

# Senate Inquiry - Aviation Accident Investigations

Submission by Mr Mick Quinn - Aviation Safety Consultant.  
I make the following submission under Parliamentary Privilege.

## Executive Summary

I have assisted Cpt James following the Pel-Air accident, on the 18th November 2009. My support of Cpt James has been voluntary. I have represented him at the Pel-Air Formal Inquiry into the accident as well as in the Administrative Appeals Tribunal in NSW during 2010. I have known Cpt James for 20 years. My submission is in support of aviation safety.

Throughout my career, I have been heavily involved in the activity, development and evolution of aviation safety internationally and in Australia. I have 23 years of aviation safety experience in the private sector, in Australia (QANTAS) and internationally (Emirates), and Senior Executive roles in the regulatory arena (State and Federal Government). I co-authored, with BASI, one of the only joint industry/BASI investigation reports in 1990 regarding a QANTAS 747 in-flight incident.

The ATSB Final Report into this matter is seriously flawed in many aspects and appears to have taken a biased view of the events surrounding the accident. Some of the deficiencies include:

- The time taken to produce the report, 1,015 days is unreasonable and outside the performance expectations set out by the ATSB, and other international agencies.
- The structure of the report does not meet with ICAO Annex 13 guidelines.
- The 'Factual Information' section has 'Analysis' embedded in the report.
- The 'Analysis' section is minimal, with serious omissions regarding organisational aspects within Pel-Air and other industry bodies, including; the Bureau of Meteorology (BoM), and the Civil Aviation Safety Authority (CASA).
- There is no Human Factors analysis in this report, yet historically, the ATSB and BASI have led the world in this field and have significant expertise in it.
- The report contains numerous factual errors which after 1,015 days of report writing in inexcusable. There are still errors in the Final Report.
- The report has serious omissions, particularly with regard to Pel-Air oversight of its operations, as detected by CASA in a Special Audit following the accident.
- The ATSB report makes no safety recommendations, which in essence is its primary role in prevention.
- A biased slant where breaches of regulation by the flight crew have been listed, however breaches by Pel-Air, and deficiencies in the regulatory process have been omitted or played down.
- The report ignores the role of the First Officer (co-pilot) in terms of Crew Resource Management (CRM) and flight planning duties.

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## Commentary

In the 1970s and 80s, accident investigation typically found a sole cause, 'machine or human'. It wasn't until the 1990s that the pendulum swung the opposite way when the concept of organisational accident investigation evolved in the form of the 'Reason Model' by Prof James Reason of Manchester University. BASI and the ATSB pioneered the use of this model in aviation with accidents such as Monarch Airlines NSW 1993, Seaview NSW 1994, QANTAS Flight 1 Bangkok 1998, and Lockhart River QLD 2005.

These reports contained detailed analysis of the breakdown in the system and pre-cursors leading to these events. A key benefit of this approach is that lessons are learnt that benefit the industry.

With the ATSB Norfolk report, the pendulum seems to have swung back to the 1970s and the questions need to be asked why. This is a retrograde step for aviation safety. Additionally, there are no lessons in this report in critical areas such as survivability, fatigue risk management, crash worthiness, flight training, EMS risks, human factors, flight planning, weather forecasting and weather based decision making.

Cpt James, in hindsight, openly admits to aspects of the flight where he and his First Officer's performance could have been better. The point of the investigation is to reveal WHY this happened, not WHAT happened. This report represents the latter and is merely a flawed narrative of the events.

The Directly Involved Parties (DIP) draft process raises serious questions in terms of interested parties responses, but more importantly, the ATSB integrity and transparency. I would ask the Committee to examine whether the ATSB have breached the TSI Act in terms of omission or coercion.

The content of this report leads me to form the opinion that agencies and organisations may have colluded internally or together, for reasons unknown to produce this report. The report needs to be withdrawn, and the aviation safety system needs to be reviewed to prevent future reports being corrupted and exposing the travelling public.

The following report addresses my concerns in detail.

I thank the References Committee for accepting my submission.

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## Analysis

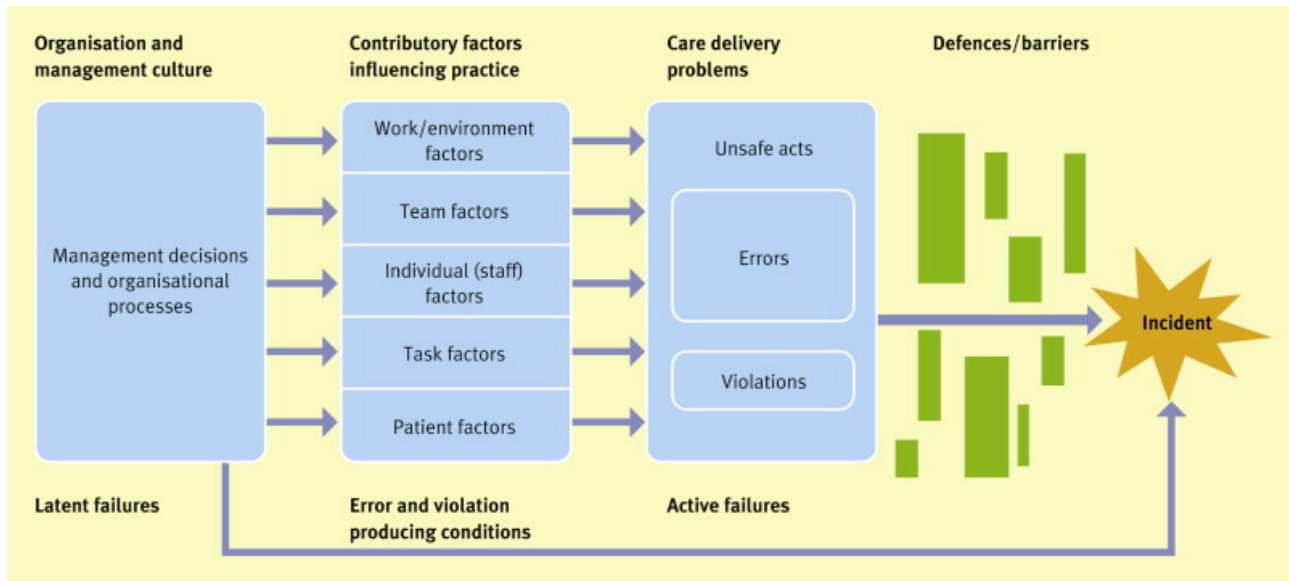
After review of the ATSB final report, associated documentation supplied to CPT James by CASA prior to the AAT hearing and detailed research, I have constructed the following alternative analysis using the 'Reason Model' which is proven and internationally accepted. This model takes into consideration:

- **The Organisational Latent Conditions** that were present at the time of the accident. These typically are process, procedure and policy of the operator. However, other agencies who provide part of the framework in which the activity takes place may be considered including; regulators, service providers, government authorities etc.
- **Task/Environmental and Local Conditions** that were present at the time of the accident. These may include weather, ATC, A/C configuration, terrain, geographic location, fatigue, priority and urgency, communications, Nav-aids, visibility, etc.
- **Individual/Active Failures** on behalf of individuals involved. These include errors and mistakes made by pilots and other operational personnel including ATC, company support staff, UNICOM, ramp staff, etc.
- **Failed or Absent Defenses**. These are mechanisms to safeguard from error and mitigate a potential hazard from materialising into an undesired state or accident. They can be described as 'checks and balances' in the system to prevent accidents.

This model has been used world-wide by accident investigators and government agencies. It has been done so and successfully applied to a variety of accidents in varying industries for 20 years. Notably, BASI (the former aviation body of the ATSB) pioneered this approach in the early nineties.

The following flow chart depicts the Reason Model in terms of Emergency Medical Service (EMS) operations. (see over)

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## ORGANISATIONAL LATENT CONDITIONS

### PEL-AIR

- Inadequate oversight of its operation which was a breach of Section 28BE of the Civil Aviation Act.
- SMS of Pel-Air was inadequate for the task of EMS.
- Considering the ad-hoc nature of the operation and associated risks, no risk register existed.
- No risk management or hazard identification for specific tasks which inherently are of a higher risk i.e. long oceanic flights with minimal support from the operator in terms of infrastructure, communications or appropriate guidance in assisting crews to make decisions on the run.
- All airports considered to be the same i.e. no categorisation of airports regarding risk.
- Inadequate resources (risk controls) to support ad-hoc operations: flight following, flight plan software, SATCOM, SELCAL, RSVM approved aircraft.
- No training regarding oceanic operations to remote islands.
- Inadequate training of crews in emergency procedures and evacuation. Cpt James had done wet drills once with no recurrency and had never done wet drills with actual life-raft on the Westwind II. Additionally, he had never been trained in the opening of the emergency exit on the Westwind II.
- Failure to validate the competency regarding the PNRs, CPs during the six monthly proficiency check in accordance with the operations manual.
- Crew Resource Management (CRM) was not based on scenarios that presented similar risk to EMS operations.
- CRM training was an off-the-shelf CBT product and not specific to EMS operations.
- Inadequate Standard Operating Procedures (SOPs) giving crews risk based guidance.

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- No guidance or SOPs for ad-hoc operations to remote island destinations.
- No SOP for decision making regarding changed in-flight weather.
- Inadequate fall-back procedures and support for base contact in non-normal situations.
- Inadequate training documentation records.
- No training or documentation for international operations for the PIC on upgrade.
- No training or guidance in operational/medical risks/doctors advice versus operational necessity.
- The aircraft was equipped with GPS however the PIC had not been trained for GNSS approaches.
- The aircraft was equipped with TCAS II and EGPWS however the PIC was not trained in the use of this equipment.
- Pel-Air had previously been prohibited to operate to Noumea by the French regulatory body due to the lack of avionics - TCAS II and EGPWS.
- The content of the Operations Manual was brief and simplistic, containing minimal and in some cases, no SOPs to support the EMS environment.
- Flight crews were expected to use their own methods/systems and tools for pre-flight planning. Therefore, there was no standardisation amongst crews. No flight planning software had been provided to the crews.
- Inadequate operational documentation provided for crews.
- CAR220 required an operator to include “specific guidance” for the computation of the fuel carried on each route in their Operations Manual. The PEL-AIR Operations Manual contains no specific guidance on each route. The operations manual only lists generic block TAS and fuel flow figures.
- No alternate requirement for flights to remote island destinations.
- No training for operational crew in identifying hazards either by threat & error and how to best manage them.
- No training for operational crew in risk analysis, risk acceptance or appropriate risk levels tolerated by the operator.
- No training of flight crew regarding prioritising risks.
- Inadequate Fatigue Risk Management System (FRMS) training for flight crew.
- Pilot stand-by time not considered in fatigue assessments.

## CASA

- Failed to provide adequate oversight of Pel-Air operations. It is unlikely the deficiencies listed in the CASA Special Audit had materialised since the previous Pel-Air AOC audit.
- Acceptance of Pel-Air Operations Manual when it didn't meet the specified criteria.
- CASA had not followed up with the BoM on a Safety Recommendation by the ATSB regarding remote island fuel carriage in 2000.
- CAO 82 did not require alternate or island reserve for aerial work operations category.
- CASA surveillance did not identify Pel-Air's non-compliance with its Operations Manual and CAR220.
- CASA surveillance did not identify the inadequacies of the Pel-Air Flight Training programme.

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- CASA surveillance did not identify the inadequacies of Pel-Air's Fatigue Risk Management System.
- CASA surveillance failed to identify that the Westwind aircraft were not suitable for operations in international airspace, particularly with regard to RVSM, despite advice from ICAO.
- Lack of specific guidance relating to the application of in-flight weather regarding landing and alternate minima.
- High risk operations such as EMS were categorised as aerial work and not differentiated based upon risk i.e. passenger/participant carrying EMS operations.
- UNICOM officers were not approved meteorological observers and could have considerable influence on pilot decision making due to their local knowledge and location.

## ATSB

- The ATSB failed to follow-up on previous recommendations regarding Norfolk Island weather issued previously (see Weather Forecasting and Appendix 2).

## Bureau of Meteorology (BoM)

- BoM forecasts were misleading and inaccurate. The 0437 TAF was significantly different to the four SPECIs and METARs issued during the flight. Additionally, the 0803 amended TAF (which the flight crew didn't receive) did not resemble the subsequent METARs or SPECIs.
- Analysis of the weather forecasts indicate significant deficiencies in the TAFs, particularly with reference to the 0437 TAF available to the PIC prior to departure. This TAF replaced the previous TAF issued at 0429 which was only valid for 8 minutes. This may be indicative of the difficulty the forecaster(s) was/were experiencing. The 0437 TAF showed the lowest cloud base as SCT 2,000. From the period of 171030 to 181200 a total of 61 METARs, including 18 SPECIs were issued. None of these contained cloud above 2,000.
- General statistics
  - 61 METARs listed in the ATSB report
    - from 171030 till 181200
    - 43 are SPECIs
      - 12 SPECIs below landing minima
  - 7 TAFs
    - from 171017 till 180958
- 0437 TAF
  - used preflight
  - forecasts unlimited visibility, scattered cloud at 2,000
    - 39 METARs issued before 0437

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- all report cloud below 2,000
    - 9 report haze
  - 22 METARs issued after 0437
    - all report cloud below 2,000
    - 3 report haze
    - 1 reports mist
    - 11 report visibility less than 9999
    - 6 report visibility less than alternate vis of 6,000
    - 3 report precipitation
  - 29 SPECIs issued before 0437
  - 14 SPECIs issued after 0437
- 0803 TAF
  - issued during flight but never transmitted to the flight crew
  - forecasts unlimited visibility, broken cloud at 1,000
    - 47 METARs issued before 0803
      - 41 report cloud below 1,000
      - 12 report haze
    - 14 METARs issued after 0803
      - all report cloud below 1,000
      - 1 reports mist
      - 11 report visibility less than 9999
      - 6 report visibility less than alternate vis of 6,000
      - 3 report precipitation
- Inflight
  - 13 METARs issued
    - 8 SPECIs
- 4 transmitted to aircraft
  - 2 sent incorrectly
    - 1 with wrong cloud base
    - 1 with wrong wind
  - 1 sent in unusual format
- 0429 TAF vs 0437 TAF:
  - 0429 TAF was in effect 29 minutes before it is issued - this is not possible
  - 0437 issued 8 minutes after previous TAF issued
  - 0437 not in effect for 83 minutes. It should it be in effect immediately. Does the 0429 apply till 0600?
  - In the 8 minutes between TAFs:
    - FM 1500 period added
    - Validity extended 6 hours
- The 0803 amended TAF indicated BKN 1,000.

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- BoM/Airservices Australia/CASA ceased training the UNICOM officers as approved MET Observers. They were a very useful resource that had been made virtually redundant as a result. Norfolk Island represents no better case for trained MET Observer UNICOM Officers.

## TASK/ENVIRONMENTAL & LOCAL CONDITIONS

- The PIC had been to Norfolk island only once before in daylight. However for the First Officer, it was the first time.
- EMS category flight and patient condition added to the urgency of the operation.
- Long over water flight with very few, distant, alternates.
- Reliant solely on HF radio with no SELCAL. Poor quality reception and fatiguing.
- Experience on arrival at Norfolk Island the previous evening, with a marginal weather forecast on departure Sydney, was in contrast to the actual conditions on arrival.
- The UNICOM operator on arrival at Norfolk island the previous night said that the AWS overstated the actual weather conditions.
- No data available on the Samoan domestic telephone network which inhibited the PIC in downloading a complete weather package (first attempt).
- WI-FI not available to the PIC attempting to obtain weather due to the unavailability of the internet (second attempt).
- The internet at the hotel reception was not available (third attempt).
- Inability to contact the Pel-Air nominated contact in Sydney via the PICs personal mobile telephone to obtain a weather/briefing package (fourth attempt).
- The Pel-Air nominated contact did not answer his phone as he was in a meeting.
- There was no fax available at the hotel.
- The PIC did not have the contact number for the Chief Pilot as it had not been disseminated.
- Cost of fuel at remote islands was excessive and the PICs were conscious not to uplift any more fuel than operationally required.
- The aircraft was non-RVSM restricting its airspace altitude capability.
- RVSM airspace required the flight to be allowed (by ATC NZ, FIJI and AUS) to climb into RVSM rather than being held at FL280. The NZ and Fijian regulations are very restrictive in this matter.
- During boarding, the patient who was suffering from septicemia collapsed on the apron whilst boarding the aircraft before departure.
- This patient's condition was obvious and this applied humanitarian pressures on the flight crew and medical crew, as well as commercial pressures.
- After the previous four attempts to receive weather and planning information the PIC telephoned Airservices Australia, which was a novel situation for the PIC. Standard Pel-Air procedure was to use NAIPS, however this was not available as the internet was unserviceable in Samoa (a risk register would have identified all of these hazards and the controls needed to treat the risks).
- During the telephone call to Airservices Australia the PIC was continually disrupted by medical staff. The valid Norfolk Island TAF was received during this phone call lasting 8 minutes. The flight plan was also submitted during this time.



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- At sunset, during the time of many of the critical RT communications, the susceptibility to atmospheric interference is at its maximum with HF communication. Difficulty in receiving HF communications from Nadi was evident in the transcript.
- The weather at Norfolk on arrival was below minima and significantly different to the forecast on the valid TAF from which the crew had obtained prior to departure.

## ACTIVE FAILURES

- The PIC elected not to uplift full fuel (tip tanks), although there was no regulatory requirement to do so. If full fuel was uplifted there was a possibility it may not have changed the fuel status at Norfolk Island had the aircraft held below RVSM airspace at FL280.
- The PIC did not obtain the en-route winds for the return sector when submitting the flight plan with Airservices.
- The PIC did not request the weather at 0830.
- The Nadi ATC incorrectly transmitted the 0630 METAR as “Few 6,000” instead of “Few 600”. Had the crew received the correct weather they may have been alerted to the deteriorating conditions at Norfolk and planned to divert to Nadi.
- NZ or Fiji ATC did not transmit the 0830 SPECI indicating below minima weather.
- NZ or Fiji ATC did not transmit the 0803 amended TAF despite knowing VH-NGA did not have alternate fuel.
- NZ ATC did not inform VH-NGA of the changed weather status at Norfolk following contact from the Norfolk UNICOM at 0833.
- The First Officer (PNF) did not broadcast a mayday indicating the intended ditching location.

## DEFENSES - ABSENT OR FAILED

- No SOP or guidance in the company operations manual regarding the handling of non-normal preflight preparation.
- No requirement from the company or CASA to carry alternate fuel for this type of operation.
- No process or communications equipment for contacting the company from a remote island location seeking operational support and guidance on the ground or in-flight.
- The six monthly proficiency check did not cover critical issues such as PNR's and CP's. (The check and renewal process only covered technical and aircraft handling aspects).
- Flight crew training, particularly regarding EMS operations to remote island destinations did not adequately arm flight crews with the knowledge required, considering the nature of EMS and associated risks i.e. aerodrome hazards, oceanic flight planning, medical priority and the peculiarities of operating ad-hoc operations to remote locations with a variety of unknown conditions. These conditions include: fuel availability, communications, air traffic control, airfield conditions, weather availability and security.

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- A GNSS approach at Norfolk Island would allow a lower minima, had such an approach been published. Such an approach would be aligned with the extended runway centre line and not oblique as per the RWY 29 VOR-DME.
- Cockpit napping was approved by Pel-Air. However, guidance and or procedures did not exist to use this as an affective fatigue control.
- At 0833 the Norfolk UNICOM operator advised Auckland of the deteriorating conditions at Norfolk Island. The UNICOM operator reported “cloud FEW 300, FEW 600, OVC 1,100”. At 0856 a METAR was issued stating SCT 500, SCT 1,200, SCT 1,500 (although the flight crew were not aware of this). In fact, by this stage the weather had deteriorated significantly. Additionally, AKL ATC were aware the flight was not carrying an alternate.
- As the weather continued to deteriorate, the UNICOM operator was becoming increasingly concerned and had been monitoring the flight on HF. The UNICOM operator called AKL ATC at 0934 to query whether the flight was carrying an alternate. He was advised “no”. At this time the flight had passed the LPSD. Had either the AKL ATC or the UNICOM operator contacted the flight at 0833, the crew would have had ample time to make a decision to divert.

## ATSB/CASA Review 2007

In 2007 a review was conducted by Mr Russell Miller into the relationship between the ATSB and CASA. This was announced by the Hon Mark Vaile MP and was prompted by concerns expressed by the Queensland State Coroner Mr Michael Barnes in bringing down his findings in the Inquest of the 2005 accident at Lockhart River. The Coroner recommended that the Minister undertake a review to assess whether high level intervention was required to ensure that there is a productive, collaborative focus on air safety between the ATSB and CASA.

The catalyst for the review was friction between the ATSB and CASA, evident to the Coroner in his consideration of the Lockhart River accident and earlier coronial inquests. The review resulted in 19 detailed recommendations and are listed in appendix 1.

I’m aware both the ATSB and CASA have put in considerable effort into the implementation of these recommendations. Yet questions need to be asked as to the interaction between these agencies regarding the Norfolk Report.

Of particular relevance to the Norfolk accident are the Reviews findings relating to the relationship. Page 25, 19.8 stated:

*“It stands to reason that, because of its relative size, the breadth of its responsibilities and the range of information and tools it has at its disposal, CASA is well placed to assist ATSB investigations, where it is appropriate to do so. Both agencies acknowledged to the Review that closer co-operation between them is desirable. The Review acknowledges, however, that inter-agency co-operation has to be tempered by reality. CASA’s regulatory role ranges over many areas unrelated to the ATSB. The ATSB’s safety investigations will, on occasions, focus on the actions of CASA as a possible contributing cause to an*

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*accident or incident and the ATSB will, quite rightly, need to maintain an appropriate degree of distance in order to preserve its impartiality. This Report is focussed on those areas where co-operation is or would be beneficial for the higher objective of improving aviation safety.”*

Of particular note is the comment that the ATSB will need to maintain an appropriate degree of distance in order to preserve its impartiality. The evidence in the Norfolk Report lacking constructive criticism by the ATSB of CASA, indicates that the ATSB are not maintaining appropriate distance. Additionally, actively seeking to omit from their report critical information, primarily the CASA Special Audit post accident. The Review stated on page 26, 20.4 & 20.5:

*“Tension between safety regulators and accident investigators is not unusual – there are international examples of such tension and, in any case, some degree of constructive tension between the ATSB and CASA should be expected given their respective roles. Although they are both important contributors to Australia’s aviation safety system and share the same long term goal (improving aviation safety), they have quite different powers and functions. The very nature of the role of the ATSB often places it in the position of reviewer of CASA’s regulatory and other actions where there has been an accident or serious incident. There can also be tensions arising from legitimate differences of opinion. Information about what happened in an aircraft accident or incident can be fragmented, allowing for a variety of hypotheses about what actually happened. The causes contributing to an aircraft accident or incident can often be diverse, leaving ample room for debate over what actually caused it. Differing professional judgements will inevitably lead to different views, often firmly held.”*

*“Creative tension can be a positive force. Professional disagreement, properly expressed, can lead to better outcomes overall as each party examines the views of the other and the expertise available to each is shared, debated and evaluated. A clearer picture can emerge and a better outcome may result.”*

This “tension” as referred to by Mr Miller is an important ingredient in changing the aviation system and if the two agencies don’t recognise this they may as well not be independent bodies. This is why I believe the pendulum has swung from adverse tension, identified by the Coroner, to one of harmony and protection of other government bodies as evidenced in the Norfolk Report.

The Review stated on page 33, 22.12, 22.13 and 22.14:

*“The Review felt that governance issues for the ATSB do stand in the way of better working relations with CASA. This requires both an increase in the authority with which ATSB speaks, through its reports, and the objective assessment that external peer review brings. Peer review would provide an added level of objectivity to the conclusions reached and recommendations made, as well as providing a reality check on the report’s practicality with regard to the CASA regulatory environment and the operational environment of the industry. Reports known to have been externally peer reviewed by a panel of recognised experts are likely to make a greater impact on CASA and industry.”*

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*“Therefore, in the Review's opinion, the ATSB's contribution to aviation safety would be enhanced if, at a minimum, an appropriate peer review group were established to review ATSB reports, including draft reports, before they are published. This would give additional weight to ATSB reports and support to the findings.”*

*“Although there is, at present, no mechanism under the TSI Act for such a group to be established, the Review sees no reason why the Executive Director could not establish such a group in consultation with the Secretary, perhaps as an interim measure, pending legislative change. This would probably require additional financial resources for the ATSB, but the amount involved should not be significant.”*

And related to this theme, page 54, 31.6:

*“The Review appreciates that the ATSB's reluctance to engage CASA and other experts may in part be motivated by a need for the ATSB to maintain its impartiality and protect the integrity of restricted information – widely regarded as essential to the success of its “no blame” investigations. It would be inappropriate for the Review to advise the ATSB how to go about its aviation investigation task. However, the Review notes that in other jurisdictions panels of external experts are maintained by the equivalent body to the ATSB and utilised to ensure that the right mix of expertise is available for each investigation.”*

This peer review system was addressed by the government forming an ATSB Commission, with part-time Commissioners. This was also recommended by the Review. The problem with this, in its form at the time of the Norfolk Report, is that the current Chief Commissioner and part-time Commissioners had no operational aviation experience, therefore their technical input and understanding of such matters, as the Norfolk accident was limited. Considering aviation investigations comprise approximately 80% of the ATSB activity, there seemed to be a gross imbalance. This is by no means being critical of individuals, however I question their ability to provide constructive input into draft and final reports. Under the TSI Act, these Commissioners sign off on final reports. The Review recommended:

*“The Commission should consist of three part-time commissioners with broad safety experience, not all in the aviation field.”*

A panel of industry experts, with specialist skills could be utilised for this function, as CASA does with its industry placed delegates. In the US, accident investigation drafts are exposed in public hearings before a broadly experienced Board. Canada and New Zealand also use Boards.

Page 41, 25.6 of the Review stated:

*“Information sharing is not a one-way matter. It was submitted to the Review that CASA does not always share information with the ATSB which would assist the ATSB in its investigations. It would appear that improvements are required in the processes by which the ATSB is able to access CASA expertise and information that is relevant to aviation safety. This is particularly important where CASA has information relevant to an accident*

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*or incident that the ATSB is unaware of or where an accident or incident is also being investigated by the ATSB. By sharing this type of information with the ATSB, CASA will assist the ATSB to identify important safety issues and will reduce the potential for embarrassing public surprises, both of which appear to the Review to have contributed to the tension between the ATSB and CASA.”*

It appears that this practice has not been implemented as evidenced by the fact that the CASA Special Audit conducted in December 2009, detailing significant deficiencies in the Pel-Air operation never found its way into the ATSB drafts or Final Report of August 2012. Additionally, CASA were aware that VH-NGA was non-RVSM as detailed in the AAT documents. This was not mentioned in the ATSB report and was critical to the conduct of this flight. This was a known problem since 2003, first identified by the FAA who monitor the Pacific region airspace.

Page 56, 33.6 of the Review stated:

*“As has previously been stated, the proper measure of success as far as the ATSB is concerned, is the extent to which its recommendations for safety improvements are implemented. This means that part of its role is to make safety recommendations that are:*

- directly relevant to avoiding, in the future, proximate causes of the accident or incident; and*
- practical, providing meaningful improvements to the aviation safety system in relation to all relevant contributing factors.”*

The Norfolk Report not only had significant omissions in factual information and analysis, it also contains no recommendations. Instead, the ATSB rely on Safety Actions that have been taken by relevant bodies involved. Part of the reason this takes place is that often by the time a report is released, the industry has made fixes and moved on. I challenge this approach as the Safety Actions are only relevant to a specific operator, in this case Pel-Air. The lessons from Safety Recommendations are relevant to the entire industry and not just the operator in question. Therefore the safety system is improved for the travelling public.

In summary regarding this Review, I'm sure it was never Mr Miller's intention to have his work interpreted as a vehicle for the ATSB and CASA to alter their relationship to the extent that it produced negative outcomes and challenged their roles under their respective Acts.

## Weather Forecasting

Norfolk Island had a history of problems associated with the accuracy in weather forecasting, as highlighted by the ATSB Recommendation R20000040 in 2000 (see Appendix 2). The report listed a number of incidents similar to those involving the accident flight and highlighted that:

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*“A pilot flying an aircraft that arrives at a destination **without alternate or holding fuel and then finds that the weather is below landing and alternate minima is potentially in a hazardous situation.** The options available are:*

- 1. to hold until the weather improves; however, the fuel may be exhausted before the conditions improve sufficiently to enable a safe landing to be made;*
- 2. to **ditch** or force-land the aircraft away from the aerodrome in a area of improved weather conditions, if one exists; or*
- 3. attempt to land in poor weather conditions.*

***All of these options have an unacceptable level of risk for public transport operations.”***

The ATSB Analysis stated:

*“..... The safety consequences of an unforecast deterioration in the weather at an isolated aerodrome like Norfolk Island may be serious.” The Analysis concluded **“The present level of reliability of meteorological forecasts and the current regulatory requirements are not providing an adequate level of safety for passenger-carrying services to Norfolk Island.”***

No differentiation was made in the report regarding the differences of aerial work and charter passenger-carrying operations.

The Safety Deficiency in this report stated:

*“The meteorological forecasts for Norfolk Island are not sufficiently reliable on some occasions to prevent pilots having to carry out unplanned diversions or holding.”*

Of particular note was the ATSB Safety Action stating:

*“The Australian Transport Safety Bureau (formerly the Bureau of Air Safety Investigation) recommends that the Bureau of Meteorology should review the methods used and resources allocated to forecasting at Norfolk Island with a view to making the forecasts more reliable.”*

The BoM response included the following comments:

*“There are several factors which determine the accuracy and reliability of the forecasts. The first is the quality and timeliness of the baseline observational data from Norfolk Island itself. The second is the information base (including both conventional surface observational data and information from meteorological satellites and other sources) in the larger Eastern Australia-Southwest Pacific region. The third is the overall scientific capability of the Bureau's forecast models and systems and, in particular, their skill in forecasting the behaviour of the highly localised influences which can impact on conditions on Norfolk Island. And the fourth relates to the speed and responsiveness with which*

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*critical information on changing weather conditions (forecast or observed) can be conveyed to those who need it for immediate decision making.”*

Additionally, the BoM states in its reply:

*“As you are aware, the Bureau commits significant resources to maintaining its observing program at Norfolk Island. While the primary purpose of those observations is to support the overall large-scale monitoring and modelling of meteorological conditions in the Western Pacific, and the operation of the observing station is funded by the Bureau on that basis, it is staffed by highly trained observers with long experience in support of aviation. As far as is possible with available staff numbers, the observers are rostered to cover arrivals of regular flights and rosters are adjusted to cover the arrival of notified delayed flights.”*

Since that time, the BoM had an AWS installed. The UNICOM operator had access to the AWS information, however was not approved as a meteorological observer.

The BoM also stated in its response that:

*“To increase the responsiveness of the terminal forecasts to changes in conditions at Norfolk Island, the Bureau has issued instructions to observing staff to ensure forecasters at the Sydney RFC are notified directly by telephone of any discrepancies between the current forecast and actual conditions. This arrangement will increase the responsiveness of the system particularly during periods of fluctuating conditions. In addition the Bureau has provided the aerodrome manager with access to a display of the latest observations to ensure the most up to date information is relayed to aircraft.*

***The Bureau is actively participating in the review of fuel requirements for flights to remote islands being undertaken by the Civil Aviation Safety Authority.”***

The **ATSB closed this Recommendation** on the basis of this response. At the time of the accident, **12 years later, fuel requirements for flights to remote islands in aerial work passenger-carrying operations had not changed.**

## UNICOM

Requirements for UNICOM Services were listed in the CASA Manual of Standards, Part 139, section 14.4.

### Section 14.4: Unicom Services

#### 14.4.1 General

14.4.1.1 *Unicom (Universal Communications) services are non-ATS radio communication services provided on an MBZ frequency or CTAF to enhance*

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*the value of information normally available about a non-controlled aerodrome. A Unicom service is not a Certified Air/Ground Radio Service.*

14.4.1.2 *The primary function of the frequencies (MBZ/CTAF) used for Unicom services is to provide the means for pilots to exchange traffic information for separation purposes. Unicom services, being a secondary use of these frequencies, must not inhibit the exchange of aircraft to aircraft traffic information.*

14.4.1.3 *Participation in Unicom services by an aerodrome operator, whether for the purposes of a frequency confirmation system or otherwise, is to be limited to the exchange of radio messages concerning:*

- (a) confirmation of the CTAF/MBZ frequency selected by aircraft;*
- (b) general aerodrome weather reports;*
- (c) aerodrome information;*
- (d) estimated times of arrival and departure;*
- (e) passenger requirements;*
- (f) aircraft refuelling arrangements;*
- (g) maintenance and servicing of aircraft including the ordering of urgently required parts;*
- (h) unscheduled landings by aircraft.*

14.4.1.4 *General aerodrome weather reports provided by a Unicom operator are to be limited to simple, factual statements about the weather, **unless the Unicom operator is authorised by CASA to make meteorological observations.***

In 2007, CASA issued a briefing paper outlining Unicom Services as follows:

*“Competencies of Unicom operators. A Unicom operator must hold an aircraft radio telephone operator certificate of proficiency in accordance with CAR 83. Unicom operator competencies will need to be managed by the Unicom Provider’s Safety Management System and may comprise part of the operator’s certificate under CASR Part 139, if the aerodrome is certified*

*Benefits of Unicom. Unicom services, which include traffic information, provide the following benefits:*

- a. Pilots receive confirmation that they are transmitting on the correct frequency. This alleviates the concern with broadcast only procedures of not closing the communication loop.*
- b. Pilots’ situational awareness is enhanced with information on reported or observed aircraft in the area who are not broadcasting and on other airfield activities or movements not otherwise notified.*
- c. **Provide updated general weather information that allows pilots to plan ahead for approaches, missed approaches or diversions as appropriate.***

**Duty of care.** *While the safety of the aircraft remains the pilot’s responsibility, Unicom operators cannot avoid their common law duty of care to pass on information which may impact a pilot’s decision regarding the safety of operations in or around the aerodrome.”*



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Had the UNICOM operator been approved as a meteorological observer, he could have contacted VH-NGA directly at 0833 instead of advising Auckland of the deteriorating conditions. At that time, the crew could have easily diverted to Nadi. This was critical in the accident sequence, yet the ATSB ignores the UNICOM radio exchange. Also, the change in the training status of UNICOM.

## **Pel-Air ban by the French/New Caledonian Authority**

On 27th February the French Civil Aviation Authority banned Pel-Air from operating in Noumea airspace due to their aircraft not being fitted with TCAS II and EGPWS (See appendix 3). VH-NGA was subsequently fitted with this equipment to address this deficiency. However, Cpt James had not been trained in the use of the equipment and therefore, should not have been flying an aircraft into this airspace.

Cpt James was aware that Pel-Air had been banned from operating in Noumea airspace however, had not been advised of the status of the ban by management prior to the accident flight. Even if he had that knowledge, he hadn't been trained on the use of the equipment. This indicates significant flaws in the Pel-Air training programme.

## **DIP Response process**

The current ATSB DIP response process is flawed, as respondents will naturally make suggestions to drafts in the defense of their character or organisation rather than comments that may improve aviation safety. If an ATSB draft misses or omits critical flaws in an investigation it is unlikely the individual or organisation responsible will highlight this to the ATSB knowing it may draw unwanted criticism of their character or organisation. Whilst the ATSB prides itself as being a "no-blame" agency, the views of the DIPs will invariably be in terms of self preservation. The DIP response process is considered restricted information under the TSI Act. This promotes this self preservation approach as only the ATSB see a DIPs response and other bodies are unaware of other responses. This process can also considerably draw out the timeframe of issuing a final report when individual DIPs make comments. New drafts that include changes then need to be redistributed to the relevant DIPs for comments. That was the case with the Norfolk accident.

In the US, the NTSB makes drafts publicly available which allows the focus of the investigation to be based on fact, rather than personal opinion or view. There is too much emphasis on the restriction of information under the current TSI Act. This is aviation safety and is in the interest of the travelling public. It is not sensitive or secret information, as are issues relating to national security. As previously stated, in the US draft accident reports are made public. In Australia disclosing a draft report publicly carries a two year jail term penalty.

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During the final DIP process Cpt James' legal counsel emailed the ATSB as a last desperate plea in the process as per below.

"Our Ref: EJM:80177  
ATSB Ref: AO-2009-072

17 July 2012

(Name deleted and title)

Australian Transport Safety Bureau  
P.O. Box 967  
CIVIC SQUARE A.C.T. 2608  
Facsimile: (02) 6247 3117n,

*Mr Dominic James: Aviation Occurrence Investigation AO-2009-072  
Ditching of IAI Westwind 1124A aircraft NGA on 18.11.2009 at Norfolk Island*

*We refer to previous correspondence regarding the above matter and thank you for your letter dated 1`2 July 2012.*

*We note that the draft Report, at page 58, does refer in passing to the special audit treoprt (sic) conducted by CASA into the operator of the above aircraft.*

*What the draft does not say is that the CASA special report found, inter alia, that the Pel-Air policy and practice may have led the pilot in command into error, and that the CASA special audit identified a number of serious deficiencies which included:*

- 1. Inadequate fuel policy for Westwind operations,*
- 2. inadequate fuel policy for Lear military operations,*
- 3. pilots use their own planning tools and there is no control exercised by Pel-Air to ensure that the fuel figures entered are valid,*
- 4. no policy exists to ensure that flight and fuel planning is cross checked to detect errors,*
- 5. no alternate requirements are specified for remote area and remote island operations,*
- 6. the Pel-Air operations manual specified 30 minute fuel checks, which was largely ignored by operating crew,*
- 7. the criteria to obtain weather updates was not specified in the operations manual, and*
- 8. the practice of obtaining weather advice varied among pilots and did not appear to be conducted at appropriate times to support decision-making.*

*The draft ATSB report also does not refer to other issues raised in the CASA special audit report concerning operational control and training; and in particular, no reference is made to any findings that Pel-Air was deficient in that:*

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9. *No operational decision-making tools were provided to support crew in balancing aviation v medical risks;*
10. *once tasked, the pilots operated autonomously and made all decisions based on behalf of the AOC; and further, the AOC exercises little, if any, control over the operation once a task commences;*
11. *Pel-Air did not provide charts or publications to pilots and did not ensure that the pilots maintain a current set;*
12. *in many cases, inadequate flight planning time was provided,*
13. *there was a failure to maintain required flight records and no apparent checking by Pel-Air,*
14. *pilots used their own flight planning tools without any control exercised by Pel-Air to ensure the data entered was valid,*
15. *there was inadequate CAO 20.11 training,*
16. *there was inadequate documentation of training programs,*
17. *there was no formal training for international operations,*
18. *there were inadequate training records for pilot endorsement and progression,*
19. *there were inadequate records of remedial training,*
20. *there was no "mentoring" program for First Officer to Command, and*
21. *there were deficiencies in training records and fatigue management for pilots.*

*The draft report (which we understand ATSB intends to publish with very few changes) appears to "point the finger at" the pilot in command to the exclusion of both the operator and CASA, with the result that the reasonable reader of the final publication will be led into believing that the ditching was simply the result of errors and mismanagement on the part of the pilot in command, with no reference to the very significant factors of the policies of the operator, which the CASA found to be seriously deficient, and of CASA itself, which did not defect the deficiencies of the operator, which eventually led the pilot in command into error.*

*As a fellow aviator with over 40 years experience in general aviation ranging from small trainers to corporate jet aircraft, I would expect the ATRSB to include all salient aspects of the incident of the ditching which occurred on 18 November 2009 in the interests of air safety; and I would respectfully disagree with your suggestion that it would be inappropriate to include the details of the CASA special audit in the ATSB report.*

*The writer remains of the opinion that the publishing of the report into the above occurrence with the exclusion of the details of the CASA special audit into Pel-Air will result in an ATSB report which is incomplete and accordingly inaccurate and misleading.*

*We again suggest you reconsider your decision to omit the details of the CASA report.*

*Yours faithfully*  
**MAITLAND LAWYERS"**

The ATSB responded by email. (see over)

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**Subject: Release of draft transport safety report [SEC=UNCLASSIFIED]**

*"Dear Mr James*

*Following Mr Maitland's letter of 3 July 12 and your email of 6 July 12, the ATSB reviewed the Norfolk Island draft report in light of the concerns raised. **That review included a review of the CASA special audit and other evidence. That review did not indicate that any significant changes were warranted** but some amendments were made relating to your concerns.*

*Given your concerns and the changes, the ATSB is conducting a limited distribution to some of the directly involved parties, yourself included....."*

This CASA Special Audit was not considered relevant for inclusion, yet issues and comments in the report such as, "There was no fire", "the operators procedures and flight planning guidance managed risk consistent with regulatory provisions...." (when they clearly weren't), "the views of ATPL students", "Threat & Error Management" (when it wasn't required), were considered relevant and are represented in the final report.

## ATSB Drafting Process

The evolution of the Norfolk Island Final Report is as follows:

- The initial Draft was released to DIPs on the 26th March 2012.
- Draft 2 issued to DIPs on the 16 July 2012.
- Final Report issued on the 30th August 2012.
- Final Report amended and re-issued 31 August 2012.

Of note was that an uncontrolled copy in Microsoft Word format was available on-line prior to the official release by the Chief Commissioner. This was in breach of the TSI Act. The report was released on the ATSB website on the 30th August 2012 and has minor differences to the Final Report. In the document properties, it is titled "no-blame". Does a "blame" version exist? The report was still available on-line on 12th October 2012 and was found at:

[atsb.gov.au/media/3658440/AO-2009-072%20Final.doc](https://www.atsb.gov.au/media/3658440/AO-2009-072%20Final.doc)

Throughout the drafting process, significant changes were made to the report and in some cases, completely polarised from comments in earlier drafts. For such significant changes, new information must have been identified by the ATSB. Alternatively, internal or external influences may have had an impact on the flavour of the report. Examples are:

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## Fatigue

**Draft 1** page 23 stated “The balance of evidence does not support the potential for the crew’s performance to have been significantly affected by fatigue”

**Draft 2** page 24 stated “The flight crew had a less than ideal rest period in the morning prior to the flight, and they were probably experiencing fatigue at a level that has at least some effect on performance. However, there was insufficient evidence available to determine the level of fatigue, or the extent to which it may have contributed to the crew not comprehending the significance of the 0800 SPECI.”

**The Final Report** page 14 & 15 stated “The flight crew had been awake for over 12 hours before being called on duty at 0900 for the departure from Sydney on the previous day, and they had been awake for over 22 hours when they landed at Samoa. After having breakfast they had about 8 hours opportunity at a hotel for rest prior to returning to the airport. The captain initially reported to the ATSB that he slept for most of this period and was well rested, but later reported to the Civil Aviation Safety Authority (CASA) that he had only about 4 hours sleep but did not feel fatigued. The first officer advised of having 5 to 6 hours sleep and feeling well rested.”

“Based on this information, it is likely that the flight crew were experiencing a significant level of fatigue on the flight to Samoa, and if the captain only had 4 hours sleep then it is likely he was experiencing fatigue on the return flight at a level likely to have had at least some effect on performance. However, there was insufficient evidence available to determine the level of fatigue, or the extent to which it may have contributed to him not comprehending the significance of the 0800 SPECI.”

## Comment

What new evidence had been identified by the ATSB to transition from the comments in Draft 1, to the comments in the Final Report? The PIC was not interviewed further during this time. Also, the ATSB comment that insufficient evidence was available to determine the extent of fatigue. The flight crew were alive and could have provided evidence, the hotel and rest facilities were available, and the crew could have provided a 72 hour history for the purpose of fatigue analysis. Additionally, the ATSB and CASA would have commissioned an external or internal review by fatigue specialists, yet this has not been included in the Final Report.

## Pre-Flight Planning

**Draft 2** page 48 stated “However, the operator’s expectation that pilots would use their own methods, systems and tools for pre-flight planning had the potential to dilute those regulatory and procedural requirements as risk controls. To some extent, this might explain the pilot in command’s (PIC) actions to develop the flight plan for the flight to Norfolk Island by reversing his outbound flight plan to Apia and applying the previously-experienced upper winds and NOTAMs to his planning for the return flight via Norfolk Island.

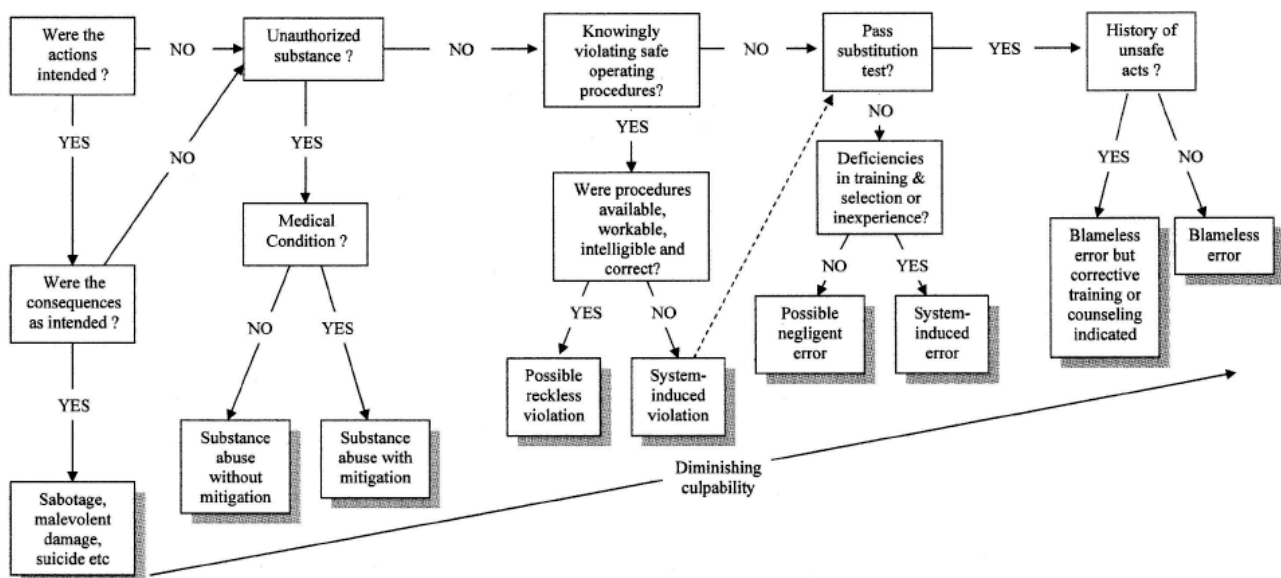
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Similarly, by not specifically requiring the copilot to partake in the flight planning, and not overtly following the flight or ensuring the availability of operational and communications support at Apia, the operator precluded these additional potential safety defences from having effect. Together with the operator's normal process of not requiring crews to report to the operator if a flight was progressing satisfactorily, this would have increased the isolation felt by its crews, and prevented a full understanding by the operator of the residual risk affecting a flight."

**The Final Report** omitted these statements which were critical of the operator.

## DIMINISHING CULPABILITY

The following flow chart was developed by Prof James Reason in terms of understanding culpability in a 'Just Culture' environment. This process has been widely used in many transport industry sectors as well as the medical industry regarding medical negligence. The model takes into account the context of an individuals actions, including: intent, physiological state, violations, a substitution test, and personal history.



In the case of Cpt James and Norfolk, my analysis using this model is as follows:

- Ditching was certainly never intended. It was the result.
- No unauthorised substance or medical condition existed.
- Cpt James did violate some SOPs.
- The procedures weren't all available, intelligible and correct, as per the CASA findings.
- This is therefore a system induced violation.
- Cpt James does pass the substitution test as other Pel-Air crew had flown to Norfolk without tip-tank fuel. These included the former Chief Pilot and Head of Checking and Training.
- Cpt James had no history with CASA or Pel-Air of unsafe acts.

Therefore in my opinion, in terms of culpability, this is a blameless error.

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## CASA SUSPENSION OF CPT JAMES LICENCE

On the 24th December 2009, Cpt James received the following letter from CASA relating to his licence suspension and competence.

Mr Dominic John Allen James  
5/18 Glen Street  
BONDI, NSW, 2026,  
AUSTRALIA

By Email: dom@cia.com.au  
dominic.james@pelair.co.au

Dear Mr James

### **NOTICE TO UNDERTAKE EXAMINATIONS (regulation 5.38, *Civil Aviation Regulations 1988*)**

### **NOTICE OF SUSPENSION OF COMMERCIAL PILOT (AEROPLANE) LICENCE, AIRLINE TRANSPORT PILOT (AEROPLANE) LICENCE AND COMMAND (MULTI-ENGINE AEROPLANE) INSTRUMENT RATING PENDING EXAMINATION (regulation 265, *Civil Aviation Regulations 1988*)**

On the basis of the facts and circumstances set out in this notice, and pursuant to regulation 5.38 of the *Civil Aviation Regulations 1988* (**CAR**), I am writing to give you notice that I, consider it necessary in the interests of the safety of air navigation for you to undertake certain examinations to demonstrate to me that you continue to possess the aeronautical skills and aeronautical knowledge appropriate to your Commercial Pilot (Aeroplane) Licence, Airline Transport Pilot (Aeroplane) Licence and Command (Multi-Engine Aeroplane) Instrument Rating.

I am also writing to give you notice that, pursuant to CAR 265(1)(a), I am suspending your Commercial Pilot (Aeroplane) Licence, Airline Transport Pilot (Aeroplane) Licence and Command (Multi-Engine Aeroplane) Instrument Rating pending your completion of the examinations mentioned above (and described more particularly in paragraph 14 below).

The facts and circumstances relating to my decision and the reasons why I consider it necessary for you to undertake this examination are set out in the following paragraphs.

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## Facts and circumstances

1. On 18 November 2009, you were the pilot in command of Israel Aircraft Industries Model: 1124A aircraft registration mark VH-NGA engaged in aerial work (ambulance function) operations on a flight conducted by Pel Air Aviation Pty Limited (**Pel-Air**) from Samoa to Melbourne with a planned refuelling stop at Norfolk Island.
2. Shortly after 1030 Universal Co-ordinated Time (**UTC**) on 18 November, VH-NGA ditched into the ocean off the coast of Norfolk Island after the aircraft nearly ran out of fuel attempting to land at Norfolk Island Airport. You, your co-pilot and four passengers of the aircraft managed to safely egress from the aircraft which subsequently sank.
3. You planned your leg from Samoa to Norfolk Island on the basis that your flight time would be 3 hours and 30 mins. You estimated that you would require 7200 pounds of fuel for this purpose, and thus refuelled the aircraft at Samoa with full wing tanks. You did not refuel the aircraft's wing-tip tanks.
4. CASA's investigation into the circumstances of this flight has revealed that the fuel planning exercise which you undertook in arriving at the figures of 3 hours 30 mins flight time and 7200 pounds required fuel was well below the standard required of an Airline Transport Pilot (Aeroplane) Licence (**ATPL**) holder. This investigation has included consideration of copies of your flight plan, transcript of the briefing which you received from an Airservices Australia briefing officer prior to commencing the flight, transcript of your in-flight communications with Air Traffic Control in Auckland, and your discussions with CASA officers in Sydney on 16 December 2009.
5. The most significant defects in your flight planning were that:
  - (a) You did not receive an area/route forecast for the route you intended to fly (Samoa – Norfolk), nor did you source any information relating to the strength of the prevailing high level winds along the route. In the absence of this critical data, there was no sound basis for your estimated flight time of 3 hours 30 mins, nor for your estimate of 7200 pounds required fuel; and
  - (b) It does not appear that you took into account contingencies such as the possibility of a depressurisation or an engine failure in calculating the amount of fuel which you took on board at Samoa.



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6. Furthermore, having commenced your flight from Samoa to Norfolk Island, the transcript of your communications with Air Traffic Control in Auckland reveals that you received a weather forecast for Norfolk Airport at 0904 UTC which showed that the weather conditions at Norfolk Island were below the minimum criteria at which an alternate aerodrome is required. A further weather update received by you at 0932 UTC indicated that Norfolk Airport was no longer suitable as a destination.
7. When you received the weather forecast at 0904 UTC, you were approximately 1 hour from Norfolk Island and in a position where it would still have been a viable option for you to have diverted the aircraft to Noumea. The fact that you elected to pursue a landing at Norfolk Island in light of the weather forecast
8. CASA's investigations to date have revealed that the medical and other personnel you were carrying on the flight, were given approximately 90 seconds warning of your intention to ditch the aircraft. This is insufficient time to ensure that the passengers and crew had sufficient time to deploy the aircraft's emergency equipment and to prepare adequately for the emergency landing.
9. On the basis of the above facts, I consider that, as pilot in command of VH-NGA on 18 November 2009, you breached the following provisions of the CAR and the *Civil Aviation Act 1988 (CAA)*:

Section/Regulation	Offence Description
CAR 233 (1)(d)	Obligation of pilot in command to ensure that fuel supplies are sufficient for intended flight
CAR 234	Obligation of the pilot in command to take reasonable steps to ensure that the aircraft carries sufficient fuel and oil to enable the proposed flight to be conducted safely
CAR 239	Obligation of the pilot in command to make a careful study of all available information appropriate to the intended operation and to plan the flight accordingly
CAR 224	Obligation of pilot in command to ensure safety of flight, including safety of passengers and other crew on board the aircraft.
CAA 20A (1) and (2)	Operated an aircraft in a reckless manner that could endanger the life or property of another person.

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10. Furthermore, I am satisfied that, on the basis of the facts set out above, you failed to comply with the following parts of Pel-Air's operations manual Part A:
  - (a) Para 9.11.1(b) – fuel planning
  - (b) Para 9.11.5 – calculation of last diversion time
  - (c) Para 8.5.2.2(b) – In flight fuel check last possible diversion point (weather check)
  - (d) Para 1.2.8 – responsibility of pilot in command.
11. By reason of your failure to comply with these provisions of the operations manual, you were in breach of your obligations under CAR 215(9) to comply with the manual.
12. On the basis of these facts and circumstances I consider you may not possess the aeronautical skills and/or aeronautical knowledge required of you as the holder of a Commercial Pilot (Aeroplane) Licence, Airline Transport Pilot (Aeroplane) Licence and Command (Multi-Engine Aeroplane) Instrument Rating.
13. I believe that you pose a serious and continuing threat to the safety of aircraft, any occupants you may be carrying, other airspace users and people on the surface in the vicinity of the airspace in which you are operating. For these reasons I have decided to require you to undertake the examinations set out below.

## Theory subjects to be examined

14. You are required to pass the following ATPL theory subjects:

(a) Flight Planning - Aeroplanes	AFPA
(b) Performance and Loading - Aeroplane	APLA
(c) Aerodynamics & Aircraft Systems - Aeroplane	AASA
(d) Navigation - Aeroplane	ANAV

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(e) Meteorology – Aeroplane	AMET
(f) Human Factors – Aeroplane	AHUF
(g) Air Law – Aeroplane	AALW
(h) IREX Theory Exam	IREX

15. The examination of the theory subjects is to be conducted through Assessment Services Pty Ltd (**ASL**) and the first examination is to be conducted no later than 31 January 2010. All examinations are to be conducted at the ASL facility at Bankstown unless otherwise agreed to by CASA. The booking process for examinations is to be made in two parts. Booking for the respective examination is to be made through the CASA Office at Bankstown by contacting the Team Leader Flying Operations. Once notified that the examination is ready for assessment you are to make a booking with ASL to sit the examination. (There will be no examination fee levied by CASA however you will be responsible to pay the supervision fee required by ASL).

## Flight Test

16. A Commercial Pilot Licence (**CPL**) flight test is to be conducted in an aircraft type and at a place and time to be determined and duly notified, but not prior to completion of the theory examinations. The CPL flight test will be conducted [according to the requirements specified on ] against the criteria set out in the Commercial Pilot Licence Form 090 (<http://casa.gov.au/manuals/regulate/fcl/form090.pdf>) and will also include an en-route assessment for Critical Point/Point of No Return and the decision to apply a diversion to an alternate, focusing on weather with a minimum fuel scenario.
17. A Command Instrument Rating (**CIR**) flight test is to be conducted in a twin engine aircraft of a type and at a place and time to be determined and duly notified, but not prior to completion of the theory examinations. The CIR flight test will be conducted according to the requirements specified on the Instrument Rating Application Form 645 (<http://casa.gov.au/manuals/regulate/fcl/form645.pdf>). The test will assess performance against all navigation aids identified on the test form being, NDB, VOR, ILS, DME/GPS arrival and GNSS/RNAV with associated sector entry and holding patterns. The test is to include en-route assessment for Critical Point/ Point of No Return and the decision to apply a diversion to an alternate, focusing on weather with a minimum fuel scenario.

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18. The CPL and CIR flight tests may be undertaken separately or CASA may, at your request, combine the elements of the assessments into a single flight test, if that can be practicably managed. The aircraft in which the flight tests will be conducted must necessarily be sophisticated enough to permit CASA to make an effective assessment of your skills, ability and competence to hold an ATPL and CPL. You are responsible for supplying the aircraft in which the flight tests are to be conducted.

## SUSPENSION OF LICENCES AND RATING

19. In accordance with CAR 265(1), I hereby suspend your Commercial Pilot (Aeroplane) Licence, Airline Transport Pilot (Aeroplane) Licence and Command (Multi-Engine Aeroplane) Instrument Rating as you have been required to undergo an examination under CAR 5.38. I have suspended your licences and rating because the matters raised above indicate you may not have the aeronautical skills and knowledge appropriate to the licences and rating.
20. This suspension is effective immediately and will remain in effect until the results of your examinations become known to CASA, and in accordance with the provisions of CAR 265(2) or (3), as the case may be.

## REVIEW OF DECISION

You are hereby advised that, subject to the *Administrative Appeals Tribunal Act 1975*, you, or any person whose interests are affected by my decision, may apply to the Administrative Appeals Tribunal for review of my decisions to require you to undergo an examination and to suspend your pilot licence within 28 days of the date on which this notice is furnished to you. I attach, for information, a document titled "Notice of Review Rights", advising generally in relation to the commencement of any such proceedings. The attached notice is not provided by way of procedural or legal advice. You should seek and rely upon your own legal advice in relation to your rights of review.

Yours sincerely

(Name and position withheld)



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The author of this letter says that Cpt James had planned for a fuel uplift of 7,200 lbs. This is incorrect as the main tank fuel uplift on the Westwind II is 7,330 lbs, as stated in the ATSB report. 7,200 lbs is the Westwind I main tank capacity. Additionally, the letter states the Cpt James received a weather ‘**forecast**’ at 0904 from Auckland ATC. This is incorrect as the 0904 weather was a SPECI, not a forecast. This is key to the ATSB concerns regarding in-flight decision making. The author then raises concerns about Cpt James’ competency which forms the basis for his licence suspension and examination requirements. Therefore, Cpt James’ licence suspension has been based on incorrect facts.

CASA had found Pel-Air in breach of: CAO 20.11 Parts 11 & 12, CAO 82 para 3.3, CAO 40 para 5.1, CAR 215 (9), CASR 92.095, CAR 5.04 (1), CAR 220 (1), CAR 215 (2), CAR 233 (3), CAR 78 & CAO 82.1, CAR 235 (1) & (2), CAR 233 (1), CAO 20.7.1B parts 4, 7 & 12. CAR 215 (8), CAR 215 (2), CAR 50, CAR 253 (4), CAA Section 28 BE para (1), (2), (3a) 7 & (3b), and multiple breaches of CAO 48 para 4.

Some of these breaches were known on the 7th December 2009 to CASA, and as such, CASA held an emergency meeting with Pel-Air to address these critical issues. Pel-Air had voluntarily ceased Westwind operations prior. I have no doubt CASA would have removed the operational approval had they not.

The questions begs, how can a pilot be labelled incompetent and someone who poses a serious and continuing threat to safety two weeks after these findings about significant deficiencies in Pel-Air? They directly relate to the culture of Pel-Air and the accident flight, yet the ATSB Norfolk Report does not consider them as worthy of inclusion or comment. I contend that if breaches of the CA Act Section 28 BE are not worthy of consideration in accident reports, what does this section of the Act exist for?

Additionally, the Chief Pilot of Pel-Air at the time of the accident was responsible for many of the breaches of the CASA regulations (as per the RCAs list above). Later he was employed by CASA as a Flight Operations Inspector in the Bankstown Field Office - the CASA Office that oversees Pel-Air and led the CASA Special Audit. How can Cpt James be found to pose such a serious threat to safety, yet the responsible Chief Pilot was later deemed to be a fit and proper person to hold CASA delegations and the position of Flight Operations Inspector? Senator Heffernan has previously raised the issue of industry conflict involving CASA personnel in the Inquiry into the Administration of CASA 2008. I can provide historical comment.

## Pel-Air Safety Policy

The Pel-Air Safety Policy opened with the following statement:

**As a member of the Regional Express Group, Safety is a fundamental consideration underlying all major actions and decisions. The Regional Express Group prides itself on its commitment to safety; it is an important feature of our operation by which we measure our success.**

And included statements such as: (see over)

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Our safety success is predicated upon:

A safety culture in which:

- ✈ Senior management demonstrates a commitment to safety by integrating safety and risk management principles in day to day operational decisions.
- ✈ Senior Management provide adequate resources to maintain an effective Safety Management System (SMS);
- ✈ All staff are responsible and accountable for maintaining safety standards and practices and adhering to regulations and company directives as applicable with their daily activities;
- ✈ Promotion of free and honest reporting of safety issues are encouraged and fostered in accordance with 'Just Culture' principles;
- ✈ Systemic issues uncovered result in process improvements in accordance with the Learning Organisation principles;
- ✈ Safe work practices, processes and lessons learnt are communicated at all levels of the organisation;

'Just Culture' is defined by CASA in CAAP - SMS 1(0) as:

"An organisational perspective that discourages blaming the individual for an honest mistake that contributes to an accident or incident. Sanctions are only applied when there is evidence of a conscious violation or intentional reckless or negligent behaviour."

A 'Safety Culture' is broadly described by Prof Patrick Hudson (leading safety culture expert from Leiden University, Netherlands) as:

"Who and what we are, what we find important, and how we go about doing things round here"

Prof Hudson categorises the maturity of a Safety Culture as:

1. **Pathological:** The organization cares less about safety than about not being caught;
2. **Reactive:** The organization looks for fixes to accidents and incidents after they happen;
3. **Calculative:** The organization has systems in place to manage hazards; however the system is applied mechanically. Staff and management follow the procedures but do not necessarily believe those procedures are critically important to their jobs or the operation;
4. **Proactive:** The organization has systems in place to manage hazards and staff and management have begun to acquire beliefs that safety is genuinely worthwhile; and
5. **Generative:** Safety behaviour is fully integrated into everything the organization does. The value system associated with safety and safe working is fully internalised as beliefs, almost to the point of invisibility.

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It appears Pel-Air used terminology in its Safety Policy that aligned with the 'Generative' category. However, in reality, based upon the evidence found by CASA in the Special Audit, it represents a culture of 'Reactive' at best.

The Safety Policy closes in stating:

Management and staff commitment to safety is crucial to our future as a leader in regional aviation. It is important that we maintain a 'Just' environment encouraging open and honest reporting of safety events or hazards. The Regional Express Group objective is to be a safety leader in regional airline operations, exceeding in most cases the legislative and regulatory requirements.

At the time of the accident, considering the amount of regulatory breaches found, this can only be taken as a 'motherhood' statement. Additionally, the actions of Pel-Air, CASA and the ATSB don't align with that of 'Just Culture'. The ATSB report does not discuss the SMS of Pel-Air.

## CONCLUSION

It is my firm belief that the pre-cursors of most accidents are known well before the accident. It is only when these pre-cursors align and trigger at the same time that an accident materialises. In the case of the Norfolk accident, the following were known factors prior to the accident, yet had not been addressed:

- Norfolk Island had a history of weather forecasting problems. This goes back 12 years as noted in an ATSB Recommendation in 2000.
- The Pel-Air Fatigue Risk Management System was inadequate for the task.
- The aircraft was non-RVSM and not suitable for flight in NZ and Fijian airspace. Almost a year prior to the accident in December 2008, Cpt James had written to Pel-Air highlighting the following deficiencies:

***"Sat phone was would have been REALLY handy on the last flight – we had planning issues and needed constant contact with Sam and the organ transplant people in flight – compelled to give ATC mobile phone numbers and messages on several occasions – apparently all we need is a subscription to get it going – I understand the hardware is fully serviceable" and,***

***"Had big issue with NZ ATC over not being RVSM again but needing to fly in RVSM airspace – I feel like we're on borrowed time with this one – soon they will just say no and put us down to 28 thousand – will be a big deal then"***

- Norfolk Island is unusual as it is in a foreign FIR (NZ). When Airservices Australia had a Flight Service Unit based in Norfolk, weather such as TAFs and SPECIs were passed onto aircraft by Flight Service. When Flight Service was disbanded, Norfolk Island was isolated.

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- UNICOM provided an opportunity for human weather observations at Norfolk in its initial concept. When UNICOM weather observer training was ceased, this further isolated Norfolk Island.
- Air Ambulance work existed in the category of aerial work and as it often involved passengers, patients and task specialists, it was not suited to this category. The ATSB and CASA have been discussing this for 10 years.
- The Westwind II was not suitable for this route due to its range limitations. If Pel-Air had planned to “island hop” via Nadi and Noumea, it would have been a much safer option.
- TCAS II and EGPWS had been fitted to the aircraft yet the PIC had not been trained in its use.
- Pel-Air had previously been banned for operations into Noumea airspace, yet the PIC had not been informed of the status of the ban.
- The Pel-Air Flight Training programme was inadequate in terms of emergency procedures, recurrency, checking and training in a multitude of critical areas.
- Flight simulators were not used for training purposes as it was with the parent company Rex Airlines.
- Aerial work operations did not require an alternate. Previous changes to the regulations involved the requirements for charter passenger carrying operations only.
- The Pel-Air aircraft was not equipped with SATCOM or SELCAL.

The ATSB have failed to address these issues in the context of the accident, and therefore have not established the criticality of the pre-cursors in the accident sequence. As a result, the industry won't benefit from the lessons of this accident. If the occupants of this aircraft had been killed, a coronial inquiry would have exposed this detail. I am at a loss to understand why the ATSB have compromised their own position, reputation, and aviation safety.

Additionally, the current DIP process is not achieving its goals and needs to be reviewed, along with consideration of quality control processes in the compilation of Draft and Final Reports. This is the only way the government can assure itself of the integrity and accuracy of accident reports.

In my 23 years in aviation safety I have never witnessed an accident report so mis-aligned, flawed and naive. However, more importantly, it is worthless in terms of improving aviation safety. It appears that a conclusion was reached by the ATSB after the accident and the report has been manipulated to meet that outcome. Of great concern for the government and travelling public, is that this is a retrograde step in aviation safety and needs to be addressed as a matter of urgency.

I'm happy to answer questions and discuss solutions and recommendations publicly or in-camera if required.

Mick Quinn  
12/10/2012



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## Appendix 1

### **Recommendation 1 – TSI Act objects**

A subtle but important amendment to the objects in the TSI Act is warranted. The TSI Act should be amended to make it clear that the primary object of the Act is to contribute to improved transport safety. The tasks referred to as current objects in section 7(1) should be a statement of the outcomes the Act is directed to in order to achieve that object.

### **Recommendation 2 – TSI Act objects: - requirement for co-operation**

TSI Act section 7(2) is inappropriately limited. It should provide that, in the performance of the Executive Director's powers and duties under the Act, the Executive Director is required to co-operate, in the interests of improved transport safety, with CASA, regardless of whether CASA has powers or responsibilities under another law of the Commonwealth to also investigate the matter under investigation by the ATSB. Furthermore, the objective of co-operating with CASA should not be limited to the period during which the ATSB is conducting an investigation.

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## **Recommendation 3 – Policy statements**

Consideration should be given to including in the TSI Act a provision to the effect that the Minister may issue policy statements from time-to-time setting out the Government's policy in relation to the administration of the TSI Act and its role in the Australian transport safety system. Any such policy statement should be general in nature and not relate to a specific investigation. If the ATSB remains a Division of the Department the policy statements should be directed to the Portfolio Secretary and the Executive Director should be required to act in accordance with them. If the Commission model is adopted the Minister's policy statements should be directed to the Commission.

## **Recommendation 4 – Policy development**

Primary responsibility for policy in relation to proposed amendments to the TSI Act and for Australia's policy positions at ICAO should be assumed by a policy Division within the Department, with that Division seeking input from the Executive Director and all other relevant stakeholders.

## **Recommendation 5 – ATSB governance**

If the current ATSB governance arrangements remain, there is merit in resolving ambiguities over the ATSB's roles and responsibilities within the Department. This should include:

- (a) the Executive Director, with the agreement of the Portfolio Secretary, appointing an expert peer review panel to review each draft and final investigation report and advise the Executive Director before the reports are issued. The TSI Act could subsequently be amended to provide for this if necessary;
- (b) administrative arrangements changing so that the position of Executive Director is filled for a fixed term, thereby reinforcing the autonomy and impartiality of that office in relation to accident and incident investigations; and
- (c) the memorandum setting out the Portfolio Secretary's expectations of the Executive Director being replaced with a new memorandum taking account of the matters set out above.

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## **Recommendation 6 – Alternative ATSB governance**

Although there are good reasons for the ATSB to remain in the Minister's portfolio, consideration should be given to changing the Executive Director's statutory role and responsibilities and improving the status of the ATSB by establishing an Australian Transport Safety Commission, based on the International Air Services Commission model. The Commission should have the following attributes:

- (a) the Commission should consist of three part-time commissioners with broad safety related experience, not all in the aviation field;
- (b) the Executive Director should be appointed by the Portfolio Secretary, after consultation with the commissioners, for a term of 3 years;
- (c) the Commission should be responsible for approving all draft and final investigation reports, but with power to delegate approval of less significant reports to one commissioner;
- (d) the current powers of the Executive Director in the TSI Act should reside in the Commission, with the normal power to delegate to appropriate levels within the ATSB; and
- (e) staff of the Commission, including the Executive Director, should be provided by the Department.

## **Recommendation 7 – Information sharing in the interests of safety**

The sharing of information between the Executive Director and CASA, where it is appropriate to do so in the interests of aviation safety, should be facilitated by:

- (a) recasting the definition of the term 'restricted information' in the TSI Act to limit its scope to the types of information referred to in Annex 13. As presently drafted the term is expressed in significantly broader terms than is appropriate in the interests of aviation safety because it results in information that should be available to CASA to take protective action (but not criminal or civil proceedings against individuals who provided information compulsorily). As defined the term 'restricted information' is also significantly broader than the Annex 13 standard (5.12) provides;
- (b) requiring the Executive Director to disclose restricted information to CASA where the Executive Director has reason to believe that there is a serious and imminent risk to air safety and the information is evidence of that risk. TSI Act section 61 should be amended accordingly;
- (c) entitling CASA, where it receives evidence from the Executive Director, to use the information as evidence to take protective action where there is a serious and imminent risk to air safety, but not for any other purpose. The CA Act should be amended accordingly; and
- (d) providing that, in cases where restricted information is disclosed to CASA to take protective action that requires CASA to present evidence to a court, the court should limit publication of that information to the parties and their representatives.

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## **Recommendation 8 – Inadmissibility of compelled evidence**

Evidence not publicly available, obtained by the Executive Director compulsorily under section 32 of the TSI Act, should continue to not be admissible against the individual providing the information in any civil or criminal proceedings but should otherwise be available in accordance with other recommendations in this Report.

## **Recommendation 9 – Court access to information**

The TSI Act should be amended to make it clear that:

- (a) section 7(3)(b) does not inhibit the Executive Director from sharing "restricted information" with the Department and CASA, in the interests of safety;
- (b) the court is entitled to consider whether restricted information should not be disclosed on the basis that it is likely to interfere with an active investigation, rather than the Executive Director being required to give the certificate provided for in section 60(4)(c)(i) before the court can consider the matter.

## **Recommendation 10 – Section 32 Notices**

- (a) Except in exceptional circumstances or when requested by CASA, the Executive Director should request information required from CASA for an investigation and expect CASA's full co-operation in identifying what is required and providing the information in a timely manner without the need for a Section 32 Notice.
- (b) CASA should co-operate fully in identifying what is required and providing the information in a timely manner where the ATSB advises CASA that it requires information from CASA in the course of an investigation into an aircraft accident or incident.
- (c) Where a Section 32 Notice is to be issued it should, except in exceptional circumstances, only be issued after discussion between the Executive Director and the Director of Aviation Safety.

## **Recommendation 11 – Building inter-agency understanding**

The ATSB and CASA should:

- (a) hold regular seminars involving ATSB and CASA staff at the operational level to consider agreed aviation safety issues, including the presentation of research outcomes;
- (b) exchange personnel with the main objective being that officers from both agencies obtain the benefit of the training and experience the other agency can offer; and
- (c) co-operation with joint research initiatives on matters relating to aviation safety.



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## **Recommendation 12 – ATSB/CASA executive meetings**

The ATSB and CASA should institute quarterly meetings at Executive level, with a positive agenda. Although the meetings should be strategic and forward-looking, they should also deal with emerging issues between the two agencies.

## **Recommendation 13 – ATSB Investigations and Reports**

- (a) During an investigation, where CASA has expertise that might be brought to bear on the likely causes of an accident or incident, the ATSB should utilise that expertise as its investigation progresses, whether by including CASA experts on the investigation team or by regular inter-agency consultations.
- (b) Before including safety recommendations in a draft report directed to regulatory changes CASA should make, the ATSB should discuss the proposed recommendations with CASA and take account of CASA's views, in order to ensure that the ATSB has taken account of all relevant issues that may impact on the relevance and practicality of its proposed recommendation.
- (c) Where CASA or any other interested party provides a substantive response to a draft report, the final report should contain a balanced explanation of substantive information or comments provided and the facts supporting them and should set out the Executive Director's reasons for accepting or rejecting the views expressed.
- (d) ATSB reports should speak for themselves. The ATSB should not continue the practice of including press releases in its reports and should give careful consideration to not issue substantive press releases on its reports.
- (e) Where the ATSB proposes to issue a substantive press release on an investigation report that refers to another portfolio agency it should provide a copy of the draft press release to the Department and the relevant agency in advance for comment.

## **Recommendation 14 – CASA's co-operation with ATSB investigations**

CASA should develop an internal system to ensure that it appropriately monitors and co-operates with ATSB investigations relevant to its regulatory functions and adequately resources those responsible for the system. If this is done there is no need for the Minister to issue a direction to CASA in that regard, but the opportunity exists to do so if required.

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## **Recommendation 15 – Monitoring ATSB safety recommendations**

- (a) Responsibility for registering, monitoring and reporting on progress with ATSB aviation safety recommendations should be assigned to another Division in the Department.
- (b) The Portfolio Secretary, or the appropriate Deputy Secretary, should convene a bi-annual meeting of the Executive Director of ATSB, the CEO/Deputy CEO of CASA and the CEO of AMSA to:
  - (i) receive reports on progress with all active safety recommendations;
  - (ii) note the reasons for closure of recommendations, including those found by the appropriate regulatory agency to be impractical or unfeasible;
  - (iii) share, to the extent desirable, information on current investigations and, perhaps, the safety research programs of CASA, AMSA and ATSB; and
  - (iv) report to the Minister on the “state” of ATSB safety recommendations so that he can form a view on the degree to which the regulatory agencies are pursuing implementation of safety recommendations and the degree to which ATSB is contributing to the improvement of transport safety.

## **Recommendation 16 - Coronial inquests**

- (a) Recognising that it is the Commonwealth, rather than the ATSB, that is entitled to seek leave to intervene in coronial inquests, decisions to retain counsel to appear for the Commonwealth in coronial enquiries should be the exception rather than the rule. The decision to do so should be made by a senior departmental officer, taking account of the views of the Executive Director and the Department's Legal Counsel.
- (b) Before CASA decides to instruct counsel to appear for it at a coronial inquest CASA should be required to inform the Portfolio Secretary. The Director of Aviation Safety should take account of the Portfolio Secretary's views in making the decision to seek leave to intervene or not.
- (c) CASA should regard itself as obliged to inform ATSB of any view it has, or evidence it proposes to present, suggesting that the ATSB may have overlooked relevant evidence or come to an incorrect expert opinion, prior to presenting the evidence or making the relevant submission to the coroner.

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## **Recommendation 17 – MOU**

The agencies should negotiate a new MOU and include matters such as:

- (a) a means of encouraging more day-to-day interaction between the agencies when serious accidents and incidents occur;
- (b) a review as to whether the current time periods for CASA responses to ATSB reports and safety recommendations should be more flexible, taking account of the need for timely investigation outcomes;
- (c) ways of enabling CASA personnel to obtain greater value from participation in ATSB investigations;
- (d) a mechanism for developing common safety messages in cases where the agencies have come to different expert views on the causes of the accident or incident;
- (e) provision for regular seminars involving the ATSB and CASA staff at the operational level to consider agreed aviation safety issues, including the presentation of research outcomes;
- (f) exchanges of personnel between the ATSB and CASA with the main objective being that officers from both agencies obtain the benefit of the training and experience the other agency can offer;
- (g) improved co-ordination of research initiatives and education programs on matters relating to aviation safety;
- (h) the information that CASA can expect to have disclosed to it the ATSB's confidential voluntary reporting scheme (REPCON);
- (i) guidance on the circumstances in which the Executive Director might be expected to provide information to CASA under the TSI Act and a mechanism for that to occur;
- (i) reviews of information holdings of both agencies to see whether greater sharing of data would be beneficial and feasible;
- (k) a review of the principles applied by the ATSB in seeking information from CASA (including a reduction in the number of requests for information under section 32 of the TSI Act);
- (l) discussion of legislative proposals in areas of interest to both agencies; and
- (m) provision for annual reviews of the MOU.

## **Recommendation 18 – CASA protocols**

CASA should develop clear internal protocols setting out the mechanisms for active co-operation with the ATSB, including clear lines of responsibility. CASA should allocate the necessary resources to ensuring that it co-operates fully with the ATSB, provides timely and appropriate feedback to ATSB draft investigation reports and safety recommendations.



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## **Recommendation 19 – Inter-agency meetings**

The ATSB and CASA should institute quarterly meetings at the Executive level, with a positive agenda including matters such as:

- (a) presentations on each agency's strategic direction and business/operational plans;
- (b) approval of operating protocols;
- (c) review of ATSB's research program;
- (d) review of CASA's progress in implementing or otherwise dealing with ATSB safety recommendations;
- (e) international visitor and staff exchange programmes; and
- (f) review of joint and individual research projects.

Although the meetings should be strategic and forward-looking, they should also deal with emerging issues between the two agencies.



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Appendix 2 ATSB Recommendation re Norfolk 2000

## Aviation safety issues and actions Recommendation issued to: Bureau Of Meteorology

Output No:

R20000040

Date Issued:

22 February 2000

Safety Action Status:

Background:

SUBJECT - RELIABILITY OF NORFOLK ISLAND FORECASTS

### SAFETY DEFICIENCY

The meteorological forecasts for Norfolk Island are not sufficiently reliable on some occasions to prevent pilots having to carry out unplanned diversions or holding.

### FACTUAL INFORMATION

#### Related Occurrences

During the period 1 January 1998 to 31 March 1999, occurrences involving unforecast or rapidly changing conditions at Norfolk Island reported to the Bureau included the following:

199801482

A British Aerospace 146 (BAe146) aircraft was conducting a regular public transport (RPT) passenger service from Sydney to Norfolk Island. The terminal area forecast (TAF) for Norfolk Island indicated that cloud cover would be 3 octas with a cloud base of 2,000 ft. Approaching Norfolk Island, the crew found that the area was completely overcast. After conducting an instrument approach, they determined that the cloud base was 600 ft, which was less than the alternate minima. Fuel for diversion to an alternate airfield was not carried on the flight because the forecast had not indicated any requirement.

199802796

Before a Piper Navajo Chieftain aircraft departed for an RPT passenger service from Lord Howe Island to Norfolk Island, the TAF for Norfolk Island did not require the carriage of additional fuel for holding or for diversion to an alternate airfield. Subsequently, the TAF was amended to require 30 minutes holding and then 60 minutes of holding. The pilot later advised that he became aware of the deteriorating weather at his destination only after he had passed the planned point of no return (PNR). However, the aircraft was carrying sufficient fuel to allow it to hold at Norfolk Island for 60 minutes. When the aircraft arrived in the Norfolk Island circuit area, the pilot assessed the

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conditions as unsuitable to land due to low cloud and rainshowers. After approximately 45 minutes of holding, the weather conditions improved sufficiently for the pilot to make a visual approach and landing.

199804317

A BAe146 aircraft was conducting an RPT passenger service from Brisbane to Norfolk Island. When the crew were planning the flight, the Norfolk Island TAF included a steady wind of 10 kt and thunderstorm conditions for periods of up to 60 minutes. Approximately 30 minutes after the aircraft departed, the TAF was amended to indicate a mean wind speed of 20 kt with gusts to 35 kt. As the aircraft approached its destination, the Unicom operator reported the wind as 36 kt with gusts to 45 kt. The crew attempted two approaches to runway 04 but conducted a go-around on each occasion because of mechanical turbulence and windshear. The pilot in command then elected to divert the aircraft to Auckland. The wind gusts at Norfolk Island did not decrease below 20 kt for a further 3 hours.

199900604

While flight planning for an RPT passenger service from Lord Howe Island to Norfolk Island, the pilot of a Piper Navajo Chieftain found that the TAF required the carriage of fuel sufficient for a diversion to an alternate aerodrome. As the aircraft was unable to carry sufficient fuel for the flight to Norfolk Island and then to an alternate aerodrome, the flight was postponed. Later in the day, the forecast was amended to require the carriage of 60 minutes of holding fuel and the flight departed carrying the additional fuel. Approximately 20 minutes after the aircraft departed Lord Howe Island and more than one hour before it reached its point of no return (PNR), the TAF was amended again to require the carriage of alternate fuel. The pilot did not request or receive this amended forecast and so continued the flight.

Following the flight's arrival overhead Norfolk Island, the pilot conducted a number of instrument approaches but was unable to land the aircraft due to the poor visibility. After being advised of further deteriorations in conditions, the pilot made an approach below the landing minima and landed in foggy conditions with a visibility of 800m. Subsequent investigation determined that the actual conditions at Norfolk Island were continuously below alternate minima for the period from 2.5 hours before the aircraft departed from Lord Howe Island until 6 hours after the aircraft landed.

## Meteorological information

The Norfolk Island Meteorological Observing Office, which is staffed by four observers, normally operates every day from 0400 until 2400 Norfolk Island time. When one or more observers are on leave, the hours are reduced to 0700 until 2400 daily. Hourly surface observations by the observers, or by an automatic weather station when the office is unmanned, are transmitted to the Sydney Forecasting Office where they are used as the basis for the production and amendment of TAFs and other forecasts.

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Weather conditions are assessed by instrument measurements, for example, wind strength, temperature and rainfall, or by visual observation when observers are on duty, for example, cloud cover and visibility. There is no weather-watch radar to allow the detection and tracking of showers, thunderstorms and frontal systems in the vicinity of the island. The wind-finding radar on Norfolk Island is used to track weather balloons to determine upper level winds six-hourly when observers are on duty. It cannot detect thunderstorms or rainshowers.

Pilots in the Norfolk Island area can contact the Met Office staff on a discrete frequency for information about the current weather conditions.

The reliability of meteorological forecasts is a factor in determining the fuel requirements. As forecasts cannot be 100% reliable, some additional fuel must be carried to cover deviations from forecast conditions.

A delay of one hour or more can exist between a change occurring in the weather conditions and advice of that change reaching a pilot. The change has to be detected by the observer or automatic weather station and the information passed to the Forecasting Office. After some analysis of the new information in conjunction with information from other sources, the forecaster may decide to amend the forecast. The new forecast is then issued to Airservices Australia and disseminated to the Air Traffic Services (ATS) staff who are in radio contact with the pilot. It is then the pilot's responsibility to request the latest forecast from ATS.

## Alternate minima

Alternate minima are a set of cloud base and visibility conditions which are published for each airfield that has a published instrument approach procedure. The alternate minima are based on the minimum descent altitude and minimum visibility of each of the available instrument approaches. When the forecast or actual conditions at an airfield decrease below the alternate minima, aircraft flying to that airfield must either carry fuel for flight to an alternate airfield or fuel to allow the aircraft to remain airborne until the weather improves sufficiently for a safe landing to be conducted.

A pilot flying an aircraft that arrives at a destination without alternate or holding fuel and then finds that the weather is below landing and alternate minima is potentially in a hazardous situation. The options available are:

1. to hold until the weather improves; however, the fuel may be exhausted before the conditions improve sufficiently to enable a safe landing to be made;
2. to ditch or force-land the aircraft away from the aerodrome in a area of improved weather conditions, if one exists; or
3. attempt to land in poor weather conditions.

All of these options have an unacceptable level of risk for public transport operations.

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The alternate minima for Norfolk Island are:

1. cloud base at or above 1,069 ft above mean sea level (AMSL) and visibility greater than 4.4 km for category A and B aircraft; and
2. cloud base at or above 1,169 ft AMSL and visibility greater than 6 km for category C aircraft.

The available alternate aerodromes for Norfolk Island are La Tontouta in Noumea (431 NM to the north), Lord Howe Island (484 NM to the south-west) and Auckland NZ (690 NM to the south-east). Lord Howe Island may not be suitable for many aircraft due to its short runway. Flight from Norfolk Island to an alternate aerodrome requires a large amount of fuel, which may not be carried unless required by forecast conditions or by regulations.

## Australian regulations

Prior to 1991, the then Civil Aviation Authority published specific requirements for flights to island destinations. For example, flights to Lord Howe Island were required to carry fuel for flight to an alternate aerodrome on the mainland Australia, and flights to Norfolk Island and Cocos Island, where no alternate aerodromes were available, were required to carry a minimum of 2 hours of holding fuel.

In 1991, Civil Aviation Regulation (CAR) 234 was enacted. This regulation provided that an aircraft would not commence a flight unless the pilot in command and the operator had taken reasonable steps to ensure that the aircraft was carrying sufficient fuel and oil to enable the proposed flight to be undertaken in safety. The regulation did not specify the method for determining what was sufficient fuel in any particular case. Civil Aviation Advisory Publication (CAAP) 234-1(0) dated March 1991, provided guidelines which set out one method that could be used to calculate fuel requirements that would satisfy CAR 234. CAAP 234-1 did not contain any special considerations or requirements when planning a flight to an island destination.

In August 1999, Civil Aviation Order 82.0 was amended to require all charter passenger-carrying flights to Norfolk Island and other remote islands to carry fuel for the flight to their destination and to an alternate aerodrome. The alternate aerodrome must not be located on a remote island. This requirement to carry additional fuel does not apply to regular public transport flights to a remote island.

## European Joint Aviation Regulation

The European Joint Aviation Regulation (Operations) 8.1.7.2 states: "at the planning stage, not all factors which could have an influence on the fuel used to the destination aerodrome can be foreseen. Consequently, contingency fuel is carried to compensate for ... deviations from forecast meteorological conditions."

## Traffic levels

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In February 2000, approximately 11 regular public transport aircraft land at Norfolk Island every week, including Boeing 737 and Fokker F100 aircraft. An additional 20 instrument flight rules and 12 visual flight rules flights are made to the island every week by a variety of business and general aviation aircraft.

## ANALYSIS

Reports to the Bureau, including those detailed in the factual information section above, indicate that the actual weather conditions at Norfolk Island have not been reliably forecast on a number of occasions. Current regulations do not require pilots of regular public transport aircraft to carry fuel reserves other than those dictated by the forecast weather conditions. The safety consequences of an unforecast deterioration in the weather at an isolated aerodrome like Norfolk Island may be serious.

The present level of reliability of meteorological forecasts and the current regulatory requirements are not providing an adequate level of safety for passenger-carrying services to Norfolk Island.

## SAFETY ACTION

As a result of these occurrences, the Civil Aviation Safety Authority has commenced a project to review the fuel requirements for flights to remote islands.

### Output Text

The Australian Transport Safety Bureau (formerly the Bureau of Air Safety Investigation) recommends that the Bureau of Meteorology should review the methods used and resources allocated to forecasting at Norfolk Island with a view to making the forecasts more reliable.

### Initial Response

#### Date Issued:

27 April 2000

#### Response from:

Bureau Of Meteorology

#### Response Status:

Closed - Accepted

#### Response Text:

In response to your letter of 25 February 2000 relating to Air Safety Recommendation 20000040 and the reliability of meteorological forecasts for Norfolk Island, the Bureau of Meteorology has explored a number of possible ways to increase the reliability of forecasts for flights to the Island.

There are several factors which determine the accuracy and reliability of the forecasts. The first is the quality and timeliness of the baseline observational data from Norfolk Island itself. The second is the information base (including both conventional surface observational data and information from meteorological satellites and other sources) in the larger Eastern Australia-Southwest Pacific region. The third is the overall scientific capability of the Bureau's forecast models and systems and, in particular, their skill in forecasting the behaviour of the highly localised influences which can impact on conditions on Norfolk Island. And the fourth relates to the speed and responsiveness with which critical information on changing weather conditions (forecast or observed) can be conveyed to those who need it for immediate decision making.

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As you are aware, the Bureau commits significant resources to maintaining its observing program at Norfolk Island. While the primary purpose of those observations is to support the overall large-scale monitoring and modelling of meteorological conditions in the Western Pacific, and the operation of the observing station is funded by the Bureau on that basis, it is staffed by highly trained observers with long experience in support of aviation. As far as is possible with available staff numbers, the observers are rostered to cover arrivals of regular flights and rosters are adjusted to cover the arrival of notified delayed flights.

The Norfolk Island Terminal Aerodrome Forecast (TAF) is produced by experienced professional meteorologists located in the Bureau's New South Wales Regional Forecasting Centre in Sydney. The terminal forecast provides predictions of wind, visibility, cloud amount and base height and weather routinely every six hours. Weather conditions are continuously monitored and the terminal forecast is amended as necessary in line with air safety requirements. The forecasters have full access to all the Bureau's synoptic meteorological data for the region and guidance material from both Australian and overseas prediction models. As part of the forecasting process, they continuously monitor all available information from the region including the observational data from Norfolk Island itself. When consideration of the latest observational data in the context of the overall meteorological situations suggests the need to modify the terminal forecast, amendments are issued as quickly as possible.

Despite the best efforts of the Bureau's observing and forecasting staff, it is clear that it is not always possible to get vital information to the right place as quickly as it is needed and the inherent scientific complexity of weather forecasting means that occasional serious forecast errors will continue to be unavoidable. That said, the Bureau has carefully reviewed the Norfolk Island situation in order to find ways of improving the accuracy and reliability of its forecasts for aviation through a range of short and longer-term means.

As part of its strategic research effort in forecast improvement, the Bureau of Meteorology Research Centre is undertaking a number of projects aimed at increasing scientific knowledge specifically applied to the provision of aviation weather services. Research projects are focussed on the detection and prediction of fog and low cloud and are based on extensive research into the science of numerical weather prediction. However, with the current level of scientific knowledge, the terminal forecasts for Norfolk Island cannot be expected to be reliable 100 percent of the time. Based on figures available for the period January 1998 to March 2000 (some 12 000 forecast hours), the Bureau's TAF verification system shows that for category A and B aircraft when conditions were forecast to be above the minima, the probability of encountering adverse weather conditions at Norfolk Island airport was 0.6%.

As part of its investigations, the Bureau has considered the installation of a weather watch radar facility at Norfolk Island with remote access in the NSW Regional Forecast Centre. Although routine radar coverage would enable the early detection of precipitation in the vicinity of the Island, investigations suggest that the impact of the radar images in improving forecast accuracy would be on the time-scale of one to two hours. This time frame is outside the point of no return for current aircraft servicing the route. It was concluded that the installation of a weather watch radar would be relatively expensive and would only partially address the forecast deficiencies identified in Air Safety Recommendation R20000040. The Bureau will however keep this option under review.

To increase the responsiveness of the terminal forecasts to changes in conditions at Norfolk Island,

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the Bureau has issued instructions to observing staff to ensure forecasters at the Sydney RFC are notified directly by telephone of any discrepancies between the current forecast and actual conditions. This arrangement will increase the responsiveness of the system particularly during periods of fluctuating conditions. In addition the Bureau has provided the aerodrome manager with access to a display of the latest observations to ensure the most up to date information is relayed to aircraft.

The Bureau is actively participating in the review of fuel requirements for flights to remote islands being undertaken by the Civil Aviation Safety Authority.

I regret the delay in replying to your letter but the Bureau has felt it important to look carefully at all aspects of the Norfolk Island forecast situation and consider the full range of possibilities for forecast improvement within the resources available to us. We will continue to work on forecast improvement for Norfolk Island as resources permit.

# Senate Inquiry - Aviation Accident Investigations

Appendix 3 French Authority (Noumea) ban of Pel-Air



MINISTÈRE DE L'ÉCOLOGIE, DE L'ÉNERGIE,  
DU DÉVELOPPEMENT DURABLE ET DE L'AMÉNAGEMENT DU TERRITOIRE

*Direction générale de l'aviation civile*

*Direction de la sécurité de l'Aviation civile*

*Direction navigabilité et opérations*

*Pôle surveillance activités internationales  
et qualité des opérations*

Reference: **09 - 195** / DSAC/NO

Case followed by :

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Tel. : +33 1 58 00 36 57 - Fax : +33 1 58 00 47 23

Subject : SAFA ramp inspection on PEL-AIR

Paris, le **27 FEV 2009**

Pel-Air Aviation Pty Ltd  
PO Box 807  
Mascot  
New South Wales 1460  
AUSTRALIE

Sir,

The air carrier Pel-Air operates emergency medical flights to New Caledonia, and more precisely to Noumea airport (NWWW), which is under the jurisdiction of the French authorities. As all the other foreign airlines operating on French airports, your airline can be inspected by the French DGAC to assess the implementation of ICAO requirements in the airline's operations (mainly Annexes 1, 6 and 8). Compliance with the requirements adopted by the International Civil Aviation Organization is a prerequisite for free international air transport operations, unless a specific waiver is granted by the foreign interested State.

The emergency medical flights performed by your airline fall under the general definition of ICAO, Annex 6, Part I (International Commercial Air Transport – Aeroplanes) for "Commercial air transport operation" which is: "An aircraft operation involving the transport of passengers, cargo or mail for remuneration or hire". According to Article 16 of the Chicago Convention foreign aircraft involved in international operations may be checked against the standards of ICAO by the local authority.

On February, 19<sup>th</sup> 2009, a ramp inspection performed on the Westwind 24 aircraft registered as VH-AJV operated by Pel-Air revealed that this aircraft was not equipped with an EGPWS or a GPWS, nor an ACAS II airborne collision avoidance system.

In accordance with the standards of ICAO, Annex 6, part I, chapter 6.15.4, "from January, 1<sup>st</sup> 2007, all turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5700kg or authorized to carry more than nine passengers, shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function".

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*In accordance with the requirements of IACO, Annex 6, part I, chapter 6.18.2, "from January, 1<sup>st</sup> 2005, all turbine-engined aeroplanes of a maximum certificated take-off mass in excess of 5700kg or authorized to carry more than nineteen passengers shall be equipped with an airborne collision avoidance system (ACAS II)".*

According to the above provisions, the West Wind 24 airplane registered VH-AJV operated by Pel-Air, which has a maximum certificated take-off mass in excess of 5700kg, should be equipped with an EGPWS and an ACAS II to perform international commercial transportation flights.

In accordance with the articles L 133-1 and L 133-3, paragraph d, of the French Civil Aviation Act, I regret to inform you that before any further operation over the French territory of the Westwind 24 airplane registered as VH-AJV is envisaged by Pel-Air, the DGAC should be submitted with a corrective action plan to restore full compliance of this aircraft with ICAO international standards, including the installation of EGPWS and ACAS II.

This restriction also applies to any other aircraft of your fleet which is not fitted with a proper and serviceable EGPWS and a proper and serviceable ACAS II in accordance with the above ICAO international.

I would appreciate receiving within 7 days, your position regarding these findings together with your corrective action plan to restore the compliance with ICAO as agreed by your civil aviation authority and the list of your aircraft, that could operated for International air transport services to the French territory, and for which you need a temporary exemption until the retrofit plan is completed.

Please note that the DGAC has the legal obligation in accordance with the European Regulation EC 2111/2005 to notify to the European Community any national ban of a foreign operator decided by the French authorities. This notification could lead the European Commission to take urgent measures and to study the case of Pel-Air in the frame of a potential update of the Community list of air carriers which are subject to an operating ban within the European Community.

Please be informed that by application of the individual defence rights provisions of the French administrative law, you may apply for a revocation of this decision within two months by judgement of the relevant French administrative court of justice.

Yours faithfully,

L'Ingénieur général des ports et chaussées

Directeur

Navigabilité et opérations

Bernard MARCOU

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**END**