



THE SENATE

**SENATE RURAL AFFAIRS AND TRANSPORT**

REFERENCES COMMITTEE

REGIONAL EXPRESS SUBMISSION ON

**PILOT TRAINING AND AIRLINE SAFETY**



## EXECUTIVE SUMMARY

### Pilot experience requirements and training issues

Regional Express does not equate a reduction in the number of flying hours with a decrease in safety. Rex has found that the standard and type of training is of far more significance than the amount of hours acquired in General Aviation prior to joining an airline. This is in line with the world industry move toward competency based training and airline based qualifications such as the Multi Crew Pilot Licence.

Rex has strong empirical data from its check and training programme which shows that the Rex trained cadet pilots entering the airline with around 200 hours perform equally as well as the direct entry pilots that are recruited with well over 1500 hours.

Any attempt to mandate a fixed experience requirement for Regular Public Transport Operations would have catastrophic implications for regional airlines as the supply of pilots would dry up with the cessation of airline pilot cadet schemes and the greatly increased recruitment of experienced regional pilots by the larger airlines. This in itself would have serious safety implications for the smaller operators as they lose large numbers of experienced airline pilots.

The world demand for airline pilots is forecast to increase significantly over the next twenty years and this, coupled with increasing domestic demand, means the industry in Australia will not be capable of supplying enough suitable pilots for the airlines without cadet schemes.

Rex does not see pay for training schemes as producing lesser quality pilots as long as stringent selection criteria and consistent assessment standards are maintained. The standard and type of training is not necessarily related to the source of funding.

Retention of pilots will be a major safety issue for regional operators once pilot demand picks up and will not be solved unless some form of financial bonding or retention scheme can be introduced either through Government sanction or through company cadet schemes.

### Safety Reporting

Regional Express is not in favour of introducing further legislative immunity for employees reporting on safety events as it is felt that this could compromise the principles of Just Culture currently practiced in contemporary Safety Management Systems.

Rex supports the principles and intent of the proposed amendments to the Transport Safety Investigation Act 2003 but feels that further changes are required to the wording to provide clarifications and address some concerns with regard to preserving the principles of Just Culture.

# TERMS OF REFERENCE

## **(a) Pilot experience requirements and the consequence of any reduction in flight hour requirements on safety.**

*Rex does not equate a reduction in flying hours with a decrease in safety. Experience has shown that the standard and type of training is far more important than hours in a log book.*

### **Background**

Until 2007 Rex was like many airlines and recruited from General Aviation (GA) with a minimum stipulated hours of experience required. Other major airlines like Qantas and even some regional airlines had had cadet schemes in place for many years and were training their own pilots as well as recruiting from other sources.

The Rex cadet programme commenced in 2007 when the major airlines started recruiting large numbers of pilots from the industry. Rex alone lost 1/3 of its total pilot workforce in the second half of 2007. It was envisaged that the cadet programme would follow the traditional model whereby normal recruitment channels were supplemented by cadet pilots. However Rex has found the standard of its cadet recruits is such that it now intends to have virtually all of its pilot recruitment from its cadet scheme and to supplement this with direct entry pilots only in exceptional cases. Rex has now enrolled 87 cadets with 64 having graduated and 50 checked to line and flying on scheduled operations as SAAB 340 First Officers.

### **Comparison between direct entry pilots and Rex cadets**

Rex Cadets enter service with on average around 200 hours of aircraft and simulator time. Direct entry pilots (i.e: non cadets) vary in terms of experience but traditionally Rex mainly recruited pilots with at least 1500 hours of experience.

Rex has a comprehensive system of assessing pilots during simulator instrument rating renewals, simulator proficiency checks and line checks where 18 attributes are individually scored from 1 to 5 by the CASA check pilot delegate and entered into an electronic database. This makes it very easy to make an accurate, empirical comparison between Rex cadets and direct entry pilots, both for discrete check items and for overall competence.

The SAAB 340 simulator used by Rex is certified as a Level 5 simulator by CASA which allows for type ratings to be done solely in the simulator. This means it has the highest level of realism possible and is used for assessing all pilots in manoeuvres such as recovery from stalls, unusual attitudes and critical engine failures. This allows for an accurate assessment of a pilot's ability to cope with any emergency irrespective of the numbers of hours they have logged.

Examination of the electronic database shows little difference in the competence level achieved by Rex cadets (numbering around 50) compared to direct entry First Officers (FOs) that have been recorded in our database over the last 8 years. [Fig 1]

	DIRECT ENTRY FO	REX CADETS
<b>AVERAGE SCORE YEAR 1</b>	<b>3.48</b>	<b>3.38</b>
<b>AVERAGE SCORE YEAR 2</b>	<b>3.62</b>	<b>3.63</b>

Fig 1. Average total score for cadets v direct entry FOs for the first and second years of service in Rex

It can be seen that there is less than a 3% variance in the scores in their first year performance and by the second year the cadets are starting to overtake the direct entry FOs. With some cadets now entering their third year with Rex it is perceived that in general this trend will continue with the cadets eventually achieving higher levels of competence than the direct entry pilots. This is because of the fact that they are trained as airline pilots from day one rather than attending a standard CASA CPL course.

When the scores are broken down into the individual assessment items it is also seen that the cadets' performance is remarkably consistent across all items with no particular weaknesses as may have been expected when compared to pilots with many thousands of hours. [Fig 2]

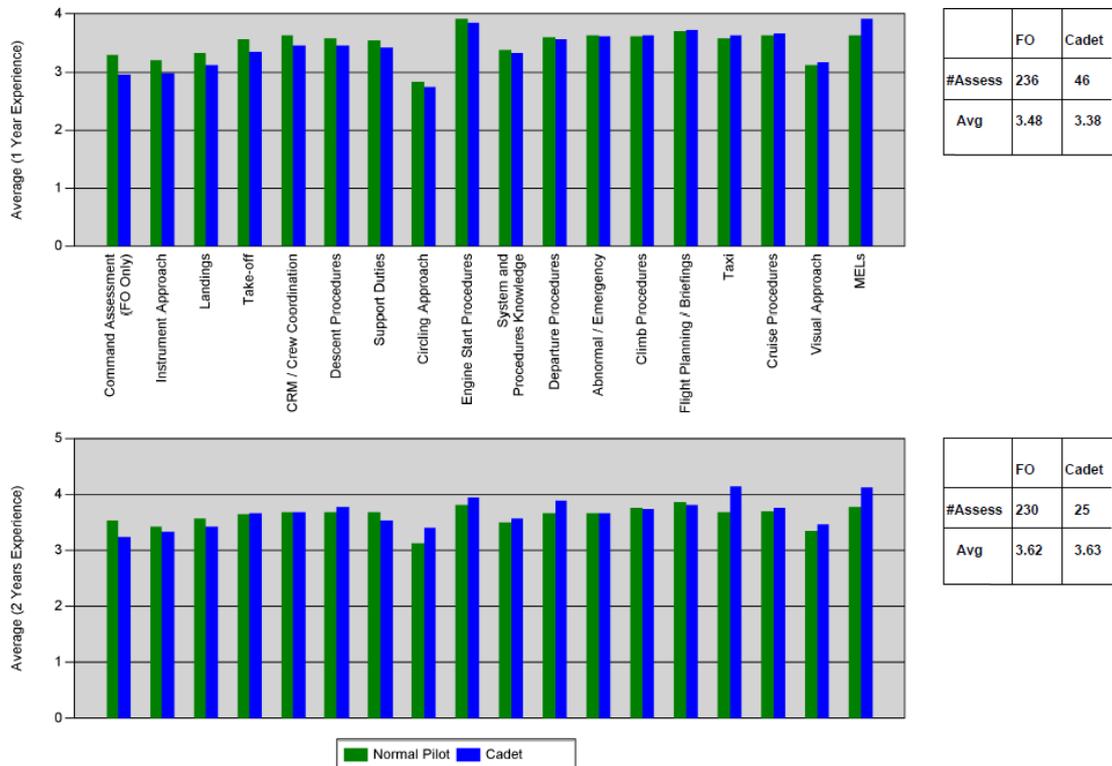
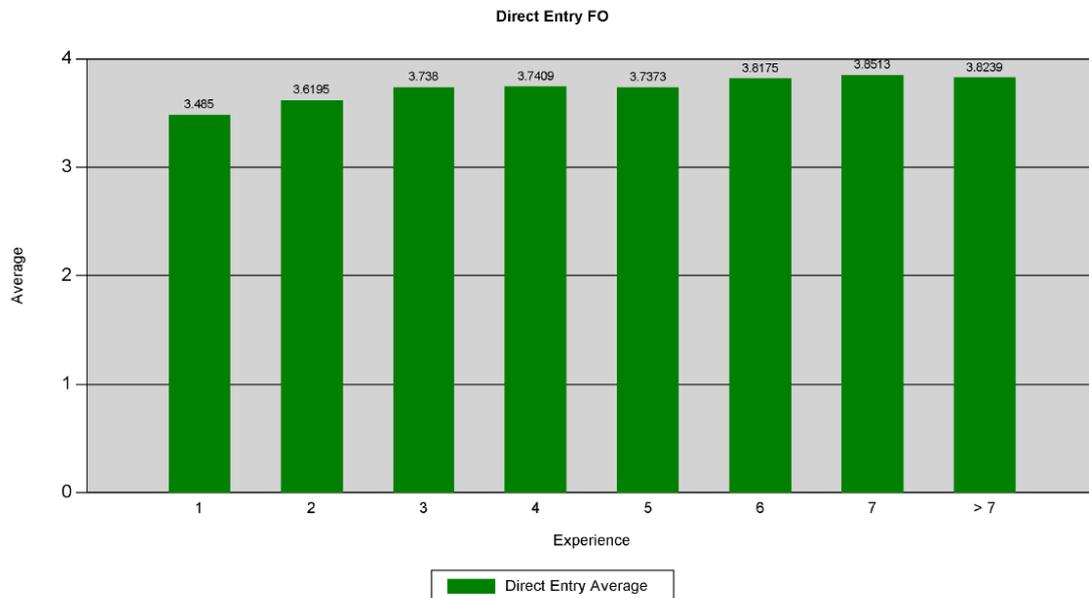


Fig 2. Average score for all assessed items for cadets v direct entry FOs for the first and second years of service

Further analysis shows that if the performance of the direct entry recruits is looked at beyond the first two years the increase in standard is negligible after the third year. The level of competence is not related to experience in this case and it can be seen from Fig 1 that there is not a significant difference between the scores achieved by the cadets in the first year of service and those achieved by direct entry pilots with over 7 years of service and many thousands of hours. [Fig 3]



**Fig 3 Average score for direct entry First Officers against years of service in Rex**

Although the above statistics clearly demonstrate the success of the Rex cadet programme, it must be emphasized that the airline has the responsibility to screen even its own cadets before checking them to line as a First Officer. Rex has had 2 cases where a cadet has not been accepted as a First Officer after obtaining their Commercial Pilot License because the company was of the view that they were simply not suitable as an airline pilot.

**(b) 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.**

*Rex is adamantly opposed to the introduction of a 1500 hour requirement for pilots engaged in Regular Public Transport operations as it feels this would have catastrophic commercial and safety implications for the industry and in particular the smaller operators.*

The FAA Extension Act 2010 requires any pilot engaged on PART 121 (air carrier) operations to hold an Air Transport Pilot Certificate. This does not mean 1500 hours as the Extension Act allows the FAA to take into account relevant training in determining the hours necessary for an ATP Certificate as follows:

(d) Credit Toward Flight Hours- The Administrator may allow specific academic training courses, beyond those required under subsection (b)(2), to be credited toward the total flight hours required under subsection (c). The Administrator may allow such credit based on a determination by the Administrator that allowing a pilot to take specific academic training courses will enhance safety more than requiring the pilot to fully comply with the flight hours requirement.

CASA rules have no such proviso and imposition of a US style requirement for an ATPL for RPT operations would mean a strict requirement for 1500 hours. While the rules can be changed Rex argues that an ATPL mandate is not an appropriate outcome for Australia for the following reasons:

- a. There is no evidence or study conducted anywhere in the world to suggest that a better safety outcome for airline pilots is achieved by gaining more flight hours in small General Aviation trainers, crop dusters or charter aircraft. In the case of the Colgan Airlines Q400 accident which led to the new US requirement, both the Captain and the Copilot had well over 1500 hours of experience. (The Captain had 3379 total hours and the Copilot had 2249 total hours)
- b. There is a big pool of evidence from airline cadet programmes all over the world for the last 30 years that demonstrates the ability of such programmes to successfully supply the world's legacy airlines with high quality recruits. Qantas, Cathay Pacific, Singapore Airlines and KLM are just a few examples of airlines with high safety standards that employ low hour pilots through cadet schemes. Also another noteworthy point is that Royal Australian Air Force pilots enter service as low hour pilots with typically 200 hours and are deployed directly onto transport aircraft (including VIP Squadron) or onto high performance tactical jet aircraft.
- c. There is increasing evidence and belief that it is the quality of training that matters much more than the number of hours of experience in an uncontrolled environment like flying a crop duster or doing joy flights over Uluru. This is why the aviation world, including Australia, has now approved the MPL concept where graduating pilots are allowed to fly as a First Officer in larger commercial jet aircraft with as little as 40 hours of flight time experience in an aircraft and the rest of the experience is gained in flight simulators.
- d. Rex has objectively demonstrated that the standard of a 200 hour cadet is not inferior to a direct entry pilot with over 1500 hours of GA experience, again establishing that it is the quality of training which is more important than the total number of flying hours.

- e. The imposition of a 1500 hour requirement would have a detrimental safety effect on regional Regular Public Transport Operations in Australia. This is because all airline cadet programmes would be completely eliminated thus reducing the supply of high quality pilots to feed regional and mainline carriers. The mainline carriers would continue to pick the better GA pilots as well as recruit in large numbers from the ranks of regional carriers and flying training schools. The depletion of experienced instructors would further compromise the flying training industry's ability to produce commercial pilots.

The regional carriers would be left with large pilot shortfalls resulting in:

- a high pilot turnover leading to heavily increased training costs
- a high pilot turnover leading to an increased safety risk as the level of airline experience decreases dramatically
- regional carriers that may be forced to employ pilots they would normally reject due to there being insufficient numbers of high time pilots available

The financial stress placed on small operators struggling to survive would be enormous which would also have immense safety implications. Rex sees this scenario as having worse consequences than the pilot shortage of 2007/2008.

Quite simply the industry in Australia is no longer capable of supplying the airlines with enough pilots that have over 1500 hours. Demand for pilots both domestically and internationally is set to increase dramatically with the latest 20 year forecast by Boeing showing a sustained demand over that period greater than that experienced prior to the Global Financial Crisis. Boeing predicts that 466,650 new pilots will be needed worldwide over the next 20 years [Boeing Current Market outlook 2010 - 2029] with significant demand from Asia and the Middle East. Inevitably Australian pilots will be attracted to high paying jobs in these areas further adding to supply pressures at home. Without pilot cadet programmes it will simply not be possible to meet this demand.

Rex does not support any mandate on the minimum number of hours but advocates that emphasis should be place on the quality of training for pilots engaged in Regular Public Transport operations.

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

*Rex does not see pay for training schemes as being flawed as long as appropriate training standards are enforced.*

The Rex cadet scheme is essentially a pay for training scheme with 3/4 of the training fee paid by the cadet. However as demonstrated earlier, the standard achieved by these cadets after around 200 hours is not significantly different from the standard displayed by direct entry pilots with over 1500 hours of experience. The current average total hours for all Rex cadets flying on line is 684 while the average figure for the current population of direct entry FOs is 3496 hours and yet there is no significant difference in performance.

Common sense tells us that the origin of the funding is irrelevant to the quality of the training and to the quality of the graduating pilot. The only relevant issue is the quality of the assessment process in place to ensure that only suitable graduates are accepted into the airline. In the case of the Rex cadet scheme, there have been instances where the cadets after graduating from the academy did not pass the type rating and were thus rejected as a Rex pilot.

**(d) Retention of experienced pilots.**

*This is a major concern for regional airlines and presents one of the largest challenges to maintaining a safe and stable operation.*

High attrition rates are a fact of life in smaller airlines and regional operations. Pilots will naturally want to enhance their careers by progressing to larger equipment and bigger pay packets. Typically, in normal times, a regional airline can expect to lose 15% or more of its pilots in any given year. This increases dramatically when large airlines, both domestically and internationally, step up recruitment efforts during times of expansion. During FY08 when the world demand for pilots increased dramatically Rex lost an unsustainable 50% of its pilot force in twelve months. Other regional airlines, including wholly owned Rex subsidiary Air link, lost over 100% of their pilot force in the same period.

This problem is not only restricted to airlines as flying training schools are even more adversely affected being at the bottom of the pecking order. On the other hand, even large, reputable airlines are not immune as we saw in the last crisis when there was increased recruitment of Australian domestic pilots by the Middle Eastern airlines and by Cathay Pacific. The bigger airlines however do have the ability to easily poach pilots from the regional airlines making those operators and the pilot training schools the most vulnerable.

There are only 2 semi-effective ways for a regional airline to mitigate against this widespread poaching. The first is national legislation that requires a kind of transfer fee for each pilot taken. This is the system in place in China where the transfer fee payable is about AUD200,000 which defrays the expense of training a new pilot.

The second is a cadet system where the airline funds the initial training of the pilot and in return the cadet signs a contract to stay a minimum period. The cadet can still break the contract but would be faced with financial penalties such as a very high loan repayment. In most cases this would be a sufficient deterrent unless the poaching airline is prepared to pay out the loan.

**(e) type rating and recurrent training for pilots.**

*Rex sees the current regulations as being adequate for type rating and recurrent training.*

Airlines and larger GA organisations operate under CAR 217 whereby they have an approved training and checking system monitored by CASA. CASA recently conducted a detailed study of all CAR 217 organisations in Low Capacity RPT operations where it examined thousands of training records for the pilots operating under those systems. The object of the exercise was to detect CAR 217 organisations that were letting sub standard pilots stay in the system or were not applying a correct overall standard. Rex sees this oversight as proper and adequate and feels that the current system is working provided CASA are diligent.

**(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.**

*CASA have some overall expertise in this area but cannot be expected to appreciate all facets of new technology as the capability and availability of equipment differs with aircraft type. CASA must work in partnership with industry to develop workable regulations that give a desirable and safe outcome with regard to new technology. The cost benefit case must be established.*

Major airlines have access to the latest technology as they update their fleets with new aircraft and are in the best position to assess the new capability. CASA can achieve effective results by working with these operators as they have done recently with the introduction of RNP approaches in the Qantas 737 fleet.

The situation is different for regional operators where access to new aircraft is not possible as there have been no 30 seat or 19 seat commuter aircraft in production since 2001. This means that the smaller airlines must cope with the challenge of retrofitting new technology into their existing fleets. This is a complex area as all aircraft types differ with basic equipment levels and there are different levels of fitment within individual fleets. Additionally the hardware available for retrofitting is constantly evolving and new solutions are becoming available by the year. It is imperative that CASA consult with operators in this respect in order to determine the practicality of any new legislation with respect to the mandated level of new equipment and the timing of such requirements. As well as the consideration of cost CASA must acknowledge that adequate lead times are required to source and fit major avionics modifications.

The recent CASA Discussion Paper released as a result of the Government's Aviation White Paper is alarming in that it proposes the major upgrading of several systems which do not have a demonstrated cost benefit with regard to the safety level achieved and may in some cases force the retirement of some older regional aircraft.

Through the Australian Strategic Airspace management group (ASTRA) CASA have access to a cross industry consultative forum which includes experts from the Department of Infrastructure and Transport, Airservices Australia, the major airlines, regional airlines and other airspace users. This forum is an effective method of providing input to CASA on technical specifications relating to new regulations.

Rex believes that CASA does have the relevant expertise as long as it works in partnership with industry and Airservices Australia. ASTRA was set up to provide industry expertise and recommendations to the Airspace Policy Group which advises the Minister and should be used by CASA for the same purpose.

**(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.**

*Rex feels that to provide a legislative immunity is against principles of justice and that the system of Just Culture must hold for reporting in any Safety Management System.*

The free reporting of safety events is an essential part of any safety system and must be encouraged. Under ICAO Annex 13, member states have certain obligations with respect to developing non punitive reporting systems. In Europe the practice is for member states to refrain from initiating proceedings except in cases of gross negligence [Directive 2003/42/EC]. In Australia the Transport Safety Investigation Act 2003 s27 prohibits investigation reports made under the Act from being used in evidence in any criminal or civil proceedings, apart from coronial enquiries.

To allow reporting of safety events without fear but to still preserve principles of justice ICAO encourages the use of the 'Just Culture' principle to allow for free and non-punitive reporting. This is well summed up by Eurocontrol:

*"A culture in which front line operators or others are not punished for actions, omissions or decisions taken by them that are commensurate with their experience and training, but where gross negligence, wilful violations and destructive acts are not tolerated"*

'Just Culture' is similarly referred to in the CASA advisory publication on Safety Management Systems [CAAP SMS-1(0)] which outlines CASA's expectations with regard to the implementing of Safety Management Systems as required by CAO 82.3 and 82.5. Rex has adopted this principle as part of its Safety Policy and as part of its Safety Management System.

To put in place a legislative immunity for reporters would compromise the principles of Just Culture which "is a necessary evolution from the 'blame free' culture of the past". [CASA CAAP SMS-1(0), 3.2.7]

**(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;**

Rex is not commenting on the specific incidents referred to in the terms of reference but believes that the Pilot in Command or any other crew member have an obligation to submit a report when he or she is the responsible person as defined by the Transport Safety Investigation Act 2003. Equally, the operator has an obligation to report when it becomes aware of a reportable matter.

Rex has an electronic reporting system that automatically submits a crew member's electronic SMS report to the ATSB if the crew member nominates that it is a reportable item under the Act. Notwithstanding this, any crew member can make a report direct to the ATSB by other means if they so wish.

Rex feels the current Act covers the reporting requirements but acknowledges that crew members need to be aware of their obligations with regard to reporting accidents or incidents.

**(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.**

*Rex supports the intent of the amendments but feels some further changes are required.*

**19A (1)**

Subject to the following comments this amendment is supported by Rex. The role of the ATSB is to promote safety within the aviation industry. It is imperative that the ATSB have full free and unfettered access to all information that relates to any reportable event. Rex has an SMS system that allows the reporter to simultaneously report to the ATSB and the company. Rex recognizes that this may result in inaccurate or incomplete information being forwarded to the ATSB by a reporter. It is then a matter for the ATSB through investigative methods to determine the facts of any incident. Rex notes that the ATSB typically provides reports to aviation companies for comment prior to the final release of a report. It is common practice for a company to establish the correct facts before a reporter lodges a report to the ATSB. Rex believes it is for the ATSB to determine the facts not the aviation company involved. While Rex does not follow commonly accepted practice it is not clear as to whether such practice would be regarded as improper under the amendment as drafted. The difficulty with the drafting of this section is the use of the word "improper". Given the very heavy penalty, the courts are likely to interpret the word "improper" in a very restrictive way. Legal advice may need to be sought but Rex believes it probably relates to a situation only where a person deliberately seeks to prevent a report being lodged or deliberately tries to change the facts that would otherwise be detailed in the report. In practice this amendment may only relate to extreme cases and as such will have little impact. There needs to be clarification as to the type of conduct that is improper.

**19A(2)**

Rex has no difficulty with 19A(2)(a) of the amendment, however, Rex has issues with 19A(2)(b). Rex notes that section 27 of the Transport Safety Act provides that ATSB reports, including draft reports, cannot be used as evidence in civil and criminal proceedings. The amendment seeks to extend this "immunity" by preventing, for example, employers penalising employees on the basis of the contents of any report made to the ATSB. This needs clarification. Usually in aviation companies reports are made to the ATSB and into a company's SMS system. SMS systems are mandatory in RPT operations. The same report can go to the ATSB and the SMS. It must be clear that the amendment does not apply to any report lodged with a company SMS even it is the same report lodged with the ATSB. This subsection refers to "the content of any report..." It must be made very clear that the subsection only applies where the company has actual knowledge that the contents are of the actual report submitted to the ATSB. The words "in respect of" may have too wide a meaning or application. Thus it must be clear that any penalty or deprivation of benefit arises solely from the company using the contents of the ATSB report made by a reporter for its actions. Any aviation company must be able to operate under its "just culture" and must be free to take disciplinary action against employees. Companies may become aware of misconduct by an employee through various means and this section must not be used in the industrial courts as a defence to company disciplinary action. If this were the case it would have its own safety implications for companies within the industry. Rex supports the intent of the amendment which is to ensure full, free reporting by reporters without fear of repercussions, however, s19A(2) needs to be amended to ensure that it does not inadvertently prevent companies from exercising appropriate actions against employees.