

19 October 2012

Mr Stephen Palethorpe  
Committee Secretary  
Standing Committee on Rural and Regional Affairs and Transport  
Australian Senate  
PO Box 6100  
PARLIAMENT HOUSE CANBERRA 2600

Via email: [rrat.sen@aph.gov.au](mailto:rrat.sen@aph.gov.au)

Dear Mr Palethorpe

### **Aviation Accidents Investigations Inquiry**

I refer to your emailed correspondence of 17 October 2012 that included a copy of submissions to the committee from Mr Mick Quinn, Mr Bryan Aherne and Mr Gary Currall. In your accompanying letter, you provided the opportunity for the Australian Transport Safety Bureau (ATSB) to respond to these submissions, on the basis that they would be published by the committee and contained adverse comment. You also indicated that the committee would prefer to receive any response prior to the hearing and that any response received after the hearings would also be considered.

The ATSB has had regard to Mr Quinn's submission and provides the following response to what we consider the key points of the submission:

- **Operations in Reduced Vertical Separation Minimum (RVSM) airspace.** During the investigation, consideration was given to the implications for the flight of the aircraft not being RVSM capable. The evidence showed that there were no operational restrictions placed on the flight by air traffic control and the ATSB concluded that this was not a factor in the occurrence.
- **Difficulty receiving high frequency (HF) communications.** A review of recorded HF communications between Fiji air traffic control and the aircraft and of evidence obtained during a flight reconstruction indicated no issue with reception of those communications.
- **Regulatory requirement to uplift full fuel (tip tanks).** Civil Aviation Regulation 234 stipulated that the determination of the amount of fuel carried during a flight shall include consideration of the possibility of an engine failure and a loss of pressurisation. To take account of the possibility of these abnormal operations during the flight to Norfolk Island, the aircraft would have had to carry full fuel.
- **Civil Aviation Safety Authority (CASA) Special Audit Report.** The ATSB considered the CASA Special Audit report and relevant factual information and analysis resulting from that examination was included in the final investigation report. The effect of the ATSB's consideration of the CASA Special Audit Report on the investigation and report is listed in Appendix A, attached to this email.
- **Norfolk Island UNICOM.** The ATSB determined that the availability of UNICOM at Norfolk Island, and the provision of flight information service was not a factor in the occurrence.

In examining Mr Aherne's submission in detail, the ATSB acknowledges three minor errors of fact in the final investigation report. None were previously identified despite two directly involved party processes in an effort to ensure the accuracy of the report, nor are they material to the analysis and findings of the report. These typographical errors include:

- The Broken cloud base in the 0803 amended aerodrome forecast as reported on page seven of the report. The forecast base of this cloud was 1,000 ft.

- There being no requirement in the operations manual for the content of any training to be recorded. This requirement did exist in the operations manual.
- Pilots being unable to descend below the minimum descent altitude for a non-precision approach unless the weather is above the landing minima. This should state that descent is permitted if the weather is at or above the landing minima.

The ATSB will correct these errors as soon as possible. There does not appear to be anything in Mr Aherne's submission that requires comment in addition to the comments we have made on Mr Quinn's submission. If the Committee wishes to understand the ATSB's views on any specific matter raised by Mr Aherne, we are happy to address that during the hearing on Monday, 22 October 2012.

We have read Mr Currall's submission carefully and acknowledge the very traumatic experience suffered by all of the aircraft occupants that night. We have noted Mr Currall's comments and we will be happy to discuss their content with the committee as necessary.

Yours sincerely

**Martin Dolan**

Chief Commissioner

**Australian Transport Safety Bureau**

Australia's national transport safety investigator

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**CONSIDERATION OF THE CASA SPECIAL AUDIT REPORT AND ITS EFFECT ON THE FINAL INVESTIGATION REPORT**

| Audit finding  | Effect on the final instigation report  |
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| <p>Inadequate fuel policy for Westwind operations.</p> | <p>P25 of the report refers to CAR 220, highlighting that an operator also shares the responsibility for ensuring that sufficient fuel and oil is carried, and was required to include specific guidance for the computation of the fuel carried on each route in their operations manuals.</p> <p>Discussion of the operator’s fuel policy that appeared somewhat less than ideal included at:</p> <ul style="list-style-type: none"> <li>• P29 of the report, which highlighted a disparity between Parts A (9.11.2) and B (6.1.2) in respect of the calculation of critical points for use depending on the availability of critical or intermediate aerodromes.</li> <li>• Also in respect of abnormal operations, p29 of the report also highlights that aerodrome ‘criticality’ and ‘adequacy’ were not defined.</li> <li>• In addition, p30 of the report relates that whereas the operator’s planning methodology for determining the point of no return (PNR) was satisfactory for determining a return in the same configuration as the outbound leg but was not appropriate for a return leg where that leg had a higher fuel burn than that outbound.</li> <li>• Moreover, on p31 of the report, the lack of a definition for the term ‘marginal aerodrome’ is highlighted. This marginality (of the weather) at a destination was stipulated by the operator to require the calculation of a latest divert time by a pilot.</li> <li>• In respect of the requirement to declare an emergency if it became apparent that a landing would result with less than the fixed reserve, p31 of the report also identified that the operations manual did not state whether this fuel related to normal or abnormal operations from the least favourable position in the flight.</li> </ul> <p>Overall, the investigation’s concerns in regard to fuel planning and guidance for application to cases of in-flight deterioration of previously good destination weather go directly to the two</p> |

| Audit finding | Effect on the final instigation report   |
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|               | <p>safety issues at p43 of the investigation report. These safety issues identified that:</p> <ul style="list-style-type: none"> <li>• The available guidance on fuel planning and on seeking and applying en route weather updates was too general and increased the risk of inconsistent in-flight fuel management and decisions to divert. <i>[Minor safety issue]</i></li> <li>• The operator's procedures and flight planning guidance managed risk consistent with regulatory provisions but did not effectively minimise the risks associated with aeromedical operations to remote islands. <i>[Minor safety issue]</i></li> </ul> <p>In support of those findings:</p> <ul style="list-style-type: none"> <li>• On p26 of the report, the lack of guidance in the Aeronautical Information Publication (AIP) about the in-flight study of amended forecasts is highlighted. This included the lack of guidance of how and when to apply new aerodrome observations to the initial forecast-based decision on the need or otherwise for an alternate, or to a later decision about a possible diversion.</li> <li>• P31 of the report highlights that, although pilots were to calculate a last safe point of diversion if the weather at the planned destination became 'marginal' and the possibility of a safe approach and landing diminished, the term marginal was not defined.</li> <li>• In addition, p34 of the report observes that the ATPL(A) theory provided no specific guidance on what: <ul style="list-style-type: none"> <li>○ operational information to seek, or when it should be sought</li> <li>○ to do with updated operational information that may become available</li> <li>○ information could be sought en route that might influence the decision to continue to a destination.</li> </ul> </li> <li>• P35 of the report discussed that a number of operators whose operations manuals were examined as part of the investigation either had no guidance, or did not provide consistent guidance on the process to be used when crews were deciding whether to continue to a destination in circumstances similar to those affecting the flight to Norfolk Island.</li> <li>• On page 39 of the report (Analysis), the ATSB comments that there were no regulated requirements or operator procedures to inform the crew of when to obtain the most recent weather information in order to manage an un-forecast deterioration in the weather. It was concluded that this increased the risk of crews inadvertently continuing to an unsafe</li> </ul> |

| Audit finding  | Effect on the final instigation report  |
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|  | <p>destination.</p> <ul style="list-style-type: none"> <li>• Further, on p39 of the report (Analysis), the ATSB comments that the provision of: <ul style="list-style-type: none"> <li>○ clear and readily available guidance for seeking and applying amended en route weather and other information to in-flight operational decisions would assist pilots maintain proficiency in such in-flight decisions.</li> <li>○ more specific guidance, particularly in the case of flight to a remote island, would allow pilots to more consistently interpret and apply the intent of the existing regulatory and other requirements.</li> </ul> </li> </ul> <p>Safety action is reported in respect of these safety issues at pp 45 to 49 of the report.</p> <p>Of more concern for the investigation was the across-industry aspect of the first safety issue.</p> <p>Safety action by CASA is reported at pp 45 to 47 of the report to address this issue across-industry aspect.</p>   |
| <p>Pilots use their own planning tools and there is no control exercised by Pel-Air to ensure that the fuel figures entered are valid.</p> | <p>In this respect p32 of the report states that:</p> <ul style="list-style-type: none"> <li>• flight crews were expected to use their own methods, systems and tools for pre-flight planning in compliance with the provisions of the operations manual</li> <li>• it was reported that co-pilots modified their techniques to reflect the preferred methods of each pilot in command with whom they flew</li> <li>• there was no independent evidence to indicate that the operator routinely assured itself of the accuracy of pilot's international flight planning and forms or their in-flight navigation logs and crew's compliance with the operator's procedures.</li> </ul> <p>In addition, p37 (Analysis) states that no detailed and consistent methodology for carrying out flight planning was available. The comment was made in the report that this would explain flight crews applying their own individual methodologies and reports of copilots varying their techniques to suit respective pilots in command (PIC).</p> <p>Finally, p38 of the report (Analysis) comments that although not required by the operator's</p> |

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|   | <p>procedures, closer review of flight documentation and how it was being applied would have increased the likelihood that inconsistent interpretation and application Parts A and B of the operations manual concerning fuel management would have been identified.</p>  |
| <p>No policy to ensure that flight and fuel planning is cross checked to detect errors.</p> | <p>In p3 of the report, it is reported that the copilot did not, and was not required to participate in the flight planning.</p> <p>In addition, p32 of the report highlights that copilots modified their techniques to reflect the preferred methods of each pilot in command with whom they flew.</p> <p>Finally, on p38 of the report (Analysis) the ATSB observed that the development of the flight plan by the PIC without input from the copilot was in accordance with standard operating procedures. The report continued that this meant that the flight plan was developed by one person and not reviewed by the copilot for accuracy and compliance with requirements. The conclusion was drawn that this reduced the likelihood that any flight planning omissions or errors would be identified.</p> |
| <p>No alternate requirements specified for remote area and remote island operations.</p>    | <p>This is consistent with the observation on p32 of the report, which states that flight crews were expected to use their own methods, systems and tools for pre-flight planning in compliance with the provisions of the operations manual.</p>   |
| <p>Flight crews ignoring the operations manual requirement for 30-minute fuel checks.</p>   | <p>At p6 of the report, a pilot report is highlighted that once established at FL390, the pilot reviewed the fuel required for the remainder of the flight against the fuel remaining in the aircraft. This might imply at least 30-minute fuel reviews by the pilot.</p> <p>The operator's requirement for 30-minute fuel checks is discussed on p31 of the report.</p> <p>The issue of flight crews largely 'ignoring' the operator's 30-minute fuel check requirement could have been (at least in part) explained by the fact that there was no independent evidence to indicate that the operator routinely assured itself of the accuracy of pilot's international flight</p>   |

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|   | <p>planning and forms or their in-flight navigation logs and crew's compliance with the operator's procedures (see p32 of the report).</p> <p>P38 of the report (Analysis) comments that, although not required by the operator's procedures, closer review of flight documentation and how it was being applied would have increased the likelihood that inconsistent interpretation and application Parts A and B of the operations manual concerning fuel management would have been identified.</p>  |
| <p>No criteria specified in the operations manual in regard to obtaining weather updates.</p> | <p>This goes directly to the two safety issues at p43 of the investigation report, and is a wider responsibility than the operator alone. The safety issues identified stated that:</p> <ul style="list-style-type: none"> <li>• The available guidance on fuel planning and on seeking and applying en route weather updates was too general and increased the risk of inconsistent in-flight fuel management and decisions to divert. <i>[Minor safety issue]</i></li> <li>• The operator's procedures and flight planning guidance managed risk consistent with regulatory provisions but did not effectively minimise the risks associated with aeromedical operations to remote islands. <i>[Minor safety issue]</i></li> </ul> <p>In support of those findings:</p> <ul style="list-style-type: none"> <li>• On p26 of the report, the lack of guidance in the Aeronautical Information Publication (AIP) about the in-flight study of amended forecasts is highlighted. This included the lack of guidance of how and when to apply new aerodrome observations to the initial forecast-based decision on the need or otherwise for an alternate, or to a later decision about a possible diversion.</li> <li>• P31 of the report highlights that, although pilots were to calculate a last safe point of diversion if the weather at the planned destination became 'marginal' and the possibility of a safe approach and landing diminished, the term marginal was not defined.</li> <li>• In addition, p34 of the report observes that the ATPL(A) theory provided no specific guidance on what: <ul style="list-style-type: none"> <li>○ operational information to seek, or when it should be sought</li> <li>○ to do with updated operational information that may become available</li> </ul> </li> </ul> |

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|  | <ul style="list-style-type: none"> <li>○ information could be sought en route that might influence the decision to continue to a destination.</li> <li>● P35 of the report discussed that a number of operators whose operations manuals were examined as part of the investigation either had no guidance, or did not provide consistent guidance on the process to be used when crews were deciding whether to continue to a destination in circumstances similar to those affecting the flight to Norfolk Island.</li> <li>● On page 39 of the report (Analysis), the ATSB comments that there were no regulated requirements or operator procedures to inform the crew of when to obtain the most recent weather information in order to manage an un-forecast deterioration in the weather. It was concluded that this increased the risk of crews inadvertently continuing to an unsafe destination.</li> <li>● Further, on p39 of the report (Analysis), the ATSB comments that the provision of: <ul style="list-style-type: none"> <li>○ clear and readily available guidance for seeking and applying amended en route weather and other information to in-flight operational decisions would assist pilots maintain proficiency in such in-flight decisions.</li> <li>○ more specific guidance, particularly in the case of flight to a remote island, would allow pilots to more consistently interpret and apply the intent of the existing regulatory and other requirements.</li> </ul> </li> </ul> <p>Safety action is reported in respect of these safety issues at pp 45 to 49 of the report.</p> |
| <p>Variance and inappropriate timing among pilots in obtaining (in-flight?) weather advice to support decision-making.</p> | <p>Not specifically discussed in the report but realistically, this goes to the above discussion/justification in respect of the lack of available guidance on fuel planning and on seeking and applying en route weather updates. Given this lack of guidance, one might expect the variance and inappropriate timing among pilots in obtaining (in-flight?) weather advice to support decision-making as identified in the CASA special audit.</p> <p>Of more concern for the investigation was the apparent wider issue across industry as enunciated in the first safety issue as follows:</p> <p style="text-align: center;">The available guidance on fuel planning and on seeking and applying en route weather</p>  |



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|   | <p>updates was too general and increased the risk of inconsistent in-flight fuel management and decisions to divert. <i>[Minor safety issue]</i></p> <p>Safety action by CASA is reported at pp 45 to 47 of the report to address this issue across industry.</p>   |
| <p>No operational decision-making tools were provided to support crew when balancing aviation versus medical risks.</p>   | <p>There was no evidence that the medical nature of this occurrence contributed to the accident.</p>  |
| <p>Once tasked, pilots operated autonomously and made all decisions on behalf of the AOC and the AOC holder exercises little, if any, control over a task once commenced.</p> | <p>The nature of the aeromedical operation is highlighted at p4 of the report as follows:</p> <ul style="list-style-type: none"> <li>• It was not normal practice for crews to report to the operator if flights were progressing satisfactorily</li> <li>• In terms of a report from the flight crew that the operator did not normally monitor a flight as it progressed.</li> </ul> <p>In addition, at p32 of the report, it was highlighted that there was no independent evidence to indicate that the operator routinely assured itself of the accuracy of pilot's international flight planning and forms or their in-flight navigation logs and crews' compliance with the operator's procedures. This would suggest a somewhat hands-off approach by the operator.</p> <p>Similarly, on p38 (Analysis), the report notes that there was significant variation in pre-flight planning procedures by flight crews that would have made it more difficult for the operator to oversee the consistent conduct of flights. The report also highlights that, although not required by the operator's procedures, closer review of flight documentation and how it was being applied would have increased the likelihood that inconsistent interpretation and application Parts A and B of the operations manual concerning fuel management would have been</p> |

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|   | <p>identified.</p> <p>Again, at p39 (Analysis) of the report, it is highlighted that there was a lack of regulated requirements or operator procedures to inform the crew of when to obtain the most recent weather information in order to manage an un-forecast deterioration in the weather. This increased the risk of crews inadvertently continuing to an unsafe destination. P40 of the report (Analysis) introduces the across-industry nature of this lack of guidance.</p> <p>In turn, this lack of guidance as it might affect distant operations gave effect to the two safety issue at p43 of the report and safety action was reported by the operator in pp48 to 49 of the report.</p>   |
| <p>No provision by the operator of domestic charts or publications to pilots, or action by the operator to ensure that pilots maintained a current set.</p> | <p>P16 of the Special Audit Report notes that international flights are provided with an International Trip Pack, which includes Jeppesen charts and instrument approach plates for the flight.</p>   |
| <p>Failure by the operator to maintain or check flight records.</p>   | <p>The comment is made on p32 of the report that there was no independent evidence to indicate that the operator routinely assured itself of the accuracy of pilot's international flight planning and forms or their in-flight navigation logs and crew's compliance with the operator's procedures.</p> <p>In addition, p38 of the report (Analysis) highlighted significant variation in pre-flight planning procedures by flight crews that would have made it difficult for the operator to oversee the consistent conduct of flights. The report then observed that, although not required by the operator's procedures, closer review of flight documentation and how it was being applied would have increased the likelihood that inconsistent interpretation and application Parts A and B of</p> |

| Audit finding  | Effect on the final instigation report   |
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|  | the operations manual concerning fuel management would have been identified.   |
| Use by pilots of their own flight planning tools with no control by the operator to ensure the validity of the data. | <p>In this respect p32 of the report states that:</p> <ul style="list-style-type: none"> <li>• flight crews were expected to use their own methods, systems and tools for pre-flight planning in compliance with the provisions of the operations manual</li> <li>• it was reported that copilots modified their techniques to reflect the preferred methods of each pilot in command with whom they flew</li> <li>• there was no independent evidence to indicate that the operator routinely assured itself of the accuracy of pilot's international flight planning and forms or their in-flight navigation logs and crew's compliance with the operator's procedures.</li> </ul> <p>In addition, p37 (Analysis) states that no detailed and consistent methodology for carrying out flight planning was available. The comment was made in the report that this would explain flight crews applying their own individual methodologies and reports of copilots varying their techniques to suit respective pilots in command (PIC).</p> <p>P38 of the report (Analysis) also comments that although not required by the operator's procedures, closer review of flight documentation and how it was being applied would have increased the likelihood that inconsistent interpretation and application Parts A and B of the operations manual concerning fuel management would have been identified.</p> <p>Finally, the operator's flight planning guidance, which included the need for own planning tool methodologies by pilots formed part of the second safety issue on p43 of the report:</p> <p style="padding-left: 40px;">The operator's procedures and flight planning guidance managed risk consistent with regulatory provisions but did not effectively minimise the risks associated with aeromedical operations to remote islands. <i>[Minor safety issue]</i></p> <p>Operator safety action in response to this safety issue is reported at pp48 to 49 of the report.</p> |

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| <p>Inadequate CAO 20.11 training (life raft refresher and emergency exit training deficient).</p> | <p>The pilot's (conducted 27 April 2008) and copilot's (19 April 2008) last CAO 20.11 emergency training were each out of date as shown on pp13 to 14 of the report. However, the crew and passengers' exit from the aircraft in particularly difficult circumstances were discussed in pp20 to 23. In particular, on p20, the crew and medical staff each stated that their ditching training assisted in their escape from the aircraft.</p> <p>Subsequently, the benefits from the completion of wet drill and HUET training in facilitating exit from the sinking aircraft is described at pp40 and 41 (Analysis) of the report – as is the degree of good fortune enjoyed by the occupants.</p> <p>The benefit described by the flight and medical crew of their previous completion of wet drills and HUET is also listed as an Other key finding on p43 (Findings) of the report.</p>   |
| <p>Inadequate documentation of training programs.</p>   | <p>The requirements for post-endorsement training to be completed before a pilot could undertake aerial work were reported at p13 of the report. At p14 of the report, it was highlighted that the ATSB was unable to independently confirm the extent of the pilot in command's post-endorsement training.</p> <p>In addition, on p 32 of the report the ATSB commented on the content and recording of pilot proficiency checks. In this respect, the ATSB observed that:</p> <ul style="list-style-type: none"> <li>• there was no independent evidence to confirm that the operator routinely assessed pilots' processes for calculating/updating PNRs en route and their application of that revised data to their alternate decision making</li> <li>• this was consistent with the requirements of the operations manual, which did not require all elements of a proficiency check to be recorded as having been carried out.</li> </ul> <p>Finally, on p40 (Analysis) of the report, the ATSB states that, in the absence of any independent record of post-endorsement training or proficiency checks of the pilot's knowledge in terms of the calculation and application of CPs and PNRs, it was unable to independently determine the</p> |

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|   | <p>PIC's ongoing exposure to, and application of those requirements in the Westwind. The ATSB suggested that the provision of clear and readily available guidance for seeking and applying amended en route weather and other information to in-flight operational decisions would assist pilots maintain proficiency in such in-flight decisions.</p> <p>The lack of readily available guidance material for reference by pilots and operators formed part of the justification for the safety issue at p43 of the report as follows:</p> <p style="padding-left: 40px;">The available guidance on fuel planning and on seeking and applying en route weather updates was too general and increased the risk of inconsistent in-flight fuel management and decisions to divert. <i>[Minor safety issue]</i></p> <p>Safety action in response to this safety issue was reported at pp45 to 47 of the report.</p> |
| <p>Inadequate training records for pilot endorsement and progression.</p> | <p>Training records were examined for the pilot's endorsement, copilot and first officer line training, flight in command under supervision flying training, and line check on the Westwind.</p> <p>Training records were examined for the copilot's endorsement, check to line as first officer, ground training in the Westwind, in command under supervision training.</p>   |
| <p>Inadequate records of remedial training.</p>                           | <p>Relevant remedial training records were examined as they have related to the crew.</p>   |
| <p>Deficiencies in training records.</p>                                  | <p>The ATSB outlined at p13 of the investigation report those elements of post-endorsement training that were to be completed before a pilot could undertake aerial work. At p14 of the report, it was highlighted that the ATSB was unable to independently confirm the extent of the pilot in command's post-endorsement training.</p> <p>In addition, on p 32 of the report the ATSB commented on the content and recording of pilot</p>   |

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|               | <p>proficiency checks. In this respect, the ATSB observed that:</p> <ul style="list-style-type: none"> <li>• there was no independent evidence to confirm that the operator routinely assessed pilots' processes for calculating/updating PNRs en route and their application of that revised data to their alternate decision making</li> <li>• this was consistent with the requirements of the operations manual, which did not require all elements of a proficiency check to be recorded as having been carried out.</li> </ul> <p>Finally, on p40 (Analysis) of the report, the ATSB states that, in the absence of any independent record of post-endorsement training or proficiency checks of the pilot's knowledge in terms of the calculation and application of CPs and PNRs, it was unable to independently determine the PIC's ongoing exposure to, and application of those requirements in the Westwind. The ATSB suggested that the provision of clear and readily available guidance for seeking and applying amended en route weather and other information to in-flight operational decisions would assist pilots maintain proficiency in such in-flight decisions.</p> <p>The lack of readily available guidance material for reference by pilots and operators formed part of the justification for the safety issue at p43 of the report as follows:</p> <p style="padding-left: 40px;">The available guidance on fuel planning and on seeking and applying en route weather updates was too general and increased the risk of inconsistent in-flight fuel management and decisions to divert. <i>[Minor safety issue]</i></p> <p>Safety action in response to this safety issue was reported at pp45 to 47 of the report.</p> |