Australian Government

Civil Aviation Safety Authority

OPERATIONS DIVISION

MINUTE

DATE: 1 August 2010

TO: John McCormick DAS

THROUGH: Terry Farquharson DDAS
CASA Legal Officer

FROM: CASA Operations Officer

SUBJECT: **PELAIR – OVERSIGHT ("The Chambers") REPORT**

Background

On 18 November 2009, Israel 1124 Westwind VH-NGA (contracted to Careflight) was conducting an air ambulance flight in the Aerial Work category from Apia in Western Samoa to Australia with a planned refuelling stop at Norfolk Island.

The crew of the aircraft circled Norfolk Island due to bad weather and conducted several instrument approaches without success. The aircraft was approaching a fuel critical state when the crew conducted a ditching near Norfolk Island. The ditching was successful and the six persons on board vacated the aircraft and were subsequently rescued.

CASA Actions

Following the loss of the aircraft, a special audit was conducted which examined various elements of the operation of Pelair.

The CASA Reviewing Officer was also requested to provide an introspective report on "lessons learned: from a regulatory oversight perspective.

This report, referred to in Operations as "the Chambers Report" is attached for consideration of the Directorate.

CASA Operations Officer

Australian Government
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Oversight Deficiencies – Pel-Air and Beyond

1 Executive Summary

The accident of IAI Westwind VH-NGA triggered a special audit by CASA of Pel-Air Aviation Pty Ltd. The findings of the audit identified serious deficiencies within the AOC. Further it raised the question of the veracity of the oversight conducted by CASA and also questions the effectiveness of current oversight policies, surveillance tools and available resources. The effectiveness of the oversight system is critical as CASA is responsible for the oversight of more than 850 Air Operator Certificates and 650 Certificates of Approval in Australia.

In reviewing the findings of the special audit, it appears as if there were indicators that could have identified that the Pel-Air Westwind operation was at an elevated risk and warranted more frequent and intensive surveillance and intervention strategies. It was also apparent that the data systems, training, surveillance tools, resources and inspector capability showed varying degrees of inadequacy and contributed to Bankstown Operations and CASA's inability to fully understand the operator's risk exposure and consequently to intervene to ensure the operator reduced the risk appropriately.

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

2 Background

On 18 November 2009, Israel 1124 Westwind VH-NGA (contracted to Careflight) was conducting an air ambulance flight in the Aerial Work category from Apia in Western Samoa to Australia with a planned refuelling stop at Norfolk Island. The crew of the aircraft circled Norfolk Island due to bad weather and conducted several instrument approaches without success. The aircraft was approaching a fuel critical state when the crew conducted a ditching near Norfolk Island. The ditching was successful and the six persons on board vacated the aircraft and were subsequently rescued

2.1 Pel-Air Aviation Pty Ltd

Pel-Air Aviation Pty Limited (Pel-Air) is a wholly owned subsidiary of Regional Express Pty Ltd (REX). The company was formed from the merger of two AOCs held by the 'Pel-Air' entities, Pel Air Express Pty Ltd (turbo-prop) and Doskite Pty Ltd (jet operations). This merger was part of the acquisition process by REX in late 2006 and resulted in a new AOC being issued to Pel-Air Aviation Pty Ltd – the 'Pel-air' entity that holds the Certificate of Approval organisation.

The Pel-Air operations are conducted in three distinct elements:

- Turbo-prop operations based in Queensland and South Australia conducting freight operations as well as passenger charter that include fly-in fly-out support to mining operations.
- Westwind 'civil jet' operations based in Sydney conducting medical transfer flights for Careflight and ad hoc charter operations.
- Lear and Westwind 'military jet' operations based in Nowra conducting tactical mission simulation including target towing (Lear) and ad hoc charter (Westwind) for the Australian Defence Force.

2.1.1 Air Operator Certificate

The Pel-Air Aviation Pty Ltd Air Operator's Certificate (AOC) authorises domestic and international Charter and Aerial Work operations permitting operation to any region of the globe. The AOC authorises operations with the following aircraft:

- Fairchild SA227 (currently operating two freight and four passenger aircraft)
- Gates Lear Jet 35/36 (four)
- Israel 1124 Westwind (nine)
- SAAB 340 (three configured for freight and two for passenger)

2.1.2 Maintenance Organisation

Pel-Air Aviation Pty Ltd has a certificate of approval that authorises maintenance to be conducted on the various aircraft types operated under the AOC except the Saab 340. The primary maintenance facility is Nowra with additional locations at Sydney, Brisbane and Darwin. The Saab 340 aircraft are maintained by Regional Express – Pel-Air's parent company.

2.1.3 Previous Accident History

On 10 October 1985 Westwind VH-IWJ with two crew on board crashed into the sea during a night time departure from Sydney. The crew were conducting a training exercise (limited panel) during departure. An existing defect of the pilots turn indicator combined with the limited panel are believed to be contributing factors in the crew losing control of the aircraft.

On 27 April 1995 Westwind VH-AJS with two crew and a company pilot as a passenger, crashed during a night approach to Alice Springs. The crew was conducting a practice locator/NDB approach to Alice Springs, at night, in clear moonless conditions. The crew had descended to the incorrect minimum descent altitude before reaching the appropriate sector of the approach subsequently the aircraft struck the top of the Ilparpa Range and was destroyed.

2.1.4 Oversighting Office

Since the formation of the single AOC the oversight of Pel-Air has been under the responsibility of CASA's Bankstown office.

Prior to the formation of the single AOC the oversight of the turbo-prop operation (Pel-Air Express) was the responsibility of the Brisbane Air Transport Office (BATFO) while the jet operation (Doskite Pty Ltd) was the responsibility of Sydney Region Office Bankstown.

2.2 Special Audit

The scope of the special audit focused on the factors of the accident flight. The audit team was a multi disciplinary team consisting of an Operations Manager, FOI Team Leader, Flying Operations Inspectors, Airworthiness Inspectors, Air Transport Inspectors and a Human Factors Specialist (16 CASA staff were committed to the audit).

The audit team approach was based on the SPM using the Management System Model and commenced with a review of the AOC systems, interviews of key personnel and review of records. The audit team formed a view that the systems were sound and while a number of breaches were identified in the records these were not found to be significant.

Interviews with line pilots were conducted to determine if they were familiar with, understood and complied with the companies operating requirements and legislation. A standard questionnaire was developed and used by the team to conduct the interviews. This process revealed deficiencies within the Westwind operation and identified key markers for subsequent investigation.

3 CASA Oversight

The Pel-Air AOC authorised LCRPT (Freight Only), Passenger Charter and Aerial Work functions (EMS & Target Towing). The surveillance planning matrix in use in the Sydney Region Office is the GA Interim Surveillance Program. The record of surveillance conducted is maintained in the ASSP[1] data base with the detailed information retained on file.

The planning matrix required a Systems Audit to be performed once every three years, a site inspection annually, and the Safety Trend Indicator (STI) every 6 months. STIs are conducted as a desktop exercise by phone with alternate STIs conducted on site. The planning matrix also specifies that CASA observe 5% of CAR217 proficiency checks but not less than 1 proficiency check per year. In-flight surveillance and ramp checks are not specifically scheduled however they are to be conducted on an opportunity basis.

Operational surveillance has generally been conducted on Check pilots for rating renewals or for the initial assessment of Check & Training or supervisory pilots.

The recording of surveillance events is inconsistent depending on the nature of the task. Audits, STIs, Site Inspections and Operational surveillance are recorded in the surveillance system data base (ASSP). Initial Check, Training or Supervisory assessments or instrument rating renewal are recorded in the regulatory service system (eRoom JMS) however they form an integral part of operational surveillance.

A Flying Operations Inspector is assigned responsibility for day to day oversight of Pel-Air. Each Inspector is assigned between 25 and 30 AOCs to oversight. Additional Inspectors are assigned to specifically assist on audits and for the 2007 and 2008 audits 3 inspectors were utilised. This compares to 16 utilised for the 2009 audit following the ditching of VH-NGA.

[1] Aviation Safety Surveillance Program

The oversighting office had available type specialists for the Metro and Lear aircraft however the type specialist for the Westwind and Saab 340 are located in Darwin and Mascot offices. Historically type specialists from the other offices were underutilised in the surveillance role however they were used for regulatory service tasks specific to the type.

The following table depicts the AOC surveillance for the period 2005 to 2010.

	STI	Site Inspection	Audit[2]	Operational Surveillance	Reg Service based Operational Surveillance	Reg Service CAR 217 Manual Assessments
2005	4			7		
2006	0	1	1	2	1	1
2007	2		1	8	5	1
2008	1		1	2	11	2
2009	2		1	2	8	
2010	1			2	5	
Total	10	1	4	23	30	4

Surveillance Events[3] 2005 to 2010[4]

The surveillance activity over the previous five years included Entry Control for the issue of the combined AOC in 2006, audits in 2007 and 2008, 46 Operational surveillance events (21 surveillance and 25 regulatory service initiated events) and 9 Safety Trend Indicator assessments. During this period a total of 31 Requests for Corrective Action and one Safety Alert were issued in relation to breaches within the AOC. The key findings were in the Fatigue Risk Management System and the Training and Checking System. Significantly there is no record of operational surveillance of line flight crew rather all operational surveillance related to Check and Training personnel.

During the audit of 2008 the audit team identified that company pilots had not received training in the Fatigue Risk Management System (FRMS). A Safety Alert was issued and the company ceased operations for 6 days while the training deficiency was addressed.

As result of the failure of the company to provide FRMS training and the identified deficiencies in training and checking, CASA considered action against the then Chief Pilot. CASA advised the company executive that action was being considered and the company made the decision to replace the incumbent and a new Chief Pilot was subsequently approved.

During 2009 concerns were again raised by CASA with the company executive regarding two occurrences where the training and checking functions were not being conducted to the level of quality and with due regard to CASAs expectations. In both cases regulatory breaches were not identified rather it was the attitudinal approach

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[2] 2006 - Entry Control for the combining of the AOCs. 2007 - Scheduled 3 yearly systems audit. 2008 and 2009 risk based audits.

[3] Surveillance event data drawn from ASSP surveillance data base and eRoom JMS. This includes the following chargeable regulatory service tasks – Check Pilot, Training Pilot and Supervisory Pilot approvals; Instrument Rating renewal; and variation to CAR 217 Training System.

[4] The Doskite Pty Ltd and Pel-Air Express Pty Ltd AOCs were combined to form the Pel-Air Aviation Pty Ltd AOC in October 2006.

taken by the Check captains that was in question. The company counselled the Check captains and subsequent operational surveillance showed that the concerns were being addressed.

3.1 CASA's Knowledge of Pel-Air Operations

The Pel-Air AOC permits world wide Charter and Aerial Work operations without limitations. CASA requires the company to have appropriate systems in place for the approved scope of the operations however CASA does not require the AOC holder to provide specific route information for Charter or Aerial Work functions.

Sydney Region uses the Assigned Inspector method of managing the Oversight of the AOC. Over the past 5 years four different Inspectors were assigned to the operator at one time or another. The currently assigned Inspector was familiar with the AOC systems, had a good relationship and regular contact with key personnel, and had a general understanding of the routes flown. As the company was not required to provide specific route information the Inspector and consequently the office had an incomplete understanding of the range of operations. This resulted in the oversighting office's inability to fully assess the extent of the operation and to conduct surveillance accordingly.

For example the oversighting office was not aware that the company conducted operations over the route of the accident flight prior to the accident. It was also discovered after the accident that the Westwind fleet operated to locations such as Papua New Guinea highlands, Guam, Cocos Island, Christmas Island as well as many of the Pacific Islands popular with Australian holiday makers. Further it was understood that the Medivac operation was a small albeit an expanding part of the Westwind operation however subsequent to the accident it became evident that the majority of the Westwind operations were medivac as the company were no longer conducting RPT Freight.

The relative familiarity with the company and key personnel resulted in a sense that CASA had detailed knowledge of the actual operations however this clearly was not the case. Ultimately CASA was not in a position to accurately assess oversight requirements without the understanding of the true nature of the operation.

4 Oversight Deficiencies

CASA utilises the systems approach to auditing with policy and guidance contained in the Surveillance Procedures Manual (SPM). The SPM applies the Management System Model to the auditing process and requires that each element of the system be assessed by the four attributes being Management Responsibility, Infrastructure, Process in Practice and Monitoring and Improvement. The systems approach is essential to ensure that operators have effective management systems in place and that those systems are being utilised and produce the required outcome – that is control of the operation to the required safety and regulatory standards, and that they appropriately managed their risk.

However this model of auditing has proved to be resource intensive and the required level of resources for effective systems auditing has not been available for the number of AOCs oversighted in a General Aviation office. Following the introduction of the Surveillance Procedures Manual processes in 2004 the resource availability was acknowledged and subsequently the GA Interim Surveillance Program was approved. This utilised the SPM Systems approach for complex organisations with

frequency determined by passenger carrying activity. Less complex organisations were subject to the Functional Surveillance model that is essentially a compliance auditing process.

This approach acknowledged the resource constraints present in General Aviation Offices however it also contributed to the failure to embrace a systems approach to surveillance.

Where systems audits are implemented (as in the case of Pel-Air) the genuine resource constraints continue to impact upon the outcome of the surveillance process. Typically this sees a significant portion of the audit time devoted to reviewing Ops Manuals, interviewing key personnel regarding the systems and reviewing flight & duty and training & checking records. These tasks are very important as part of the review of the system design and confirming from records that the systems are being applied however the effectiveness of this approach is not measured and therefore uncertain as the Pel-Air experience demonstrates.

4.1 Interaction with Key Personnel and Line Staff

The element of systems auditing that receives the least attention is Process in Practice. Typically little audit time is spent with line personnel to evaluate the application of the systems and processes at the working level. The special audit of Pel-Air highlighted that significantly more time needs to be spent with line personnel as it was the interviews with line pilots following the accident that identified that the systems and processes were not being used or were not effective to produce the desired safety outcome.

Process in practice is product checking with a clear purpose. It is not and should never be a tick and flick exercise to complete a surveillance checklist. It is a qualitative assessment to determine that the systems implemented by the company are producing the desired safety outcome. This check determines compliance with the systems by line personnel. For line personnel to be compliant they must first know and understand the systems and apply them in practice. This was considered to be a key failing in Pel-Air and was only evident through interviews with line pilots.

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

Interviews with line staff were the most influential factor in identifying the failings within the Pel-Air AOC. The use of a standard questionnaire produced consistent results from the audit process with line staff. This needs to be addressed in surveillance methodology in the upcoming review of CASA's oversight methodology.

If a systems audit is conducted with inadequate product checking CASA is unable to genuinely confirm that the operator is managing their risks effectively. It is also essential that the product check is conducted with line personnel and not management staff or key personnel such as check pilots. Management and specialist personnel such as Check and Training pilots are most familiar with the systems therefore they will be able to provide the best practically informed answers to CASA auditing however line personnel are only able to do this if they are actually using the system correctly.

4.2 Inspector Capability & Performance

The capability and performance of the technical inspectors is a significant factor in the effectiveness of CASAs oversight of industry. Technical Inspectors are primarily recruited for their technical competency however this approach leaves open the potential for Inspectors to join the organisation who although they may be technical competent, may not have the additional competencies required to deal with the complexity of the role.

An inspector needs to have a level of investigative skill to drill down to find the deficiencies that are genuinely serious and are often complex. Not all inspectors have this capability and it seems that this characteristic is assumed to exist in an inspector. Inspectors need the capability to deal with a variety of difficult circumstances including conflict situations that often arise during the surveillance process. The question arises whether the recruiting process places sufficient weight on the "soft skills" or if the screening is sufficient to identify significant shortcomings in those skills.

4.2.1 Scratching the Surface

CASA is concerned that in some of our oversight activities, we may be merely scratching the surface. A cohort of CASA's inspectors complete the surveillance task to schedule, however they only issue few and somewhat benign findings. This approach meets scheduled surveillance targets however the veracity of the surveillance is in doubt.

Some inspectors appear to display an aversion for conflict and this seems to be a factor in CASA's activities. When inspectors investigate thoroughly and expose deficiencies this can and often does lead to conflict with the operator. For those who manage conflict well they are readily equipped to deal with these situations however many people naturally avoid conflict and inspectors are no different. In a surveillance situation this can be detrimental to identifying the significant safety deficiencies that may exist.

This situation becomes evident when a different inspector takes over surveillance and investigates thoroughly to find serious flaws that should have been evident to the previous inspector. In the worst case an accident occurs and the subsequent investigation identifies the failures of the organisation that were pre-existing.

The capability and willingness of inspectors to deal with conflict should be assessed during the recruitment process. The OPIC testing needs to be reviewed to determine if it provides sufficient markers to identify if an individual has the tendency to avoid conflict. Further current inspectors should be appropriately skilled in this area.

Further the "scratching the surface" approach avoids overwork. When an inspector digs deep into an operation the type of issues discovered are generally more complex and can go to the heart of a business. Dealing with deep seated issues takes significant time and effort to document the evidence, conduct the reporting and follow up to ensure the deficiencies are corrected . Such situations are often the source of conflict between the inspector and the company.

For the inspector who only scratches the surface conflict situations rarely arise and this ensures the job remains enjoyable. Unfortunately for CASA and aviation safety this is counterproductive as ultimately this approach will fail to provide adequate oversight.

It is not uncommon that such an Inspector may actually be seen as an asset without recognising the shortcomings. Such inspectors are those most likely to meet their assigned surveillance targets and are often successful at completing urgent tasks. An office that has 1 or 2 such inspectors has the potential to have anywhere from 25 to 50 operators whose oversight may be inadequate or incomplete.

4.2.2 Training and Assessment

An Inspector who has been selected, appropriately trained, mentored and assessed to the required level of performance is capable of conducting surveillance to the standard required. There are many Inspectors within CASA who have not received the required training or who have not been formally assessed as competent in the role.

Inadequate training, lack of formal standards, and no formal assessment process results in variable levels of competency that leads to inconsistent surveillance outcomes. CASA is reliant on the capability of the inspector to detect deficiencies during the audit process. While CASA does not have specified qualitative standards that are expected of inspectors and there is no formal assessment of performance CASA will continue to experience inconsistent results in surveillance with the risk that significant deficiencies will go undetected.

The capability of Inspectors to perform oversight to the required standards is not easily measured. A significant proportion of surveillance in general aviation is conducted unaccompanied while lesser amount is conducted in teams. This situation permits inspectors to operate to their own quality standards and these vary considerably.

The ability to apply measures is limited to such things as the number of findings issued, the time taken to complete surveillance tasks and the quality of the reporting. It is arguable to what extent these measures can be relied upon to measure overall quality of surveillance by an individual inspector. These measures have more to do with measuring efficiency than quality. Consequently CASA must pursue improvements in the measurement of the quality of the inspector's surveillance performance and this is essential to ensure that our surveillance is effectively and performed consistently between Inspectors and Offices

There is a need to periodically measure Inspector's surveillance practices to ensure that they meet appropriate quality standards. As CASA develops the risk assessment processes within the surveillance activity the importance of surveillance quality will increase. Failure to ensure appropriate quality and consistency when conducting risk assessments will affect the reliability of the assessments and undermined the veracity of the surveillance system.

CASA historically has not conducted internal audit activities to the level of the inspector. This has allowed a significant variation in standards between inspectors and the quality of the surveillance is largely dependent on the individual inspector.

4.3 Data Storage, Management and Analysis

CASA's knowledge of an operator commences at entry control and continues to expand over time through the surveillance and regulatory service processes.

The recording and retention of that knowledge or data is problematic. For example, the data that CASA has available for Pel-Air is stored in at least ***fourteen*** disparate and unconnected systems. These include Hard Copy files, TRIM electronic files,

AIRS, Field Office common drives, Inspectors Home Drives, Outlook, STI database, ASSP data base, ESIR Data Base, SDR Data Base, Surveillance eRoom, Regulatory Services eRoom, Enforcement eRoom, and the PAC Work Flow Management System (WMS).

Very few of these systems can be mined for data and none of the systems are integrated with each other to provide a comprehensive data set or profile of the operator. CASA is entirely reliant on individuals, usually the assigned Inspector, to analyse the information to form a picture of the operator. The result is a less than adequate view that invariably is stored in the mind of the inspector.

The overall knowledge of an operator varies considerably with the passage of time as Inspectors rotate and the company's operations change. The perpetual knowledge of the operator is dependant on the level of interaction between the individual Inspector and the operator and the diligence and skill the individual inspector applies to building that comprehensive picture through stored documentation.

CASA does not have a summary description of an operator (An Operator Profile). For the Manager or Team Leader to understand an operator they must obtain a verbal briefing from the Inspector or review data from the fourteen available sources. Even with this data combined the perspective remains limited and often historical rather than current.

One of the strengths of our current system is the individual Inspector and it is the personal standard of many of these inspectors that results in sound observations being made leading to informed decisions. The reliance on the individual can also be considered a weak link in the system as the individual performance of an inspector can have a detrimental affect on the oversight picture formed and decisions taken.

Over the past five years the oversight of Pel-Air was assigned between four inspectors and during the same period there were four different Team Leaders involved. As the system was reliant on the Inspector forming the picture from the disparate data sources the changeover of Inspectors had a detrimental affect on the ability to form a reliable understanding. Further one of the four inspectors could be characterised as one who had a tendency to scratch the surface further, reducing the effectiveness of oversight.

Given these constraints it is worth noting that the oversight in this period also identified a number of significant findings (see paragraph 3). Unfortunately similar deficiencies remained evident following the accident. This highlights that a comprehensive view of the operator was incomplete and did not support identification of on-going trends.

4.4 Acquittal of Requests for Corrective Action

CASA uses the Request for Corrective Action (RCA) as the means to identify regulatory deficiencies to an operator. The RCA process requires the operator to initiate remedial action to address the immediate deficiency; to identify root cause; and to implement corrective action to address the root cause. This approach is designed to ensure the operator investigates and corrects the underlying failures in the system that lead to the deficiency.

The RCA process normally requires a response from the operator in 28 days. Typically an operator response addresses the remedial action, identifies the root cause and proposes a plan to implement the corrective action by some future date. In

many cases the corrective action is not yet implemented upon initial receipt of the RCA response.

The SPM provides clear guidance for assessment of the adequacy of the corrective actions and acquittal of RCAs. However, the SPM does not explicitly require verification of evidence of acquittal rather it leaves this to the discretion of the Inspector acquitting the RCA.

There is evidence that RCAs have been acquitted by Inspectors based on proposed plans of corrective action rather than on evidence that the corrective action has been implemented. Further there is evidence in a number of cases that the proposed corrective action was not implemented or only partially implemented by the operator and this was not discovered by CASA until a subsequent audit.

The practice of acquitting an RCA without verifying through evidence that the corrective actions have been implemented has lead to failures to address the root cause and resulted in repeated deficiencies. This practice undermines the effectiveness of oversight and contributes to the failure to ensure that operators take responsibility for and correct the deficiencies in their operations.

4.5 Available Inspector Resources

The current FTE for Sydney Region Flying Operations is 9 FOIs. This has reduced from an FTE of 11 FOIs in early 2009 however the number of AOCs being oversighted has remained steady (currently 177). The reduction in FTE resulted from a transfer of a Helicopter FOI position to Flying Standards Branch and a fixed wing FOI position to Standards Division. Further the office has been understaffed by 2 FOIs for the past 12 months.

While a detailed analysis of the current resource constraints has not been conducted and the impact on oversight of Pel-Air was not able to be assessed, it is apparent that the shortage of FOIs has had a significant negative impact on surveillance capability. In the current year the surveillance achieved is behind schedule surveillance targets by more than 25%.

5 Conclusion and Recommendations

Following any accident the review of an operator invariably discovers deficiencies that were had not previously been identified through surveillance; or had been identified but not adequately addressed by the operator. The review of oversight of Pel-Air identified inadequacies in the surveillance system that needs to be addressed.

There are six significant opportunities for improvement that are essential to the on-going development of the CASA Oversight System and it is noted that work has commenced in a number of these areas through the CASA Operations Enhancement Program.

Recommendations:

1. The development and implementation of a ***Permission Profile***.
2. That the ***Systems approach to Surveillance*** is fully implemented for complex Permissions.
3. Update to Surveillance Processes to ensure that "Process in Practice" or "***Product Testing***" is appropriately implemented as part of systems surveillance.
4. Update to Surveillance Processes to ensure that ***Requests for Corrective Action*** can only ***acquitted*** when evidence exists that the corrective action has been satisfactorily implemented.
5. That ***Inspector Standardisation and Assessment*** processes are implemented.
6. Review and update ***Inspector Recruitment Criteria and Assessment***
7. Enhance the ***Data Systems*** to support comprehensive data analysis.
8. In consultation with A/Deputy Director Aviation Safety and A/ Associate Director Aviation Safety implement on an urgent basis recommendations 3 and 4.

5.1 Permission Profile

The Permission Profile is a clearly documented comprehensive summary of the operator's permissions, capabilities, activities, management structure, operational processes and risks. Such a tool would be dynamic and updated from all available sources of data. This tool would serve to compel systematic analysis of data contained in the disparate systems to obtain a comprehensive view of each operator. Such a tool could be developed and implemented without substantial changes in the data systems however this will come at a resource cost.

It is recommended that this tool is developed in conjunction with the update to the Surveillance Procedures and the implementation of Pentana Audit Work System (PAWS).

5.2 Systems Approach to Surveillance

The Systems approach to surveillance has been in use since 2004 however its effectiveness has had a somewhat limited application in the surveillance of some

organisations. There is a need to update the approach to include contemporary philosophy and methodology, and to embrace the capability of the systems type inspector cohort.

Further this methodology should be fully implemented for complex aviation organisations. Additionally the use of the systems type inspectors should be trialled as part of the surveillance of these same organisations. The outcome of the trial used to determine effectiveness and to define criteria for the application of the systems type inspector resource.

5.3 Product Testing

Process in practice is product testing with clear purpose. It is a qualitative assessment to determine that the systems implemented by the company are producing the desired safety outcome. Further the assessment ensures that line personnel understand and are compliant with the company's processes.

It is imperative that product testing is conducted with line personnel. The surveillance procedures and associated training needs to be reviewed to ensure that product testing with line personnel is implemented as a mandatory process within the surveillance system.

5.4 Acquittal of Requests for Corrective Action

The RCA process requires the operator to initiate remedial action to address the immediate deficiency, identify root cause and propose corrective action to address the root cause. This approach is designed to ensure the operator investigates and corrects the underlying failures in the system that lead to the deficiency.

Acquittal of the RCA should only be made when the operator presents suitable evidence to show that the remedial action has been implemented, the root cause has been thoroughly investigated and the corrective action has been implemented. The practice of acquitting RCAs based on a proposed plan of corrective action should be discontinued at the earliest opportunity.

5.5 Inspector Standardisation and Assessment

An underinvestment in Inspector Training over many years combined with lack of a structured standardisation program contributes to a less than adequate surveillance performance. Further the lack of on going quality assessments of inspector capability and performance suggests a degradation in standards of surveillance.

The initial and mandatory training and assessment programs being developed and implemented by Standards Analysis and Education Division need to be complemented with ongoing capability measurement of existing inspectors.

Further an internal audit program developed at Operations Division Level and implemented at field office level should be considered to ensure inspector performance is maintained at appropriate standards.

5.6 Inspector Recruitment Criteria and Processes

This report found that two key factors in an inspector capability are considered inherent however they are not specified in recruiting criteria and it is not known if they

are currently screened. These are the investigative skills of an inspector and the ability to deal with conflict.

The recruitment criteria for technical inspectors should be reviewed to include assessment for investigative capability and the ability to deal with conflict. Further the current training should be reviewed to determine if these factors among others are adequately addressed.

5.7 Enhance the Data Systems

The capturing and retention of knowledge and data about an operator is problematic. This report identified at least ***fourteen*** disparate and unconnected data systems storing Oversight data for Pel-Air.

CASA needs to invest significantly in data systems to build a capability to bring significant volume of data of an operator together to enable comprehensive and efficient data analysis. Work currently being undertaken in CASA data systems should be reviewed to ensure that a proliferation of disparate data systems is not continuing and that the IT development is supporting the requirement for comprehensive analysis capability.

CASA Reviewing Officer

2 August 2010