA submitted that the regulatory standards governing experience requirements for CPL and ATPL licences represented 'safe and internationally recognised minima for the operation of Australian registered aircraft by airlines'.[11] The CASA submission stated:

> The minimum number of hours required to obtain a qualification (such as a private pilot licence) is generally set by [the International Civil Aviation Organization] ICAO and, in practical terms, provides a degree of confidence that a person with the prescribed number of hours of training and experience has acquired the skills needed for the award of a licence.[12]

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6 Civil Aviation Regulations 1998, r 5.105.

7 See Civil Aviation Regulations 1998, rr 5.104(1)(f)(i) and 5.111.

8 See Civil Aviation Regulations 1998, rr 5.104(1)(f)(ii) and 5.113.

9 Civil Aviation Regulations 1998, r. 5.166.

10 See Civil Aviation Regulations 1998, rr 5.165(1)(f) and 5.172.

11 *Submission 12*, p. 8.

12 *Submission 12*, p. 9.

2.15 As noted above, however, airlines 'frequently' set minimum experience levels as a precondition of employment that are higher than the regulatory minima set out above.[13]

2.16 In both cases, CPL and ATPL holders must also hold additional endorsements (such as a class endorsement) and ratings (such as a flight crew rating) to be entitled to co-pilot or pilot a particular class or type of aeroplane. Such endorsements or ratings may also increase a licence holder's flight or training experience above the minimum licence requirements.

2.17 The committee heard that minimum experience requirements for licensing purposes are complemented by requirements which ensure that proficiency is maintained. As noted above, pilots must adhere to periodic currency standards, which require a mandated number of hours to be flown over a specified period in order for a licence or rating to remain valid.[14] Airline operators are also required to maintain 'internal training and checking' systems to induct and train new and ongoing pilot employees, and pilots are required to undergo at least two proficiency checks in each calendar year. Training and checking systems are audited by CASA.[15]

Multicrew Pilot Licence requirements

2.18 In simple terms, an MPL qualifies the holder to:

- fly an aeroplane as co-pilot while it is engaged in any operation conducted under an Air Operators Certificate (AOC) that authorises charter or RPT operations.

2.19 To qualify for an MPL, a person must have, inter alia, a minimum of 240 hours of training as a pilot during an approved course of training, including:

- 40 hours of flight time as pilot of a registered aeroplane;
- at least 10 hours of solo flight time in a registered aeroplane;
- at least five hours of cross-country flight time as pilot in command (captain) in a registered aeroplane; and
- at least 12 take-offs and landings in a specified type of aircraft.[16]

2.20 The regulations also specify requirements for an MPL holder to hold a relevant endorsement and crew rating to act as co-pilot on a particular class or type of aeroplane.[17]

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13 Civil Aviation Safety Authority, *Submission 12*, p. 8.

14 Civil Aviation Safety Authority, *Submission 12*, p. 7.

15 *Submission 12*, p. 8.

16 See Civil Aviation Regulations 1998, r 5.207 and 5.214.

17 See Civil Aviation Regulations1998, r 5.209 and 5.210.

Pilot licence experience requirements

2.21 On the question of the types of experience that are counted towards the minimum experience requirements for the grant of a pilot licence, the Australian and International Pilots Association (AIPA) expressed concern that glider experience is able to be counted towards the 1500 hours required to hold an ATPL.

2.22 AIPA contended that glider experience does not correlate well or closely enough with the flying of engine-driven aircraft in a multi-crew environment.[18]

2.23 AIPA's view was supported by Captain Tim Berry, Director of Operations for Tiger Airways, who felt that 'no consideration should be given…in the context of an ATPL to glider pilot hours, ultralight pilot hours or anything of that kind'.[19]

2.24 Accordingly, AIPA called for the experience requirements for the grant of an Australian ATPL to be reviewed to ensure that sufficient weight is placed on multi-engine aeroplane experience as opposed to the recognition of glider and ultralight experience.[20]

Consequences of any reduction in flight hour requirements on safety

2.25 The terms of reference for the inquiry directed the committee to consider the consequences of any reduction in flight hour requirements on safety. Very little, if any, evidence was received on this question, most likely because there is no apparent proposal or likelihood that the current minimum experience requirements for the granting of pilot licences will be reduced.

2.26 However, many submissions commented that, historically, co-pilots and pilots of RPT flights generally commenced with flight experience hours well in excess of the minima prescribed for licence qualification. Suggested reasons for this included airlines setting higher entry requirements, a greater proportion of candidates coming through the general aviation pathway (where high numbers of flight experience hours are common), and traditional career pathways whereby candidates often gained significant flight hours as second officers. Captain Geoff Klouth submitted:

> Traditionally experience has been valued in aviation and it was only through the accrual of experience that a pilot was able to progress to the next level of operation. This would result in experience levels in the cockpits of jet aircraft being high with the First Officer and the Captain. The stable nature of the Australian airline industry also meant that First Officers generally had many years in the right hand seat before progressing to Captain. With the collapse of Ansett and the rapid expansion of Virgin

18 Captain Richard Woodward, *Committee Hansard*, 1 December 2010, p. 5.

19 *Committee Hansard*, 1 December 2010, p. 26.

20 *Submission 6*, p. 6.

> Blue that stable progression was replaced by pilots obtaining jet Command positions within 6 to 12 months of commencing with the airline.[21]

2.27 The committee heard that co-pilots are today frequently commencing as first officers with a number of flight experience hours much closer to the prescribed licence minima. The consequences of this apparent development were addressed in much of the evidence provided to the inquiry.

2.28 Accordingly, the committee considered the consequences of the current trend towards flight crews having lower average experience levels than in the past.

Consequences of trend towards lower average experience levels

2.29 As noted above, a number of submissions identified a trend in the aviation industry towards pilots operating on RPT flights with lower average flight experience levels. Tiger Airways noted that a worldwide shift in recruitment practices, away from general aviation and military pathways, was a factor in declining experience levels:

> …there has been a trend internationally over the past twenty years, or so, away from 'traditional' routes [that is, general aviation and the military] for pilots into commercial aviation. Traditional routes into aviation did generally mean that pilots did have a higher number of flight hours than is the case today.[22]

2.30 VIPA submitted that the general 'lowering in the average flying experience levels of crews', was due to the increased competition and number of aircraft being operated in Australia.[23]

2.31 Some airlines indicated that, for various reasons, their recruitment strategies favoured candidates coming through training courses specifically designed to produce commercial RPT pilots. This is discussed further below under the discussion of cadet schemes (term of reference (c)).

2.32 However, some airlines provided evidence indicating that they continued to recruit pilots with experience levels well in excess of the prescribed licence minima. Captain Rick Howell, General Manager of Flight Operations and Chief Pilot for the Virgin Blue Group (Virgin), for example, advised:

> …for Virgin Blue and…V Australia as well, the first officer standard…is 1000 hours and 500 hours in multiengine aeroplanes so…it is well above the minimum standard…I do not believe that we have actually recruited anyone into a first officer position with less than 1500 hours.[24]

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21 *Submission 5*, p. 1.

22 *Submission 14*, p. 1.

23 *Submission 37*, p. 3.

24 *Committee Hansard*, 18 March 2011, p. 15.

2.33 Mr Tony Davis, Tiger Airways' Chief Executive Officer and President, advised that Tiger Airways had in place a requirement of 2000 hours for its co-pilots.[25]

Risks associated with lower average experience levels

2.34 CASA submitted that current licensing standards, along with supporting measures such as training and checking systems, meet international standards and produce pilots with adequate levels of proficiency to operate safely in the aviation sector:

> Australia's basic pilot licensing system meets or exceeds ICAO requirements and produces pilots equipped to move safely and competently into the airline environment. Similarly, the mandated training and checking system required of airlines, when properly designed to meet the airline's operational and human capital environment, provides an ongoing training and proficiency checking outcome that helps to ensure high safety standards.[26]

2.35 However, a number of submitters and witnesses expressed concerns about pilots operating close to minimum experience requirements.

View of the Australian and International Pilots Association

2.36 High level concerns over the lower average experience levels for operating pilots were encapsulated by the views of AIPA. AIPA expressed concern that 'the widespread shift in emphasis on airline pilot recruiting…has and will continue to increase the risk of an aviation accident'.[27] While AIPA acknowledged that modern training systems place an emphasis on competency based approaches,[28] it believed that:

> …the current minimum hours required…[to hold] a licence to act as a crewmember on regular public transport (RPT) [is] insufficient to provide the appropriate balance between technical skills, knowledge and experience that would enable a pilot to adequately perform that role in all reasonably foreseeable circumstances.[29]

2.37 AIPA described the solution to current shortcomings in pilot skills as 'multifolded':

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25 *Committee Hansard*, 27 May 2011, p. 7.

26 *Submission 12*, p. 13.

27 *Submission 6*, p. 3.

28 The issue of competency based training is discussed below in relation to term of reference (c) (dealing with current industry recruiting and training practices).

29 *Submission 6*, p. 5.

> You have got to give the basic flying skills to the pilot to start with. The second thing is that you have got to teach them about the systems of the aeroplane so they can fault analyse and the third thing is that you have got to teach them how to use the automation of the aircraft properly and how to deal with it when it operates incorrectly. So you have got to teach people the basics of analysing what the automation is doing with aircraft right now. Modern aircraft are very complex and have many modes that you can use. …[There] have been a number of accidents worldwide where the pilots simply got confused.[30]

2.38 AIPA called for a 'comprehensive review of the minimum experience requirements for Australian airline pilots to act as a crewmember on [RPT] operations [to] be undertaken by [CASA].[31] In terms of the scope of the review:

> The ultimate purpose of the review should be to design a compulsory "pilot experience and safety management plan" (PESMP) that would be binding on commercial airlines operating into and out of, or operating in Australia. In turn, the essence of the PESMP would be to establish a compulsory risk management framework that would see lower experienced pilots having their piloting skills assessed, corrected and confirmed more frequently than experienced flight crew. The PESMP would also have to address a robust support and supervision requirement that would mitigate increased pressure on Captains operating with a low experience crewmember.[32]

2.39 Similar concerns were voiced by a number of groups and individuals that provided evidence to the inquiry, with particular emphasis on the following specific matters.

Capacity to respond to emergency situations

2.40 A number of submitters expressed concern that an inexperienced co-pilot would not be able to effectively support his/her pilot (captain) in high stress or emergency situations. VIPA, for example, described this as a latent risk in current airline operations

> …we are seeing an emergent risk…[where] a relatively inexperienced airline captain will be faced with a situation where a low-experienced First Officer is unable to provide the Captain with the level of operational support required…[This will] increase the likelihood of an undesired outcome should an abnormal situation arise. VIPA believes that the obvious latent…nature of this issue and the increased demand for close supervision of the First Officer by the Captain has a negative impact on operational safety. [33]

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30 Captain Richard Woodward, *Committee Hansard*, 1 December 2010, p. 10.

31 *Submission 6*, p. 3.

32 *Submission 6*, p. 3.

33 *Submission 37*, p. 3.

2.41 VIPA did not believe that there were appropriately directed strategies in place to address the latent risk identified:

> In isolation, the inherent risk of this situation could be dealt with by utilising the traditional mitigators of increased training and greater mentoring by the airlines, aligned with specific quality oversight of risk management and training by the regulator. VIPA is of the opinion that these risk control strategies are ineffective or completely nonexistent.[34]

2.42 Captain Klouth noted that the presence of a relatively inexperienced co-pilot 'puts the other pilot under more pressure to make up for the lack of experience', and that there was an increased risk that 'they may find themselves in a situation that neither pilot knows how to deal with effectively'.[35]

Cockpit authority gradients

2.43 A number of submissions commented on the issue of cockpit authority gradients, which refers to the relative experience levels of a pilot (captain) and his/her co-pilot. A 'steep' cockpit authority gradient occurs where a pilot has substantially more experience than the co-pilot. In this situation, there is an increased risk that a co-pilot with relatively few flight experience hours will be less likely to question or challenge the judgement of the flight captain, even where the safety of a flight and its passengers may be stake. Captain Klouth explained:

> …when you have a high cockpit gradient where you have a significantly experienced captain with a first officer who does not have much experience, then that can create a situation whereby maybe the first officer does not feel he can speak up.[36]

2.44 Further, a 'steep' gradient will increase the level of supervision and work required to be done by a captain in all circumstances, and this may increase the potential for accidents in both normal and emergency operating conditions.

2.45 A number of airline operators, while acknowledging that issues could arise from 'steep' cockpit authority gradients, pointed to significant aspects of organisational culture or operating procedure which can ensure that safety is not undermined.

2.46 Regional Express, for example, submitted that 'the industry has put a considerable amount of work in…[over] the last 15–20 years around…cockpit resource management [CRM] and…threat and error management'.[37] Mr Chris Hine, Flight Operations General Manager, commented that training in Regional Express was strongly geared to overcoming authority gradients, and such training was reinforced by the airline culture more broadly:

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34 *Submission 37*, p. 3.

35 *Submission 5*, p. 1.

36 *Committee Hansard*, 15 February 2011, p. 7.

37 *Committee Hansard*, 1 December 2010, p. 45.

> …we have got a culture in the airline in which the first officers feel very supported in coming forward and indeed the captains feel…open to that feedback. That has been one of the fundamental changes in the last 20-30 years in aviation, that the [First Officer] should not just sit there and say nothing and make the captain look good.[38]

2.47 Virgin advised that, while the regulation of training in non technical skills or human factors (which deals with, inter alia, cockpit authority gradient issues) was somewhat deficient, the airline had pursued a best practice approach to training in these areas. Captain Howell advised:

> [With regard to]…what is normally called in aviation circles non-technical skills or human factors training…the regulation has actually lagged in many ways…[and] industry best practice has gone well in advance of the regulation. Not only have we been consulting to CASA on the development of the new standard but we have set out to ensure that the standard that we achieve across our three airlines—Virgin Blue, V Australia and Pacific Blue—is at a standard that we would accept as being best practice.[39]

2.48 Mr Anthony Petteford, Oxford Aviation Academy, expressed the view that cockpit authority gradients were "very much a thing of the past" in modern airline operations.[40] Mr Petteford's views do not necessarily appear to be supported by a number of experienced Australian airline pilots.

2.49 The committee notes evidence from CASA advising that proposed new regulation CASR Part 121 will place restrictions on the crewing together of inexperienced pilots.[41]

Multicrew pilot licenses

2.50 AIPA outlined significant concerns in relation to MPLs, notwithstanding the very limited issue of such licences by CASA. AIPA observed that MPLs had been issued overseas on the basis of very low flight experience requirements, and could be issued in Australia on the basis of similarly low requirements:

> …if [an MPL holder]…did the bare minimum they would have about double the hours it takes to get a drivers' licence in New South Wales. It is 120 hours to get a drivers' licence in New South Wales. It is 240 hours to get an MPL licence as a pilot, 40 of which can be flying and 10 of which are as pilot in command—total. So we can see one of those graduates come

38 *Committee Hansard*, 1 December 2010, p. 45.

39 *Committee Hansard*, 18 March 2011, p. 5.

40 *Committee Hansard*, 25 February 2011, p. 82.

41 *Submission* 12, p. 19; CASA website, 'CASR Part 121 – Passenger Transport Services and Cargo Operations – Larger Aeroplanes', http://www.casa.gov.au/scripts/nc.dll?WCMS:PWA::pc=PARTS121, accessed 23 February 2011.

> into an airline and ultimately be given command of an airliner with no more than 10 hours ever in command of any aeroplanes.[42]

2.51 However, Swinburne University of Technology (SUT) noted:

> In Britain the academically supported competency based model has been the basis for recruitment of new pilot intakes. The first multi-crew pilot licence (MPL) trainees have recently graduated and are currently undertaking the final stage of training to take up co-pilot positions with a British registered airline. The MPL is a low hour competency based pilot training model.[43]

2.52 AIPA submitted that experiences overseas with MPL pilots suggested that such pilots were not making the transition from simulator training to real flight effectively. AIPA was particularly concerned that such pilots could not take over from the chief pilot in the event that he or she was incapacitated (discussed above).[44]

Proposals to ameliorate risks of lower average experience levels

Imposing mandatory minimum experience levels

2.53 A number of submitters and witnesses supported the proposal to introduce a minimum experience requirement of 1500 hours for certain pilots. This proposal is discussed in detail below.

2.54 This issue of experience levels is related to the question of what proficiency standards are being achieved through the various training pathways that are intended to qualify graduates immediately for co-piloting roles (and thus with flight hours experience approaching the theoretical minimum established by the requirements for licence qualification). This is considered below in the discussion of cadet schemes and similarly tailored training courses.

2.55 In its supplementary submission, AIPA noted:

> that the extensive risk mitigation strategies that now drive the supervision and mentoring of cadet pilots in Jetstar, while an excellent model for other operators is an overt recognition that experience acts as a risk mitigator and that compensating arrangements are necessary for low experience pilots.[45]

2.56 Indeed, Qantas Group in its answers to additional questions taken on notice on 25 February 2011, gives details of the level of supervision (which far exceeds the level of supervision for non-cadets) and includes acknowledgement of the need to treat cadets differently from direct entry pilots.

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42 *Committee Hansard*, 1 December 2010, p. 6.

43 *Submission 30*, p. 8.

44 *Committee Hansard*, 1 December 2010, p. 14.

45 *Submission 6, (Supplementary)*, p. 18.

Question 4 (Senator Xenophon):

Qantas' submission observes that, for cadets, the operational restrictions are tailored and materially different to that of a direct entry pilot, however the remainder of the paragraph which describes training and supervision in such a way it is not clear. Specifically:

(a) What is included in the 1000 hours of training and how much actual flight time is provided?

(b) When does the 18 months of further supervision begin and is there some form of competency assessment to end it?

Answer (a)

The 1000 hours includes 100 hours of simulator time and 185 hours flying time provided during ab initio training, including for the A320 Type Rating. An additional 20 hours of simulator time and 200 hours of flying time are included in the transition course and line training provided by Jetstar. Following Clearance to Line, cadets are rostered with experienced captains for a minimum of 500 hours. In total, this amounts to 1000 hours of training and close supervisory flying.[46]

Answer (b)

The 18 month period of close supervision commences on the completion of (a minimum of) 500 hours operating with an experienced captain following Clearance to Line. During this period, at least three competency checks will be conducted.[47]

Question 5 (Senator Xenophon):

Qantas' submission observes that, for cadets, the operational restrictions are tailored and materially different to (sic) that of a direct entry pilot. Does this not indicate that Jetstar recognises the need for risk mitigation of the cadets' lack of operational experience in contrast to its direct entry pilots?

Answer (Qantas):

This is not a recognition of 'risk'. All our cadet pilots are trained to be fully competent on the aircraft type they operate, in line with Jetstar's internal standards and CASA regulatory requirements. However, a cadet scheme must clearly be managed differently from the training process for a direct entry pilot. The cadet program approach is conservative and allows for close monitoring in the early stages of its introduction. It provides a broad

46 *Answer to question on notice,* received 31 March 2011, p.15.

47 *Answer to question on notice,* received 31 March 2011, p.15.

> range of simulator and actual flying time to ensure that cadets meet internal Jetstar and regulatory standards.[48]

Ensuring adequate experience levels of flight crews – operator policies

2.57 Virgin advised the committee that, while it did not employ cadet pilots,[49] it had in place a policy relating to the relative experience levels of captains and co-pilots on its services—a so-called 'green-on-green' policy, which was intended to ensure that inexperienced pilots were not placed together to operate as flight crew.[50]

2.58 In answer to a question on notice Virgin advised that the policy was comprised of the following elements:

> 1. A flight crew member is deemed to be 'inexperienced' following completion of a type rating or command course (and the associated line flying under supervision), until achieving the following additional experience on the type in their respective flight crew station"
>
> - 100 flying hours and flown 10 sectors, within a consolidation period of 120 consecutive days; or
> - 150 flying hours and flown 20 sectors (with no time limit).
>
> 2. At the roster construction stage, the Aircrew Rostering Officer shall not roster flight crew together unless one or both crew members have achieved the minimum experience requirements listed above.
>
> 3. Once the flight crew rosters have been issued, and control of day-to-day rostering is passed to the Crew Controller, the following policy applies:
>
> - Where a published roster has to be varied for any reason the Crew Controller shall ensure that, as far as possible, one or both flight crew members meet the minimum experience requirement listed above; and
> - If the first officer does not meet the minimum experience requirement then the captain must have a minimum of 300 hours and 100 sectors total experience on that aircraft type.[51]

2.59 Virgin's approach was cited with approval by the Australian Federation of Air Pilots (AFAP), which submitted:

> Our experience with the generically titled 'Low Cost Carrier' models in Australia supports the need to mix and match the levels of experience as an operation grows. Virgin Blue's entry into the industry is an example of successfully mixing experienced Captains with less experienced First Officers. In this case, the experienced Captains provided a solid mentoring

48 *Answer to question on notice*, received 31 March 2011, p.15.

49 *Committee Hansard*, 18 March 2011, p. 22.

50 *Committee Hansard*, 18 March 2011, p. 16.

51 *Answer to question on notice*, received 12 April 2011, p. 2.

> and training base for the airline to grow and develop and for those less experienced first officers to attain command early in their Virgin career.[52]

2.60 Qantas and Jetstar advised that, following clearance to line, cadets 'are rostered with experienced captains for a minimum of 500 hours' and then subjected to an 18-month period of 'close supervision'.[53]

2.61 A number of submitters and witnesses also indicated that they had in place policies relating to supervision and the imposition of operational restrictions on low-experience pilots. These are discussed below under term of reference (c), which relates to current industry practices to recruit and train pilots.

2.62 AIPA submitted that CASA should be required to develop and publish:

> …a specific policy on the risk mitigation strategies for the employment of low experience pilots to both address the increased risk and to provide a standardised approach for all operators…[54]

Increasing multi-crew operations training

2.63 Mr Petteford urged the committee to consider a recommendation that all prospective RPT pilots be required to 'complete a two-to three-week course in multi-crew operations and crew resource management using both the turbine simulator and a classroom environment, before they embark on their initial type endorsement training'[55]. Mr Petteford explained that such a course would:

> …provide pilots with highly relevant skills for our RPT operations…[and enable] the pilots to gain far more relevance and value from the type endorsement course itself. These skills will then form the core foundation in which new airline pilots will both build and grow their teamworking skills, which are absolutely essential in stressful emergency situations during which human beings have a tendency to revert to the law of primacy, which is a critical factor in RPT operations.[56]

2.64 Mr Petteford stressed that improving the ability of crews to communicate and adhere to standard operating procedures (SOPs) in highly automated environments would address the main causes of airline accidents, and would therefore improve flight safety within RPT operations 'overnight'.[57]

2.65 In relation to crew resource management, SUT explained:

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52 *Submission 41*, p. 3.

53 *Answer to question on notice*, received 31 March 2011, p. 5.

54 *Submission 6, (Supplementary)*, p. 22.

55 *Committee Hansard*, 25 February 2011, pp 80-81.

56 *Committee Hansard*, 25 February 2011, pp 80-81.

57 *Committee Hansard*, 25 February 2011, p. 81.

> Crew Resource Management is specifically focussed on the ability to lead or follow, and aims to develop abilities to communicate with associates, apply critical thinking skills and generally perform as a professional aviator.[58]

2.66 In answer to a question on notice, CASA advised that under proposed new regulation CASR Part 61:

> …the new regulations for flight crew licenses, flying training organisations and training and checking organisations will introduce a multi-crew cooperation course which is modelled on the European MCC course. An MCC qualification will be required for all pilots flying multi-pilot aircraft.[59]

2.67 Mr Peter Boyd, an Executive Manager with CASA, noted that human factors training, which could address, for example, issues around cockpit authority gradients, was currently being implemented more broadly across the aviation industry. He explained:

> [Human factors training]…is being mandated more widely at the moment within CASA, and not just for [CASR Part 61]. We have amended our current system and our current civil aviation orders to require human factors training across regular public transport operators. So that will include the next generation, if you like, of that type of training. In terms of time frame, the operators must submit their training plans to us by next week and they must have implemented those types of human factors training by June [2011].[60]

The United States of America's Federal Aviation Administration Extension Act of 2010 which requires a minimum of 1500 flight hours before a pilot is able to operate on regular public transport services and whether a similar mandatory requirement should be applied in Australia

2.68 Term of reference (b) required the committee to consider the United States of America's Federal Aviation Administration Extension Act 2010 [sic] (the US Act),[61] and in particular the requirement for 'a minimum of 1500 flight hours before a pilot is able to operate on [RPT]…services and whether a similar mandatory requirement should be applied in Australia'. A number of submissions addressed this proposal in general terms, however, the US Act itself was not the subject of detailed submissions.

2.69 Given the existing requirement that pilots (captains) of RPT must hold an ATPL, and that a condition of qualification for such a licence is a minimum of 1500

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58 *Submission 30*, p. 7.

59 *Answer to question on notice*, dated 11 March 2011, p. 11.

60 *Committee Hansard*, 25 February 2011, p. 113.

61 The full title is the Airline Safety and Federal Aviation Administration Extension Act of 2010, available at United States Government Printing Office website, http://www.gpo.gov/fdsys/pkg/PLAW-111publ216/pdf/PLAW-111publ216.pdf

hours flight time, the committee understood the proposal to be to impose a minimum requirement of 1500 hours as applying only to co-pilots (first officers).

2.70 As outlined above, the minimum requirement to act as a co-pilot on a RPT flight is the holding of a CPL, based on a minimum 150 hours (for those undertaking a commercial flight course) or 200 hours (for those coming through the general aviation pathway).[62] A MPL holder could act as co-pilot on the basis of 240 hours' experience, of which only 40 hours must be actual, as opposed to simulator, flight time.

Should Australia adopt a mandatory requirement of 1500 hours?

Opposition to proposal for a mandatory minimum 1500 hours' experience

2.71 Many submitters and witnesses did not support the proposal that Australia adopt a mandatory requirement of 1500 hours' flight experience for co-pilots operating RPT flights.

2.72 AFAP, for example, supported the maintenance of current arrangements, subject to appropriate oversight and management of less experienced pilots:

> …[AFAP] does not support the reduction (or increase) of mandatory flight time requirements. Our experience, such as at Virgin Blue, is that less experienced pilots can and should be incorporated into airlines, providing there is a solid existing experience base and sound internal check and training systems in place.[63]

2.73 AFAP also noted that 'many individual operators overlay these minima with higher internal minimum experience levels. These are often adjusted in response to market demands and other factors'.[64]

Experience not an effective indicator of proficiency

2.74 A common objection to the proposal for a 1500 hour minimum was that a bare requirement for minimum flight hours' experience would not necessarily equate to an adequate or certain level of pilot competency. CASA, for example, submitted that 'completing an arbitrary number of flight hours alone may not necessarily ensure competency to perform a task safely'.[65] The CASA submission stated:

> Experience-based flying training is based on the accumulation of a prescribed number of hours for training activities, at the completion of which a flight test is undertaken. Assessment of performance in this context

62 This is effectively a theoretical minimum given the usual requirements for specific endorsements and ratings needed to fly particular aircraft.

63 *Submission 41*, p. 2.

64 *Submission 41*, p. 3.

65 *Submission 12*, p. 10.

> may be less objective with results being less consistent than the criterion-referenced assessment required by competency based training.[66]

2.75 Similarly, SUT commented that 'quantity of training is no substitute for quality'.[67]

2.76 The Regional Aviation Association of Australia (RAAA) submitted that flight hours are not a useful determinant of a pilot's skill or likely levels of safety,[68] and noted that in many cases:

> …junior pilots who join…[regional airlines as first officers (co-pilots)] with less than 1500 hours often excel when compared to pilots with higher initial total time but…less airline exposure.[69]

2.77 Virgin also noted that pilot experience was not universal in terms of its relevance to RPT services:

> It is also relevant to consider the circumstances in which pilot experience is gained, ie aircraft type (light, commercial, military) and single pilot versus multi-crew as these cannot be considered equivalent for the purposes of assessing capability to operate RPT services safely.[70]

2.78 AIPA concurred with this analysis, noting that, while experience requirements had historically acted as a 'filter' for young pilots developing skills and experience in general aviation, a substantial number of flying hours based on a narrow set of flying conditions and experiences would not necessarily deliver a well-rounded learning experience. Captain Richard Woodward, a Vice President of AIPA, observed:

> There is a common statement that one hour [of experience] repeated 2000 times is not much of a learning experience.[71]

2.79 Mr Petteford noted:

> …not all general aviation experience is relevant to RPT operations and in some instances it can generate unsafe attitudes and practices which are not conducive to the operation of RPT aeroplanes.[72]

2.80 These comments were supported by anecdotal evidence suggesting that pilot standards emerging from the general aviation route are variable, and that a high

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66 *Submission 12*, p. 10. The issue of competency based training is discussed below in relation to term of reference (c), which deals with current industry recruiting and training practices.

67 *Submission 30*, p. 1.

68 *Submission 19*, p. 2.

69 *Submission 19*, p. 5.

70 *Submission 17*, p.1.

71 *Committee Hansard*, 1 December 2010, p. 3.

72 *Committee Hansard*, 25 February 2011, p. 80.

number of flight hours' experience does not therefore necessarily equate to proficiency for RPT purposes. Regional Express, for example, advised that it had previously encountered varying standards of pilot competency when recruiting on the basis of a relatively high minimum experience requirement. Mr Chris Hine, Flight Operations General Manager, explained:

> We used…[2000 hours minimum flight experience] as our paper benchmark [for recruitment]. [However, we] got to the point where we were so concerned from a duty-of-care point of view about some of the things that we were finding in the interviews that we…met with our local CASA office and said, 'We wish to at least advise you that these are the standards we've seen.' It raised for us the fact that these were pilots who had what would be considered considerable experience levels, yet they did not have the standards that we felt were required.[73]

Unintended consequences for regional airlines

2.81 A number of airlines contended that a mandatory requirement of 1500 hours' flight experience for pilots would have unintended adverse consequences, particularly in relation to the ability of regional airlines to recruit and retain pilots.

2.82 Captain Tim Berry, Director of Flight Operations, Tiger Airways, noted that, if a requirement for 1500 hours' experience were adopted in Australia, 'budding' pilots would have no choice but to seek training overseas as there are not sufficient opportunities for a pilot to gain 1500 hours' experience in the non-commercial aviation sector in Australia.[74]

2.83 Mr Petteford supported the view that the general aviation industry in Australia would not provide sufficient opportunities for pilots to attain the 1500-hour minimum.[75]

2.84 The RAAA noted that, unless any such requirement was 'grandfathered' for all existing RPT pilots, a number of pilots would be forced out into the general market for aviation pilots to achieve the mandatory minimum.[76]

2.85 The RAAA also pointed to problems retaining experienced pilots for regional airlines if the mandatory minimum were introduced. The RAAA submission explained:

> One of…[the] biggest challenges for regional airlines is holding onto their pilots. As they become more experienced they become more attractive to the major, jet airlines – which can pay higher salaries and offer larger aircraft for pilots to fly…If regional airlines cannot hire pilots for RPT until

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73 *Committee Hansard*, 1 December 2010, p. 36.

74 *Committee Hansard*, 1 December 2010, pp 22 and 23.

75 *Committee Hansard*, 25 February 2011, p. 80.

76 *Submission 19*, p. 4.

> they have 1500 hours, then it will be very difficult to secure them for any reasonable time before they move to the larger airlines, making it even more difficult than now to recover the very high costs of induction, check and training, etc that is a necessary part of getting a pilot into an RPT operation.[77]

2.86 Similarly, Regional Express warned of 'catastrophic implications' for regional airlines, as a 1500 hour mandatory minimum would lead to the cessation of pilot cadet schemes, which would become uneconomic if cadets were required to attain 1500 hours within such a scheme. This, in turn, would lead to 'increased recruitment of experienced regional pilots by the larger airlines', and 'serious safety implications for the smaller operators as they lose large numbers of experienced pilots'.[78] Regional Express noted as a relevant example its experience during a pilot shortage in 2007-08, in which the company lost 50 per cent of its pilots to recruiting by the larger airlines.[79]

2.87 This view was supported by the evidence of Virgin, which predicted an almost immediate effect on regional airlines:

> Regional airline pilots tend to have accumulated relatively less experience at commencement, because the type of aircraft generally operated by those carriers enables a natural progression from general aviation. More experienced regional pilots in turn supply a significant proportion of the technical crew for the major Australian airlines.[80]

2.88 Virgin observed that the adverse effects of a mandatory minimum experience requirement would ultimately also impact on the ability of major Australian airlines to recruit experienced pilots:

> It could…be expected that over time – and particularly in times of strong growth such as those experienced by the highly cyclical aviation industry in 2007 and 2008 – such a requirement could have a measurable impact on airlines such as Virgin Blue, with regional airlines anticipated to be subjected to severe labour shortages.[81]

2.89 In response to the concerns outlined above, AIPA acknowledged that a mandatory minimum as proposed could adversely impact on the 'smaller elements of commercial aviation'. However, AIPA contended that such 'market distortions' could be taken into account in the legislative scheme that imposed the requirement.[82]

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77 *Submission 19*, p. 3.

78 *Committee Hansard*, 1 December 2010, p. 36.

79 *Committee Hansard*, 1 December 2010, p. 36.

80 *Submission 17*, p. 1.

81 *Submission 17*, p. 2.

82 *Submission 6*, p. 3.

2.90 Specifically, AIPA proposed that any such requirement could be limited to 'pilots of jet public transport aircraft'.[83]

Context of the US Act does not translate to the Australian aviation industry

2.91 Lastly, the committee heard that Australian conditions are significantly different to those which drove the introduction of the 1500 hour requirement in the US. CASA identified a number of differences between Australia and the US in relation to pilot qualification:

> For domestic flights conducted within the United States, co-pilots are not required to hold a type endorsement for the aircraft being operated and receive only the training the operator deems necessary to perform the co-pilot duties. For international operations, the co-pilot must be fully qualified, and must hold an aircraft endorsement, as this is an ICAO requirement.[84]

2.92 Further, CASA noted that 'there is a significant difference between the approach taken to basic flying in Australia'. It explained that, in the US, 'basic training can be conducted by flight instructors working independently of a flying school with very limited regulatory oversight'.[85] Where such training is conducted by an approved training organisation, a reduction in the minimum number of flying hours is granted.[86] In contrast, in Australia, 'all flying training for CASA issued licences must be conducted by the holder of an Air Operator's Certificate which authorises flying training'.[87]

2.93 Other points of distinction raised by CASA were:

- that 'a large portion' of training in the US is not based around competency based principles; and
- that aspects of the US training and checking requirements are 'less rigorous' than the systems in place in Australia.[88]

2.94 Qantas and Jetstar observed that the US Act allows for the recognition of 'non-flying training', and expressed a preference for 'academic training courses [that] will enhance safety more than requiring the pilot to fully comply with the flight hours requirement' (that is, competency based flying training).[89] While there was no evidence of how this process would work in practice, the committee notes that a

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83 *Submission 6, (Supplementary),* p. 11.

84 *Submission 12*, p. 10.

85 *Submission 12,* p. 11.

86 *Submission 12*, p. 12.

87 *Submission 12*, p. 11.

88 *Submission 12*, p. 11.

89 *Submission 31*, p. 7.

similar provision in the Australian context, where competency based training is the norm, could impact on the operation of a mandatory minimum.

2.95 Given the factors identified above, CASA concluded that 'it is unclear…what, if any, safety issues would be addressed in Australia by increasing minimum hour requirements for co-pilots to an arbitrary 1500 hours'.[90] CASA did not support 'the requirement for co-pilots to hold an ATPL (with a minimum experience requirement of 1500 hours).[91]

Support for proposal for a mandatory minimum 1500 hours' experience

2.96 In contrast to views opposing the introduction of a 1500 hour minimum, a number of submitters and witnesses supported the proposal.

2.97 AIPA contended that actual flight experience is qualitatively superior to theoretical or simulated approaches to pilot training:

> …practical and appropriate piloting experience is a significant risk mitigator that cannot be replaced by theory or simulator training, only supplemented.[92]

2.98 AIPA also acknowledged that minimum experience requirements are but one factor in the production of competent pilots:

> …hours alone is not a determinant…[of pilot competency]. There is obviously a minimum number of hours where you have enough experience to be self-reliant…but the other thing you need is competent training and certainly a mentoring program for the pilots.[93]

2.99 However, AIPA felt that the minimum flight hours' requirement must reflect 'a balance between skills, knowledge and behaviours versus the operational risk',[94] arguing that 'pathways to gaining operational experience should be focused on situations that reduce the exposure of the travelling public to the risk of an error caused by inexperience'.[95] Accordingly, AIPA's view was that:

> …subject to appropriate supervision and mentoring, low experience pilots should enter the system through operations that employ non-jet aircraft with 50 or fewer seats. Proposals to employ low experience pilots on jet aircraft and larger non-jet aircraft should be possible, but only after rigorous controls are established and monitored.[96]

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90 *Submission 12*, p. 11.

91 *Committee Hansard*, 25 February 2011, p. 109.

92 *Submission 6*, p. 3.

93 Captain Richard Woodward, *Committee Hansard*, 1 December 2010, p. 4.

94 *Submission 6*, p. 5.

95 *Submission 6, (Supplementary)*, p. 11.

96 *Submission 6, (Supplementary)*, p. 11.

2.100 AIPA therefore supported the 1500 hour minimum for all pilots of jet public transport aircraft through the requirement to hold an ATPL and, 'until such time as the existing legislation is modified, that a minimum hours experience requirement be established for high capacity RPT aircraft captains and co-pilots'.[97]

2.101 While AIPA acknowledged an emerging international consensus that 750 hours 'may be an appropriate minimum', the ICAO requirement of 1500 hours' experience for an ATPL, which is binding on Australia, meant that this was the only mandatory limit that was practically achievable currently.[98]

2.102 Captain Klouth supported the proposal for a 1500 hour minimum, arguing that:

> A person with 1500 flight hours will be more capable than a person with 200 flight hours. They will have been exposed to a full change of season and know how to cope with weather changes and generally have more knowledge about the environment they work in. To obtain an ATPL a person requires 1500 flight hours so that should be the minimum standard before they are permitted to operate on RPT services.[99]

2.103 Captain Klouth also pointed to certain factors, discussed above, as justifying a requirement of 1500 hours for both pilots, namely the need for a co-pilot to be able to support or possibly take over from the captain in an emergency, and the dynamics of a steep cockpit authority gradient.[100]

Current industry practices to recruit pilots, including pay-for-training schemes and the impact such schemes may have on safety

2.104 A number of submissions commented on current industry practices relating to pilot recruitment, and the impact such practices might have on safety.

2.105 The committee received a considerable amount of evidence commenting on this issue, particularly pilot cadet schemes. In keeping with the focus of the terms of reference, the committee was interested to explore whether aspects of such arrangements have any adverse impacts on the quality of pilots and airline safety more generally.

2.106 In general terms, the main pilot recruitment/training options are:

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97 *Submission 6, (Supplementary),* p. 11.

98 Captain Richard Woodward, *Committee Hansard,* 1 December 2010, p. 4. CASA is required to perform its functions in a manner consistent with Australia's obligations as a signatory to the Convention on International Civil Aviation (Chicago Convention) and any other agreement between Australia and any other country or countries relating to the safety of air navigation (CASA, *Submission 12*, p. 4).

99 *Submission 5*, p. 1.

100 *Committee Hansard*, 15 February 2011, p. 7.

- direct entry: where a pilot has pre-existing qualifications and can be employed directly—although they will typically require training in the SOPs of the employing airline; and may require training in the piloting of a particular aircraft (type endorsement); and
- cadet programs: courses for aspiring pilots that are tailored to producing pilots for RPT operations. Generally these are pilots who would not otherwise meet the airline's minimum experience requirements. These may be run in-house or through third-party providers. Various fee arrangements may apply: cadets may be required to pay their own fees (pay-for training schemes), or an airline may pay fees on a loan or bond basis.

Cadet schemes

2.107 The CASA submission explained that:

> …a cadet pilot scheme…sees recruits trained *ab initio* to CPL standards, with ATPL theory examination passes, following which these pilots are employed in co-pilot or second officer positions...[101]

2.108 CASA noted that cadet programs have been 'in existence for many years [in Australia], as well as overseas'.[102]

2.109 Tiger Airways also noted that cadet pilot programs have been 'well and truly established' overseas since the 1980s, and are now 'generally the preferred method of recruitment into an aviation career [in Europe]'.[103] Captain Berry stated:

> In Europe, for years and years they have had pilot cadet schemes. I personally was involved with the KLM pilot cadet scheme…Lufthansa, Air France, British Airways and further afield, Emirates, Cathay and Singapore Airlines all have pilot cadet schemes, take pilots off the street and train them up to the standard they want and put them in their aircraft. And they have all been highly successful.[104]

2.110 Captain Berry noted that Tiger Airways did not currently employ any cadet pilots. However, he believed that Tiger Airways 'should be looking to cadet pilot schemes [in future]',[105]and that the airline supported cadet schemes as being one of a range of routes that should be available to potential pilots to become qualified.[106]

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101 *Submission 12*, p. 11.

102 *Submission 12*, p. 14.

103 Captain Tim Berry, Director of Flight Operations, *Committee Hansard*, 1 December 2010, p. 21.

104 *Committee Hansard*, 1 December 2010, p. 40.

105 *Committee Hansard*, 1 December 2010, p. 22.

106 *Committee Hansard*, 1 December 2010, p. 33.

Increasing use of cadet training schemes

2.111 A number of submitters and witnesses observed that Australian airlines are increasingly using cadet training schemes to recruit pilots. The Qantas and Jetstar submission observed that Australian carriers:

> …have introduced a range of programs to train new pilots for the industry. Although the nature of these programs varies in the way the training is delivered, all are subject to approval by CASA.[107]

2.112 Mr Jim Davis, Managing Director of Operations, Regional Express, advised that a number of airlines were 'progressing towards training their own pilots', and that there was a trend for either airlines or 'large professional training organisations' to perform most pilot training. [108] Mr Davis advised that Regional Express ran its own in-house cadet training scheme.[109]

2.113 Virgin advised that it would be implementing a cadet scheme, and was in the initial stages of planning for the scheme.[110]

2.114 A range of factors were identified as driving the move toward cadet schemes. Qantas and Jetstar submitted that traditional routes through general aviation and the military were not sufficient to meet current and projected demand:

> The demand for pilots in Australia and overseas is strong. The traditional pilot recruitment processes, such as sourcing pilots from General Aviation and the military, have proven to be insufficient to meet the needs of the Australian aviation industry in recent years…Forecasts from ICAO indicate that this region will suffer the greatest number of pilot shortages in the next twenty years.[111]

2.115 This view was supported by Tiger Airways, which submitted that it 'was recognised in the 1960s and [19]70s that these two routes into aviation would not provide pilots in the numbers that were required'.[112]

2.116 Captain Klouth, however, questioned the claim that general aviation could not provide sufficient numbers of pilots, and noted that cadet schemes were originally intended to supplement traditional sources of pilots:

> Australia, as opposed to places like Europe and Asia, has had a quite significant general aviation industry and…there are still plenty of general aviation pilots who would love the opportunity to apply for and receive an

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107 *Submission 31*, p. 8.

108 *Committee Hansard*, 1 December 2010, p. 35.

109 *Committee Hansard*, 1 December 2010, p. 43.

110 *Committee Hansard*, 18 March 2011, p. 3.

111 *Submission 31*, p. 8.

112 *Submission 14*, p. 3.

> interview with a major domestic airline. As for saying there are not enough pilots out there…[as] other people have mentioned, the cadet pilot system as it was usually done here was never intended to be the primary source of pilots. It was intended to supplement the usual stream. To say that there are no pilots out there is not entirely correct.[113]

2.117 AIPA also disagreed with claims of a shortage of pilots:

> AIPA believes that Australia is not currently facing a shortage of qualified pilots and we further believe that there is an adequate distribution of operational experience among the pool of prospective pilot employees available to airlines.
>
> AIPA believes that the approach taken by Jetstar, as a prime example, has nothing to do with a shortage of suitably qualified and experienced pilots.[114]

2.118 AIPA expressed the view that, in fact, cadet schemes could be acting as a disincentive to prospective pilots due to the associated costs.[115] Mr Bruce Buchanan, the Chief Executive Officer of Jetstar, however, asserted that cadet schemes offered another route for entry into the pilot profession. Mr Buchanan stated:

> No good training system exists such as that which universities provide for doctors and lawyers. For a young person trying to become a pilot, there is a huge cost barrier to get into this field. We are trying to create mechanisms where people can get into this field, where they can afford to get into it no matter what their socioeconomic background is and where they can get to really good salaries very quickly.[116]

2.119 Tiger Airways also identified 'significant advantages' attached to cadet schemes, provided that they were properly regulated, employed pilot aptitude testing as a requirement for entry, and were tailored to the needs of individuals in the program.[117] The Tiger Airways submission observed that, while military trained pilots were historically 'sought after' by airlines, there was 'a growing realisation that the personality traits that suit a pilot to fly a high performance fighter in battle are not necessarily suited to the role of the airline pilot'. Pilots undertaking the general aviation route could be of 'mixed quality', due to a large portion of their experience being gained 'flying alone, uninstructed and un-mentored'.[118]

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113 *Committee Hansard*, 15 February 2011, p. 6.

114 *Submission 6, (Supplementary)*, p. 4.

115 *Submission 6, (Supplementary)*, p. 12.

116 *Committee Hansard*, 25 February 2011, p. 22.

117 *Committee Hansard*, 1 December 2010, p. 21.

118 *Submission 14*, p. 2.

2.120 Qantas and Jetstar also pointed to the consistency of training offered by cadet schemes, as compared to the experience gained through the general aviation pathway.[119]

2.121 Mr John McCormick, Director of Aviation Safety, CASA, noted that cadet schemes could offer advantages in terms of providing cadets with a stronger exposure to an airline's operating procedures and safety culture. He explained:

> [Cadet schemes are]…in a lot of ways, very good for someone who is going to have a career in the airline, because right from the start there is a certain amount of inculcation of the principles of safety, and there is perhaps even by osmosis a…carryover of the character of the organisation and the way it operates. That [is beneficial]…for the ethos…of flight deck management…of how the crew cooperate, of how the captain and the first officer cooperate.[120]

2.122 These views were supported by Regional Express. The committee heard that the Regional Express in-house cadet scheme currently supplies 100 per cent of its new pilot intake. Mr Davis explained that one of the drivers behind the scheme was the issue of pilot quality:

> …a few years ago we did recruit from general aviation using minimum experience requirements. We typically required 2,000 or 3,000 hours to get a pilot into Rex. We were not happy with what we were getting—we saw some standards there that did not meet our requirements—and we started looking at a cadet scheme.

2.123 In terms of pilot quality and safety, Mr Davis commented:

> I see this as a very positive trend, I see this as an increase in safety, because we are getting the standard of pilot that we want out of our own training schemes when we start from day one, *ab initio*.[121]

2.124 Virgin, however, reported that the quality of pilots sourced through the general aviation pathway was adequate for its recruitment purposes. Captain Howell noted that Virgin:

> …have not had any trouble recruiting applicants [through general aviation] that meet our standards. We are quite comfortable that our selection process is robust and shows a good correlation between recruitment process and success as an operating pilot.[122]

2.125 An additional driver for Regional Express to establish an in-house cadet scheme was that this allowed the business to establish a relatively secure pilot

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119 *Submission 31*, p. 10.

120 *Committee Hansard*, 25 February 2011, p. 116.

121 *Committee Hansard*, 1 December 2010, p. 36.

122 *Committee Hansard*, 18 March 2011, p. 12.

workforce against the historical trend for pilots to move from regional operations to the larger commercial airlines such as Qantas. The committee heard that Regional Express had suffered a dramatic loss of pilots during a recent pilot shortage, and the scheme offered a greater potential for the airline to retain pilots for a reasonable period.[123] This was because the Regional Express scheme included financing arrangements intended to create a financial incentive or bond for pilots to remain with the company. Mr Davis explained:

> …cadets enter into a financing arrangement with the company, [whereby Regional Express]…actually supply three-quarters of the cost of training [which is approximately $88,000]. They supply one-quarter up front. After six years, we will forgive a quarter of the cost of training, so the cadet then only has to pay three-quarters of the total cost of training, but half of that total cost is a HECS type scheme. They pay it back to us at low interest. So the incentive to stay with Rex is because, as soon as they leave us, at whatever stage of the repayment schedule they are at, they have to pay us what they owe.[124]

2.126 AIPA identified the introduction of the low-cost carrier (LCC) model to Australia as a significant reason for the increased use of cadet schemes:

> …cost pressures brought about by the Low Cost Carrier (LCC) model have resulted in airlines offering terms and conditions that are unattractive to experienced pilots. The likelihood of increased pilot turnover from pilots seeking more equitable terms, combined with the need to generate financial ratios acceptable to their owners, has resulted in airlines seeking ways to circumvent the traditional approach to hiring pilots with experience in commercial operations.[125]

2.127 According to AIPA, a key feature of the LCC training model is to offer 'increasingly poor terms and conditions'. AIPA submitted that such approaches were:

> …cost-driven models consistent with an oversupply of pilots. AIPA asserts that those models are entirely out of step with the now ubiquitous forecasts of a worldwide shortage of pilots that airlines and their representative organisations are currently scrambling to address in other ways.[126]

2.128 AFAP, although it supported a 'variety of pathways to an airline career', was concerned about:

> …growing over-reliance on the 'pay-for-training' or cadetship model. These programs have an intrinsic commercial incentive for the parties to get through the training by the quickest allowable means. This risk needs to be

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123 *Committee Hansard*, 1 December 2010, p. 35. This issue is discussed further in relation to term of reference (d), which relates to pilot retention.

124 *Committee Hansard*, 1 December 2010, p. 41.

125 *Submission 6*, p. 7.

126 *Submission 6*, p. 7.

> managed and closely monitored. It also has the potential to undermine internal training systems and traditional career paths to an airline career.[127]

2.129 Captain Klouth noted that certain business models employing cadet schemes exhibited significant financial incentives for airlines:

> There are some in the aviation industry who consider that this form of experience is not relevant to a modern airline and the best and safest way forward is to get young men and women, train them to the minimum hours allowed, load them up with significant debt and then pay them at a third of the cost of experienced first officers. I am yet to see any evidence that the cadet system, as it is currently being run, is anything other than a cost-benefit to the airline.[128]

2.130 Similarly, AIPA submitted that:

> …cadet schemes such as those engineered by Jetstar appear to be motivated by converting a cost centre into a revenue centre as well as transmitting business to offshore entities.[129]
>
> AIPA is firmly of the view that the recent exposure of the so-called 'Jetstar Cadet Scheme' has shown it to be nothing other than a scheme to avoid Australian employment and tax rules and to shift work offshore as a means to reduce labour costs. The evidence on cadet schemes shows some schemes are usurious and a long way from the philanthropy that some…claim.[130]

Adequacy of cadet scheme based pilot training

2.131 CASA submitted:

> …[Provided] there is an appropriate ongoing training and development system in place, there is no evidence to suggest that [the cadet training type] approach has resulted in any diminution of safety standards.[131]

2.132 CASA pointed to the balance of elements in Australia's approach to initial pilot training, noting that this 'combines a rigorous competency based flying training program with the specification of a required minimum number of flying hours'. Such an approach:

> …recognises the need to ensure competency while at the same time acknowledging that the exposure gained by flying experience is also an important factor in developing piloting skills.[132]

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127 *Submission 41*, p. 2.

128 *Committee Hansard*, 15 February 2011, p. 2.

129 *Submission 6, (Supplementary)*, p. 2.

130 *Submission 6, (Supplementary)*, p. 4.

131 *Submission 12*, p. 11.

132 *Submission 12*, p. 9.

2.133 Similarly, SUT commented:

> The integration of targeted high level educational and practical training programs with advanced technology aircraft and associated training aids delivers a graduate equipped with both the technical and non technical skills required for a flight crew member.[133]

2.134 Mr Buchanan commented:

> …the combination of training elements has proved the most effective way to get pilots trained to deal with the issues that they are going to deal with. So a combination of a lot of practical time, getting them ready for multicrew jet operations, and then simulator time where they are practising different scenarios and events, and flying time, has been proven the best by studies around the world to prepare pilots to fly a modern jet aircraft.[134]

2.135 Mr Anthony Petteford, OAA, commented:

> …it has been quite clearly proven over the years that quality cadet programs, whilst requiring significantly fewer hours of flying experience than the GA pilot route, do enhance RPT operational safety as opposed to reducing it…[135]

2.136 The Regional Express submission provided an empirical analysis of the performance of cadet pilots and 'traditional' pilots. Appearing before the committee, Mr Hine explained the findings of this analysis as follows:

> [Regional Express has a system which] digitises all of our check reports. Every pilot that does a check is scored on a range of variables from 1 to 5, 1 being unsatisfactory and 5 being the highest standard. For the last five years all of the data from every single check report that is completed has gone into an electronic database. We are able to query that database and ask it to give us the average scores of cadets versus what we will call 'traditional' first officers. We found that the scores were almost identical. In the first year there was a less than three per cent variation across the board, and certainly into the second year we found that the data showed that the cadet pilots started to outperform the traditional, more experienced pilots.[136]

2.137 In discussing the very low failure rate for cadets (at around five per cent), Regional Express representatives noted that the selection processes for entry into its cadet scheme ensured that candidates possessed a high aptitude for pilot training. Mr Davis explained:

> When we started the cadet scheme we did change our recruitment methods. We became far more selective. We introduced a different simulator test, we

133 *Submission 30*, p. 1.

134 *Committee Hansard*, 25 February 2011, p. 25.

135 *Committee Hansard*, 25 February 2011, p. 16.

136 *Committee Hansard*, 1 December 2010, pp 38-39.

> introduced the pilot aptitude test, we introduced an academic test and we also introduced several ranges of interviews. They do two or three interviews.[137]

2.138 Qantas and Jetstar also reported that its cadet graduates attained equivalent levels of skill and competency to direct entry pilots:

> Irrespective of the originating recruitment program all QantasLink pilots must undergo the same airline training path and demonstrate the same high level of flying skills in a range of competency assessment milestones prior to unrestricted line operations. This is evident in the performance of pilots completing each program, as over 94 percent of total checks of pilots in the Trainee/Cadet program record satisfactory results, which is almost equal to the results of pilots in the Direct Entry program.[138]

2.139 Further, Qantas and Jetstar noted that the cadet pilot scheme employed selection processes designed to identify candidates with the appropriate skills and aptitude for piloting modern aircraft:

> It is important to note that Cadet Pilot Training processes provide three distinct opportunities to vet candidates; initial entry screening processes, meeting the requirements of the competency based training program and then via additional screening prior to a pilot being checked to line.[139]

2.140 Qantas and Jetstar also noted that:

> Following the completion of the training and oversight process for a new cadet pilot the operational restrictions are tailored and materially different to that of a direct entry pilot.[140]

2.141 For example, in relation to Jetstar pilots:

> Operational restrictions have been developed to quarantine a cadet pilot to only operate with approved Captains for the first six months of line operations. In addition, extra check points (simulator checks/line checks) and training details have been developed by Jetstar to increase the training and oversight of the cadet during his/her initial period of operations. Restrictions on the cadets during their initial phases also include a lower cross wind limit for landings and operating restrictions on narrow and short runways.[141]

2.142 AIPA submitted that the use of flight simulators, which was prevalent in cadet style training schemes, did not adequately prepare pilots for real life flying:

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137 *Committee Hansard*, 1 December 2010, p. 40.

138 *Submission 31*, p. 8.

139 *Submission 31*, p. 9.

140 *Submission 31*, p. 9.

141 *Submission 31*, p. 9.

> …the use of flight simulators and other synthetic flight training devices cannot adequately replicate the physical environment of real aircraft responses to the vagaries of actual weather phenomena and busy air traffic services that are critical to *ab initio* pilots developing sound situational awareness, aircraft handling skills and coping behaviours under stress.[142]

2.143 AIPA submitted that there was an increasing risk of airline safety incidents or accidents in Australia, which could be seen as part of an 'increasing trend for accidents worldwide', largely due to 'poor training, automation reliance by pilots and poor manual flying skills'.[143] Captain Woodward explained:

> We see similar elements developing in Australia. We are not necessarily predicting an accident tomorrow, but we see there is a potential in the industry to go down the same route that they have seen in Europe and in the United States—decreasing experience levels and dumbing down of training.[144]

2.144 AIPA was particularly concerned about the use of cadet schemes in the context of LCCs. It noted that:

> Few, if any, LCCs invest in any training infrastructure and generally favour third party training providers. The cost of training is moved off the balance sheet, the profit and loss account is improved and the pilots now carry a financial burden that acts as a disincentive to start again with another operator.[145]

2.145 AIPA was particularly concerned that LCCs:

> …typically deny any linkage between experience and operational risk and make little or no effort to establish supervisory and mentoring schemes to manage that risk.[146]

2.146 In contrast to AIPA's concerns over LCC cadet scheme models, the association identified the Regional Express cadet scheme as a successful model. In relation to this scheme, Captain Woodward commented:

> I heartily endorse the Rex cadet scheme system, providing there is proper mentoring and training. They are bonding those pilots for six years. We talked to the Rex people and went and looked at their facilities. They said that if they could get six or seven years out of a pilot they accept that they will move on. So they have come to grips with the constant loss to the bigger side of the industry.[147]

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142 *Submission 6*, p. 5.

143 *Committee Hansard*, 1 December 2010, p. 3.

144 *Committee Hansard*, 1 December 2010, p. 3.

145 *Submission 6*, p. 7.

146 *Submission 6*, p. 8.

147 *Committee Hansard*, 1 December 2010, p. 16.

2.147 The AIPA submission stated:

> AIPA supports the Rex approach in which the company created its own training school, guaranteed employment for the graduates and provided significant financial incentives for the trainees to achieve high standards.[148]

2.148 AIPA called for the Commonwealth Government to set standards relating to the operation of cadet schemes.[149]

Consistency with competency based approaches to training

2.149 Many submitters and witnesses highlighted the fact that cadet schemes in Australia are designed around a competency based approach to training, which was said to be recognised as the best practice approach.

2.150 Qantas and Jetstar, for example, contrasted the competency based approach with one that focuses solely on pilot hours:

> There is considerable international evidence and practice to suggest that competency based training as an approach delivers better safety outcomes than focusing on quantitative training measures.[150]

2.151 The Qantas and Jetstar submission noted that the trend towards competency based training, as opposed to 'purely experiential training', was 'consistent with broader educational training trends and supported by a number of studies comparing training approaches'.[151]

2.152 In particular, Qantas and Jetstar pointed to a review of pilot training practices conducted by the ICAO in 2003, which was undertaken in recognition of changes in the nature of aircraft and piloting demands post Second World War.[152] The review had led to a greater emphasis on competency based training and the development of the MPL.[153] Such developments demonstrated that:

> …international regulatory bodies such as ICAO and representative industry bodies such as IATA agree that the safety of commercial airline operations are best ensured through a well designed and managed competency based approach to pilot training.[154]

2.153 Mr Alan Joyce, Qantas Chief Executive Officer, noted, however, that the company continued to value experience. He stated:

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148 *Submission 6*, p. 8.

149 *Committee Hansard*, 1 December 2010, p. 16.

150 *Submission 31*, p. 3.

151 *Submission 31*, pp 5-6.

152 *Submission 31*, p. 3.

153 *Submission 31*, p. 4.

154 *Submission 31*, pp 4-5.

> I want to emphasise that moving towards competency based training does not mean devaluing the merits of experience, or at least the right kind of experience. On the contrary, we are very proud of our senior experienced pilots. We value the wisdom that comes with that experience. We think young pilots, however well trained, can always benefit from the observation of more experienced pilots and the mentoring that they provide,[155]

2.154 Similarly, SUT commented:

> The International Air Transport Association (IATA) is currently working with the International Civil Aviation Organisation (ICAO) to 'modernise and revolutionise training and qualification schemes, focussing on competency based training'.
>
> Worldwide there is increasing support by authorities and airlines for high quality competency based training models and the increasing enhancement of these programs with educational delivery.[156]

2.155 On this issue, CASA noted that the competency based approach for training pilots had been in place in Australia for 'almost two decades', and that such an approach 'is the basis for all Vocational Education and Training conducted in Australia, under the auspices of the Australian Quality Training Framework'.[157]

2.156 CASA identified a number of proposed improvements to training regulation through proposed CASR Parts 141 and 142, and CASR Part 61, which would apply to flight training operators and flight crew licensing respectively. In relation to CASR Part 61:

> The proposed regulations recognise that both aircraft captains and co-pilots should receive equivalent training and demonstrate the same essential levels of proficiency to achieve safety of flight operations. Consequently, the introduction of CASR Part 61 will [inter alia] introduce the requirement for co-pilots to also hold command instrument ratings and command aircraft endorsements (type ratings) and to be assessed against the same standards applicable to aircraft captains.[158]

2.157 In addition to proposed new regulations, CASA advised that it had implemented a number of safety initiatives relating to the flying training sector since 2004, culminating in the establishment of a flight training and testing office in 2008. This measure had been 'highly successful in driving improvements in the standard of graduating instructors'.[159]

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155 *Committee Hansard*, 25 February 2011, p. 3.

156 *Submission 30*, p. 8.

157 *Submission 12*, p. 9.

158 *Submission 12*, p. 12.

159 *Committee Hansard*, 25 February 2011, p. 110.

2.158 CASA also drew the committee's attention to its establishment of a Flying Standards Branch (FSB) within the flight training and testing office, which is:

> …responsible for practically assessing pilot proficiency standards, oversighting pilots that have been appointed as Approved Testing Officers…and assisting the flying training sector.[160]

2.159 The FSB had initiated or was developing a number of programs, including regular testing of approved testing organisations (ATOs), publication of an ATO manual, conduct of industry flight tests and conduct of a formal training and assessment course for ATO applicants.[161]

2.160 Finally, CASA noted that there were two 'key mechanisms to allow CASA and industry to work together to review pilot training standards'. Mr McCormick explained:

> There is the flying training panel, which CASA formed to provide strategic advice on flying training matters. This panel is chaired by industry and meets quarterly. There is also the flight crew licensing subcommittee of the standards consultative committee, CASA's industry chaired committee, which brings together CASA staff and representatives from a diverse range of aviation industry groups to work jointly during the development phase of regulatory material.[162]

Third party providers of cadet training

2.161 As noted above, cadet schemes may be run in-house by an airline, such as the Regional Express approach, or by a third party provider, such as the Oxford Aviation Academy (OAA). Tiger Airways observed that there had been a trend away from airlines running their own cadet schemes, with such training being outsourced to third-party training providers. The Tiger Airways submission commented:

> Typically the programme will be built around 250 flying hours. The academic requirements and flight tests will all be conducted to Captain standard although the licence issued is 'frozen' at the First Officer level until the pilot has achieved minimum on the job experience requirements (typically 1500 hours).[163]

2.162 The committee received submissions and evidence from, and in relation to, a number of institutions that act as third-party providers of cadet training schemes and/or flying and non-flying aviation programs.

2.163 In relation to OAA, Qantas and Jetstar noted:

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160 *Submission 12*, p. 12.

161 *Submission 12*, p. 13.

162 *Committee Hansard*, 25 February 2011, p. 111.

163 *Submission 14*, p. 2.

> Oxford Aviation Academy has trained approximately 24,000 airline pilots for 80 airlines including a wide range of full service, low cost and charter carriers such as British Airways, BMI, Air France, Ryanair, EasyJet and Gulf Air. Oxford Air Training School (the pre-cursor to Oxford Aviation Academy) was established in 1964 when they provided their first courses to…[the airlines that went on to become] British Airways.[164]

2.164 A submission from OAA advised that the company had been a 'fully-fledged airline flying school since 1960', and focused on a 'core business' of 'teaching pilots how to fly (*ab initio* and type specific), as well as cabin crew and maintenance staff'.[165]

2.165 The committee also received a submission from SUT, which described itself as:

> …one of the predominant providers of Aviation tertiary programs and pilot training in Australia with over 470 Aviation students currently enrolled in programs from VET, undergraduate degree, and postgraduate coursework programs.[166]

2.166 Professor John Beynon, Dean of the Faculty of Engineering Services and Industrial Sciences, SUT, advised that, in addition, the university's program aimed to support a broad range of graduate outcomes:

> Although in cooperation with Oxford Aviation Academy we are delivering the Jetstar cadet pilot program and in the recent past the Qantas cadet pilot program as part of an associate degree, most of our pilot training programs are not focused on a particular airline. This enables our graduates to choose rather than to go into either general aviation or commercial airlines or, indeed, into management careers in airline or airport operations. The academic content, while tailored for a career in aviation, also serves our graduates well for a wider range of careers in the tradition of undergraduate education.[167]

2.167 SUT cited an empirical study which supported a conclusion that:

> …the best performing pilots had graduated from collegiate accredited flight programs with aviation degrees and had received advanced (post-Private) pilot training in college.[168]

2.168 However, SUT suggested that standardisation of third-party aviation training providers could be considered:

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164 *Submission 31*, p. 10.

165 *Submission 29*, p. 1.

166 *Submission 30*, p. 1.

167 *Committee Hansard*, 9 March 2011, p. 79.

168 *Submission 30*, p. 7.

> In Australia there are a number of university aviation providers whose programs have been developed through their self accrediting status. Benefit in standardisation could be gained through accreditation of these programs through an appropriate professional body such as occurs through the Aviation Accreditation Board International in the United States.[169]

2.169 Professor Beynon also noted that the institution would welcome a recommendation from the committee that the 'progression of trained pilots in the industry be tracked', and noted that the university was 'preparing a research proposal to monitor the performance of recently trained pilots from a selection of pathways to enable a quantifiable comparison to be made'.[170]

2.170 The committee heard that some submitters and witnesses were concerned about the quality of training provided by third-party training providers, and particularly the potential for such arrangements to lead to confusion or inadequate knowledge regarding SOPs. Captain Klouth, for example, submitted:

> Having experienced in-house training and pay for training, the in-house training prepares one better for line training and gives a better foundation of knowledge of the aircraft. I did my A320 rating with Alteon which is a Boeing owned company. I was not provided with cockpit diagrams on which to practise procedures (colloquially referred to as paper tigers), provided with any systems manuals (other than those that were purchased from Jetstar),with which to revise the computer based training and had simulator instructors who had never actually flown the aircraft. The instructors were not familiar with the airline operating procedures and would actually speak disparagingly about the airline that I was to be employed by.[171]

2.171 While Captain Klouth could point to an exception regarding the generally poor quality of third-party training, he concluded that such training:

> …provides little more than an endorsement approved by CASA. It does not provide value for money and does not prepare a new pilot adequately for line training.[172]

2.172 Similarly, AIPA was concerned that:

> …training schools may not be producing a consistent product and that low end operators may not be value adding to their employees' experience. It may be instructive if the [Productivity Commission] PC examined whether there is really a shortage of suitable candidates for the bigger airlines and, if there is, the underlying reasons. Similarly, the PC or the Bureau of Infrastructure, Transport and Regional Economics (BITRE) should

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169 *Submission 30*, p. 5.

170 *Committee Hansard*, 25 February 2011, p. 81.

171 *Submission 5*, pp 2-3.

172 *Submission 5*, p. 3.

> investigate the likely trajectory of Australian domestic airline pilot employment to inform the debate and future planning for the training industry.[173]

2.173 Mr Stephen Phillips, who appeared in a private capacity, noted that the commercial nature of third-party training meant it was unlikely that training organisations would train students to a standard above the regulatory minima required to achieve a pilot licence, as this would involve increased cost to those students. While the regulatory minima were 'quite reasonable' to achieve a 'level of competency', this was 'not necessarily the level of competency that [was appropriate for a commercial RPT pilot]'.[174]

2.174 Captain Woodward considered that the minimum regulatory standards were 'adequate', but noted that the aim of pilot training should be to exceed these levels. However, he observed that 'training is always pitched at the minimum standard, because training costs a lot of money'.[175]

2.175 Captain Dick MacKerras, Technical, Safety and Regulatory Affairs Adviser for AIPA, commented that the current regulations were not developed with LCC business models in mind, and it was these types of carriers that tended to pursue minimum compliance strategies:

> …the lower the cost of the carrier the more that minimum compliance becomes a flaw, because that is their target. The problem is that the existing legislation never envisaged that. It was written around reasonable people behaving reasonably.[176]

2.176 Mr Petteford stressed that third-party training must be delivered in partnership with airlines. He noted that 'if you simply give your type endorsement training to a third party without having created any bonds then that is a recipe for disaster'.[177]

2.177 Virgin indicated that it customised third-party endorsement training to ensure that such training accurately reflected the company's SOPs and flight operations. Captain Howell explained:

> In terms of the endorsement training, it is possible to take a pilot who has taken a 'plain vanilla' endorsement and provide added training to get them competent to operate in our area, but it is actually advantageous for us to modify the simulator training package such that, when they have come out of the simulator training, they are familiar with how we operate the aeroplane, where we operate the aeroplane and the slight variations from

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173 *Submission 6, (Supplementary),* p. 12.

174 *Committee Hansard*, 18 March 2011, pp 32-33.

175 *Committee Hansard*, 25 February 2011, p. 40.

176 *Committee Hansard*, 18 March 2011, p. 45.

177 *Committee Hansard*, 25 February 2011, p. 87.

> the way we might operate the aeroplane to the way that Boeing might for other customers.[178]

2.178 AFAP commented that, although it had a preference for in-house training, third-party training providers were a part of the aviation industry landscape and should be subject to direct regulation by CASA:

> Our strong preference is that the endorsement training of those pilots by the airlines be conducted in-house, and for that in-house training to be supported by a solid internal experience base and a sound check and training system. We do, however, recognise the advent, particularly over the last 10 years, of third-party training providers, but would fully support those providers being regulated to the same standards as those that apply to the air operator certificate holders.[179]

2.179 The committee notes that the proposed new regulation CASR Parts 141 and 142, relating to flight training operators and flight crew licensing, propose that third-party training organisations that provide training either independently to individuals or in concert with aircraft operators, must be responsible for the training they provide or take shared responsibility with the aircraft operator. Such relationships are not currently subject to direct regulation.[180] CASA advised that CASR Part 142 'is under review as a matter of priority and has now been progressed to the Office of Legislative Drafting and Publishing'.[181]

2.180 Mr Petteford noted that CASR Part 142 was based on ensuring conformity of training quality systems between airlines and third party training providers. Citing current European arrangements as an example, he explained:

> …under the European regulations, it is a requirement that where you are working with an AOC holder of multipilot operations, the quality systems must harmonise together, and so there has to be an oversight by one of the quality systems, whether it is from the AOC or the training provider overseeing the airline quality system. The quality system dovetails it together and that is the way it works. That is the foundation on which the [CASR Part] 142 concept comes about. It is the mutually working together, which should be through the safety management and the quality management systems.[182]

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178 *Committee Hansard*, 18 March 2011, p. 17.

179 *Committee Hansard*, 25 February 2011, p. 55.

180 Australian Transport Safety Bureau, 'Go-around event Melbourne Airport, Victoria, 21 July 2007, VH-VQT, Airbus Industrie A320-232', ATSB Transport Safety Report, Aviation Occurrence Investigation AO-2007-044 (Final), p. 24. This issue is discussed further in relation to term of reference (h), relating to reporting of incidents.

181 *Submission 12*, p. 30.

182 *Committee Hansard*, 25 February 2011, p. 88.

Pay-for-training approaches

2.181 The committee received a significant amount of evidence regarding pay-for-training arrangements and, more broadly, the various means or mechanisms by which trainee pilots are able to fund the costs of their training.

Pay for training

2.182 Apart from cadet training schemes—in which, as noted above, it is common for cadets to pay the costs of, or to raise a debt against the costs of, their training—the committee understood this term to apply also to the practice of airlines requiring employee pilots to bear the cost of aircraft type endorsements.

Criticisms of pay-for-training approaches

2.183 A number of submitters and witnesses outlined concerns regarding pay-for-training schemes.

2.184 The AIPA submission argued that current training practices have departed from historical approaches, whereby the costs of *ab initio* training (that is, training to receive the relevant pilot's licence and instrument rating) was generally borne by the individual, and subsequent training (such as training to receive type endorsement in a particular aircraft) was borne by the employer. AIPA submitted:

> Two inherently industry damaging and risk exacerbating schemes were introduced to Australia by LCCs. The more common 'pay-for-training' schemes refer to postgraduate training where the employer transfers the cost of training to prospective employees.[183]

2.185 AFAP expressed concern that pay-for-training approaches could create an 'intrinsic commercial incentive' for trainees to be qualified as quickly as possible, and commented that this risk would need to be 'managed and closely monitored'.[184]

2.186 Mr Phillips commented that, although he did not believe that flying schools were graduating pilots who patently lacked competency, there may be students being passed who were at the margins of proficiency. He stated:

> I believe that, at the end of the day, no school will graduate someone that they really believe is unsafe. [However, they]…will graduate people who they are not overly comfortable with.[185]

2.187 Mr Phillips noted that, with the exception of some flying schools, such as OAA, most third party providers did not employ selection processes to ensure a high quality of student pilots. Mr Phillips indicated that he would support the introduction

183 *Submission 6*, p. 7.

184 *Submission 41*, p. 2.

185 *Committee Hansard*, 18 Marc h 2011, p. 33.

of such a requirement in the case of people seeking to obtain a CPL (as opposed to a person seeking a recreational or Private Pilot Licence (PPL)).[186]

2.188 The VIPA considered that employer funded training had in the past 'proved to be an effective entry-risk mitigator', and that the shifting of pilot training costs on to pilots carried two 'significant' risks:

- experience and suitability has been superseded by ability to 'buy' or 'finance' a job; and,
- entry risk mitigation is severely reduced due to no syllabus or standards control of the training provider by the airline.[187]

2.189 Further, VIPA noted:

> …the related effects on flight safety, either directly through reductions in control over flight standards or indirectly as a response to changes in corporate culture and the social welfare of pilots, have not been adequately researched or debated.[188]

2.190 AIPA was concerned that pay-for-training schemes resulted in cadet pilots beginning their careers with significant levels of debt,[189] and referred to overseas examples of cadets declaring bankruptcy 'because they cannot afford to live on their wages'.[190] AIPA noted that, in the context of a projected increase in demand for pilots in Australia and overseas, pay-for-training schemes could act as a disincentive to would-be pilots. This was compounded by the reduction in entry-level salaries for cadet pilots:

> If we do not have a serious look at the Australian industry where the growth comes from both general aviation and those cadet schemes, we will see young people not entering the industry because why would they pay upwards of around $200,000 for a cadet and training scheme when they are going to earn NZ$42,000 per annum for three years as a cadet pilot? That is less than the Australian [average] wage.[191]

2.191 Captain Klouth shared these concerns, and noted also that significant debts carried by new pilots could affect their willingness to voice concerns related to safety:

> The pay for training schemes that are currently used by the Low Cost Carriers result in new pilots commencing their career in airlines with a substantial amount of debt. Combined with debt that they may have incurred during their commercial training debts of over $100,000 are not

186 *Committee Hansard*, 18 March 2011, p. 34.

187 *Submission 37*, p. 2.

188 *Submission 37*, p. 2.

189 *Committee Hansard*, 1 December 2010, p. 13.

190 *Committee Hansard*, 1 December 2010, p. 3.

191 *Committee Hansard*, 1 December 2010, p. 3.

> uncommon. This puts an additional layer of stress on the new First Officer that may result in them not wanting to 'rock the boat' when it comes to criticism of their training.[192]

2.192 AIPA's view was that:

> …the cost of running cadet schemes should be cost neutral with direct entry schemes because the training should elicit the same graduate competencies. If Government believes that direct intervention is inappropriate, then AIPA strongly suggests that consideration should be given to extending HECS support to Air Transport Pilot Licence (ATPL), Instructor and type rating training.[193]

2.193 AIPA recommended that:

> …the Bureau of Infrastructure, Transport and Regional Economics (BITRE) be tasked with investigating the price sensitivity of flying as a career choice, pricing structures within the aviation training industry and the relative position of aviation training within Government financial and fee [194]assistance/incentive programs.

Alternate views on pay-for-training approaches

2.194 The evidence of a number of submitters and witnesses did not support the concerns outlined above in relation to pay-for-training schemes.

2.195 CASA noted that pay-for-training schemes had been in use internationally for 'many years', particularly by European low-cost carriers, and had become 'the norm in certain sectors of the Australian market'.[195] The practice of airlines paying for pilots' aircraft ratings was 'occurring less often today than it once did', and there was no evidence of any detrimental effects on airline safety from such practices.[196]

2.196 In response to concerns that pay-for-training provided an incentive to pass sub-standard recruits, Captain Berry stated that he did not believe that pay-for-training schemes had any particular tendency to create pressure for paying students to be passed.[197] He noted that low failure rates were, in part, attributable to the use of aptitude tests as a barrier to entry into flying training courses.[198]

2.197 The Qantas and Jetstar submission also rejected such concerns:

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192 *Submission 5*, p. 2.

193 *Submission 6, (Supplementary),* p. 12.

194 *Submission 6*, p. 10.

195 *Submission 12*, p. 15.

196 *Submission 12*, p. 15.

197 *Committee Hansard*, 1 December 2010, p. 27.

198 *Committee Hansard*, 1 December 2010, p. 27.

> There is no evidence of a connection between the manner in which a training program is funded and the skill level or safety of a pilot. It is common practice across a range of industries for the provision of training to have moved away from a more traditional apprenticeship model.[199]

2.198 In the case of OAA, Mr Petteford noted that, in relation to both airline sponsored cadets and private student training, OAA employed selection processes and continuous assessment, which ensured a high quality of graduates. He explained:

> If an airline is supporting the program and willing to support them into employment at the end, then it is highly competitive and 95 per cent of them are rejected. If they were white tails, they don't know who they are going to work for at the end, we are doing all of the selection initially and we reject 52 per cent of our applicants. During the program—and this is the bit that really makes the program the filter as well—we carry out a process of continuous assessment, of which four per cent of them fail.[200]

2.199 In the case of students who failed to meet required standards, Mr Petteford noted that:

> [OAA's] solution to the moral dilemma is if we terminate their training we give them all of their money back [for the balance of the course]. That is it. They get a full money back guarantee.[201]

2.200 In contrast to concerns about low wages for cadets, some evidence pointed to low starting wages as a feature of other professions, noting that people may accept low starting wages in light of the potential for better wages and conditions as their career advances. Captain Woodward commented:

> It is an apprenticeship, really. Most young pilots realise that they are doing those things in the Northern Territory or earning such poor wages because ultimately they will be sitting where I am sitting as a 380 captain in an airline. It is a bit like doing training as a surgeon. Doctors end up doing 15 years of training to become a surgeon. They work long hours and get pitiful wages initially, but in the long term they do very well out of it, so they are rewarded. [202]

Other training funding arrangements

2.201 Qantas and Jetstar submitted that there is a number of payment arrangements in place for pilot training schemes, which provides a suitably broad range of options for aspiring pilots:

> The cost of…[training] programs is not uniform or standard. Some programs have an aspect of government and/or company funded

199 *Submission 31*, p. 10.

200 *Committee Hansard*, 25 February 2011, p. 94.

201 *Committee Hansard*, 25 February 2011, p. 94.

202 *Committee Hansard*, 1 December 2010, p. 12.

> arrangements, while others have the option of either direct payment by the training pilot or via salary sacrifice arrangements. These different payment options create flexibility to ensure that appropriately skilled individuals have a range of options in attaining their [CPL]. The range of options for pilot training available currently assists in attracting the most suitable candidates, rather than merely relying on ex service pilots and General Aviation pilots (who historically paid for their training in any event).[203]

HECS-HELP and VET FEE-HELP

2.202 The evidence received by the inquiry indicated some support for expanding the operation of HECS-HELP and VET FEE-HELP schemes.

2.203 The Department of Education, Employment and Workplace Relations website explains that HECS-HELP 'is a loan available to eligible students enrolled in Commonwealth supported places, and will cover all or part of the student contribution amount'.[204]

2.204 VET FEE-HELP is:

> …a student loan scheme for the Vocational Education and Training (VET) sector that is part of the Higher Education Loan Program (HELP). VET FEE-HELP assists eligible students undertaking certain VET courses of study (diploma, advanced diploma, graduate certificate and graduate diploma courses) with an approved VET provider, to pay for all or part of their tuition costs. A VET provider is a registered training organisation who has been approved by the Australian Government to offer VET FEE-HELP assistance to their students.[205]

2.205 The RAAA commented that the current HECS-HELP arrangements favoured universities over independent training institutions, with anomalous results:

> Those students undertaking their training through a university can qualify for HECS (and a significant debt). However, those training through the independent CASA approved flight training schools cannot access HECS while the parallel VET FEE-HELP scheme has become a bureaucratic quagmire and proving useless to the aviation industry. The latter schools can train competent commercial pilots in 18 months-2 years while the university schools take 3-4 yrs because of their degree structures. The anomaly is that students are attracted to the university schools because HECS is available. In other words government policy and administration

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203 *Submission 31*, p. 10.

204 Department of Education, Employment and Workplace Relations website, HECS-HELP', http://www.goingtouni.gov.au/Main/Quickfind/PayingForYourStudiesHELPLoans/HECSHELP.htm, accessed 29 April 2011.

205 Department of Education, Employment and Workplace Relations website, 'VET FEE-HELP', http://www.deewr.gov.au/skills/programs/support/vetfeehelp/Pages/default.aspx, accessed 19 April 2011.

> around the HECS/VET FEE-HELP schemes is seriously skewing the market towards the university based flight schools. Both types of schools are producing competent commercial pilots but students are choosing the longer path for financial reasons and non-university based schools are closing. This is madness when the industry needs well-trained pilots now. Australia has the potential to be a world leader in aviation training but cannot achieve this goal with the current policy settings.[206]

2.206 Mr Phillips supported a broadening of HECS-HELP. He commented that HECS-HELP:

> …should not be just tied to universities…[as there] does need to be a broader pool…[Piloting is] one of the few professions where the individual carries the whole can for their training and professional qualifications and then rolls out at the end of it to probably some of the lowest paid positions around the place.[207]

2.207 In relation to VET FEE-HELP, Mr Stephen Fankhauser, Aviation Discipline Leader, SUT, advised that VET FEE-HELP was not available for a Certificate IV course of study, which was the accredited level of study assigned to the CPL under the current framework.[208] In addition, Mr Fankhauser noted that the current VET FEE-HELP limit of $86 000 was 'not adequate for [the eligible practicum part of] aviation training', particularly when compared to the limits in place for other disciplines, such as veterinary science.[209]

2.208 Mr Peter Sobey, Compliance and Training Manager, RAAA, noted also that it was difficult for smaller training organisations to meet the criteria for attracting VET FEE-HELP, relating to financial requirements and the primary purpose of the training organisation, which must be for education.[210] Mr Sobey commented that, as a result, there were very few smaller training organisations were eligible for VET FEE-HELP:

> Unfortunately in pilot training in Australia, one of the biggest problems that we have is it is only the pilots or cadets whose parents can support them that can make the journey through in the world of aviation. VET FEE-HELP was introduced to help the VET sector in the training area that I am in. As far as I know, there may be one actual training organisation that is qualified for VET FEE-HELP. So the scope around qualifying for VET FEE-HELP is ridiculous. It may be available to the bigger universities and TAFE colleges that have the government's backing, but there would not be a private enterprise training organisation that would not have some debt at

206 *Submission 19*, p. 3.

207 *Committee Hansard*, 18 March 2011, p. 35.

208 *Committee Hansard*, 25 February 2011, p. 89.

209 *Committee Hansard*, 25 February 2011, p. 89.

210 *Committee Hansard*, 25 February 2011, p. 32.

> the bank, and we do not make the financial requirements of VET FEE-HELP.[211]

2.209 AIPA supported the expansion of VET-FEE HELP support to registered institutions.[212]

2.210 Virgin also supported this proposal:

> The cost of pilot training is high, and prohibitively so for many aspirants. The Government's Vocational Education and Training (VET) reforms have enabled approved providers to offer VET FEE-HELP to eligible students in the aviation sector. While the number of providers offering flight training courses is limited, this may increase over time. The opportunity for a larger pool of labour to train as pilots and compete for selection should be positive in terms of maintaining high performance standards creating a more stable workforce.[213]

Retention of experienced pilots

2.211 Term of reference (d) required the committee to consider issues relevant to the retention of experienced pilots.

2.212 The AIPA submission advised:

> Prior to industry deregulation in the US and the emergence of the LCC worldwide, pilot retention was essentially not an issue. Pilot conditions of service were stable and rewarded years of service in a company. Remuneration was at the high end for salaried employees.[214]

2.213 However, the AIPA submission observed that industry deregulation and the emergence of LCCs had seen pilots' salaries and conditions significantly reduced. Captain Woodward observed:

> We are seeing the situation where pilots are paid salaries that are below the basic wage in Australia and certainly below the wages of baggage handlers that are handling the bags in the aircraft.[215]

2.214 VIPA noted that the transition to low-cost methodologies in Australia, and the increase in competition, had seen the historical use of pilot wages to attract and retain experienced personnel come under 'significant pressure'.[216] This had also resulted in a shift away from the 'traditional airline practice of identifying and developing,

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211 *Committee Hansard*, 25 February 2011, p. 32.

212 *Committee Hansard*, 1 December 2010, p. 18.

213 *Submission 17*, p. 2.

214 *Submission 6*, p. 9.

215 *Committee Hansard*, 1 December 2010, pp 2-3.

216 *Submission 37*, p. 3.

experienced airline technical managers from within the pilot ranks.[217] VIPA was concerned that such approaches to pilot wages and conditions could amount to a 'race to the bottom', and ultimately lead to 'blowback' in the form of a deterioration in safety'.[218]

2.215 VIPA felt that airlines were increasingly focused on and concerned with business cost or 'bottom line' considerations in setting and negotiating over pilot wages and conditions. VIPA characterised a company involved in recent industrial negotiations as:

> …so deeply tied into business cost and negotiating the most business efficient outcome that the safety aspects and the real need for experience is forgotten in the rush to undersell pilots terms and conditions for less experienced pilots who will work for less money.[219]

2.216 Similarly, AIPA submitted that LCCs in Australia operate on a recruitment model that does not seek to retain experienced pilots, but rather seeks to service a high turnover of less experienced and therefore more affordable pilots through particular recruiting practices, such as cadet training schemes.[220]

Demand for pilots

2.217 Many submitters and witnesses placed their remarks on the issue of pilot retention in the broader context of the likely demand for pilots in Australia in future years.

General industry trends

2.218 CASA advised that there is a 'limited supply of skilled aviation personnel in Australia', and that some predicted worldwide 'major shortfalls of trained pilots if the [current] rate of industry expansion continues'.[221] The CASA submission stated:

> The dimensions of the skilled staff shortage throughout the world can be seen in figures produced at ICAO's Next Generation of Aviation Professionals conference...[in 2011], which indicate that, over the next sixteen years, there will be a need for an additional 800 000 new pilots and engineers to keep the international aviation industry functioning smoothly. Boeing predicts that there will be a requirement for an extra 180,600 pilots and 219,900 new technicians in the Asia/Oceania region alone by 2029.[222]

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217 *Submission 37*, p. 3.

218 *Submission 37*, p. 4.

219 *Submission 37*, p. 4.

220 *Submission 6*, p. 7.

221 *Submission 12*, p. 20.

222 *Submission 12*, p. 20.

2.219 Captain Woodward observed that the expected increase in demand for pilots would impact on the ability of Australian airlines to retain pilots, and influence the employment dynamics of the airline industry. He explained:

> Traditionally, you might have joined your national carrier and stayed there for 40 years. You will probably see pilots migrating back and forth now between countries and airlines trying to achieve best outcomes…We will see pools of pilots coming from all over the world because there will be a period soon where, if you are warm and upright and you have a professional licence, you will get a job.[223]

2.220 CASA observed that the general aviation sector experienced problems retaining experienced pilots as a result of pilots moving from 'commuter, charter or instructional backgrounds' to commercial airlines.[224]

2.221 Tiger Airways noted that such movement of pilots from general aviation and smaller operators to larger operators was a longstanding feature of airline operations. Captain Berry commented that:

> …aviation has always been a career ladder. Pilots have generally progressed from flying smaller aircraft to flying larger aircraft. Pilots hold various ambitions, but to be a captain of an A380 one day is probably on a lot of people's lists. There is an element of one airline feeding upon the other, if you like, when seeking pilots for employment…We do not knowingly go out and 'poach', to use the term, but where a pilot presents himself to us, if he has discharged himself of his obligations to his previous employer, we are very happy to take him on.[225]

2.222 Similarly, Captain Woodward observed that the ability of larger carriers to offer superior pay and conditions and, to some extent, the prospect of piloting larger and more powerful aircraft, was a constant source of attraction to pilots seeking 'better remuneration and conditions'.[226] The retention of pilots was a 'perpetual problem' for the 'low-capacity end of the aviation sector', such as regional carriers.[227]

2.223 Virgin also acknowledged that 'the career aspirations of the regional pilots are to fly for Virgin Blue or other mainline carriers'.[228] In recognition of the pressures that this could place on regional carriers, Virgin advised:

> What we have done recently is be more transparent with the regional carriers. We are starting to share the number of pilots we plan on hiring for the year…so that they have the opportunity to see from a planning

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223 *Committee Hansard*, 1 December 2010, p. 17.

224 *Submission 12*, p. 15.

225 *Committee Hansard*, 1 December 2010, p. 32.

226 *Committee Hansard*, 1 December 2010, p. 3.

227 *Committee Hansard*, 1 December 2010, p. 3.

228 *Committee Hansard*, 18 March 2011, p. 10.

> perspective how many of their pilots are going to put their hands up and say, 'I would like to fly for Virgin Blue.' That will continue. What we are trying to do is help them manage their process as well.[229]

2.224 The RAAA submitted that the movement of pilots from regional to major airlines meant that the regional airline industry carries relatively higher costs of training and developing pilots:

> There is little doubt that the large airlines treat the regional airlines as their training pool. Some of the large airlines do not have their own pilot training program and make no contribution to developing young pilots. They rely on attracting pilots from smaller airlines and overseas, and benefit from the training previously given by other aviation companies. As a result, the regional airline industry which has much lower economies of scale and decreased ability to bear high costs, incurs the largest proportion of the cost of developing a commercial pilot into a professional, experienced and polished RPT captain or [first officer].[230]

2.225 As a particular example of this trend, Regional Express noted that, during a shortage of pilots in 2007-08, the company had lost 50 per cent of its pilots to larger airlines, and that this had been a significant factor in the company instituting its own cadet pilot training scheme.[231] The Regional Express cadet scheme contained financial incentives to encourage pilots to stay for at least the period over which the training costs are repaid to the company (approximately seven years).[232]

2.226 Mr Sobey commented:

> …the best way we can see to keep pilots is for companies like Jetstar, Qantas and Virgin to have their own cadetship programs. That way, they're not out poaching our pilots.[233]

2.227 CASA observed that the movement of pilots from general aviation to commercial airlines had potential safety implications, and advised that it had:

> …adjusted its oversight of individual operators and sectors of the industry accordingly by increasing surveillance where appropriate and providing increased and targeted educational support…[234]

2.228 In contrast to general aviation operators and regional airlines, Qantas and Jetstar advised that the group of companies had a 'high level of pilot retention over

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229 *Committee Hansard*, 18 March 2011, p. 10.

230 *Submission 19*, p. 3.

231 *Committee Hansard*, 1 December 2010, p. 36. Cadet schemes are discussed above under term of reference (c), relating to current industry recruiting practices.

232 *Committee Hansard*, 1 December 2010, p. 40-41.

233 *Committee Hansard*, 25 February 2011, p. 33.

234 *Submission 12*, p. 15.

recent years', as evidenced by the 'low attrition rate for pilots employed by each of the [Qantas Group's] Australian flying entities, especially when compared with the Australian average'.[235] The pilot attrition rates for the three entities comprising the Qantas Group were all below the Australian industry average of 12.5 per cent:

- Qantas (1.1 per cent);
- Jetstar (1.4 per cent); and
- Qantaslink (7.2 per cent).

2.229 With regard to Qantaslink, the Qantas Group advised:

> Whilst having a low attrition rate, QantasLink's attrition rate is higher than the other Group airlines as it reflects the general trend of pilot progression from regional turbo prop operations to jet aircraft operations.[236]

2.230 Virgin advised:

> The annual turnover of pilots in the Virgin Blue Group is less than 1%, which is much lower than other major groups of its workforce. Turnover in the industry generally rises during growth periods as demand for labour and accordingly choice of employment opportunities increases, and is lower during times of reduced economic activity such as the global financial crisis. It should also be noted that the ability to retain pilots, is not solely influenced by the airline employer. Broader factors such as more competitive personal tax frameworks and lifestyle also drive decisions.[237]

Type rating (endorsements) and recurrent training for pilots

2.231 For the purposes of the inquiry, the committee understood the term 'type rating' to refer to aircraft 'endorsements', which is a specific qualification to fly a type or class of aircraft. An endorsement is issued on the basis that the pilot in question can safely operate a type or class of aircraft as pilot in command or co-pilot, as specified.[238]

2.232 The committee understood the term 'recurrent training' to refer to airlines' training and proficiency checking systems. CASA offered the following description of an airline training and checking systems:

> Within an airline training and checking system, a pilot will be proficiency checked; that is a specific proficiency will be assessed by the operator, such as the pilot's proficiency to operate a company aircraft on line operations (the line check). [An]…operator may also provide its pilots with the opportunity to periodically practice emergency flight manoeuvres that

235 *Submission 31*, p. 10.

236 *Submission 31*, p. 11.

237 *Submission 17*, p. 2.

238 *Submission 12*, p. 18.

> would not be encountered during normal operations. Personnel employed by the airline may have previously received training conducted by a number of different providers or been issued qualifications on the basis of foreign licence qualifications. An airline training and checking system must determine a person's competency to perform their duties to the standards expected of the airline and in compliance with CASA regulations.[239]

2.233 Training and checking may apply to the following aspects of a pilot's skills and career development:

- induction into an airline;
- training in the airline's operations before being released to unsupervised line operations;
- training on any new procedures or equipment;
- endorsement on company aircraft (if the company conducts its own endorsement training);
- checking for continuing proficiency at least twice per year; and
- testing for the re-issue of command or co-pilot instrument ratings on an annual basis.[240]

2.234 The committee heard that, in Australia, type endorsements can be conducted by airlines, specialist approved training organisations, ATOs or qualified flying instructors.[241] As the safety regulator, it is CASA's role to set the standards for aircraft type endorsements.[242]

2.235 The committee heard that the large commercial airlines in Australia are required to have in place a CASA-approved training and checking system.[243] For smaller operators, the Chief Pilot is responsible for maintaining flying standards.[244] As the safety regulator, it is CASA's role to set the standards for training and checking of flight crew.[245] This includes:

- approving various approaches to training and checking;
- periodically assessing and approving training and checking pilots; and
- assessing and approving chief pilots.[246]

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239 *Submission 12*, p. 17.

240 *Submission 12*, p. 18.

241 *Submission 12*, p. 17.

242 *Submission 12*, p. 16.

243 *Submission 12*, p. 18.

244 *Submission 12*, p. 19.

245 *Submission 12*, p. 16.

246 *Submission 12*, pp 18-19.

Concerns relating type endorsement and recurrent training

2.236 AIPA submitted that type endorsements and recurrent training were directly relevant to the three of the four root causes in an increase in fatal accidents in large aircraft since 2005. These were:

- training being inappropriate for today's aircraft;
- automation reliance; and
- degraded manual handling skills.[247]

2.237 AIPA noted that modern aircraft were heavily reliant on automated flight systems, and that there was an attendant risk that pilots' manual flight skills would 'eventually deteriorate if not regularly practised'.[248]

2.238 AIPA also noted that automation carried inherent risks for safety:

> A series of accidents and incidents related to incorrect or inappropriate auto-flight use have led most airlines to publish auto-flight usage policies in order to give the pilots guidance on when they should use the auto-flight system, at what level and, more importantly, what to do if there is an auto-flight system malfunction or auto-flight system confusion on the part of the pilots.[249]

Adequacy of flight simulator training

2.239 AIPA submitted that these issues relating to automation were effectively 'all issues associated with training', largely conducted through the use of flight simulators.[250] AIPA was concerned that flight simulators were being used to enable pilots to achieve a minimum standard rather than to equip them with the skills and knowledge to address the problems arising from aircraft automation. The AIPA submission explained that cost was a factor in determining how simulators were being used for training:

> Almost all pilot training in large aircraft is conducted in simulators rather than in the aircraft itself, both as a cost and a risk reduction measure. However, modern simulators can cost $20 million dollars each with running costs of hundreds, or even thousands, of dollars an hour. These high costs result in training courses that are pitched at the lowest number of simulator sessions that will allow the pilot to achieve the minimal acceptable standard. This is often a selling point by the manufacturers: company A's

247 *Submission 6*, p. 11.

248 *Submission 6*, p. 11.

249 *Submission 6*, p. 11.

250 *Submission 6*, pp 11-12.

> aircraft requires two less simulator sessions for a pilot conversion from a similar type than company B's aircraft.[251]

2.240 The use of flight simulators for a minimum compliance outcome was also encouraged by baseline training ratios set by aircraft manufacturers:

> The aircraft manufacturer generally establishes the baseline type rating training. Invariably, this baseline training is focused on the minimal training required to operate the aircraft as originally intended, rather than with the design flaws and unexpected outcomes that typically arise over the life of the aircraft. Despite the rhetoric, manufacturers and operators infrequently revisit these baselines in the pursuit of quality and most LCCs are particularly wary of increases in training costs. The previous situation where operators easily exceeded the minimum regulatory requirements is rapidly disappearing and the minimum statutory requirements are now becoming the benchmark.[252]

2.241 Virgin, however, advised that, in respect of type endorsement training, for example, the company exceeded the minimum number of hours training prescribed by the regulations.[253]

2.242 AIPA submitted that simulator training was also lacking in human factors training:

> AIPA is of the view that most currently available aircraft type ratings tend to treat predominantly skills in the simulator with minimal reinforcement of knowledge and virtually no [human factors/non technical skills] HF/NTS training. We believe that instructors have to be capable of HF/NTS training and assessment in order to integrate the training. Unfortunately, airline training of instructor staff is unregulated and very patchy, as is typical of course development. There is a paucity of guidance material and regulatory standardisation.[254]

2.243 Given these factors in relation to simulator training, AIPA submitted that:

> …the current regulatory requirements are inadequate as benchmarks for quality type rating training and consequently for recurrent training. The role of the Civil Aviation Safety Authority (CASA) is to specify a minimum standard of required knowledge, skills and behaviours that reflects modern systems and maintains the quality of training. Quality type rating and recurrent training provide the essential system resilience to address emerging issues as well as to maintain acceptable levels of safety.[255]

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251 *Submission 6*, pp 11-12.

252 *Submission 6*, p. 12.

253 *Committee Hansard*, 18 March 2011, p. 16.

254 *Submission 6, (Supplementary)*, p. 10.

255 *Submission 6*, p. 12.

2.244 Mr Joyce described simulators as valuable and critical elements of modern training:

> They have improved dramatically over the years, and keep raising the levels of reality. [Simulators replicate]…challenging flying conditions…and…scenarios…The simulators are important aids to pilot training and to the maintenance of pilots' skills. Even the most experienced Qantas pilots spend an average of 16 hours per year in the simulators. In addition to the cost of training-related infrastructure such as flight simulators, we spend approximately $30 million each year on pilot training, including recurrent training.[256]

2.245 Captain Bryan Murray, AFAP President, was also confident that simulators were a valuable aspect of modern aviation training approaches:

> I consider that the simulator is an outstanding training aid and we obviously can do things in the simulator that we would not even think about doing in the aeroplane. I personally consider that the simulator is more difficult to fly than the aeroplane, as good as the simulators are. It is different, but I am sure that, having had simulator training on the 737 simulator and recurrent training, if the same thing happened in the aeroplane I would more than capably handle it because of the training that I regularly get from Virgin Blue.[257]

2.246 In relation to type endorsement and recurrent training more broadly, AIPA recommended that:

> …airline operators no longer be permitted to charge employees for post graduate training programs to fly specific aircraft types. In AIPA's considered view, these forms of training should remain an airline's cost of doing business.[258]

2.247 Finally, AIPA recommended that:

> CASA review the knowledge, specified behavioural objectives and skills required for type rating and recurrent training programmes. This review should focus on the skill set necessary for a pilot of a modern complex aircraft to deal with sophisticated automation, degraded auto-flight modes and manual flight skills throughout the aircraft's flight envelope. It should also define minimal levels of systems and aircraft knowledge such that systems confusion and automation dependency do not become a flight safety issue.[259]

2.248 CASA advised the committee that it was currently conducting a review of airline training and checking activities. Mr McCormick explained:

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256 *Committee Hansard*, 25 February 2011, p. 2.

257 *Committee Hansard*, 25 February 2011, p. 62.

258 *Submission 6*, p. 8.

259 *Submission 6*, p. 12.

> This review—the most comprehensive CASA has ever undertaken—is ongoing. Preliminary indications suggest that there is opportunity for CASA to provide more guidance to operators regarding airline training and checking. To this end we have expanded the approved testing officer manual and we will be developing an entry control theory course for new check pilots. We will also be expanding the use of our flight test notification system to enable a more comprehensive analysis of data relating to pilot standards. During this process, we will involve the airline industry through the formation of specialist industry advisory panels.[260]

2.249 CASA drew the committee's attention to a number of proposed new regulations relating to type endorsements and operator training and checking. These were CASR Parts 119, 121, 133, 135 and 142. The committee notes that CASR Part 121 in particular is intended to introduce 'more comprehensive training and checking requirements for cabin crew…flight crew and ground support personnel'.[261] However, the committee did not receive evidence on the substantive detail of this proposed new regulation.

Committee view

Introduction

2.250 The committee notes that the inquiry provided a valuable opportunity for an extensive airing of, and investigation into, a raft of issues to do with airline safety. As noted in Chapter 1, given the nature of the airline industry, in which accidents and safety incidents can have such profound consequences, safety is an issue that in theory and practice cuts across every aspect of airline operations.

2.251 Given the breadth of issues raised by submitters and witnesses, and in light of practical considerations, the committee has limited the focus of this report to the issues of pilot training and accident and incident reporting, and their potential impacts on airline safety more generally.

2.252 The committee's approach means that a number of issues that were raised in evidence are not addressed in detail in this report. An example of one such issue is aviation maintenance, which, while not given detailed consideration in this report, may be worthy of particular examination by this committee or another appropriate body in the future. Similarly, the committee notes that, while the focus of the report is on the larger commercial passenger airlines in Australia, an inquiry into the general aviation sector may well be warranted in future.

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260 *Committee Hansard*, 25 February 2011, p. 109.

261 CASA website, 'Civil Aviation Safety Regulations, CASR Part 121 – domestic and international passenger transport services (PTS) or cargo-only in larger aeroplanes', http://www.casa.gov.au/wcmswr/_assets/main/newrules/parts/121/download/infopack121_may09.pdf, accessed 23 February 2011.

2.253 Throughout the course of the inquiry, the committee also received a number of public and in camera submissions inviting it to consider particular incidents relating to safety. While the committee examined any such incidents for evidence of broader or systemic pilot training or reporting deficiencies, the committee did not make findings regarding individual fault or blame in any such case. The committee raised a number of these reports and incidents with the regulator, and was satisfied in all cases that appropriate investigations and action had been, or would be, undertaken.

2.254 The committee notes that the evidence of all submitters and witnesses was underpinned by a desire to maintain Australia's enviable aviation safety record. The committee rejects any suggestion that parties to the inquiry were motivated by matters other than their interest in ensuring that Australian aviation continues to achieve world's best outcomes in terms of safety.

Pilot experience requirements and the consequence of any reduction in flight hour requirements on safety;

The United States of America's Federal Aviation Administration Extension Act of 2010, which requires a minimum of 1500 flight hours before a pilot is able to operate on regular public transport services and whether a similar mandatory requirement should be applied in Australia;

Current industry practices to recruit pilots, including pay-for-training schemes and the impact such schemes may have on safety;

Retention of experienced pilots; and

Type rating and recurrent training for pilots.

2.255 Terms of reference (a), (b), (c), (d), and (e) required the committee to consider a broad range of issues relating to pilot experience requirements, recruiting and training and pilot retention, as well as a specific proposal to require that all pilots operating regular public transport (RPT) should be required to have a minimum 1500 hours flight experience.

2.256 The committee heard that pilot experience requirements in Australia are effectively established by the minimum experience requirements which apply to the licences needed to operate as a pilot on RPT services. While there is no proposal or apparent likelihood that these minima will be reduced, there was significant comment in evidence regarding whether these minima remain sufficient to ensure positive safety outcomes.

2.257 The committee heard that this question has become all the more relevant given recent trends in the aviation industry, whereby pilots are moving into the co-pilot's seat more quickly than was historically the case. While pilots (captains) are required to have a minimum 1500 hours experience, the minimum experience requirement for co-pilots is an apparently modest 150 or 200 hours, depending on the course of qualification undertaken.

2.258 Generally speaking, there was a significant consensus among stakeholders that acceptable levels of pilot proficiency are achieved through a mix of flight experience (including flight simulator training) and competency based training.

2.259 However, there was substantial disagreement regarding the exact number of flight hours that should, combined with the achievement of the relevant competencies, qualify a co-pilot to operate RPT services. A number of submitters and witnesses, including the CASA, regarded the existing minima as satisfactory. In support of this view, it was noted that the current requirements are in accordance with international norms, and are sufficient in light of competency based and tailored training approaches. Further, it was noted that specific policies and airline training checking systems are directed to ensuring that low-experience pilots are properly mentored and monitored once allowed into the co-pilot's seat.

2.260 A number of submitters and witnesses, however, argued that the minimum flight hours requirement for co-pilots operating RPT flights should be increased to 1500 hours (term of reference (b)). This proposal was said to achieve a more appropriate balance between experience and competency based training approaches, particularly in light of the potential consequences of accidents involving high-capacity RPT services. The use of co-pilots with flight experience hours approaching the licence minima was said to involve a number of latent safety risks, notably the inability of a co-pilot to replace and/or support the captain in cases of emergency, and the reluctance of a very inexperienced co-pilot to question the actions of an experienced captain (a circumstance described as involving a steep cockpit authority gradient).

2.261 A critical issue in these arguments was the adequacy and quality of current training methods for prospective pilots, as well as for the granting of type endorsements and recurrent training of already licensed pilots. The focus of much of the evidence in relation to these matters was on cadet schemes and third party training providers (term of reference (c)), which the committee heard are increasingly being used by Australian airlines.

2.262 Supporters of the current licence minima generally argued that cadet schemes and third party training arrangements promote adequate if not superior training outcomes, as they are specifically tailored to producing commercial pilots to operate multicrew aircraft in accordance with the specific standard operating procedures of a particular airline. Cadet schemes were also identified as enabling regional operators to better retain pilots through bonding arrangements, in order to resist the historical loss of pilots to larger airline operators.

2.263 In addition to evidence regarding the specific benefits of cadet schemes and third party *ab initio* training, the committee heard that the proficiency of low-experience pilots was supported by ongoing training and checking requirements, as well as particular airlines' policies governing the use of such pilots. The committee heard that, generally speaking, low-experience co-pilots are placed under operational

restrictions. One such example was the Virgin Blue Group (Virgin) policy which restricts the pairing of inexperienced pilots.

2.264 Proponents of an increase in the minimum experience requirement for co-pilots operating RPT argued that the methodologies employed by cadet training and third party *ab initio* training do not substitute for the breadth of experience and situational awareness that comes from real life flying. In particular, it was argued that simulator training is pursued as a minimum compliance or 'tick-a-box' activity, and is not fully utilised to achieve proficiency outcomes. Third party provision of cadet or pilot training was also said to potentially suffer from a similar compliance focus, as well as create potentially dangerous learning discrepancies in relation to the standard operating procedures (SOPs) of the contracting airline (this issue arose in connection with term of reference (h), discussed below). Significantly, it was noted by many that third party providers currently fall outside of the regulatory purview of CASA.

2.265 Evidence provided to the inquiry by pilots (in particular by AIPA and Captain Geoff Klouth) refers to the additional pressure on a captain flying with a low-experience pilot, particularly in a stressful flight situation, let alone in an emergency. For these reasons alone, the committee agrees that those who hold only a CPL or an MPL should not be permitted to co-pilot the largest high capacity regular public transport jet aircraft in Australia, as identified in Recommendation 1.

2.266 The concerns outlined in the preceding paragraph regarding the quality of simulator training and the use of third-party training providers were also relevant to (term of reference (e)), relating to type rating (endorsement) and recurrent training for licensed pilots.

2.267 In relation to (term of reference (d)), relating to pilot retention, a number of submitters and witnesses argued that airlines, particularly low cost carriers (LCCs), are increasingly utilising cadet schemes to avoid paying higher wages for experienced pilots, or even as a strategy to generate revenue through the training costs applied to cadets or to pilots obtaining type endorsements. The committee heard concerns that new pilots were beginning their careers with substantial debts, which could impact on both morale and the preparedness of such pilots to raise safety concerns.

2.268 However, these practices were defended as being relatively longstanding practices that provided a legitimate entry pathway to a career as a pilot, for those who did not have the capacity to pay the significant costs of training up-front, and which supported a variety of business models in the aviation sector.

2.269 In relation to the issue of co-pilots operating on RPT flights with flight experience hours closer to the established licence minima, the committee observes that this must, of itself, represent a reduction in safety compared to past practices in which pilots would not usually progress to the co-pilot's role without flight experience significantly in excess of the prescribed licence minima. However, given the evidence that the current minima accord with international standards and are not considered by CASA to represent a threat to safety standards, the committee could not conclude with

any confidence that this represents a reduction in safety that equates to a significantly or unacceptably higher risk to Australian aviation.

2.270 In addition, the committee was concerned that the imposition of such a requirement could adversely impact on the supply of suitably qualified pilots to particular sections of the Australian aviation industry, notably the general aviation sector and smaller regional operations.

2.271 Further, MPL programs worldwide are still in their infancy and the jury is still out on their quality and effectiveness.

2.272 However, the committee did not support the proposal that all RPT co-pilots in Australia be subject to a minimum experience requirement of 1500 hours.

2.273 Despite this conclusion, the committee observes that the increasing use of co-pilots with flight experience hours approaching the licence minima does give rise to legitimate concerns regarding the capacity of flight crew to respond to emergency situations, such as the recent uncontained engine failure of Qantas flight QF32 over Batam Island near Indonesia. Equally, the use of low-experience co-pilots may increase the potential for adverse consequences arising from steep cockpit authority gradients.

2.274 Accordingly, the committee agreed that commercial passenger airlines should be required to develop and implement policies relating to the use of low-experience pilots, to maximise, wherever possible, the collective experience levels of flight crew.

2.275 The committee would also highlight evidence regarding the importance of multicrew training, or crew resource management (non-technical skills) and human factors training, as an antidote to many of the inherent risks identified as arising from low flight experience, such as poor situational awareness and steep cockpit authority gradients, and the increasing reliance on automated aircraft systems. The committee heard that there is not currently sufficient requirement for such training in respect of the qualifying requirements for the grant of a Commercial Pilot Licence (CPL) or Air Transport Pilot Licence (ATPL). However, the committee understands that such training will be incorporated into the qualifying requirements for these licence types with the implementation of proposed new regulation CASR Part 61, which is expected to be complete by June 2011.

2.276 Subject to the committee's general comments in the next chapter regarding CASA's regulatory reform process, the committee agreed that the implementation of CASR Part 61 should be pursued as a priority, and should ensure that all prospective regular public transport (RPT) pilots are required to complete substantial course-based crew resource management and human factors training prior to, or in reasonable proximity to, initial endorsement training.

2.277 In addition, the committee agreed that, given the importance which all stakeholders placed on the quality of simulator training, there are legitimate questions surrounding whether such training is being used to achieve optimum safety related

outcomes, as opposed to minimum compliance outcomes. For example, the committee considered that a number of stick shaker incidents discussed in evidence to the inquiry may suggest inadequate simulator training with respect to avoiding an imminent stall, one of the most dangerous situations that a pilot may encounter. Given this, the committee felt that CASA should be required to undertake a risk assessment of current simulator training, to assess whether the extent, aims and scope of such training is being utilised to achieve optimum safety outcomes rather than minimum compliance objectives.

Recommendation 1

2.278 The committee is of the view that an ATPL should also be required for first officers in high capacity regular public transport (RPT) jet aircraft such as Boeing 737, A320 and other aircraft of similar or greater capacity, and that consideration be given to implementing this as a standard.

Recommendation 2

2.279 The committee recommends that for non-jet operations which employ low-experience first officers, operators be required to provide enhanced supervision and mentoring schemes to offset such lack of experience.

Recommendation 3

2.280 The committee recommends that Air Operators Certificate (AOC) holders be required to develop and implement 'green on green' policy positions relating to the use of low experience pilots in RPT operations, to maximise, wherever possible, the collective experience level of flight crew.

Recommendation 4

2.281 The committee recommends that Civil Aviation Safety Regulation (CASR) Part 61 ensure that all prospective regular public transport (RPT) pilots be required to complete substantial course-based training in multi-crew operations and resource management (non-technical skills) and human factors training prior to, or in reasonable proximity to, initial endorsement training; the committee recommends that the Civil Aviation Safety Authority (CASA) expedite, and assign the highest priority to, the implementation of CASR Part 61.

Recommendation 5

2.282 The committee recommends that the Civil Aviation Safety Authority (CASA) ensure that Part 61 of the Civil Aviation Safety Regulations currently being reviewed place sufficient weight on multi-engine aeroplane experience as opposed to the current recognition of glider and ultra-light experience.

Recommendation 6

2.283 The committee recommends that the Civil Aviation Safety Authority (CASA) be required to undertake a risk assessment of current simulator training

to assess whether the extent, aims and scope of such training is being utilised to achieve optimum safety outcomes rather than minimum compliance objectives.

2.284 In relation to third party provision of cadet and pilot type endorsement and recurrent training, the evidence showed that currently there is a regulatory 'blind spot' in relation to such entities. The committee heard that, while CASA maintains oversight of training standards and outcomes through its regulation of AOC holders, the lack of regulatory oversight of third party training does not provide for optimal safety outcomes. In particular, there is a strong view among many industry stakeholders that third party providers may be giving priority to commercial imperatives by pursuing minimum compliance or 'tick-a-box' strategies. Further, there is a very real risk that such arrangements may be giving rise to learning discrepancies between third party provider training courses and the SOPs of airlines contracting such training services. The potential for such outcomes was reinforced by the committee's consideration of the Jetstar 'go-around' event in connection with term of reference (h).

2.285 In relation to these issues, the committee notes evidence that proposed new regulations CASR Parts 141 and 142, relating to flight training operators and flight crew licensing, propose that third party training organisations that provide training either independently to individuals or in concert with aircraft operators, must be responsible for the training they provide or take shared responsibility with the aircraft operator. The committee understands that CASA is pursuing the implementation of the proposed new regulations as a priority.

2.286 In light of the evidence regarding third party training providers, and subject to the committee's general comments in the next chapter regarding CASA's regulatory reform process, the committee shared the view that the implementation of CASR Parts 141 and 142 should be afforded the highest priority.

2.287 The following Recommendation 4 and the supporting analysis are also relevant to term of reference (e), relating to type rating (endorsement) and recurrent training for licensed pilots.

Recommendation 7

2.288 The committee recommends that the Civil Aviation Authority (CASA) expedite, and assign the highest priority to, the implementation of Civil Aviation Safety Regulations (CASR) Part 141 'Flight Training Operators' and Part 142 'Training and Checking Operators'.

2.289 In relation to cadet schemes, the committee notes that, notwithstanding the issues surrounding third party provision of training and the use of simulators, cadet schemes improve the ability of airlines, particularly regional carriers and smaller commercial operators, to train pilots for the purpose of business continuity. The use of cadet schemes by larger airlines may also reduce the need for such airlines to 'poach' pilots from regional operators. Subject to ensuring quality training outcomes,

including adequate supervision and mentoring, the committee found that cadet schemes are a legitimate pathway for pilot recruitment, training and development.

2.290 However, the committee was concerned by evidence provided over the disparate terms and conditions of cadet schemes. Some members of the committee were particularly concerned over the terms and conditions for the Jetstar cadet scheme.

2.291 In relation to the issue of pilot retention, the committee notes that there was significant disagreement on the extent to which airlines may be improperly pursuing cost reduction strategies at the expense of employing and retaining experienced pilots. The committee notes that the increased competition in the Australian market, flowing from the introduction of international carriers and the advent of LCCs, has resulted in a wider variety of business models offering pilots a range of salaries and employment conditions. While the committee acknowledges that levels of remuneration may impact on the ability of airlines to attract the 'best and brightest', the inquiry did not receive evidence that the current range of pilot salaries from general aviation through to LCCs and premium employers such as Qantas acts as a disincentive to talented prospective pilots. Indeed, the committee notes that pilot career progression has historically taken a course from less sophisticated operations, operating relatively basic aircraft and offering relatively modest remuneration, through to high-end carriers operating state-of-the art aircraft and offering more generous salaries and conditions.

2.292 The committee notes that a fundamental driver of pilot retention and levels of remuneration is the domestic supply of pilots, and this was an area that was also subject to significant disagreements in the evidence received. While some claimed that that general aviation is unable to provide adequate numbers of suitably skilled candidates for general airline intake, another view was that general aviation continues to provide sufficient candidates with a skills base that is readily convertible to RPT operations.

2.293 In the committee's opinion, general aviation remains a fundamental and necessary source of pilots for the Australian commercial airline market. While, as noted above, the inquiry's focus was not on general aviation, it remains the case that the route from general aviation through to regional carriers and high-end commercial operations remains one of the critical pilot recruitment pathways. Further, in a country as vast as Australia, the committee agrees that the ongoing health and viability of the general aviation sector is vitally important.

2.294 Beyond general aviation, ensuring sufficient future domestic pilot supply also relies on removing barriers to entry to the profession relating to both cost and opportunity. In this respect, the committee notes wide support among industry stakeholders for the broadening of current HECS HELP and VET FEE-HELP arrangements to provide support for a wider range of training options and pathways.

2.295 In response to the issues raised in relation to pilot retention and supply side issues, the committee considers that the Government should require the Productivity Commission or another suitable body to undertake a review of the current and future supply of pilots in Australia, with particular reference to the general aviation and cadet training pathways, and HECS HELP and VET FEE-HELP arrangements.

Recommendation 8

2.296 The committee recommends that the Government require the Productivity Commission or another suitable body to undertake a review of the current and future supply of pilots in Australia, with particular reference to the general aviation and cadet training pathways, and HECS HELP and VET FEE-HELP arrangements.

2.297 Since the committee last heard evidence, an updated briefing has been provided by France's Bureau of Investigation and Analysis (BEA), France's equivalent to the ATSB, on the loss of Air France 447 on a flight from Rio de Janeiro to Paris on 1 June 2009.

2.298 It appears likely from the preliminary briefings by the BEA, that issues of pilot training and experience will be further considered in extensive detail in relation to the loss of Air France 447, and the final findings of the BEA's investigation should be extensively considered by CASA, the ATSB, and the aviation industry generally.

Recommendation 9

2.299 The committee recommends that the Civil Aviation Safety Authority (CASA), the Australian Transport Safety Bureau (ATSB) and Australian aviation operators review the final findings of France's Bureau of Investigation and Analysis into Air France 447, including consideration of how it may apply in the Australian context. Subject to those findings, the committee may seek the approval of the Senate to conduct a further hearing in relation to the matter.

Chapter 3

Capacity of the Civil Aviation Safety Authority; and

Incident reporting and immunity (including the Transport Safety Investigation Amendment (Incident Reports) Bill 2010

3.1 This chapter discusses a number of terms of reference concerning airline safety in connection with the capacity of the Civil Aviation Safety Authority and incident reporting and immunity, including the Transport Safety Investigation Amendment (Incident Reports) Bill 2010 (the Bill) (terms of reference (f), (g), (h) and (i)). The specific terms of reference are:

- the capacity of the Civil Aviation Safety Authority to appropriately oversee and update safety regulations given the ongoing and rapid development of new technologies and skills shortages in the aviation sector;
- the need to provide legislative immunity to pilots and other flight crew who report on safety matters and whether the United States and European approaches would be appropriate in the Australian aviation environment;
- reporting of incidents to aviation authorities by pilots, crew and operators and the handling of those reports by the authorities, including the following incidents:
  - the Jetstar incident at Melbourne airport on 21 June 2007, and
  - the Tiger Airways incident, en route from Mackay to Melbourne, on 18 May 2009; and
- how reporting processes can be strengthened to improve safety and related training, including consideration of the Transport Safety Investigation Amendment (Incident Reports) Bill 2010.

The capacity of the Civil Aviation Safety Authority to appropriately oversee and update safety regulations given the ongoing and rapid development of new technologies and skills shortages in the aviation sector

3.2 The committee received evidence in relation to the capacity of the Civil Aviation Authority (CASA) to appropriately oversee and update safety regulations (term of reference (f)), as well as in relation to the regulator's performance more generally.

Industry skills shortages and CASA recruitment challenges

3.3 The committee heard that CASA faces a particular challenge in recruiting appropriately skilled and experienced workers, particularly as it is effectively required to compete with the aviation industry for the same workers:

> CASA recognises that it faces challenges recruiting appropriately skilled and qualified people. CASA draws new employees from the same pool as the rest of the aviation industry, and competition for skilled aviation professionals is increasing in Australia, as it is elsewhere in the world. This growth in the industry will result in an increasingly competitive market for experienced and skilled people, both for the Australian aviation industry and for CASA alike.[1]

3.4 Accordingly, in terms of future requirements, CASA submitted:

> An equally challenging issue for both the industry and CASA is the limited supply of skilled aviation personnel available in Australia. While the demand for aviation services has grown rapidly, the number of qualified and experienced aviation professionals required has not expanded in a similar manner.[2]

3.5 CASA noted that the significant growth in demand for aviation services in Australia was driven by such things as the expansion of the offshore oil and gas and resources industries.[3]

3.6 The Australian and International Pilots Association (AIPA) commented that the ability of CASA to recruit appropriately qualified personnel was limited by its ability to match the salaries on offer in the high end of the private sector:

> As a government agency, CASA cannot match salaries offered by the high end of the private sector. In the flying operations area, salaries are typically equivalent to a First Officer in a full service airline. Therefore, it should not be surprising that CASA occasionally has difficulty recruiting suitably qualified pilots to oversee the industry, particularly as it buys in new aircraft and equipment and adopts new training procedures.[4]

3.7 AIPA also considered that over recent years CASA personnel had lost touch with the current standards and skills which the regulator was meant to oversight:

> Over the years, the practice of CASA Flight Operations personnel undergoing the same training courses and flying the same aircraft as airline pilots has been curtailed as a cost cutting measure. Fears of conflicts of interest and "capture" have resulted in CASA staff being distanced from the operations that they are required to supervise. The focus of previous CASA

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1 *Submission 12*, p. 20.

2 *Submission 12*, p. 20.

3 *Submission 12*, p. 20

4 *Submission 6*, p. 13.

> regimes on the tactical role of auditing has sacrificed the strategic role of global industry oversight. Flying recency in an airline environment is now a thing of the past, as inspectors undergo sporadic simulator exercises with each other rather than as part of an industry crew undergoing scheduled recurrent training.[5]

3.8 As a consequence, AIPA argued that CASA pilots are 'normally not current on the aircraft they are supervising and may never have actually flown the real aircraft', and may not be familiar with the standard operating procedures (SOPs) of the airline. This meant that:

> The CASA pilot is essentially auditing the airline as it meets its own training program and no longer enjoys any of the professional credibility that was historically the norm.[6]

Funding and technological change

3.9 In addressing this term of reference, CASA noted that technological change was a longstanding and consistent feature of the aviation industry:

> The aviation industry has always faced the challenge of dealing with rapid technological change. To suggest that the nature of this challenge has changed fundamentally in recent years overstates the case. At the same time, however, CASA acknowledges that the aviation industry is dynamic and, like many other businesses nowadays, it has to be constantly innovative in managing a range of issues and pressures.[7]

3.10 CASA noted that it had received additional funding of $89.9 million 'in recognition of the need to regulate a growing and increasingly complex industry'.[8]

3.11 AIPA, while acknowledging that funding for CASA was an ongoing issue, noted its concern in relation to CASA's ability to 'respond to changes in modern systems and modern aircraft—and indeed in modern business practices'.[9] Given the increasing technological sophistication of the aviation industry, as well as the advent of new international and low cost business models, AIPA commented:

> AIPA strongly advocates that a new regulatory perspective needs to be applied that accounts not only for the sophisticated technologies of today but also the sophisticated business models that have emerged. We believe that CASA needs to get involved in some serious risk assessment activities with industry and Government stakeholders, including the Department of Infrastructure and Transport (DIT), Department of Education, Employment and Workplace Relations (DEEWR), ACCC, PC and Department of

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5 *Submission 6*, p. 13.

6 *Submission 6*, p. 13.

7 *Submission 12*, p. 19.

8 *Submission 12*, pp 20-21.

9 Mr Dick Mackerras, AIPA, *Committee Hansard*, 1 December 2010, p. 7.

> Immigration and Citizenship (DIAC) and the new national regulator for the vocational education and training, the Australian Skills Quality Authority (ASQA).[10]

3.12 Further:

> AIPA believes that budgetary pressures on CASA have led to a gradual decline in pilot licence, instructor and instrument rating training standards and inadequate control of aircraft conversion training. While this decline is slowly being reversed by recent CASA activities, AIPA is not convinced that CASA has sufficient experienced resources to quickly recover flight standards.[11]

3.13 AIPA therefore believed that:

> Alternative models for supplementing CASA and ATSB staff with appropriate industry personnel must be explored urgently. AIPA believes that the costs should primarily be absorbed by operators as a cost of entry to the industry.[12]

3.14 Specifically, AIPA called for CASA to be:

> …funded to directly participate in…[international flight standards and safety research] as well as to directly participate in safety research within Australia. CASA needs an equivalent of the FAA Academy that not only trains CASA staff but, of equal importance, makes the same or equivalent training available to the industry. AIPA believes that collaborative efforts, such as industry Quality Assurance staff assisting CASA in audit planning and analysis or CASA staff providing specialist regulatory training to industry personnel, can be conducted without conflicts of interest.[13]

3.15 AIPA also believed that the Australian Transport Safety Bureau (ATSB) should be able to access industry expertise and resources in the conduct of its investigations:

> AIPA believes that there needs to be a formal system for multilateral industry assistance to the ATSB to supplement its resources, particularly in regard to specialist operational and technical knowledge.[14]

3.16 Despite acknowledging the historical challenges and dynamic nature of the aviation industry, CASA maintained that it 'is well placed to both regulate and prepare safety legislation for the Australian aviation industry'.[15]

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10 S*ubmission 6, (Supplementary)*, p. 12.

11 S*ubmission 6, (Supplementary)*, p. 2.

12 S*ubmission 6, (Supplementary)*, p. 2.

13 S*ubmission 6, (Supplementary)*, p. 3.

14 *Submission 6, (Supplementary*, p. 7.

15 *Submission 12*, pp 19 and 23.

3.17 The Qantas and Jetstar submission stated:

> An important aspect of aviation safety is to have an independent, appropriately funded and adequately resourced regulator. The nature of the aviation industry means that new aircraft types and technologies are constantly developing. To ensure that the introduction of new technologies is managed in a safe and orderly manner it is important that there is a collaborative approach taken between airlines introducing these new technologies and CASA. There are many examples of this process working effectively: the introduction of the Airbus A380 and Required Navigation Performance being two recent examples.[16]

CASA regulatory reforms

3.18 The committee heard that CASA has been undertaking a reform of the civil aviation regulations which commenced in the 1990s. A number of submitters and witnesses expressed concern over the length of time taken for this process.

3.19 AIPA, for example, while it acknowledged that CASA was under-resourced and had made significant recent efforts, noted that the slowness of reform meant that CASA was working with regulations that are out of date.[17] AIPA submitted that the current 'rule making' process had become 'cumbersome and…involved a number of iterations over the years' leading to 'frustration from industry as significant effort has been applied with apparently little outcome'.[18]

3.20 Similarly, VIPA pointed to a degree of regulatory ineffectiveness that has arisen due to the incomplete shift from a prescriptive regulatory environment under the old regulations to an outcomes based regulatory environment. The VIPA submission explained:

> …in a time of transition in which outcome based management is desired by CASA without the structural support of the required legislation, airlines are able to operate in a way in which they can operate outside the restriction of the current prescriptive and outdated legislation, yet are not being held accountable to the intent of the draft [Civil Aviation Safety Regulations (CASRs)] which are yet to be enacted. During this time CASA has shifted the industry towards the requirement for Safety Management Systems (SMS). This shift has been taken up by the airlines, however there is little agreement between the industry and CASA on exactly what a SMS is, and how the intent is enforceable from a regulatory perspective.[19]

3.21 AIPA was also concerned with aspects of the 'shift to a formal risk management approach' through the implementation of SMSs. AIPA felt that the

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16 *Submission 31*, pp 11-12.

17 Captain Richard Woodward, *Committee Hansard*, 1 December 2010, p. 15.

18 *Submission 6*, p. 13.

19 *Submission 37*, p. 4.

process had been 'inadequately supported in terms of identifying appropriate training models for operators' staff'. A supplementary submission provided by AIPA commented:

> Operators have not fully committed to widespread risk management training due to the potential costs of exceeding CASA's expectations, which at this stage are neither consistent nor well defined.[20]

3.22 AIPA also believed that the SMSs of some operators were not supported by adequately resourced safety departments, particularly in relation to resources required to investigate human factor events. The AIPA supplementary submission stated:

> AIPA is not convinced that SMSs should run on a skeleton full-time staff that is supplemented by line resources when required. That normally means that operational production is favoured over proper safety support.[21]

3.23 Given the variability of resourcing of SMSs in the industry, AIPA called for 'joint CASA/ATSB industry standards for SMS staffing' to be 'established as a matter of urgency'.[22]

3.24 VIPA noted that the slowness of the regulatory reform process meant that airlines had 'been effectively self-regulating for a number of years awaiting the regulatory reform package'. This had 'led to a situation in which there has been very little effective control over entry and supervision of Australian airlines'.[23]

3.25 AIPA acknowledged ongoing reform of the regulations, but questioned the adequacy of current regulations:

> AIPA believes that the present rule set and supporting material is inadequate to ensure long term flight standards resilience.
>
> AIPA supports the current CASA activities in redressing the issues but is concerned that there is still insufficient attention being given to the negative aspects of operating highly automated aircraft.
>
> The current regulations reflect a now-outdated approach to industry practices and business models and are unsuitable as a safety net for minimum compliance.[24]

3.26 VIPA suggested a number of recommendations going to the performance and operations of CASA. These included that:

> (1) CASA formally conduct an Industry Risk Profile Assessment for each area of its regulatory responsibility;

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20 *Submission 6, (Supplementary),* p. 3.

21 *Submission 6, (Supplementary),* p. 5.

22 *Submission 6, (Supplementary),* p. 5.

23 *Submission 37,* p. 5.

24 *Submission 6, (Supplementary),* p. 5.

> (2) CASA establish Industry Risk Management Teams that include demographically relevant representatives by industry sector, in particular industrial representative bodies such as AIPA;
>
> …
>
> (13) CASA prepare a public Position Paper on its ability to:
>
> (a) attract, train and retain quality technical personnel;
>
> (b) develop and implement more contemporary and future-looking regulatory models to protect flight standards; and
>
> (c) adequately protect the public interest through its supervisory mechanisms;
>
> (14) CASA extend its internal staff training requirements for inspectors to develop model training and experience requirements for operators' technical managers; [and]
>
> (15) CASA establish an Industry Training Support Team with appropriate government funding support to identify and develop industry wide training material specific to identified high risk issues…[25]

3.27 CASA acknowledged that regulatory reform process had been 'ongoing for several years', and advised that, along with the new major maintenance regulations, about half of the proposed new operational and flight crew licensing CASR parts were drafted and currently undergoing CASA consultation, to be followed by industry consultation. The drafting of the remainder was expected to be finalised by June 2011.[26]

3.28 Mr Peter Boyd, Executive Manager, Standards Development and Future Technology, advised that CASA had taken steps to expedite the regulatory reforms process:

> Last year it was recognised that the regulatory reform program needed a kick along, if you like, in terms of the time frame. In March 2010 we formed a reg reform task force with the Office of Legislative Drafting and Publishing to do just that. So from March last year our own CASA instructors that look after the policy aspects of drafting the regulations and the office's legal drafters have been housed together in one task force. It has shown quite significant fruit, if you like, in terms of the speed at which we are turning out the legislation.[27]

3.29 CASA advises that a 'portion' of recent additional funding (see above) was to be directed towards supporting the regulatory reform process.

> A portion of [the recent] additional funding is going towards the recruitment of specialist staff for the Standards Development function. The

25 *Submission 37*, p. 7.

26 *Submission 12*, p. 21.

27 *Committee Hansard*, 25 February 2011, p. 113.

> aviation safety regulations are being re-written and, as mentioned above, the [Civil Aviation Regulations (CARs) and the Civil Aviation Orders (CAOs)] are being updated and consolidated in the CASRs and their corresponding…[standards manuals]. This is a demanding task, and considerable additional specialist resources are necessary to complete and to then maintain the rule set into the future.[28]

3.30 AIPA urged that the regulatory reform process be vigorously pursued and that 'no more delays should be accepted'. However, it warned that 'the cost of the implementation of the new rules should not be underestimated by government', and that 'additional funding may be required'.[29]

3.31 AIPA offered a number of recommendations relating to CASA, including that:

- the Government review CASA salaries with a view to making them more attractive to suitably qualified applicants for key operational roles;
- alternatively, AIPA recommends that the Government and CASA look at a method of secondment from industry of key operational personnel for a defined period of time. Properly handled this would ensure that personnel with currency and expertise are available to CASA;
- that CASA, in consultation with industry, further review the rule making for flight standards to ensure its relevance and effectiveness;
- that the Government fund CASA to keep designated personnel current with technologies employed by the RPT sector. This may mean embedding CASA personnel for a period of time in industry or regular training of key CASA personnel; and
- that CASA develops internal professional development programs, in consultation with industry and academia, to ensure that CASA staff are familiar with and employing current best practice in aviation training, technologies and systems development.[30]

The need to provide legislative immunity to pilots and other flight crew who report on safety matters and whether the United States and European approaches would be appropriate in the Australian aviation environment; and

Transport Safety Investigation Amendment (Incident Reports) Bill 2010

28 *Submission 12*, p. 21.

29 *Submission 6, (Supplementary)*, p. 11.

30 *Submission 6*, p. 14.

3.32 A number of submitters and witnesses provided evidence in relation to the question of whether there is a need to provide legislative immunity to pilots and other flight crew who report on safety matters.

3.33 This question was also central to submissions on the Transport Safety Investigation Amendment (Incident Reports) Bill 2010 (the Bill), which would make it an offence to impose a penalty on, or deprive of benefit, any person who reports an accident or incident. The effect of this offence would be to extend a 'de facto blanket immunity' to reporters of accidents or safety incidents.[31] Given the strong connection between the Bill and the issue of legislative immunity, the Bill in its entirety is considered below.

Legislative immunity versus just culture principles

3.34 Many submissions which commented on term of reference (g) suggested that a specific legislative immunity for pilots reporting safety incidents was unnecessary, given that Australian airlines generally employ 'just culture' principles in relation to their incident reporting systems and processes.

3.35 The Qantas and Jetstar submission explained that just culture is:

> …an approach to safety that has gained considerable international support. It is made up of two concepts. 'Culture' which is expressed as 'the way we do things around here' and 'just' which refers to a fair, consistent and transparent approach. In the context of safety management, the Just Culture philosophy recognises that mistakes are often a symptom of systemic issues in the organisation, workplace and the limitations of humans themselves. Therefore, a Just Culture promotes an atmosphere of openness and voluntary sharing of information, where staff feel comfortable to admit to mistakes without fear of reprisal.[32]

3.36 The submission went on to characterise just culture as maintaining a:

> …balance between a 'blame free' culture, which complete legislative immunity would provide, and a 'punitive' culture, which is also undesirable as it hampers transparent, accurate and prompt reporting.[33]

3.37 This importance of just culture in terms of safety was that it is:

> …critical to ensuring prompt and accurate reporting of safety information', and 'assists in identifying the underlying reasons why a specific action was taken in a specific context, so that the most appropriate remedial actions can be taken.[34]

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31 *Submission 25*, p. 21.

32 *Submission 31*, p. 12.

33 *Submission 31*, p. 12.

34 *Submission 31*, pp 12-13.

3.38 Qantas and Jetstar submitted that:

> …[the] current regulatory framework with respect to reporting requirements is robust, effective and consistent with international best practice. The [Qantas] Group believes that the current reporting requirements advance the principles of Just Culture whilst having sufficient scope to take punitive and corrective action, where appropriate.[35]

3.39 The Virgin Blue Group (Virgin) submitted that, in light of the operations of just culture principles, the provision of legislative immunity would 'not enhance safety':

> …the proposed provision of legislative immunity to pilots and other flight crew who report on safety matters would not enhance safety. Virgin Blue's approach to safety is based on principles of open reporting and a just culture, which explicitly avoids the use of Safety Management Systems as a punitive tool.[36]

3.40 Similarly, Tiger Airways stated that it maintains a safety reporting system and promotes a 'just safety culture', which extends to the reporting of incidents to the regulator. However, it noted that, while authorities should not take action against an individual who makes a report purely on the basis of that report:[37]

> …the pilot carries an obligation to his passengers. The passengers have a right to expect that if the pilot commits a breach of the law that the law will be suitably applied and that the pilot should not be a hallowed individual who in any sense sits above the law. Regulations must strike a balance between the need to 'learn from the errors of others' that arise from the frank admission of error (to which it is desirable to apply some level of immunity…) and the need to ensure that pilots act responsibly in accordance with the law.[38]

3.41 Regional Express submitted that it did not have any significant issues with the 'status quo' as it exists in Australia.[39]

3.42 AIPA, however, questioned the extent to which just culture principles and practices were operating effectively, and maintained that there were 'persistent impediments to establishing a culture of free and open reporting of aviation safety data'. The AIPA supplementary submission commented:

> Historically, aviation personnel are distrustful of management and cultural shifts in reporting activities are hard won and easily lost. The required level of transparency requires an overt implementation program and, in our view,

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35 *Submission 31*, p. 15.

36 *Submission 17*, p. 2.

37 *Committee Hansard*, 1 December 2010, p. 23.

38 *Submission 14*, p. 4.

39 *Committee Hansard*, 1 December 2010, p. 44.

> unprecedented levels of access and review. Separately and perhaps more problematic, there are also entrenched ego and self-esteem issues at the operating level that are inherently difficult to overcome.
>
> While 'Just Culture' is on everyone's lips, there is much anecdotal evidence of inadequate training of managers and many managerial responses that have created distrust and a fear of retribution where reports are critical of operator policies and procedures.[40]

Existing protections in relation to reporting systems

3.43 CASA submitted that the question of whether there is a need to provide legislative immunity 'depends upon several considerations', including:

- the nature and substance of the information reported;
- the person or organisation to whom the information is reported;
- the reason for reporting the information;
- the circumstances under which the information is reported; and
- the use to which the information reported is or may be put.[41]

3.44 In respect of reporting systems or responsibilities administered or governed by CASA, CASA noted the availability of a confidential telephone 'hot line' for persons wishing to report aviation related threats to safety. The confidential basis of the service meant that there was 'no need to provide protection for [a] person making a report'.[42]

3.45 In relation to the major defect reporting provisions of the CARs, CASA advised that 'there are no immunity provisions in the civil aviation legislation expressly protecting persons who make reports'. However, as a matter of policy, CASA's practice is:

- …not to disclose the name of the person submitting a report, or of a person to whom it relates, unless required to do so by law or unless in either case the person concerned authorises the disclosure; and
- not to institute proceedings in respect of unpremeditated or inadvertent breaches of the law which come to its attention only because they have been reported under the defect reporting program, except in cases involving a 'dereliction of duty amounting to gross negligence'.[43]

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40 *Submission 6, (Supplementary)*, p. 6.

41 *Submission 25*, pp 25-26.

42 *Submission 12*, p. 25.

43 *Submission 12*, p. 24.

3.46 In addition, the Aviation Self Reporting Scheme (ASRS), operated by CASA and the ATSB, offers a limited immunity for holders of civil aviation authorisations who report specified breaches of the regulations. The CASA submission explained:

> With a receipt issued by the ATSB for the report, the person may claim a kind of immunity from CASA in relation to the contravention, from administrative action to vary, suspend or cancel their authorisation, or from the imposition of an administrative penalty under the infringement notice scheme. The immunity may only be claimed once every five years.[44]

3.47 In respect of the reporting systems administered or governed by the ATSB, the ATSB advised that it operates a confidential reporting scheme established under the Air Navigation (Confidential Reporting) Regulations 2007, known as REPCON.[45] The committee notes that, as with the CASA reporting hot line, there is no need to provide immunity to people making a confidential report.

3.48 The ATSB also administers a mandatory reporting scheme under the Transport Safety Investigation Act (the Act). The ATSB submission noted that:

> In accordance with the provisions of the Transport Safety Investigation Act, the disclosure of information from ATSB investigations for purposes other than addressing identified safety issues within safety systems is limited – even to CASA – in the interests of preserving the free flow of information to the ATSB.[46]

3.49 While AIPA acknowledged that there is some indemnity for reporters [of incidents] in Australia, it argued that it is 'highly specific and largely unknown'.[47]

3.50 These reporting systems are discussed further below in relation to reporting of incidents to aviation authorities (term of reference (h)).

European and US approaches

3.51 The ATSB submitted that it is not aware that any other country's mandatory accident and incident reporting systems [provides a blanket immunity, particularly such as that] proposed in the Bill.[48] In the particular case of the US, there was no immunity offered in relation to the reporting of accidents, incidents and defects; and a relevant EU Directive in the case of Europe provided that cases of 'gross negligence' should not be exempted from proceedings arising from the mandatory reporting of 'unpremeditated or inadvertent infringements'.[49]

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44 *Submission 12*, p. 7.

45 *Submission 25*, p. 7.

46 *Submission 25*, pp 9-10.

47 *Submission 6*, p. 15.

48 *Submission 25*, p. 22.

49 *Submission 25*, p. 22.

3.52 With particular reference to CASA, the ATSB noted that CASA's current approach was already in accordance with EU Directive 2003/42/EC, which relates to occurrence reporting in civil aviation. The directive requires, inter alia, that:

- proceedings are not instituted in respect of unpremeditated or inadvertent infringements of the law only because they have been reported under a mandatory scheme; and
- employees who report incidents are not subjected to any prejudice by their employer.[50]

3.53 CASA's adherence to these principles was evident in the requirement that the regulator's enforcement decisions 'must be proportional responses to the identified breaches and the safety risk they give rise to'. In particular:

> - CASA's first priority is to protect the safety of passengers who are least able to control the aviation related risks to which they are exposed.
> - CASA will take strong action against those who persistently and/or deliberately operate outside the civil aviation law.
> - CASA will seek to educate and promote training or supervision of those who demonstrate a lack of proficiency but show a willingness to comply with the civil aviation law.
> - where consistent with the overarching interests of safety, CASA will consider the use of infringement notices rather than administrative action when dealing with private pilots who breach the law.[51]

3.54 The ATSB concluded:

> In light of CASA's clearly articulated enforcement policy, every aviation professional should have an expectation that CASA will not use information from accident and incident reports that it receives via the ATSB to take enforcement action against individuals in circumstances where they have shown a willingness and an ability to comply with the requirements of the civil aviation legislation.[52]

Conformity with international approaches through Safety Management Systems

3.55 The ATSB observed that airline operators are effectively required to implement the principles of EU Directive 2003/42/EC with respect to prejudicial actions against employees who make reports through their safety management systems (SMSs). The ATSB submission stated:

> A fair and open reporting culture is an integral part of an effective Safety Management System and this includes a clear understanding amongst all

50 *Submission 25*, pp 21-22.

51 *Submission 25*, p. 23.

52 *Submission 25*, p. 23.

> interested parties about confidentiality, reporting requirements, and individual responsibilities. A clear distinction between what is acceptable behaviour and what is unacceptable is required, as is the expectation that people will be treated accordingly.[53]

3.56 Similarly, the CASA submission highlighted the 'principle underpinning the standards and recommended practices specified in Annex 13 to the Chicago Convention, 'Aircraft Accident and Incident Investigation', to which Australia is a signatory. This was that:

> The protection of safety information from inappropriate use is essential to ensure its continued availability, since the use of safety information for other than safety-related purposes may inhibit the future availability of such information, with an adverse effect on safety.[54]

3.57 CASA observed that 'inappropriate use' extends to the use of safety information for 'disciplinary, civil, administrative and criminal proceedings against operational personnel', and asserted that such protection was 'to some extent…extended, in principle, to employees of organisations required to have and maintain a SMS, [which includes airline operators].'[55]

3.58 CASA noted that the integrity of an SMS relies on:

> …the certainty that information voluntarily provided for the purpose of identifying and mitigating safety risks, will not be used by an employer for otherwise disciplinary or punitive purposes.[56]

3.59 CASA pointed to guidance material supporting SMS requirements, which specify the inclusion of a commitment to an open reporting culture in which there are 'clear boundaries about confidentiality, reporting requirements and individual responsibilities '.[57]

3.60 CASA stressed that information reported under a SMS could, however, be used for punitive or disciplinary purposes, or disclosed for the purposes of civil or criminal proceedings, where the conduct involved was the result of a 'wilful, reckless or grossly negligent act on the part of the person against whom the information is used'.[58]

3.61 CASA also stressed that it was proper to use information reported under a SMS for safety related regulatory purposes. The CASA submission explained:

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53 *Submission 25*, p. 23.

54 *Submission 12*, p. 26.

55 *Submission 12*, p. 26.

56 *Submission 12*, p. 27.

57 *Submission 12*, p. 27.

58 *Submission 12*, p. 28.

> Such use could involve regulatory action by CASA to vary, suspend or cancel a person's civil aviation authorisation where it is demonstrably unsafe to permit that person to continue to exercise the privileges of his or her authorisation, or to continue to do so in the absence of certain limiting conditions calculated to minimise the risks of an accident or incident.[59]

3.62 The Qantas and Jetstar submission observed that the approach outlined above 'is not dissimilar to the legislative reporting practices in either the European Union or the United States'.[60] It observed:

> The European Union and the United States do not offer absolute immunity to pilots or others who report safely occurrences. Each jurisdiction precludes or discourages prosecution to an extent but also incorporate behavioural limitations outside of which prosecution will be permitted.[61]

3.63 The relevant immunity in the EU 'does not exclude the criminal law entirely and applies only to unpremeditated or inadvertent breaches', while in the US the immunity excludes information 'concerning criminal offences or accidents (as opposed to 'incidents').[62]

3.64 AIPA, however, claimed that 'nothing in Australian legislation or subordinate documents matches either the US or European approaches, [which] both provide qualified protection for reporters'. AIPA did not believe that current aviation safety reporting legislation adequately respects the privilege against self-incrimination that should attend any regulatory scheme that makes reporting mandatory.[63]

List of reportable accidents and incidents

3.65 The ATSB noted that, in 2003, Australia moved to a system of prescriptive mandatory reporting, whereby reportable matters are listed in the Transport Safety Investigation Regulations (the regulations). This is the same approach as is taken by the US and European jurisdictions.

3.66 AIPA expressed concern with the prescribed list of reportable events. The AIPA submission stated:

> Perversely, the prescription of mandatory reports in the Transport Safety Investigation Regulations 2003 allows individuals and operators to 'opt out' of the intended level of reporting by narrowly interpreting the clauses of the relevant regulations. AIPA is concerned that the current prescriptions do

59 *Submission 12*, p. 28.

60 *Submission 31*, p. 13.

61 *Submission 31*, p. 13.

62 *Submission 31*, p. 13.

63 *Submission 6*, p. 16.

> not adequately cover automation issues, human factors events or other emerging risks and that valuable safety data is being lost.[64]

3.67 Accordingly, AIPA recommended that:

> …existing provisions for mandatory reporting be strengthened with outcomes obligations to supplement existing prescriptions.[65]

3.68 The ATSB noted that it considered that 'further improvements can be made to clarify the list of reportable matters contained in the [regulations]'.[66] The ATSB advised that it had therefore initiated a consultation process to establish 'whether a categorisation system similar to the European model would assist industry professionals to better identify the matters that need to be reported'.[67]

Transport Safety Investigation Amendment (Incident Reports) Bill 2010

Establishment of effective immunity for reporting incidents

3.69 As noted above, the Transport Safety Investigation Amendment (Incident Reports) Bill 2010 (the Bill) would effectively provide a blanket immunity for reporters of accidents and safety incidents through establishing an offence for imposing a penalty on, or depriving of benefit, any person who reports an accident or incident. Clause 19A(2) provides that:

> …a person commits an offence if the person inflicts any penalty upon, or deprives any benefit to, a responsible person with knowledge of an immediately reportable matter or a routinely reportable matter in respect of:
>
> (a) the responsible person making any report under this Division;
>
> (b) the content of any report made by the responsible under this Division.

3.70 Captain Woodward advised that AIPA supported the Bill on the basis that it would entrench aspects of a 'just culture' approach to incident reporting. In particular, AIPA argued that Australia should adopt aspects of the reporting systems in the UK and the US, where self-reporting of safety incidents is encouraged through protection from prosecution.[68]

3.71 However, the ATSB submitted that the proposed immunity would be 'dangerous for safety' and 'dangerously counterproductive'.[69] The ATSB submission observed that the proposed immunity could, by making it an offence to inflict a

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64 *Submission 6*, p. 17.

65 *Submission 6*, p. 18.

66 *Submission 25*, p. 25.

67 *Submission 25*, p. 25.

68 *Committee Hansard*, 1 December 2010, p. 11.

69 *Submission 25*, pp 21 and 24.

penalty or deprive of a benefit a person who reports an accident or incident, prevent an operator from taking 'essential safety action'.[70] CASA, as the regulator, may be able to raise a defence of lawful authority in order to take necessary safety action; however, this 'may be uncertain'.[71]

3.72 The ATSB submission explained that there are cases where a person's actions have endangered safety and it is therefore legitimate and necessary for CASA or an airline operator to take action against that person, such as by suspending a licence, or suspending that person from operational duties.[72] The Bill, however, would enable any such person who reported their own actions to claim the immunity offered by the proposed provision in the Bill. The ATSB submission explained:

> The Bill's provisions have the potential to endanger safety by hindering operators taking necessary safety-related action and leaving the situation unclear about whether the provision is intended to prevent safety action by CASA. In either circumstance, preventing essential safety action is inappropriate.[73]

3.73 Similarly, AIPA did not believe that the Bill should extend to the protection of individuals who had committed wilful or negligent acts:

> Both the UK and the United States have more complex systems than we have and arguably they are better developed for safety reporting. The just culture concept is actually entrenched in [International Civil Aviation Organization or] ICAO standards and recommended practices. They are actually moving that way. We would like to see just culture enshrined in Australian legislation, so we actively support… [the proposed] amendment. One of the concepts of a just culture is that wilful negligence, disregard for standard procedures or actually breaking the law is not condoned; it is actually recognised in the just culture concept that those issues are not meant to protect an individual who deliberately or flagrantly breaks the law or is actually just negligent.[74]

3.74 Virgin supported the proposed provision, subject to:

> …amendments that protect against the use of immunity for industrial purposes or to protect against actions that are wilfully reckless, negligent or non-compliant. We would not wish to see legislation protect those who would use immunity for a purpose other than enhancing safety [75]

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70 *Submission 25*, p. 20.

71 *Submission 25*, p. 20.

72 *Submission 25*, p. 21.

73 *Submission 25*, p. 21.

74 *Committee Hansard*, 1 December 2010.

75 *Committee Hansard*, 18 March 2011, p. 2.

3.75 Further, the ATSB submission noted that the terms 'penalty' and 'benefit' as used in the Bill were ambiguous and could also interfere with the taking of genuine safety related actions. It explained:

> If requiring a crew member to undertake additional training were to be regarded as a 'penalty', or if suspension from duties pending a necessary demonstration of proficiency were to be regarded as depriving a person of a 'benefit', the interests of safety could be unacceptably compromised.[76]

3.76 In light of the issue outlined above, the ATSB concluded that the offence as proposed in the Bill would provide a blanket immunity that 'would prevent legitimate safety action being taken when there has been deliberate, reckless or grossly negligent conduct'.[77]

3.77 CASA warned against developing broadly prescriptive policies or legislative mechanisms governing the use of safety related information.[78] Further, CASA noted that it and the ATSB had jointly contributed to working papers raising these issues in the appropriate ICAO forums, which was to underpin the formation of a task force to review the standards and recommended practices in this area (that is, contained in Annex 13 of the Chicago Convention). Given this, CASA urged the committee 'to refrain from recommending the further consideration of legislation in this area pending the outcome of this work'.[79]

3.78 Similarly, while the ATSB offered an alternative wording for a legislatively prescribed immunity, its preference would be to:

> …address legislative protections associated with accident and incident reporting in the light of imminent developments in this area in the international aviation community. In this connection, the Committee's attention is drawn to the resolution adopted by the 37th Session of the ICAO Assembly in October 2010, confirming the establishment of a multi-disciplinary task force, which will inform ICAO's review of the issues germane to the protection of those who provide safety-related information, under safety management systems, to aviation safety regulatory authorities and to accident investigation agencies. The task force is expected to be established by ICAO in November 2010.[80]

Establishment of offence for improperly influencing a responsible person in respect of a report

3.79 Clause 19A(1) of the Bill provides:

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76 *Submission 25*, p. 22.

77 *Submission 25*, p. 22.

78 *Submission 12*, p. 28.

79 *Submission 12*, p. 29.

80 *Submission 25*, p. 24.

> …a person commits an offence if the person, by any improper means, attempts to influence a responsible person with knowledge of an immediately reportable matter or a routinely reportable matter in respect of any report made or required to be made under this Division.

3.80 The ATSB noted that the explanatory memorandum to the Bill states that 'there are currently no penalties for altered reports being provided to aviation authorities', and observed that the apparent intent of this clause of the Bill 'is to ensure accurate reporting'. However, the ATSB noted that the premise of the proposed offence was 'incorrect', as like offences may be found in existing legislation. The ATSB explained:

> It is already an offence under section 137.1 of the Criminal Code to supply false or misleading information to the Commonwealth, which includes the ATSB. The offence in the Criminal Code would apply to circumstances where a pilot makes a report to the safety department of the airline he or she works for and the safety department then falsifies the document before giving it to the ATSB. Further, sections 11.2 and 11.4 of the Criminal Code make it an offence to aid, abet, counsel, procure or urge a person to submit a false or misleading report. These offences may adequately cover 'influencing' someone with respect to their reporting responsibilities.[81]

3.81 In addition, the ATSB was concerned that the clause, as drafted, gave rise to significant problems of interpretation. It observed that:

> …the offence does not require a link between the act of 'influencing' a person and an improper result in relation to the report. In accordance with clause 19A(1), the 'influence' may have resulted in the content of the report being improved and made more accurate but it could still potentially be an offence. It is also difficult to distinguish between the physical elements of the offence and the fault elements that would automatically apply under section 5.6 of the Criminal Code. These problems could lead to difficulties in enforcing the offence, as currently drafted.[82]

81 *Submission 25*, p. 21.

82 *Submission 25*, p. 21.

Reporting of incidents to aviation authorities by pilots, crew and operators and the handling of those reports by the authorities, including the following incidents:

(i) the Jetstar incident at Melbourne airport on 21 June 2007, and

(ii) the Tiger Airways incident, en route from Mackay to Melbourne, on 18 May 2009

Reporting of incidents to aviation authorities

3.82 The committee heard that a number of systems exist which compel or allow pilots, crew and operations to report incidents to the appropriate aviation safety authorities. The ATSB observed that the 'inter-relationship of the different systems is relevant for the purpose of addressing some of the inferences in the…[inquiry's terms of reference] and the proposed amendments in the Bill'.[83]

3.83 Both CASA and the ATSB collect accident and incident safety information. CASA, as the industry regulator, is responsible for 'developing and promulgating aviation safety standards and monitoring their implementation by industry'.[84] The ATSB is an independent Commonwealth Government statutory agency established under the *Transport Safety Investigation Act 2003* (TSI Act). The ATSB's primary function is to 'improve safety and public confidence in the aviation, marine and rail modes of transport through excellence in:

- independent 'no-blame' investigations of transport accidents and other safety occurrences;
- safety data recording, analysis and research; and
- fostering safety awareness, knowledge and action.[85]

3.84 The committee heard that primary responsibility for receiving and managing reports concerning matters relating to aviation safety rests with the ATSB. Given this, CASA relies 'heavily' on the ATSB as a source of information regarding accidents and incidents, to support CASA regulatory functions of developing standards and regulations and safety risk management.[86]

83 *Submission 25*, p. 11.

84 *Submission 25*, p. 9.

85 *Submission 25*, p. 3.

86 *Submission 25*, p. 9.

Mandatory reporting systems

ATSB

3.85 Part 3 of the TSI Act provides the framework for the ATSB mandatory reporting system, and requires that *responsible persons* report *immediately reportable matters* (IRMs) (that is, *accidents and serious incidents*) and *routine reportable matters* (RRMs) (that is, *incidents*).

3.86 The TSI regulations prescribe who are responsible persons.[87] Responsible persons include, inter alia:

- a crew member of the aircraft concerned;
- the owner or operator of the aircraft;
- a person who is licensed as an aircraft maintenance engineer and does any work in relation to the aircraft; and
- a member of the staff of CASA.[88]

3.87 The TSI Regulations also prescribe the types of accidents and incidents that must be reported, namely IRMs and RRMs.

3.88 A responsible person is required to report to the ATSB IRMs (as soon as practicable) and RRMs (within 72 hours) that they have knowledge of. However, they are excused from the requirement to report if they believe on reasonable grounds that another responsible person will report the matter within the required timeframe with all the relevant details (if they do not have this belief they are not excused).[89] In practice, a pilot who has made a report to the employing airline's safety department as a requirement of that company's SMS is absolved of the requirement to report to the ATSB (assuming that he or she reasonably believes that the operator will pass the report on to the ATSB). The ATSB submission notes that transport safety legislation allows for operators to develop a culture of accident and incident reporting within their SMS.[90]

3.89 CASA noted that, in accordance with the provisions of the TSI Act, the disclosure of information to CASA from ATSB investigations for purposes other than addressing the safety issues identified is limited 'in the interests of preserving the free flow of information to the ATSB'.[91] However, the two bodies were cooperating closely in the development of ICAO standards to enhance CASA's access to the ATSB's accident and incident notification system, without 'compromising

87 *Submission 25*, p. 11; italicised terms are defined terms for the purposes of the TSI Act.

88 See regulation 2.5 of the Transport Safety Investigation Regulations 2003 for the complete list.

89 *Submission 25*, pp 11-12.

90 *Submission 25*, p. 12.

91 *Submission 25*, pp 9-10.

confidentiality where it is required'.[92] Current consultations around potential changes to the list of mandatory reportable accidents and incidents also offered an opportunity to 'improve these processes domestically'.[93]

3.90 The committee heard that in Australia Part 3 of the *Transport Safety Investigation Act 2003* (TSI Act) requires 'reportable matters' (as defined in the regulations) to be reported to the ATSB. The ATSB submission explained:

> The mandatory reporting scheme is the ATSB's prime source of information for determining whether or not to commence an investigation and is used to conduct research and analysis. CASA receives weekly updates of accident and incident reports with personal information being removed where practicable. De-identified information is also made available to the industry and the public. This is consistent with the amended *Freedom of Information Act 1982* coming into effect on 1 November 2010 which promotes recognition that information held by the Government is to be managed for public purposes, and is a national resource.[94]

CASA

3.91 The defect reporting provisions of Part 4B of the CARs require a person engaged in the maintenance of an Australian aircraft, who becomes aware of a major defect in the aircraft, to report that defect to CASA, as well as to the holder of the certificate of registration for the aircraft. It is an offence for a person to fail to make such a report, however the reporting requirement does not apply if the person is an employee of the person responsible for carrying out the maintenance.[95]

3.92 Under the reporting obligations of the defect reporting scheme a person connected with the operation of, or carrying out of maintenance on, an Australian aircraft discovers a major defect of a particularly significant kind, that person is also required under the regulations to report the defect immediately to CASA, and it is an offence to fail to do so.[96]

3.93 The CASA submission advised that the purpose of these defect reporting requirements is to:

- permit timely airworthiness control action in the Australian aircraft fleet;
- assist in long term improvement in design, manufacturing and maintenance standards; and

92 *Submission 25*, p. 10.

93 *Submission 25*, p. 10.

94 *Submission 25*, p. 7.

95 *Submission 12*, p. 23.

96 *Submission 12*, pp 23-24.

- permit the assessment of risk levels in the Australian aircraft fleet.[97]

Confidential reporting systems

REPCON

3.94 The ATSB advised:

> The ATSB operates a confidential reporting scheme that is established under the Air Navigation (Confidential Reporting) Regulations 2007. This scheme, known as REPCON, allows anyone to confidentially report a safety concern to the ATSB. The ATSB fully de-identifies the report (including information about the reporter and any person referred to in the report), before passing the details to CASA and publicising any identified safety issues in industry magazines like *Flight Safety Australia*. De-identified information is used by the ATSB for research and analysis.[98]

Aviation Self Reporting System (ASRS)

3.95 The ASRS is established under division C of the Act and Subpart 13.K of the CASRs.[99] As noted above, the ASRS is established under the Act and is administered by the ATSB and CASA.

3.96 The ASRS provides for holders of civil aviation authorisations, which includes pilots and other flight crew members, to self-report specified breaches of CASA's regulations to the ATSB. Specified breaches must not include conduct that was deliberate or fraudulent, or caused or contributed to an accident or serious incident; and must not involve a number of regulations prescribed in CASR 13.325.[100]

3.97 As noted above, the ASRS offers a limited form of immunity from administrative action or penalty arising from the reported contravention.[101]

Operator accident and incident reporting systems

3.98 The ATSB advised:

> Airline operators are required by CASA Civil Aviation Orders 82.312 and 82.513 to have in place a Safety Management System. An operator's Safety Management System must contain hazard identification and risk assessment and mitigation processes. Accident and incident reports are not the only source of information for identifying hazards and risks but these reports do form an integral part of an operator's database of information. The operator

97 *Submission 12*, p. 24.

98 *Submission 25*, p. 7.

99 *Submission 12*, p. 23.

100 *Submission 12*, p. 24.

101 *Submission 12*, p. 25.

> needs to know first-hand what is occurring within the organisation. The International Civil Aviation Organization (ICAO) acknowledges the need for this, advising, 'those who operate the system daily are the ones who are in constant contact with the hazards, the consequences of which effective safety reporting aims to mitigate'.[102]

3.99 The ATSB noted that the reporting of accidents and incidents by employees is a 'fundamental part of the development of a good working safety culture'.[103] The ATSB submission stated:

> The safe functioning of an organisation requires that employees report internally so that both the employees and the organisation are risk aware. It is not a good working safety culture if the organisation does not have the responsibility of receiving and assessing accident and incident reports and acting on the information. It is also not a good safety culture if individuals are not encouraged to report accidents and incidents within the organisation. Practices which encourage a culture of risk awareness must be embedded in the organisation.[104]

Adequacy of reporting under current reporting systems

3.100 In terms of compliance with, or level of reporting through, the mandatory reporting scheme, the ATSB noted that a 2008 audit by ICAO concluded that Australia's civil aviation legislation addressed the requirements of Annex 13 of Chicago Convention (which relates to aircraft accident investigation). The ATSB also identified the following indicators in support of ICAO's conclusion:

- an increase in reporting since the commencement of the TSI Act (despite a decrease in the actual number of incidents);
- identified over-reporting by the airline industry (from 2007-10 duplicate reports ran at 14.12 per cent and non-reportable incidents at 26.88 per cent);[105] and
- lack of evidence of operators failing to comply with reporting obligations.[106]

3.101 The ATSB concluded that these indicators suggest that the airline industry 'has been cautious about providing as much information as possible…and that there is not a systemic issue with [the] filtering [of] reports to the ATSB'.[107] Data presented in

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102 *Submission 25*, p. 8.

103 *Submission 25*, p. 8.

104 *Submission 25*, p. 9.

105 *Submission 25*, p. 15.

106 *Submission 25*, p. 13.

107 *Submission 25*, p. 15.

the ATSB submission showed that the 'high capacity air transport sector [has taken] an even more cautious approach…to reporting than the industry as a whole'.[108]

3.102 In relation to operator accident and incident reporting schemes, the ATSB noted that it had not been advised by CASA 'of any significant concerns regarding the effective operation of an operator's internal reporting system'.[109]

3.103 The CASA submission noted that it 'routinely considers and, where appropriate, acts on the findings and recommendations made by the ATSB'.[110]

3.104 Virgin submitted:

> A regulatory requirement to pass on any reports relevant to the Australian Transport Safety Bureau (ATSB) and the Civil Aviation Safety Authority (CASA) is already in place. This occurs on a daily basis in the Virgin Blue Group, with electronic output produced which feeds directly to these agencies. A mechanism for flight crew to report incidents directly to the ATSB and CASA also exists.
>
> It is interesting to note that the list of matters classified as 'immediately reportable' is much broader in Australia than other major aviation regions, and it is proposed to expand this list. In the consideration of this by relevant agencies, the Virgin Blue Group would highlight the need to guard against moving to onerous requirements which have the potential to give rise to 'reporting fatigue' which may ultimately discourage pilots from reporting matters.[111]

3.105 The RAAA submitted:

> With respect to ATSB accident/incident reporting requirements, current arrangements are well understood by the industry and there is no apparent need for change.[112]

3.106 Qantas and Jetstar submitted that the companies generally made determinations regarding the reportability of incidents 'conservatively, such that over rather than underreporting is achieved'.[113]

3.107 However, AIPA submitted that it had 'anecdotal evidence' of underreporting of airline safety incidents in Australia, including incidents involving 'take-off go-around' selection events (see below) and stick-shaker events.[114]

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108 *Submission 25*, p. 15.

109 *Submission 25*, p. 16.

110 *Submission 12*, p. 29.

111 *Submission 17*, p. 2.

112 *Submission 19*, p. 5.

113 *Submission 31*, p. 14.

114 *Committee Hansard*, 1 December 2010, p. 9.

3.108 With reference to the Jetstar 'go-around' event discussed in the following paragraphs, AIPA argued that the incident was a demonstration of the tendency for operators, in determining whether an incident is a reportable event, to classify incidents as not being reportable. Captain Woodward commented:

> The problem we see with a reportable event list is that there are always commercial interests in not reporting your dirty washing to the public because it could be misinterpreted. So having the airline interpret its own safety reports as to whether they should be reported or not is an issue because they will reluctantly report items. The list is reasonably clear though. If you have a ground proximity warning system go off you should report it.[115]

3.109 AIPA expressed its concern that:

> …there does not appear to be a consistent approach from either ATSB, CASA or operators to the accurate categorisation of events and the depth of investigation that attaches thereto.
>
> …AIPA believes that CASA must be capable of conducting 'knowledge' audits based on a consistent standard of operators' SMSs to ensure that proper categorisation of incidents takes place…
>
> AIPA does not believe ATSB or, to a lesser extent CASA, have sufficient well-qualified and experienced professionals within their ranks to meet this particular task. Neither agency can compete financially for expertise and may never have sufficient resources to meet their workload. We need to be able to supplement the normal resources in time of need.[116].

3.110 Captain Klouth discussed a number of occasions in which safety reports were not appropriately submitted to the ATSB because an airline safety department 'did not consider it met the strict criteria of the immediately reportable and routinely reportable matters'. To avoid such outcomes, Captain Klouth called for a legislative requirement that all internal airline safety reports be submitted to the ATSB for scrutiny:

> …[There] should be a legislative requirement that all internal reports, be they draft or final, be copied and submitted to the ATSB. The ATSB can then assess the quality of the investigation, for a start, and also assess whether they need to get involved and investigate further.[117]

3.111 AIPA also favoured strategies for enhancing the distribution of, and access to, safety related data and information. The AIPA supplementary submission stated:

> …there is significant potential for enhancing safety data through cooperative arrangements. ATSB should be able to 'data mine' SMS data that is otherwise not reportable. Operators should share data with other

115 *Committee Hansard*, 1 December 2010, pp 8-9.

116 Submission 6, *(Supplementary)*, p. 7.

117 *Committee Hansard*, 15 February 2011, p. 7.

> operators through some form of safety collective type arrangements, subject to appropriate security and privacy protections.[118]

3.112 In relation to the use of confidential reporting systems, the ATSB noted that the inquiry had attracted a number of reports of safety related incidents. Mr Martin Dolan, ATSB Chief Commissioner, commented:

> [The ATSB's evidence has drawn attention to]…the confidential reporting scheme that we administer. That scheme is explicitly designed to deal with a number of the circumstances that have been referred to this committee where people feel unable to bring safety matters internally to notice. It is a scheme that gives pretty much absolute protection of identity to someone who brings a safety issue to the attention of the ATSB, and we will follow it up with whichever relevant organisation is necessary. It seems to me we need to do a better job of publicising the existence of that scheme and the very strong protection of identity that it gives because it does offer at least one channel for people to raise those issues.[119]

Jetstar incident (Melbourne airport, 21 July 2007)

3.113 Term of reference (h) required the committee to consider a specific incident relating to a 'go-around event' at Melbourne airport in July 2007, which involved a Jetstar aircraft.

3.114 The ATSB transport safety report AO-2007-044 (the ATSB Jetstar report) provides the following abstract of the incident:

> On 21 July 2007, an Airbus Industrie A320-232 aircraft was being operated on a scheduled international passenger service between Christchurch, New Zealand and Melbourne, Australia. At the decision height on the instrument approach into Melbourne, the crew conducted a missed approach as they did not have the required visual reference because of fog. The pilot in command did not perform the go-around procedure correctly [that is, the missed approach setting had not been correctly selected] and, in the process, the crew were unaware of the aircraft's current flight mode. The aircraft descended to within 38 ft of the ground before climbing.
>
> The aircraft operator had changed the standard operating procedure for a go-around and, as a result, the crew were not prompted to confirm the aircraft's flight mode status until a number of other procedure items had been completed. As a result of the aircraft not initially climbing, and the crew being distracted by an increased workload and unexpected alerts and warnings, those items were not completed. The operator had not conducted a risk analysis of the change to the procedure and did not satisfy the incident reporting requirements of its safety management system (SMS) or of the Transport Safety Investigation Act 2003.

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118 *Submission 6, (Supplementary),* p. 8.

119 *Committee Hansard*, 18 March 2011, 2011, pp 54-55.

> As a result of this occurrence, the aircraft operator changed its go-around procedure to reflect that of the aircraft manufacturer, and its SMS to require a formal risk management process in support of any proposal to change an aircraft operating procedure. In addition, the operator is reviewing its flight training requirements, has invoked a number of changes to its document control procedures, and has revised the incident reporting requirements of its SMS.
>
> In addition to the safety action taken by the aircraft operator the aircraft manufacturer has, as a result of the occurrence, enhanced its published go-around procedures to emphasise the critical nature of the flight crew actions during a go-around.[120]

3.115 In its submission to the inquiry, the ATSB noted that the initial reporting of the incident as a RRM was done 'in accordance with acceptable practice'. However, the crew had omitted from that report the fact that the ground proximity warning had sounded during the incident. Jetstar had not become aware of this fact until 'almost two weeks' after the incident occurred.[121] Jetstar did not provide this new information to the ATSB, which found out about the incident through media reports.[122]

3.116 In relation to the failure of Jetstar to report the incident, the Qantas and Jetstar submission explained:

> Following this incident the pilot in command submitted a report to Jetstar which was then provided verbatim to the ATSB within the required 72 hour period. Subsequent to submitting the report, an internal Jetstar investigation of this incident revealed additional information from that provided in the pilot's initial report [ie that two enhanced ground proximity warning system (EGPWS) alerts had been triggered during the event]. This additional information triggered an internal review of missed approach procedures to improve their effectiveness. [However, the ATSB was not notified of the additional information relating to the EGPWS alerts].[123]

3.117 The ATSB Jetstar report identified the failure of Jetstar to advise it of the additional information relating to the EGPWS alerts, and found that Jetstar:

> …had not complied with the requirements of its [safety management system] in relation to the reporting of occurrences and as a result had not complied with the reporting requirements of the *Transport Safety Investigation Act 2003*.

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120 Australian Transport Safety Bureau, 'Go-around event Melbourne Airport, Victoria, 21 July 2007, VH-VQT, Airbus Industrie A320-232', ATSB Transport Safety Report, Aviation Occurrence Investigation AO-2007-044 (Final), p. v.

121 *Submission 25*, pp 17-18.

122 *Submission 25*, p. 18.

123 *Submission 31*, p. 15.

3.118 The ATSB found that there was no evidence that Jetstar's failure to notify it of the EGPWS alerts was a deliberate act, and concluded that it was likely that Jetstar considered that it had satisfied its occurrence reporting obligations under the TSI Act following its first notification of the incident on 26 July 2007. That is, 'Jetstar incorrectly believed that all they were required to do was to make an initial report, not to communicate its changed status'.[124]

3.119 This view was supported by Captain Klouth, who maintained that there was 'no deliberate effort to hide this incident'. However, Captain Klouth identified a lack of resources for investigating the incident as a contributing factor'.[125]

3.120 Noting the broader context of the immunity proposed by the Bill, the ATSB commented:

> Although both Jetstar and the pilots failed in their reporting responsibilities, there was no indication that this was the result of Jetstar 'influencing' the pilots or the pilots requiring 'immunity' because they were concerned about inappropriate 'penalties'. Jetstar took safety action by amending its reporting procedures to ensure future compliance and the ATSB reminded Jetstar that the TSI Act makes it an offence for failing to report matters of which they have knowledge.[126]

3.121 However, the ATSB noted that the TSI Act specifically indicates that, once a person had knowledge of an immediately reportable or routinely reportable matter, they must report that matter within the timeframes indicated in the TSI Act (72 hours in this case).[127] The ATSB Jetstar report stated:

> It was only when the ATSB was alerted by media reports of the potentially serious nature of the occurrence that sufficient information became available from the aircraft operator on which the ATSB could determine the need for a formal investigation under the TSI Act. The delay in the initiation of an ATSB investigation may have the potential to deny opportunities for safety lessons to be learnt and associated safety action to be taken in a timely fashion to prevent recurrence.[128]

3.122 The committee notes that, apart from drawing attention to the failure of Jetstar to report the information relating to the EGPWS alerts, as it was required to by the TSI Act, the ATSB report identified the (a) change to the manufacturer's operating

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124 *Submission 25*, p. 18.

125 *Committee Hansard*, 15 February 2011, p. 4.

126 *Submission 25*, p. 18.

127 Australian Transport Safety Bureau, 'Go-around event Melbourne Airport, Victoria, 21 July 2007, VH-VQT, Airbus Industrie A320-232', ATSB Transport Safety Report, Aviation Occurrence Investigation AO-2007-044 (Final), p. 25.

128 Australian Transport Safety Bureau, 'Go-around event Melbourne Airport, Victoria, 21 July 2007, VH-VQT, Airbus Industrie A320-232', ATSB Transport Safety Report, Aviation Occurrence Investigation AO-2007-044 (Final), p. 26.

procedures and (b) the failure to subject that change to a risk analysis as being 'significant safety issues'.[129]

3.123 The ATSB Jetstar report also commented, in relation to the failure of the flight crew to quickly realise that the incorrect flight mode had been selected:

> Neither the [pilot in command's] (PIC's) nor the co-pilot's training or experience, when coupled with the unexpected distractions and workload during the event, enabled them to quickly diagnose the situation during the early part of the first missed approach.[130]

3.124 The report noted that:

> Evidence from a range of studies worldwide indicates that shortcomings in flight crew training associated with the operation of aircraft automated flight control systems is of ongoing concern. Accidents and incidents where the flight crew have a poor understanding of the operation of the automated systems continue to occur.[131]

3.125 Further, the report noted that the pilots' endorsement training and SOP training had been conducted, respectively, by a third-party training provider and the aircraft operator, and noted:

> The risk with such a separation of training into 'endorsement' and 'post-endorsement' components, with each being provided by different organisations, was that techniques or procedures may either be overlooked, or taught differently by the respective organisations. As a result, trainees could be required to unlearn some of their newly-acquired knowledge or, when under pressure, the possibility exists that crews could revert to previously or first-learned techniques and knowledge.[132]

3.126 On this point, CASA commented:

> The ATSB report into the Jetstar incident found that there was no provision in the current civil aviation legislation in relation to third-party flight crew training providers. In the event, the ATSB found that responsibility for training outcomes was unclear. CASA has advised the ATSB that proposed

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129 Australian Transport Safety Bureau, 'Go-around event Melbourne Airport, Victoria, 21 July 2007, VH-VQT, Airbus Industrie A320-232', ATSB Transport Safety Report, Aviation Occurrence Investigation AO-2007-044 (Final), p. 27.

130 Australian Transport Safety Bureau, 'Go-around event Melbourne Airport, Victoria, 21 July 2007, VH-VQT, Airbus Industrie A320-232', ATSB Transport Safety Report, Aviation Occurrence Investigation AO-2007-044 (Final), p. 23.

131 Australian Transport Safety Bureau, 'Go-around event Melbourne Airport, Victoria, 21 July 2007, VH-VQT, Airbus Industrie A320-232', ATSB Transport Safety Report, Aviation Occurrence Investigation AO-2007-044 (Final), p. 23.

132 Australian Transport Safety Bureau, 'Go-around event Melbourne Airport, Victoria, 21 July 2007, VH-VQT, Airbus Industrie A320-232', ATSB Transport Safety Report, Aviation Occurrence Investigation AO-2007-044 (Final), p. 23.

> CASR Part 142, which deals comprehensively with external training providers, is under review as a matter of priority and has now been progressed to the Office of Legislative Drafting and Publishing. The ATSB reported that this adequately address[es] the safety issue.[133]

3.127 AIPA submitted that the incident was symptomatic of both declining pilot skill levels and underreporting of safety incidents in the airline industry:

> …it seems to us from a distance it is a skill and/or training level thing. We believe that it is probably symptomatic of other incidents that the industry is having. In other words, we think that there is an underreporting of those sorts of incidents. We have anecdotal evidence from our members that that type of incident has occurred before on that particular airline. Certainly in the regional transport sector there have been a number of incidents, not related to that but other issues.[134]

Tiger Airways incident (en route from Mackay to Melbourne, 18 May 2009)

3.128 Term of reference (h) required the committee to consider a specific incident relating to a flight control system event en route from Mackay to Melbourne in May 2009, which involved a Tiger Airways aircraft.

3.129 ATSB transport safety report AO-2009-021 (the ATSB Tiger report) provides the following abstract of the incident:

> On 18 May 2009, an Airbus Industrie A320-232 aircraft, registered VH-VNC was on a regular public transport flight from Mackay, Queensland (Qld) to Melbourne, Victoria when at about 1249 Eastern Standard Time, the aircraft started to vibrate. Cockpit indications showed that the left aileron was oscillating. The crew diverted the aircraft to the Gold Coast Aerodrome, Qld and landed.
>
> The source of the aileron oscillation was an internal fault in one of the left aileron's hydraulic servos. The fault was introduced during manufacture by an incorrect adjustment of the servo, which caused internal wear in a number of the servo's hydraulic control components. The aileron servo manufacturer has incorporated a new method of adjusting the aileron servos during assembly to minimise the likelihood of a recurrence of the problem.
>
> During the investigation, it was found that an identical fault had occurred to the same aircraft 8 months prior to this incident. The previous incident was not reported to the Australian Transport Safety Bureau by the operator as required by the Transport Safety Investigation Act 2003. The operator has improved the training of its staff and the reportable event requirements in its safety management system manual in an effort to address the non-reporting risk.

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133 *Submission 12*, p. 30.

134 *Committee Hansard*, 1 December 2010, p. 8.

3.130 The ATSB Tiger report found that Tiger had not complied with the reporting requirements of the Act , as the aileron problem was a 'routine reportable matter' under regulation 2.4(1) of the Transport Safety Investigation Regulations, which specify that an aircraft system malfunction that does not seriously affect the operation of the aircraft is a reportable matter.

3.131 The ATSB Tiger report commented:

> Whereas the nature of the previous incident, and inability at that time to isolate the fault might have influenced the operator to not report the incident, the incident was a routine reportable matter in accordance with the *Transport Safety Investigation Act 2003*.
>
> Although the ATSB may not have investigated the earlier incident, all reported incidents are entered into the ATSB's occurrence database. That data can then be searched to establish safety trends, potentially contributing to the initiation of a safety issues investigation, or become part of wider safety research and/or education initiatives.[135]

3.132 Noting the broader context of the inquiry, and particularly the immunity and offences proposed by the Bill, the ATSB submission to the inquiry stated that there was no suggestion that the ATSB did not receive a report 'because certain persons had been 'influenced' or that pilots required an 'immunity' of the type suggested.[136] The ATSB considered that it 'appears that Tiger simply (and incorrectly) failed to assess the first incident as reportable',[137] and that this error would be taken into account in the event of future breaches of the Act.

3.133 Tiger Airways confirmed that the failure to report the first incident was due to a mistaken belief that the incident was not reportable. Captain Berry advised:

> Tiger Airways has an open reporting culture but the ATSB does rely to a certain extent on operators filtering reports simply to get the number of reports to a manageable level. It does not want us to report everything although we would be very willing to do so. It was the judgment of Tiger Airways of the first of the incidents, which was not reported to the ATSB, that this matter was nonreportable.[138]

3.134 Captain Berry noted that the reporting of the second incident was based on the different circumstances on that occasion:

> We had two incidents which were related to that particular problem. The first incident occurred and was not reported. The second incident occurred

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135 Australian Transport Safety Bureau, 'Flight control system event, 520km NW of Gold Coast Aerodrome, Queensland, 18 May 2009, VH-VNC, Airbus Industrie A320-232', ATSB Transport Safety Report, Aviation Occurrence Investigation AO-2007-044 (Final), p. 27.

136 *Submission 25*, p. 19.

137 *Submission 25*, p. 19.

138 *Committee Hansard*, 1 December 2010, p. 23.

> several months later and was reported. The distinction between the two incidents was that the first incident did not lead to an emergency diversion and the second incident did. So the first incident was not reported but the second incident was.[139]

3.135 Captain Berry advised that Tiger Airways had accepted the criticism by the ATSB in relation to the non-reporting of the incident, and had altered its procedures to ensure that such incidents would be reported in future:

> On a weekly basis we review all of the safety reports in a safety meeting with the airline, which is attended by all of the airline's senior executives. We analyse all of the safety reports to ensure that reports have been properly reported to the authorities.[140]

3.136 AIPA also characterised this event as being symptomatic of a tendency for operators to underreport safety incidents. In AIPA's view, the incident was undoubtedly a reportable incident, whereas the operator initially chose not to report the event.[141]

How reporting processes can be strengthened to improve safety and related training, including consideration of the Transport Safety Investigation Amendment (Incident Reports) Bill 2010

Transport Safety Investigation Amendment (Incident Reports) Bill 2010

3.137 Given its connection with the question of immunity for reporters of aviation accidents and incidents, the Bill is considered in its entirety above under term of reference (g), relating to the question of legislative immunity.

Other means to strengthen reporting processes to improve safety and related training

3.138 Other means to strengthen reporting processes are considered throughout the report where evidence was received in relation to specific issues.

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139 *Committee Hansard*, 1 December 2010, p. 23.

140 *Committee Hansard*, 1 December 2010, p. 29.

141 *Committee Hansard*, 1 December 2010, p. 9.

Committee view

The capacity of the Civil Aviation Safety Authority to appropriately oversee and update safety regulations given the ongoing and rapid development of new technologies and skills shortages in the aviation sector;

The need to provide legislative immunity to pilots and other flight crew who report on safety matters and whether the United States and European approaches would be appropriate in the Australian aviation environment;

Reporting of incidents to aviation authorities by pilots, crew and operators and the handling of those reports by the authorities, including the following incidents:

(i) the Jetstar incident at Melbourne airport on 21 June 2007, and

(ii) the Tiger Airways incident, en route from Mackay to Melbourne, on 18 May 2009; and

How reporting processes can be strengthened to improve safety and related training, including consideration of the Transport Safety Investigation Amendment (Incident Reports) Bill 2010.

3.139 Terms of reference (f), (g), (h) and (i) required the committee to consider a broad range of issues concerning airline safety in connection with the capacity of the CASA and incident reporting and immunity, including the Transport Safety Investigation Amendment (Incident Reports) Bill 2010 (the Bill).

3.140 In relation to the capacity of the CASA to appropriately oversee and update safety regulations (term of reference (f)), the evidence to the inquiry highlighted the problems arising from CASA's current regulatory reform process, notably the very long time that the process has been underway. By some reckonings, this process was commenced over 20 years ago, and there is no doubt that regulatory reform of the Australian aviation industry has been characterised by a lack of timeliness.

3.141 The committee wishes to stress that the lack of timeliness in the aviation regulatory reform process has significantly hampered the committee's work, not only in relation to the current inquiry but also in relation to previous inquiries and the committee's examination of the aviation industry through the estimates process. This is because, with an industry as technologically and commercially complex as aviation, it is appropriate for the committee to take a strategic or high level approach, and to generally avoid the making of recommendations that would second-guess or anticipate the outcomes of the CASA reform process. The ongoing failure to resolve and implement important reforms has therefore effectively frustrated the ability of the committee to properly scrutinise aspects of the industry in which important reforms are constantly said to be pending.

3.142 In addition, the committee notes that the significant delay affecting the reform process has created frustration within industry, and apparently contributed to a lack of

engagement with, and knowledge of, important suggested or pending reforms. This is demonstrated by the extent to which many of the issues raised in the course of the inquiry are to be addressed in proposed new regulations (CASRs).

3.143 Despite the preceding observations, the committee heard that the CASA regulatory reform process has been invigorated under the current CASA management and by additional funding from Government. This should see very important new regulations—such as those relating to third party training arrangements discussed in Chapter 2—being implemented in the near future.

3.144 Nevertheless, the committee agrees that the ongoing process of reform would benefit from clearer industry and public understanding of the reform priorities and intended timelines.

3.145 Further, the committee believes that the Government should review CASA's funding to ensure that there is sufficient specific funding to support an expedited reform process.

Recommendation 10

3.146 The committee recommends that the Minister for Infrastructure and Transport provide a report to Parliament every six months outlining the progress of the Civil Aviation Safety Authority's (CASA) regulatory reforms and specifying reform priorities, consultative processes and implementation targets for the following 12-month period.

Recommendation 11

3.147 The committee recommends that the Government undertake a review of the funding to the Civil Aviation Safety Authority (CASA) to ensure that there is sufficient specific funding to support an expedited regulatory reform process.

3.148 The committee heard that an issue of great significance for CASA's capacity to fulfil its regulatory functions is its ability to attract appropriately skilled and qualified personnel, particularly in light of the fact that it competes with industry for employees. Without the ability to compete with the salaries on offer in the aviation industry more broadly, or to otherwise access personnel with high-level and current technical skills and knowledge, there is a significant risk that the regulator will be under-resourced to effectively oversight and respond to technological and commercial changes in the aviation sector. Given this, the committee's view is that the Government should provide CASA with specific funding to enable it to offer salaries that are competitive with industry. In addition, or as an alternative, the committee agreed that the Government should consider implementing formal mechanisms for the sharing of expertise between industry and CASA.

Recommendation 12

3.149 The committee recommends that, as an ongoing measure, the Government provide the Civil Aviation Safety Authority (CASA) with specific funding to enable it to offer salaries that are competitive with industry; in addition, or as an alternative, the Government should consider implementing formal mechanisms for the sharing of expertise between industry and CASA.

3.150 In relation to the need to provide specific immunity to pilots for the reporting of safety incidents (term of reference (g)), the committee considered this issue in conjunction with the Bill, which proposed an effective immunity through establishing an offence for imposing a penalty on, or depriving of a benefit, any person who reports an accident or incident.

3.151 The committee heard that a number of mandatory and confidential accident and incident reporting systems are available for persons wishing to make safety related reports to CASA and the ATSB. While confidential reporting systems in most cases negate the need for immunity, the committee heard that information provided through mandatory reporting to the ATSB is used only for 'no-blame' investigations, and de-identified when shared with CASA. In addition, the self-reporting scheme administered jointly by CASA and the ATSB contains a scheme for limited immunity.

3.152 More broadly, it was argued that the need for express immunity is negated by the broader principles underpinning mandatory airline Safety Management Systems (SMSs), which derive from Australia's international obligations, and require airlines to employ the principles of 'just culture' in relation to the reporting of accidents and incidents. In simple terms, just culture principles require that airlines promote an open and blame free reporting culture.

3.153 On the basis of the existing systems and just culture considerations, a number of submitters and witnesses argued that the need for legislative immunity, as proposed by the Bill, was unnecessary.

3.154 However, AIPA argued that the offence proposed by the Bill would entrench just culture principles, while a modest number of other submitters and witnesses supported the Bill on the basis that it would 'do no harm'.

3.155 The committee received very little evidence relating to the offence proposed in the Bill for influencing a person in respect of the making of a safety report.

3.156 In the case of both proposed offences, there were a number of drafting or technical concerns identified, that called into question the effect of the Bill if passed in its current form.

3.157 However, on the basis of the evidence received, the committee did not consider that there is a necessity for an express legislative immunity for reporters of accidents or safety related incidents, and therefore for the effective immunity proposed in the Bill. Further, there was no compelling case put forward for the proposed offence relating to influencing a person in respect of a safety report.

Recommendation 13

3.158 The committee recommends that the Transport Safety Investigation Amendment (Incident Reports) Bill 2010 not be passed.

3.159 The committee intends to further explore the ATSB's interpretation of these matters at the next opportunity.

3.160 The *Transport Safety Investigation Act 2003*, Part 3, Division 1 "Compulsory Reporting" Sections 18 and 19 deal only with "immediately reportable matters" and "routinely reportable matters".

3.161 The *Transport Safety Investigation Act 2003* Section 3 defines both types of matters in terms of the Regulations. Regulations 2.3 and 2.4 provide lists of reportable events. If the matter is not defined on the list, there is no obligation for it to be reported.

3.162 AIPA recommended in their additional information provided to the committee to add to both the *Transport Safety Investigation Act 2003* and the *Transport Safety Investigation Regulations* a general obligation to report matters that represent an urgent safety risk that may not be otherwise picked up by the prescriptive list.

Recommendation 14

3.163 The committee recommends that the current prescriptive approach needs to be supplemented with a general obligation to report whenever the 'responsible person' believes that there is an urgent safety risk that must be addressed.

Recommendation 15

3.164 The committee recommends that the Australian Transport and Safety Bureau (ATSB) review its approach to the investigation and publication of human factors with a view to achieving a more robust and useful learning tool for the industry.

Recommendation 16

3.165 The committee recommends that the Australian Transport and Safety Bureau (ATSB) review existing processes for the categorisation of aviation events to ensure that miscategorisation is minimised and opportunities for system improvement are not lost.

Recommendation 17

3.166 The committee recommends that the Civil Aviation Safety Authority (CASA), in concern with Australian Transport and Safety Bureau (ATSB), consider developing and publishing guidance on model reporting to minimise understatement of the actual or potential significance of aviation events.

3.167 There is currently no model published by either CASA or the ATSB that establishes a standard for the content and style of incident reports.

3.168 Both the Jetstar go-around incident report and the Jetstar windshear incident report do not appear to have attracted an appropriate level of response from the ATSB at first instance. This appears to be related to the content of these initial reports.

Recommendation 18

3.169 The committee recommends that Civil Aviation Safety Authority (CASA) require operators to observe the highest standards of incident reporting from their personnel and provide appropriate training as part of the safety promotion function of their SMS.

Recommendation 19

The committee recommends that, in order to enhance 'just culture' and open reporting of incidents, aviation operators should ensure that their relevant managers are adequately trained in procedural fairness.

Chapter 4

Related matters

4.1 This chapter considers other matters related to the inquiry's main terms of reference (term of reference (j)).

4.2 The issues considered in this chapter are:

- fatigue;
- issues relating to cabin crew;
- issues relating to flight crew; and
- cost pressures impacting on the Australian aviation industry.

Fatigue

4.3 A considerable amount of evidence was received in relation to the issue of fatigue affecting flight and cabin crew, and the extent to which fatigue levels may be adversely impacting on airline safety in Australia.

Fatigue management

4.4 The committee heard from a number of stakeholders that expressed significant concerns about the prevalence of fatigue affecting Australian airline flight and cabin crews.

Flight crew

4.5 In relation to flight crew fatigue levels, the AIPA submitted that, while it was difficult to accurately gauge the overall performance of fatigue management systems given the variety of operating schedules in use by airlines, 'the existing framework works more often than not'.[1]

4.6 However, AIPA was concerned that, in some cases, specific rostering patterns were emphasising 'productivity over risk management'.[2] Further, it noted that 'fatigue management is not being adequately monitored by CASA and may be subject to abuse by commercial imperatives'.[3]

4.7 Mr Terry O'Connell, Executive Director, Australian Federation of Airline Pilots (AFAP), commented that the potential for fatigue had increased with the advent of low cost carriers (LCCs) into the Australian market. He explained:

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1 *Submission 6, (Supplementary)*, p. 15.

2 *Submission 6, (Supplementary)*, p. 15.

3 *Submission 6, (Supplementary)*, p. 15.

> One of the major changes that has come about as a result of low-cost carriers coming into Australia in particular is that aircraft are used much more. They are much more productive. How do they become more productive? They become more productive by flying more hours, and that is generally 'back of the clock'. That is why you see the Melbourne-Darwin and the Melbourne-Denpasar pairings. The aircraft are being used now much more than they used to be as a result of the nature of the low-cost carrier mentality. That is why we have to be far more vigilant in our roster pairing builds and other protection mechanisms.[4]

4.8 The committee was concerned by an email that was sent from the then senior Jetstar based pilot at Perth Airport to other pilots with regard to fatigue. The email, sent on 7 January 2011, read:

> "Toughen up princesses!
>
> You aren't fatigued, you are tired and can't be bothered going to work."
>
> ...
>
> "In the last 4 weeks I have done 7 BOCs, 2 lots of back to back and 1 after JQ117. I personally found the back to back the hardest and after JQ117 no dramas. By trial and error I have worked out what works for me so I can manage the shift. I can say that I hate the shift and I definitely don't operate to my normal standard. I am tired throughout the shift, feel terrible, but would not call it fatigued.[5]

4.9 Whilst Qantas group senior management said they did not have knowledge of the document, the email raises serious questions about the corporate culture governing fatigue in flight operations.

4.10 Furthermore, the existence of 12 Duty One extensions in 21 consecutive Jetstar flights (on the Darwin-Singapore route) would seem to indicate a systemic problem in route planning at the very least.

4.11 The committee also received evidence of significant concern regarding the way fatigue was managed by some operators.

4.12 A CASA document titled 'Special Fatigue Audit: Jetstar' prepared on 10 May 2010 by Ben Cook of the Human Factors section highlighted concerns around Jetstar's handling of flight crew fatigue, including that the operator favoured operational benefits rather than focussing on safety risk management.[6]

4.13 The document also states that:

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4 *Committee Hansard*, 25 February 2011, p. 68.

5 *Tabled Document*, 31 March 2011.

6 *Tabled Document*, 18 March 2011, p. 2.

- No evidence has been provided to date to demonstrate appropriate strategic assessment of fatigue risk;
- There was no evidence of pro-active fatigue risk assessment when the new Darwin based was established;
- Evidence from interview and review of documentation highlights a reactive system for managing fatigue with a heavy reliance on the CAO 48.0 exemption. The system is too reliant on incidents to occur and for reports from flight crew to determine whether there is an unacceptable fatigue risk;
- There remains significant operation pressure for flight crew to accept extensions of duty; and
- Based on feedback from operational personnel it is not considered Jetstar management has created a culture of open and honest reporting of fatigue risk. There remains reluctance from a number of flight crew to report fatigue risk and/or to say no to an extension of duty based on the perceived punitive nature of taking such actions. Open and honest feedback from operational personnel is one of the key processes required to identify and manage fatigue risk.[7]

4.14 The committee notes that this document as tabled was not provided to Jetstar; rather a modified version of the report was provided, which did not include the aforementioned concerns. However, it is noted that Jetstar has changed pilot rosters for the Darwin-Singapore route.

Cabin crew

4.15 AIPA observed that cabin crew fulfil important safety functions on commercial flight operations:

> Cabin crew are part of the aircraft management team. More so now than ever prior to the enforced separation of the cockpit security door, cabin crew have to deal with many issues without the physical support of the flight crew. AIPA believes that it is axiomatic that proper fatigue management of cabin crew must be prescribed in legislation.[8]

4.16 In relation to cabin crew fatigue levels, Captain Klouth, who appeared before the committee in a private capacity, remarked that the issue of fatigue had been widely raised by cabin crew, and advised:

> The consistent theme, particularly with cabin managers, is that they are being rostered with such onerous duties with a little time off in between that they are often coming to work very tired.[9]

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7 *Tabled document*, 18 March 2011, p. 2.

8 *Submission 6, (Supplementary)*, p. 17.

9 *Committee Hansard*, 15 February 2011, p. 2.

4.17 Captain Klouth advised that cabin managers, who are in charge of the safety of the cabin section of aircraft, were reporting being under significant fatigue pressures due to certain rostering practices. He explained:

> Cabin managers have told me of being rostered for 6 consecutive days of usually 10 hours duty followed by a single day off then rostered for another 5 days. The duties they are rostered for often consist of a series of early morning starts followed by late starts and back of clock operations which usually results in elevated levels of fatigue. Cabin managers have told me that on occasions they have felt momentarily disorientated in the cabin and have forgotten how to disarm an aircraft door…Cabin managers also say that if they take sick leave then they are questioned by their manager.[10]

4.18 Captain Klouth remarked that, on longer flights, certain carriers did not provide adequate cabin crew rest facilities. On a Jetstar Sydney-Honolulu flight, for example, cabin crew were not able to lie flat and rest.[11]

4.19 In answer to a question on notice regarding the frequency of long shifts for cabin crew, Qantas and Jetstar advised:

> Jetstar has two international flying shifts in [the range of 15 hours duty]…which are rostered in accordance with the relevant labour agreements. Crew receive a minimum planned rest period…equivalent to the duty time operated. Jetstar international cabin crew are rostered an average of up to two such duties a month, and as standard practice Jetstar rosters no more than three a month. If a shift is extended due to operational reasons, crew receive a minimum extended rest period…[12]

4.20 However, Ms Monique Neeteson-Lemkes, who appeared in a private capacity, argued that rostering practices needed to take more account of certain duty types and combinations carrying a higher fatigue risk. In answer to a question on notice, Ms Neeteson-Lemkes stated:

> [There is a need to]…put parameters and limitations around types of duties rostered leading up to a back of the clock [shift] and after completion of back of the clock…[Currently a] flight attendant can be rostered a combination of earlies, standbys, lates and then a back of the clock. I've not met one flight attendant who hasn't said this not only plays havoc on their body but definitely affects the way they operate on flights as their bodies and sleeping are disturbed and their bodies aren't able to adjust. This has an adverse effect on safety whilst flying.[13]

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10 *Submission 5, (Supplementary)*, p. 1.

11 *Committee Hansard*, 15 February 2011, p. 16.

12 *Answer to question on notice*, received 18 April 2011, p. 4.

13 *Answer to question on notice*, received 19 April 2011, p. 1.

Use of flight duty limit exemptions

4.21 AIPA was concerned that the limits set by the current standards could see crews operating that were 'seriously fatigued', and noted also that standard industry exemptions relating to flight time limitations, issued under Civil Aviation Order (CAO) 48, were outdated compared to the current understanding of fatigue management.[14]

4.22 The CASA website provides the following explanation of CAO 48:

> A 'Standard Industry Exemption' is an exemption from the flight and duty time limitations set out under CAO Part 48. Under CAO 48 Paragraph 4.1, CASA is authorised to issue an instrument in writing to exempt a person from any of the requirements set out in Part 48. It is in effect a permission from CASA for an operator to work to a different set of flight and duty time limitations. CASA will only issue such an exemption to an operator who has applied in writing to operate to the exemption and satisfied CASA that they are operationally capable of working at an equivalent level of safety to CAO 48, when operating to the flight and duty time limitations set out in the exemption.[15]

4.23 A number of submitters and witnesses identified the extension of duty times as an increasingly common practice that could contribute to the fatigue of pilots and crews. Captain Woodward, noted that a CASA analysis of the worst-case night-flying scenarios under CAO 48 suggested that operating crews would be 'seriously fatigued'. Captain Woodward noted that the CAO 48 exemption suffered from a lack of clear definitions, particularly relating to what constituted 'duty' for the purposes of calculating duty times.

4.24 As a particular example, Captain Woodward noted that certain crews operating on a Darwin-Singapore-Darwin flight were commenting on the 'fatiguing nature' of regular extensions of duty under CAO 48.[16] The committee heard that, while some airlines require crew to fly long-haul flights such as Darwin-Singapore-Darwin in one shift, others 'overnight' crew on such flights.[17] Mr Bruce Buchanan, Chief Executive Officer of Jetstar, noted that, following ongoing incidents of exceeding duty time limits on a Darwin-Singapore-Darwin service the company had made a decision to overnight the crew in Singapore. Mr Buchanan observed that this was a case of 'fatigue risk management processes working well'.[18] More broadly, Jetstar advised that it had 'processes in place to assess the rate of duty extensions' and

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14 *Committee Hansard*, Wednesday 1 December 2010, p. 17.

15 Civil Aviation Safety Authority website, 'Standard Industry Exemptions', http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_90317, accessed 29 April 2011.

16 *Committee Hansard*, 18 March 2011, p. 43.

17 *Committee Hansard*, 18 March 2011, pp 4 and 44.

18 *Committee Hansard*, 31 March 2011, p. 14.

that 'repeated duty extensions are escalated to the Airline Safety Committee for resolution'.[19]

4.25 However, Mr Buchanan noted that extended duty periods were a relatively common feature of the aviation industry:

> …the aviation business does work shift work and we are subject to earthquakes, volcanoes, weather and floods, so sometimes shifts do go longer than is expected and sometimes people do work longer hours. The average number of hours our cabin crew work a week is 27 hours, putting it in perspective, and that includes about 21 flying hours.[20]

4.26 Mr McCormick, advised the committee that the CAO 48 prescribed minimum duty and rest periods and exemptions were 'written a long time ago in a different world and they never were contemplated as tools for managing fatigue risk as we understand it today'. In direct terms, Mr McCormick explained that:

> …the issue is that the original CAO, when it was written, did not contemplate things like ultra long haul operations, multiple crews, multiple sector operations or relatively tight turnaround times. The reg is just not up to it…Those exemptions were put there to allow Australia's aviation industry to continue to operate.[21]

4.27 Mr McCormick noted that commercial imperatives had seen the prescribed minima approach taken in CAO 48 become outdated:

> Up until [the pending ICAO fatigue risk management guidelines (discussed below)]…we have a system that…is prescriptive, whether it be a minimum standard of hours on…[or] a minimum standard of time off...But when it is a minimum it is there for a very good reason and that is the lowest that you can show acceptable safety and acceptable compliance. So the minimum is not necessarily dangerous, but in the commercial reality of these operations I think it is pretty self-evident that all these carriers these days look to go to the minimum, they look to go to where they get the most commercial advantage…The basis in reality is that the minimum is the acceptable. Whether it is best practice is another question.[22]

4.28 Mr Peter Boyd, Executive Manager, Standards Division, CASA, noted that the 'prescriptive' nature of CAO 48 did 'not fit' a number of situations to which a number of standard exemptions had therefore been developed. CASA was 'eagerly awaiting' the ICAO fatigue risk management guidelines 'to move into the modern world on that fatigue issue'.[23]

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19 *Answer to question on notice*, received 31 March 2011, p. 20.

20 *Committee Hansard*, 25 February 2011, p. 29.

21 *Committee Hansard*, 18 March 2011, p. 68.

22 *Committee Hansard*, 18 March 2011, pp 61-62.

23 *Committee Hansard*, 18 March 2011, p. 65.

4.29 Notwithstanding the problems identified with the operation of CAO 48, Mr McCormick stressed that this was the current industry standard within which airlines were required to operate until such time as CAO 48 was replaced by the new ICAO fatigue risk management scheme. Mr McCormick noted that:

> …the use of flight time limitations, extensions of duty periods and reductions in rest periods, rightly or wrongly, is industry standard.[24]

4.30 Virgin advised that it had in-built restrictions in its rostering practices to limit the allocation of back-of-the-clock duties, which is where pilots or crew are required to work an overnight shift. Captain Rick Howell, General Manager of Flight Operations and Chief Pilot, explained that Virgin had:

> …built restrictions into our rostering system…and we can absolutely demonstrate where the impact of those restrictions has dropped the fatigue reporting level significantly. We monitor the fatigue reports and we also monitor the removal of crew due to fatigue.[25]

4.31 Mr Buchanan advised that there were multiple layers to the fatigue risk management process, which resulted in rostering practices that were not accurately described as going 'to the limit of the compliance envelope'. He explained:

> The way the fatigue risk management process works is you have got a compliance structure you start with and then it is like an onion: you peel back the layers, and each layer adds a little more conservativeness to the rostering build.[26]

4.32 Mr Buchanan observed that the factors influencing duty limits included industrial agreements, rostering practices based on knowledge of safety issues, fatigue analysis, safety forums and, ultimately, the shared responsibility of employees to notify their employer if they were unfit for duty. The combination of such multiple factors meant that Jetstar pilots were 'working on average 18 hours flying a week [against]…a compliance maximum of 25 hours a week'.[27]

4.33 The committee considers that claims by airline operators that flight duty extensions are 'industry standard' are unacceptable and CASA's attitude to fatigue management supervision is woefully inadequate. CASA's answer to a question on notice in relation to more than half the number of Jetstar flights on a particular route in one month being subject to extensions, is concerning.

> **Senator Xenophon –** Perhaps on notice you can provide details of: how did Jetstar respond to this and how were you satisfied that they have complied? I do not know whether Mr Hood can comment on this. How is it that, if it is the case that there were extensions in 12 out of the 21 – which I think you

24 *Committee Hansard*, 18 March 2011, p. 67.

25 *Committee Hansard*, 18 March 2011, p. 22.

26 *Committee Hansard*, 31 March 2011, p. 8.

27 *Committee Hansard*, 31 March 2011, p. 8.

> have acknowledged seems quite high – and that you will be looking into that, is that something that CASA ought to monitor on a regular basis? You get all these undertakings, you give them the tick of approval, but if there are 12 out of 21 extensions out of more than half the flights in January alone, does that indicate there ought to be continual monitoring by CASA of this particular exemption?
>
> **Mr McCormick –** We will take on notice, Senator, as you quite rightly said, the issue of the 12 out of the 21. I will go back to what I did say earlier on. We are auditing Jetstar's AOC SMS in May this year. That will be a more comprehensive look at the organisation rather than just looking at an individual piece of it. Perhaps you would care to request that document when we have finished that, to answer that question more fully rather than giving you pieces[28] –
>
> **Answer**
>
> CASA does not consider that these extensions require continual monitoring.
>
> The duty extensions recorded in January 2011 by Jetstar were a result of flight crew agreeing to operate beyond the standard 12 hour initial limits as provided for within Civil Aviation Order 48 Exemption. No breaches of the 14 hour condition were recorded.
>
> Jetstar have since advised that the January rate of extensions was considered at the January meeting of their Flight Standards and Safety Committee. It was identified that due to a number of factors associated with ground operations provision at Singapore, the schedule did not live up to planned expectations. The Flight Standards and Safety Committee again considered the matter in February, and while some improvement was noted in the duty extension rate for February, the Chief Pilot resolved to split the pairing and overnight flight crews in Singapore. This decision is being implemented.[29]

4.34 It is the committee's view that flight duty extensions should not be considered common practice; rather, they should only be applied in unexpected or unforeseen circumstances. Furthermore, flight extensions and fatigue management should be carefully monitored by CASA.

Development of international fatigue standards

4.35 AIPA advised that committee that in 2010 the ICAO had introduced a requirement for the introduction of fatigue risk management systems, which would have to be implemented in Australia, and noted that AIPA was:

> …optimistic about the ICAO Fatigue Risk Management Systems (FRMS) guidance scheduled for release this year. This is particularly so, given that ICAO is as much an economic as it is a safety regulatory advisor and it must consider the full range of social and economic development of the

28 *Committee Hansard*, 18 March 2011, p. 74.

29 *Answer to question on notice*, received 12 April 2011.

> Contracting States to the Chicago Convention. Hopefully, implementation in Australia will follow closely thereafter.[30]

4.36 CASA advised that it expected that the ICAO fatigue risk management system guidance, mentioned above, would contain guidance specifically in relation to cabin crews.[31]

4.37 Noting the existing disparities in the duty limits applying to Australian cabin crew, Captain Klouth called for CASA to regulate this area of airline operations, as it does in relation to flight crew:

> Another recommendation I would like to make is that cabin crew duty hours be regulated by CASA regulations in the same way that flight crew duty hours are regulated. At the moment, some cabin crew are on an EBA and they have restrictions on the hours they can work; and then I think there are another two tiers of employment contracts that cabin crew are working to—all on the same aircraft—and they do not have the same restrictions on duty hours, which are hours spent in an aeroplane. They can operate for, I think, up to 16 hours, whereas the EBA cabin crew can only operate for up to 12. It seems to me that those duty hours are regulated only through the EBA process. I think cabin crew duty hours should be regulated through CASA because, at the end of the day, even though the passengers' lives are in our hands as flight crew, if for whatever reason the aircraft is on the ground and needs to be evacuated, their lives are then in the hands of the cabin crew.[32]

4.38 Virgin advised that it would support a proposal for cabin crew fatigue risk management to be regulated by CASA.[33]

4.39 AIPA also supported this proposal. Captain Woodward remarked:

> …[AIPA] would like to see…regulatory standards being set for cabin crew, such as basic flight time limitations and things that are viewed by the regulator as the minimum that you can do, so that we do not have tired cabin crew operating an aeroplane. Arguably, their role is principally a safety role to ensure that in an evacuation everyone gets out alive; it is not to serve tea and biscuits to the passengers, even though that is what they spend most of their time doing.[34]

4.40 Mr McCormick provided the following advice regarding the implementation of the ICAO fatigue risk management guidelines:

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30 *Submission 6, (Supplementary)*, p. 15.

31 *Committee Hansard*, 25 February 2011, p. 119.

32 *Committee Hansard*, 15 February 2011, pp 10-11.

33 *Committee Hansard*, 18 March 2011, p. 21.

34 *Committee Hansard*, 18 March 2011, p. 45.

> …[CASA is] awaiting the fatigue risk management guidelines from ICAO [which are] due to come out [April 2011]. The compliance date for what is called the SRP, the standard recommended practice, is expected to be November [2011]…We will implement those ICAO recommendations for flight crew by that date. We are anticipating the introduction of fatigue risk management for cabin crew to take slightly longer than that…[because CASA] have never regulated cabin crew times before, and we think we will have to do a lot of consultation with the industry and the cabin crew unions and other interested parties before we produce our first ever document. That is our intent.[35]

4.41 Qantas advised that it had commenced the implementation of the new standards. Mr John Gissing, Executive Manager of Group Safety, advised:

> …[Qantas is]working with the ICAO proposals at the moment. As recently as October last year, ICAO has tabled the implementation guiding draft form and across the group we are working on initiatives to improve our fatigue risk management systems in line with those recommendations that we expect at the end of this year to be tabled for consideration by member states. So a lot of work is continuing, and we will be in a very good position to be well ahead of any requirements that are brought in at that time.[36]

4.42 Senior Jetstar flight attendant Monique Neeteson-Lemkes in her submission to the inquiry stated:

> Flight Attendants are afraid to speak the truth about current practises within the workplace. They know it'd be seen as going against their employers. It's known as the culture at Jetstar that should you choose to speak up about truthful matters, you aren't exactly welcomed with open arms. Flight Attendants don't have the attractive salary level that comes with being a Captain so the cost to 'fight back' legally should our employment be terminated is extremely intimidating.
>
> Whatever type of contract of employment we all share a common concern, fatigue. It is not only impacting our occupational health and safety but spilling over into our personal health and safety. The impact fatigue has to both the Flight Attendant and the safety of the airline's passengers whilst operating is of great significance and potentially dangerous.
>
> My Flight Attendant peers regularly discuss the symptoms that manifest as a result of fatigue. These include disorientation, stinging dry eyes, involuntary nodding off whilst seated on our jump seats, short tempered dispositions, short term memory loss, ineffective decision making, involuntary yawning, anxiety and a higher error rate whilst performing duties. We tend to be much slower in reaction and workplace injuries are at a high rate but not often reported, as crew are too tired to fill out forms. [37]

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35 *Committee Hansard*, 18 March 2011, p. 61.

36 *Committee Hansard*, 31 March 2011, p. 7.

37 *Submission 52,* pp. 1 and 2.

4.43 Ms Neeteson-Lemkes also stated in her evidence to the committee:

> ... a couple of month's back-to-back running of flight attendants being expected to extend beyond rostered duties on a daily basis.[38]
>
> ...
>
> The biggest safety concerns to date, in my opinion, are fatigue and the training of the new flight attendants and the impact that the training they have had on the existing flight attendants.[39]

4.44 Captain Klouth also makes reference to occupational stress and fatigue in his supplementary submission and also in evidence:

> With fatigue your decision-making abilities are impaired in event of an emergency, and as I mentioned it does not have to be an accident. An example is, say, the QF5 incident at Sydney, where they evacuated the aircraft at the terminal. If you have cabin crew who are fatigued, their ability to respond to that emergency is much reduced because they are not able to think straight.[40]

Issues relating to cabin crew

4.45 The committee received a significant amount of evidence relating to aspects of safety with regard to cabin crew.

Training and regulation

Training

4.46 A number of submitters and witnesses advised that Jetstar had reduced training of cabin crew.[41]

4.47 Captain Klouth submitted that training of cabin crew by Jetstar had been reduced from six weeks to three weeks.[42] Captain Klouth stated that this was reflected in deficiencies in the knowledge of cabin crew staff:

> The result has been that some new Flight Attendants have completed their training without having operated on the airline's A321 aircraft. They have been unable to 'arm' the doors. Arming the doors is necessary to allow for the automatic deployment of the emergency escape slide if the aircraft has to be evacuated. Some Captains have stood Flight Attendants down and not allowed them to operate on an aircraft because they have not been able to demonstrate that they have the required knowledge to perform their safety

38 *Committee Hansard,* 31 March 2011, p. 58.

39 *Committee Hansard,* 31 March 2011, p. 55.

40 *Committee Hansard,* 15 February 2011, p. 2.

41 See for example Captain Geoff Klouth, *Committee Hansard,* 15 February 2011.

42 *Committee Hansard,* 15 February 2011, p. 15.

> function. This is not the fault of the F/A but rather a symptom of the reduction in resources and training that Jetstar allocated to F/A training.[43]

4.48 However, Mr Buchanan advised the committee that this change had legitimately reflected a substantive change in the work of such cabin crew. He explained:

> Our safety component training was reduced from 25 days to 18 days some time ago. Previously we used to train all of our cabin crew to do both wide bodied and narrow bodied work. So they would be trained for both aircraft types. When we reduced it to 18 days, we just trained them for the narrow bodied work, which has been the primary growth vehicle. They are dedicated to one aircraft type, so we do not need to train them for both.[44]

4.49 Mr Buchanan noted that Jetstar had in fact 'put a significant investment into customer service training and safety training over the last 12 months, and…doubled the amount…[of] spending on cabin crew and pilot training'.[45]

Current lack of regulation of cabin crew

4.50 The committee heard that cabin crew currently do not fall under the regulatory oversight of CASA. AIPA submitted that 'the lack of legislative certainty over the qualifications, training and checking of cabin crew is unacceptable'. The AIPA supplementary submission commented:

> AIPA believes that Australian legislation must contain a formal requirement for the qualifications and training of cabin crew. The requirements should cover initial and recurrent training as well as a checking regime…While we note that the proposed new [CASA Part 121] rules may address some of these issues, we believe that this matter should be referred to the Minister for Infrastructure and Transport to be included in his current inquiry into cabin crew numbers.[46]

Use of foreign cabin crew

4.51 The committee heard that there was an increasing use of foreign cabin crew on domestic legs of flights conducted by Australian carriers. Qantas and Jetstar, for example, confirmed that crew from different international bases were used on domestic Australian flights in order to achieve 'efficiencies at the bases'.[47]

4.52 Captain Klouth advised:

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43 *Submission 5*, p. 5.

44 *Committee Hansard*, 25 February 2011, p. 5.

45 *Committee Hansard*, 25 February 2011, pp 5-6.

46 *Submission 6, (Supplementary)*, p. 16.

47 *Committee Hansard*, 25 February 2011, p. 5.

> Jetstar is also employing more [flight attendants (F/As)] who are based in Singapore and Bangkok yet operate domestically in Australia on international 'tag' flights. These flights are considered to be extensions of international flights that arrive in Darwin but then continue to other Australian airports. The flights are available for domestic passengers to fly on but the cabin crew are often all foreign based F/As.[48]

4.53 Captain Klouth suggested that the use of foreign crews could potentially impact on safety:

> The foreign based crew all speak English but the ability to be understood in an emergency is an aspect of their training that is not effectively assessed..[49]

4.54 Captain Klouth noted that foreign cabin crew operating on domestic legs of international tag flights [and pilots if such a practice were adopted] fly under the regulations of their home country. While Captain Klouth could not therefore comment on the specific restrictions, if any, governing pilot or cabin crew fatigue levels, he observed that such things as rostering practices applying to Singaporean cabin crew 'are [likely] very different from what we would normally consider acceptable here in Australia'.[50]

4.55 Qantas and Jetstar acknowledged that crew from different international bases would be employed under different conditions. However, this was also the case with Australian crew employed on various domestic awards.[51]

4.56 AIPA also raised safety concerns in relation to the use of foreign crews, and expressed the view that 'international crewing models do not confer any public benefit on Australian travellers'. The association believed that the use of foreign crews:

> …lead to a number of increased risks, particularly regarding safety standards for cabin crew. The risk will increase if there are inconsistencies in English language skills and training standards, simply due to the likelihood of confusion and loss of team coordination in an emergency. We believe that the problem is exacerbated by the lack of Australian standards for cabin crew.[52]

4.57 AIPA commented that foreign crews would not enjoy 'many of the Australian employment and general workplace protections that we consider appropriate for

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48 *Submission 5*, pp 5-6.

49 *Submission 5*, pp 5-6.

50 *Committee Hansard*, 15 February 2011, p. 11.

51 *Committee Hansard*, 25 February 2011, p. 5.

52 *Submission 6, (Supplementary)*, p. 13.

Australian employees and…workplaces'.[53] Further, AIPA identified a number of potential public revenue implications raised by foreign crewing models:

> AIPA believes that one of the primary consequences of the crewing models pioneered by Qantas through Jetconnect and Jetstar Airways in New Zealand is the avoidance of Australian taxation and the mandatory superannuation requirements.
>
> There may also be consequences for any HECS or FEE HELP debts. It has been suggested that employing Australian citizens on foreign contracts may serve to avoid the repayment of HECS or FEE-HELP debts because these are tied to Australian tax returns. Presumably, pilots employed on foreign contracts will not pay tax in Australia.[54]

4.58 Mr Buchanan stressed to the committee that the use of foreign crews was driven by business demands. He advised:

> The company strategy is driven by where the growth occurs. So when the growth occurs inside Australia, we employ people inside Australia; when the growth occurs from Ho Chi Minh to Guangzhou, we will be employing people in Vietnam and China. It is really about the market dynamics.[55]

Issues relating to flight crew

Use of foreign pilots

4.59 Captain Klouth advised that, in relation to Jetstar, 'all pilots who fly for Jetstar in Australia [currently] have to meet the Australian licensing requirements'.

4.60 However, there was a suggestion that the company was considering moving flight crews between the various entities of the Jetstar group, including its operations in Vietnam and Singapore. Captain Klouth noted that there were potential cultural factors to be considered in relation to this proposal, to ensure that foreign crews met the historically high standards of Australian flight crews.[56]

4.61 AIPA was also concerned at the potential for the use of foreign crews in Australia:

> AIPA is also concerned that proposals to source pilots to fly Australian aircraft from overseas may further increase the risk of an aviation accident because there are many countries that are not as well regulated or as culturally aligned in terms of corporate governance as Australia.[57]

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53 *Submission 6, (Supplementary)*, p. 14.

54 *Submission 6, (Supplementary)*, p. 14.

55 *Committee Hansard*, 25 February 2011, p.21.

56 *Committee Hansard*, 15 February 2011, p. 9.

57 *Submission 6*, p. 3.

4.62 AIPA pointed to recent problems in India relating to the integrity of pilot licensing, and submitted that:

> …CASA may need to introduce more stringent scrutiny for foreign applicants for Certificates of Validation for existing pilot licences as well as applications for Australian licences based on foreign qualifications.[58]

4.63 Responding to concerns about Jetstar's use of New Zealand based cadet pilots, Mr Buchanan advised that this employment strategy was guided by the training needs of those pilots:

> We do move around some cadets based on training needs into different jurisdictions. Cadets in New Zealand, cadets in Singapore and cadets in Australia are employed largely to fill the flying in those markets. They are not there to undercut and effectively move across into Australian flying, but there is some flying done around the network to make sure we get exposure to the best of our training captains and the best of our check and training captains, and make sure we are giving those young cadets exposure to the best and brightest of our pilots.[59]

4.64 Mr Terry O'Connell, Executive Director, AFAP, indicated that there was likely a significant disparity between the wages of Australian and Singapore pilots:

> Our rough reckoning is that the Jetstar New Zealand and probably Singapore are between 30 per cent to 40 per cent lower than the equivalent Australian Jetstar pilot. It is significant and it is a major industrial concern.[60]

Cost pressures impacting on the Australian aviation industry

4.65 A number of submitters and witnesses responded to the inquiry's terms of reference within the broader context of commercial pressures impacting on the Australian aviation industry. Many of the in camera submissions provided by operating pilots addressed these broader commercial trends and, while this evidence was largely comprised of personal or anecdotal accounts, these submissions were largely reflected in the collective view as represented in the submissions of pilot unions.

Pressure to reduce costs and impacts on safety

4.66 A consistent theme of the submissions and evidence provided by AIPA was that competitive pressures in the Australian market, due to increased international competition and the advent of low cost carriers into the Australian market, was leading to significant pressure to reduce costs that is impacting on the safety related areas of airline operations.

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58 *Submission 6, (Supplementary)*, p. 14.

59 *Committee Hansard*, 25 February 2011, p. 23.

60 *Committee Hansard*, 25 February 2011, p. 59.

4.67 AIPA noted that 'intensive' competition in international markets were impacting on the flight safety margins and practices of the Australian airline industry:

> While we are most certainly not anti-competitive, it remains true that there have been insidious declines in operating standards as a consequence of intensive (if not excessive) competition in the US and European aviation markets.[61]

4.68 AIPA submitted that it believed there is:

> …ample evidence that cost reduction strategies within the industry have led to the sacrifice of quality for lowest cost compliance. This can be seen in such examples as the reduction in the ratio of licensed to unlicensed maintenance personnel and the shifting of training costs from operator to employee.[62]

4.69 Similarly, Captain Klouth, for example, explained that he saw the issues identified by the inquiry's terms of reference as part of an overall financial imperative to reduce costs

> I was motivated to write to the committee through concern that the safety margins that were a normal part of the aviation industry, and which contributed to Australia's safety record, have been and are being eroded [due to cost pressures] to the point that airline safety can no longer be considered as a given. This erosion of margins has occurred in the areas of flight crew and cabin crew training; rostering practices that contribute to increased fatigue; experience levels of flight and cabin crew; and, reduction in resources allocated to operational areas.[63]

4.70 Captain Klouth observed that many areas of airline operations were effectively fixed costs, and that safety functions were therefore an area targeted for cost reductions:

> …in an airline the fuel cost is fixed and the maintenance costs are fixed. There is only one way you can go with reducing the costs and that is with people…[For example, at Jetstar] the safety department still has a similar number of investigators for an airline that is much bigger than when I was in the safety department.[64]

4.71 Similarly, AIPA submitted:

> AIPA is concerned that Safety Departments, like Training Departments, are often viewed as cost centres rather than quality assurers and come under commercial pressures to generate the appearance of activity rather than generate genuine quality improvements in airline processes. Investigation

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61 *Submission 6*, p. 21.

62 *Submission 6, (Supplementary)*, p. 2.

63 *Committee Hansard*, 15 February 2011, pp 1 and 8.

64 *Committee Hansard*, 15 February 2011, p. 5.

> of aircraft incidents and monitoring of fatigue inducing rostering practices are examples where inadequate resourcing of Safety Departments and inappropriate management expectations can give the lie to the safety first mantra.[65]

4.72 AIPA was concerned that continued cost reductions in response to competitive pressures would ultimately translate to adverse safety outcomes:

> AIPA believes that it is abundantly clear that operators will seek to cut costs until prevented by legislation or the public response to a serious incident or accident. Unregulated market forces will inevitably end up with operators taking calculated risks that technology can offset quality training and that a hull loss may not cause the demise of the business.[66]

4.73 A number of submitters and witnesses argued that the cost pressures on the Australian industry were exemplified by the availability of increasingly cheap fares in the Australian market. Captain Klouth remarked:

> [How] do you get the fares so low? You have to reduce your costs in some areas.[67]

4.74 AIPA also discussed this issue:

> The advent of very low air fares has increased the demographic pool of potential air travellers and created a significant demand for increased capacity that appears set to continue. However, the expectation of the public is generally that the cheap fares come without any reduction in safety. That expectation may not be matched by the industry performance if we do not address the issues raised [by AIPA in its submissions to the inquiry].[68]

4.75 Given the risk that competitive pressures would lead to an underinvestment in operational and training systems, AIPA remarked that:

> It may be necessary for additional agencies such as the Australian Competition and Consumer Commission (ACCC) or the Productivity Commission (PC) to become involved in looking at the financial and economic viability of fare levels to provide greater assurance of financial viability.[69]

4.76 AIPA concluded that current trends in Australia and, indeed, worldwide, in the aviation industry present a number of latent threats to safety that must be addressed to ensure that Australia maintains its enviable aviation safety record:

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65 *Submission 6, (Supplementary)*, p. 4.

66 *Submission 6, (Supplementary)*, p. 3.

67 *Committee Hansard*, 15 February 2011, p. 8.

68 *Submission 6*, p. 21.

69 *Submission 6, (Supplementary)*, p. 3.

> Historically, the airline industry has been good at being reactive to threats and has slowly matured into an ultra-safe industry. But progress has slowed and may even have reached a nadir. To move forward, we now need to identify and mitigate latent threats and be more proactive. Low crew experience, inadequate training, cultural differences and poor job satisfaction are all latent threats, yet little response is apparent.[70]

4.77 However, in response to concerns over the competitive pressures in the Australian market, Mr Alan Joyce, Qantas Chief Executive Officer, advised that discounted fares were a sustainable feature of the airline industry:

> …there will always be opportunities for airlines to fill up aircraft seats at lower airfares. We have a large number of seats that go empty in the airline every year. We know that having aggressive pricing out there stimulates demand; it gets people to travel when they would have normally not wanted to. It fills up seats, and the economics for us are a lot better. So you will always have the need to have very discounted airfares.[71]

4.78 Further, Mr Joyce strongly rejected the suggestion that cheaper fares and LCC models inevitable involved a compromise on safety. He stated:

> We have noted expressions of concerns about the long-term viability of aviation, given the rise of budget airlines and customer expectation of ever-reducing fares. I have had the experience of establishing Jetstar…so I am familiar with the budget airline model. The first thing to say is that low fares do not inevitably mean lower safety standards. The budget airline model is viable because of reduced service offering, with major savings on everything from catering to lounges to in-flight entertainment. Operating a new fleet and having fewer fleet types significantly cuts maintenance costs, and operating out of secondary airports and a focus on airport costs improves the overall economics. Let me make this clear: at Jetstar there is no compromise on safety. The budget airline model does not require it, and we would never accept it.[72]

4.79 Mr Joyce also identified changes in aviation industry technology as a basis for airlines to continue to pursue efficiencies and reduce costs. Mr Joyce noted:

> …new aircraft technology is changing the industry all the time, and costs and efficiencies can be generated by having new ways of doing things…[Qantas] have utilised technology and efficiency to provide economic air transportation to people over a long period of time. That will continue, because we are seeing major changes to technology coming from the manufacturers. We are seeing the use of technology in airport check-in and other areas, and they can continually help us be more efficient.[73]

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70 *Submission 6*, p. 22.

71 *Committee Hansard*, 25 February 2011, p. 4.

72 *Committee Hansard*, 25 February 2011, p. 3.

73 *Committee Hansard*, 25 February 2011, p. 4.

4.80 In relation to Jetstar, Mr Buchanan commented:

> If you look at the history of Jetstar, a lot of that cost saving has come through technology. We started with the 717s, which were smaller aircraft. We then moved to the A320; we have now introduced the A321. We have also introduced the A330 and now we are investing in 787s as part of the group fleet order. All of those things are delivering significant cost savings which then flow through to the bottom line.[74]

4.81 Mr Buchanan specifically rejected suggestions that pilot training had been reduced in pursuit of cost savings:

> A fallacious view you hear is that that is coming about through cuts in pilot costs or pilot training. The opposite is true. Our costs in the pilot area alone have been up 7½ per cent every year since we started. Our costs in training, just in the last 12 months, have doubled. They are not areas that we are cutting back on at all. They are small areas in the overall cost base. Our primary focus, like all low-cost carriers, is to get creative in how we can unbundle the product and give people more choice. That includes things like taking out meals, taking out some of the other product attributes and then giving them back as choice to customers.[75]

4.82 Mr John Borghetti, Virgin Chief Executive Officer, also defended the sustainability of cheaper fares and airlines' responses to competitive pressures. He commented:

> I think sometimes people get misled by a $50 airfare between Melbourne and Sydney or wherever it might be. The truth is that not many seats are sold at that price, and the truth also is that technology continually improves and it improves your cost structure if used correctly. So I think all that leads to competition, but it does not necessarily lead to the assumption that safe practices are compromised.[76]

Committee view

4.83 An issue of significant interest to many stakeholders in the inquiry was the extent to which fatigue affecting flight and cabin crew may be adversely impacting on the safety of Australian airline operations.

4.84 The committee notes evidence suggesting that changes to flight operations arising from the internationalisation of the aviation industry, as well as the entry of low cost carriers into the Australian market, have resulted in generally increased levels of fatigue in relation to specific 'long-haul' flights and certain rostering practices.

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74 *Committee Hansard*, 25 February 2011, pp 20-21.

75 *Committee Hansard*, 25 February 2011, p. 21.

76 *Committee Hansard*, 18 March 2011, p. 30.

4.85 The committee notes also that the discipline of fatigue prediction and management is a relatively uncertain exercise, particularly when applied to the physical make-up and broader environmental influences that can affect how a given individual may respond to extended periods of duty. Given this uncertainty, the committee could not confidently assess the extent to which increased fatigue levels may be adversely impacting on safety within the Australian airline industry.

4.86 However, the committee notes that the anticipated ICAO fatigue guidelines, which will require, and presumably establish criteria for, Australian airlines to institute fatigue risk management systems, should establish a credible benchmark for the duty limits which currently apply to Australian flight crew, and should also inform CASA's assessment of the extent to which current exemptions appropriately allow for duty limits to be exceeded.

4.87 Based on the evidence received, the committee is of the view that Australian cabin crew should be subject to regulation by CASA, and the committee understands that the ICAO fatigue guidelines will, by including reference to cabin crew duty limits, bring this issue into the regulator's purview. The committee agreed that, following the release of the ICAO fatigue guidelines, CASA should expedite necessary changes and/or additions to the regulations as a priority.

4.88 In the event that the ICAO guidelines did not extend to cabin crew duty limits and fatigue management more broadly, the committee agreed that the Government should amend the *Civil Aviation Act 1998* to include cabin crew under CASA's regulatory oversight.

Recommendation 20

4.89 The committee recommends that, following the release of the International Civil Aviation Organization (ICAO) fatigue guidelines, the Civil Aviation Safety Authority (CASA) should expedite necessary changes and/or additions to the regulations governing flight and cabin crew fatigue risk management as a priority

Recommendation 21

4.90 The committee recommends that, in the event that the International Civil Aviation Organization (ICAO) fatigue guidelines do not extend to cabin crew duty limits and fatigue risk management more broadly, the Government should amend the *Civil Aviation Act 1998* to include cabin crew fatigue risk management under the Civil Aviation Safety Authority's (CASA) regulatory oversight.

4.91 In relation to the broader issues raised in evidence to the inquiry regarding the broader competitive pressures in the Australian airline industry, the committee notes that many of the issues considered in the preceding chapters of this report discussed

the specific concerns relating to cost reduction as applied to pilot training and safety related functions.

Recommendation 22

4.92 The committee recommends that the Civil Aviation Safety Authority (CASA) specify the type of training and amount of training required for cabin crew, including mandatory English language standards.

Senator the Hon. Bill Heffernan

Chair

Additional Comments by Senator Xenophon

1.1 In recent months I have been contacted by dozens of pilots and crew members who are concerned about the lowering of standards and the quality of training and the impact this may have on safety in the skies.

1.2 One pilot said to me: "Better a Senate Inquiry now, than a Royal Commission later", and while that may sound dramatic, that sums up just how serious the concerns are.

1.3 There are very real issues here to do with aviation safety and this Inquiry has been useful to uncover many of these and to recommend crucial reforms.

1.4 Every day, tens of thousands of people put their trust in pilots to get them from 'Point A' to 'Point B' safely in Australia, and with the advent of low-cost carriers it's fair to say more and more people are flying more and more often.

1.5 This shift towards low-cost models has meant that airlines are trying to trim costs wherever they can. We need to ensure that this does not affect safety standards.

1.6 Just because flights are getting cheaper does not mean standards should fall. Safety in the skies is something that cannot be chanced.

1.7 Australia's aviation reputation internationally is an exemplary one. And we need to do whatever it takes to ensure that this remains the case.

1.8 However, the culture within parts of the industry is currently one of fear of retribution for speaking out over safety concerns.

1.9 While this culture exists, and while pilots and crew are afraid to speak out about their concerns because of the repercussions it may have on their job, issues such as the quality of training and safety standards cannot be addressed.

1.10 It was not my intention as mover of the Bill to give blanket immunity for deliberate, reckless or grossly negligent violations of aviation safety standards under Clause 19A(2) of the Bill; rather, the intent is to enforce 'just culture' so that prosecution or punishment will not follow reports of un-premeditated or accidental breaches of regulations.

1.11 It should also be noted that the intention of the Bill is also not to impede or interfere with the taking of genuine safety-related actions.

1.12 Accordingly, Clause 19A(2) should be passed with amendment, such that:

(a) Ensure legitimate safety actions in all circumstances where a report has been made; and,

(b) To qualify the protection to exclude deliberate, reckless or grossly negligent conduct.

1.13 Furthermore, in relation to the ATSB's comments that Clause 19A(1) may already be covered under the Criminal Code, there is still some ambiguity under the current Code and the proposed amendment would assist in removing that ambiguity.

Recommendation

The committee recommends that the Transport Safety Investigation Amendment (Incident Reports) Bill 2010 be passed with amendments to remove any ambiguity with regards to deliberate, reckless or grossly negligent violations of aviation safety standards.

Nick Xenophon

Independent Senator for South Australia

APPENDIX 1

Submissions Received

Submission Number	Submitter
1.	Alexander Reith
2.	Doug Edwards
3.	Department of Aviation, University of New South Wales (UNSW)
4.	John Alldis
5.	Geoff Klouth
6.	The Australian and International Pilots' Association
7.	Name Withheld
8.	CONFIDENTIAL
9.	Name Withheld
10.	Richard Green
11.	Stan van de Wiel
12.	Civil Aviation Safety Authority (CASA)
13.	Brad Coombe
14.	Tiger Airways Australia
15.	Stephen Phillips
16.	Cobham Aviation Services Australia
17.	Virgin Blue Group
18.	CAE
19.	Regional Aviation Association of Australia (RAAA)
20.	Aerial Agricultural Association of Australia Ltd
21.	Chris Manning
22.	West Wing Aviation
23.	Guild of Air Pilots and Air Navigators
24.	Regional Express Holdings Ltd
25.	Australian Transport Safety Bureau
26.	George Schuit
27.	CTC Aviation Group plc
28.	Peter Sadler
29.	Oxford Aviation Academy

30. Swinburne University of Technology
31. Qantas Airways Limited and Jetstar
32. Australian Airports Association (AAA)
33. F A Walker
34. Martin Watson
35. Boeing Training and Flight Services
36. Australian Services Union (ASU)
37. VIPA
38. Pilot Career Initiative (PCI)
39. Fiona Norris
40. Robert Loretan
41. Australian Federation of Air Pilots
42. Glenalmond Engineering
43. Shane Urquhart
44. Griffith University
45. Multi crew Airline Training Systems
46. John Laming
47. Alan Wilson
48. G McArthur
49. Australian Licensed Aircraft Engineers Association (ALAEA)
50. Australian Council of Trade Unions (ACTU)
51. Susan Michaelis ATPL, PhD
52. Monique Neeteson-Lemkes
53. Ben Balzer
54. Ross Steele
55. Peter Young

Additional Information Received

- Received on 10 March 2011, from the Virgin Blue Group. Answers to Questions taken on Notice on 25 February 2011;
- Received on 11 March 2011, from the Australian Transport Safety Bureau (ATSB). Answers to Questions taken on Notice on 25 February 2011;
- Received on 11 March 2011, from the Civil Aviation Safety Authority (CASA). Answers to Questions taken on Notice on 25 February 2011;
- Received on 11 March 2011, from the University of New South Wales (UNSW). Answers to Questions taken on Notice on 25 February 2011;
- Received on 31 March 2011, from the Australian Federation of Air Pilots (AFAP). Answers to Questions taken on Notice on 25 February 2011;
- Received on 31 March 2011, from the Qantas Group. Answers to Questions taken on Notice on 25 February 2011;
- Received on 12 April 2011, from the Virgin Blue Group. Answers to Questions taken on Notice on 18 March 2011;
- Received on 12 April 2011, from the Australian and International Pilots Association (AIPA). Answers to Questions taken on Notice on 18 March 2011;
- Received on 12 April 2011, from the Civil Aviation Safety Authority (CASA) & Australian Transport Safety Bureau (ATSB). Answers to Questions taken on Notice on 18 March 2011;
- Received on 18 April 2011, from the Qantas Group. Answers to Questions taken on Notice on 31 March 2011;
- Received on 18 April 2011, from the Australian Transport Safety Bureau (ATSB). Answers to Questions taken on Notice on 31 March 2011;
- Received on 19 April 2011, from Ms Neeteson-Lemkes. Answers to Questions taken on Notice on 31 March 2011;
- Received on 8 June 2011, from the Civil Aviation Safety Authority (CASA). Answers to Questions taken on Notice on 27 May 2011;
- Received on 9 June 2011, from Tiger Airways. Answers to Questions taken on Notice on 27 May 2011;

TABLED DOCUMENTS

- Tabled by Australian and International Pilots Association on 1 December 2010 in Sydney. Copy of a Jetstar 'Flight Standing Order (FSO) 212/10' on Cadet First Officers;
- Tabled by Senator Xenophon on 18 March 2011 in Canberra. Civil Aviation Safety Authority (CASA) report titled on 'Special Fatigue Audit: Jetstar';
- Tabled by Civil Aviation Safety Authority (CASA) on 18 March 2011 in Canberra. Copy of Audit report from CASA to Mr Bruce Buchanan, Chief Executive Office, Jetstar;

- Tabled by Civil Aviation Safety Authority (CASA) on 18 March 2011 in Canberra. Copy of letters from CASA to Air Operator's Certificate (AOC) Holders regarding AOC Holder Accountability – Important information for Chief Executive Officers. Directors and other 'Accountable' Persons dated 10 February 2011;
- Tabled by Senator Xenophon on 31 March 2011 in Canberra. Copy of an anonymous email;

APPENDIX 2

Public Hearings and Witnesses

WEDNESDAY, 1 DECEMBER 2011 – SYDNEY

- BERRY, Captain Tim, Director of Flight Operations,
  Tiger Airways
- BOLWELL, Mr Kristian, In-house Solicitor,
  Australian and International Pilots Association
- DAVIS, Mr Jim, Managing Director, Operations,
  Regional Express (Rex) Airlines
- HINE, Mr Chris, Flight Operations General Manager,
  Regional Express (Rex) Airlines
- MACKERRAS, Mr Dick, Safety and Technical Consultant,
  Australian and International Pilots Association
- WOODWARD, Captain Richard, Vice-President,
  Australian and International Pilots Association

TUESDAY, 15 FEBRUARY 2011 – CANBERRA

- KLOUTH, Captain Geoffrey Steven

FRIDAY, 25 FEBRUARY 2011 – CANBERRA

- ALECK, Dr Jonathan, Associate Director of Aviation Safety,
  Civil Aviation Safety Authority
- BEYNON, Professor John Howard, Dean, Faculty of Engineering and
  Industrial Science, Swinburne University of Technology
- BOYD, Mr Jeff, Technical Working Group Vice Chairman,
  Regional Aviation Association of Australia Ltd
- BOYD, Mr Peter, Executive Manager, Standards Development and Future
  Technology, Civil Aviation Safety Authority
- BUCHANAN, Mr Bruce Eaton, Jetstar Group Chief Executive Officer,
  Jetstar Airways Limited
- CROSTHWAITE, Mr Roger, Manager, Permission Application Centre,
  Civil Aviation Safety Authority

- DOLAN, Mr Martin Nicholas, Chief Commissioner,
  Australian Transport Safety Bureau
- FANKHAUSER, Mr Stephen, Aviation Discipline Leader,
  Swinburne University of Technology
- FARQUHARSON, Mr Terence, Deputy Director of Aviation Safety,
  Civil Aviation Safety Authority
- HAYNES, Mr Stuart, Manager, Flight Standards,
  Virgin Blue Airlines
- HORNBY, Mr Patrick Francis, Manager, Legal Services,
  Australian Transport Safety Bureau
- HORTON, Brian Kenneth, Director of Flight Operations,
  University of New South Wales
- HOWELL, Mr Rick, General Manager, Flight Operations,
  Virgin Blue Airlines
- JOYCE, Mr Alan, Chief Executive Officer and Managing Director,
  Qantas Airways Limited
- McCORMICK, Mr John, Director of Aviation Safety,
  Civil Aviation Safety Authority
- MIDDLETON, Prof. Jason Harry Falla, Head, School of Aviation,
  University of New South Wales
- MURRAY, Captain Bryan, President,
  Australian Federation of Air Pilots
- O'CONNELL, Mr Terry, Executive Director,
  Australian Federation of Air Pilots
- PETTEFORD, Mr Anthony, Managing Director,
  Oxford Aviation Academy
- RINDFLEISH, Captain Mark, Chief Pilot,
  Jetstar Airways Limited
- SOBEY, Mr Peter, Technical Working Group,
  Regional Aviation Association of Australia Ltd
- SOBEY, Mrs Helen, Compliance and Training Manager,
  Regional Aviation Association of Australia Ltd
- TYRELL, Mr Paul, Chief Executive Officer,
  Regional Aviation Association of Australia Ltd
- WILSON, Captain Peter, Chief Pilot,
  Qantas Airways Limited.....

FRIDAY, 18 MARCH 2011 – CANBERRA

- AGGS, Mr Stuart, Acting General Manager, Safety Systems, Virgin Blue Airlines
- ALECK, Dr Jonathan, Associate Director of Aviation Safety, Civil Aviation Safety Authority
- BORGHETTI, Mr John, Chief Executive Officer, Virgin Blue Airlines
- BOYD, Mr Peter, Executive Manager, Standards Division, Civil Aviation Safety Authority
- DOLAN, Mr Martin Nicholas, Chief Commissioner, Australian Transport Safety Bureau
- DONOHOE, Mr Sean, Group Executive, Operations, Virgin Blue Airlines
- FARQUHARSON, Mr Terence, Deputy Director of Aviation Safety, Civil Aviation Safety Authority
- HAYNES, Captain Stuart, Manager, Flight Standards, Virgin Blue Airlines
- HOCKIN, Mr Michael, General Manager, Engineering, Virgin Blue Airlines
- HOOD, Mr Greg, Executive Manager, Operations Division, Civil Aviation Safety Authority
- HORNBY, Mr Patrick Francis, Manager, Legal Services, Australian Transport Safety Bureau
- HOWELL, Captain Rick, General Manager, Flight Operations, and Chief Pilot, Virgin Blue Airlines
- MacKERRAS, Captain Dick, Technical, Safety and Regulatory Affairs Adviser, Australian and International Pilots Association
- McCORMICK, Mr John, Director of Aviation Safety, Civil Aviation Safety Authority
- McKEON, Ms Jane, Group Executive, Government Relations, Virgin Blue Airlines
- PHILLIPS, Mr Stephen
- WALSH, Mr Julian Robert, General Manager, Strategic Capability, Australian Transport Safety Bureau
- WOODWARD, Captain Richard, Vice-President, Australian and International Pilots Association

THURSDAY, 31 MARCH 2011 – CANBERRA

- BUCHANAN, Mr Bruce, Chief Executive Officer,
  Jetstar
- DAVEY, Mr Mark, Chief Pilot,
  QantasLink
- DOLAN, Mr Martin Nicholas, Chief Commissioner,
  Australian Transport Safety Bureau
- GISSING, Mr John, Executive Manager, Group Safety,
  Qantas
- HORNBY, Mr Patrick Francis, Manager, Legal Services,
  Australian Transport Safety Bureau
- JOYCE, Mr Alan, Chief Executive Officer,
  Qantas
- NEETESON-LEMKES, Ms Monique Naiyana
- RINDFLEISH, Mr Mark, Chief Pilot,
  Jetstar
- ROSSITER, Mr Mark, Head of Safety,
  Jetstar
- WILSON, Mr Peter, Chief Pilot,
  Qantas

FRIDAY, 27 MAY 2011 – CANBERRA

- ALECK, Dr Jonathan, Associate Director of Aviation Safety,
  Civil Aviation Safety Authority
- BERRY, Mr Tim, Director of Operations,
  Tiger Airways Australia
- BOYD, Mr Peter, Executive Manager, Standards Division,
  Civil Aviation Safety Authority
- DAVIS, Mr Tony, Chief Executive Officer and President,
  Tiger Airways Holdings
- FARQUHARSON, Mr Terence, Deputy Director of Aviation Safety,
  Civil Aviation Safety Authority
- HOOD, Mr Greg, Executive Manager, Operations Division,
  Civil Aviation Safety Authority
- MAZIWITA, Mr Grant, Manager, Standards Development,
  Civil Aviation Safety Authority

- McCORMICK, Mr John, Director of Aviation Safety,
  Civil Aviation Safety Authority
- McGREGOR, Mr Max, Manager, Southern Region Operations,
  Civil Aviation Safety Authority
- RIX, Mr Crawford, Managing Director,
  Tiger Airways Australia
- WARD, Mr Nicholas, Manager, Certification and Airworthiness,
  Civil Aviation Safety Authority