Appendix 1.

@

QUALITY SYSTEM COMPLIANCE
VENDOR / SUPPLIER AUDIT REPORT

Qantas Airways Limited

Qantas Engineering External Suppliers

Contracted Maintenance – SIAEC Singapore "D" Check on
Qantas Aircraft VH-OJO V/C: T7105

AQD Audit ID: 06/SPT/10

Audit Dates: 16th –18th May 2006

&

31st May – 9th June 2006

1. Audit Summary, Conclusion & Findings

Findings & Quality Concerns relating to this audit are attached:

Executive Summary:

2 Surveillance audits occurred during this planned 40-day maintenance check –

16th–18th May 2006 (14th Day into check)

31st May – 9th June 2006 (28th Day into check)

SIA Engineering Company (SIAEC) functions as an MRO and provides total support services to Singapore Airlines and International Customers. They hold a current Singaporean CAAS 145 regulatory approval and in addition hold international approvals such as EASA 145 and FAA 145 for Heavy Maintenance.

Given the significant nature of this (40 day –7,000 Task Card) aircraft maintenance check there is obvious airworthiness & quality related risks to the business.

SIAEC approvals demonstrated airframe capability for the Qantas registered aircraft VH-OJO, however QF differences training (CAR214) was provided to address known skill gaps.

Timing of surveillance audits allowing for sampling of on-site activities, focusing on Inspection/Rectification and Assembly stages.

Concerns were noted when SIAEC maintenance personnel appeared to struggle with the Qantas task card maintenance system and all its attachments. For first time users it appeared to be an over load of data to comprehend with various levels of understanding and compliance.

Aircraft VH-OJO was delayed by approx 10 days from the scheduled timeframe and numerous issues were identified and corrected.

Conclusion:

Considering the number of issues raised during this off-shore maintenance and that this was the first heavy maintenance "D" check with SIAEC, consideration should be taken into account for any future HM contracts covering the following subjects:

- Control of Sub-Contractors
- Measurement of Skill Gaps
- Levels of Competence
- Customised MRO task card package – pre-stamped covering stage inspections, CPC inspections, certification of flight controls, recalls, AD compliance limitations or warnings etc.
- HM Doc's & Proc's training material, review content & approval process
- Human Factors

Given if contracted MRO's are clearly made aware of Qantas requirements, this could assist in monitoring stages of maintenance at set intervals, which would aid in ensuring compliance with significant functions and/or high-risk activities, with a positive outcome for both parties.

2. Introduction

This audit report forms part of the Quality System Audit Program carried out by the Quality System Compliance Group. The audits are conducted in accordance with Qantas Engineering procedure manual 8-30-012.

3. Scope and objective

Scope:

Elements covered during the Audit include, but not limited by the following:

Review previous audit results/history

Contracts/Approvals

Management Responsibilities

Facilities

Training/TNA's

Personnel/Certifying Staff

Production Planning

Approved Data

Tooling/Equipment including calibration

Parts and Materials

Certification of Maintenance

Occurrence Reporting/Quality System

Maintenance Records

Product/Processes with VH-OJO maintenance activities

Objective:

Compliance audit in accordance with Qantas PM 8-30-012, objectives are to:

Assess compliance with applicable Approvals/Standards /Regulations.

Assess adequacy & conformance to relevant Policy, Procedures and Processes.

Identify opportunity for Business/Quality improvement where apparent.

Report Audit outcomes to Management.

4. Documents used as standards

Maintenance Organisation Authorisation QA 035 dated 28 April 2006 (MOA)

747-400 CMPM dated 28 March 2006 (C5861)

Qantas Engineering Procedures & AMM's

5. Auditors

	Lead Auditor	S-AB2/8
	Snr Quality Surveyor	MELBSC

6. Department Representatives

Gerard Monteiro	Acting Manager Audit & Standards	Hangar 31
Andrew Teo	Snr Quality Engineer	Hangar 31
Jeffrey Lee	Base Maint Supervisor	Hangar 31

7. Distribution

The recipients of this report are:

Joe Favazza	Manager Quality System Compliance	S-AB2/8
Derek Smith	Manager Quality Standards	S-AB2/8
Keith Clark	General Manager Heavy Maint	S-AB2/3
Brenton Maile	Manager HM Projects	S-AB2/3
Iain Hodgson	Manager Airworthiness Compliance	S-AB1/8

Mark Ross

Team Leader

Date 7th July 2006

Attachment

Findings raised during 1st Surveillance Audit

F1119-06 - Technical Publications / Approved Data

Qantas Maintenance Memo's not being Read n Signed by SIAEC personnel.

F1120-06 - Facilities

Lighting in aircraft VH-OJO poor, for inspection and maintenance activities. Including control of debris/FOD on aircraft flooring.

Storage & Segregation of parts removed from aircraft in hanger should be monitored to prevent damage. Ie. Very congested.

F1121-06 - Tooling & Equipment

Thermograph (Temperature/Humidity) instrument in Composite shop did not display calibration due date label or identification.

Heater blankets in Composite shop, portable tester not available for resistance/wattage compliance checks.

Recall system for tooling items requiring 'calibration' requires monitoring, report from SIAEC calibration facility indicates approx 200 items require calibration for May/2006. At the time of audit several items were seen as "overdue for calibration". Ie 14 May 2006

F1122-06 - Parts & Materials

Sheetmetal shop - Raw material off-cuts in toolcrib cage had no traceability. Ie. Part number/release notes.

Prepreg rolls in freezer no.2 not supported separately on any rollers and stacked together.

Freezers #1 & #2 indicated a storage temperature of (-8C), Boeing SRM indicates a storage temperature of below (-12C).

F1123-06 - Maintenance Records

Sample of job cards indicated "progressive certification" had not been completed.

Composite Repair - Hotbonder FG0063 - "compliance test printout record" not attached to maintenance record. Ie Product Samples SWJC No. CS 156/May/06 & CS 148/May/06

F1124-06 – Quality Concern/QF Team Oversight of Operations

Quality & Risk (Compliance Representative) attended 1 production meeting on Tuesday 16/5/06 between SIAEC & QF staff, results of meeting identified numerous issues with aircraft VH-OJO undergoing maintenance, actions and outcomes being monitored by Qantas Team for continual improvement.

Airworthiness & Quality Concerns raised, discussed and resolved during 2nd Surveillance Audit

Maintenance Records

- Independent Inspections of Flight Control process not understood, and inspections not being performed or written in logbook.
- Recall functions not signed and being missed on Qantas task cards, SIAEC personnel not referring to or reading EI's or AMM chapters where it clearly defines requirements. Ie. AD compliance issues.
- Knowledge of Qantas MR sheets poor, example #2 Engine fan blades installed, task card signed up but MR Sheet not completed, which incorporates an independent inspection.
- EI result sheets not being completed, information passed on.
- Progressive Certification being monitored, daily improvement.
- No release/batch numbers recorded for parts changed.
- Review of SIAEC operations room showed task card system quite confusing, after several attempts could not confirm status of job cards. Ie. Not started, In progress, awaiting spares or tech services, etc.
- SIAEC work task card grouping & sequencing of jobs, not very well managed. Approx 7,000 routine/non-routine cards to be covered in OJO 'D' check.

Training/Competency

- Differences training provided by QF training school personnel, classroom & readnsign packages. SIAEC still appeared to struggle with RR Engine functions, IFE issues, Skybed and seating etc.
- Qantas delivered HM Doc's & Proc's training, review & approval of course content and development should be established. Ie. Independent inspections were covered, but not recall functions also noted no allocated course # for training in approved MOA document.
- Structures Engineer – Confirmation that some composite repairs not completed in accordance with SRM. Ie. SIAEC knowledge and competence
- SIAEC training records were reviewed for people in composite shop, records produced indicate some vendor training ranging from 1997 to 2004, noted no refresher training is incorporated.
- SIAEC heavy maintenance personnel coverage, they perform more maintenance activity with lower level inspection tasks such as checks A or B etc, this could be a trigger that has indicated what they have missed in relation to the Qantas D check. Ie. Inspection criteria is far more detailed within a D Check function.
- Main Deck Zones A & B seats being installed, competence levels with Skybed seating & IFE cables routing etc unclear. Concerns with this activity could possibly cause further delays to aircraft, mentioned to QF rep to watch this maintenance.
- Carpet layout and preparation different, Qantas drawings explained the unique numbering system; Qantas task card refers to drawing, which contains all details. SIAEC did not appear confident with carpet installation around emergency lighting in the floor system & the final cutouts of trim to cover seat tracks between seats.

Approved Data/Processes

- SIAEC struggled with out task cards and were confused with documents they needed to refer to & read for correct completion of tasks. Ie EI's, SI's, MR's, QPS spec, flight control log, controlled reports, drawings, Maint Memo's etc.
- SIAEC personnel could, not access Qan/E&M-PRO-PDF policy manual CD loaded onto SIAEC system, at the time of audit.
- Qantas upper deck galley repair – approved data CMM or CD not available to SIAEC.
- QPS cleaning specification not complied with, deviation process not understood by SIAEC.
- Rolls Royce repair (Blocker Doors), SIAEC do not stock correct 'water break' material required for that repair.
- No dedicated paint facility on site, painting carried out in hanger with obvious over-spray and inside of aircraft with rollers.

Parts and Materials

- Daily production meetings revealed constant issues with spares. Ie. Preload stock and rectification work, dealing with logistics/handling, items getting lost, accurate whereabouts etc.
- QF Spares held in 3 locations, confirmed SIAEC LAMES in hanger and AME's in workshops could not access database for search criteria of Qantas parts available.
- RR Engine spare parts holding up SIAEC production work.
- Noted SIAEC personnel using hardware from personal containers, no part number or release note control.

Sub-Contractors for SIAEC

- Observed various sub-contractors working on aircraft IFE/First Class Pods/Skybeds all performing maintenance functions, confirmed these personnel did not receive any QF differences training/CAR 214.
  Note: Only SIAEC Lames/Supervisors received this training, not the contractors. Ie. Aerospec – IFE/Seats, Aviation Jobs – IFE/Seats, Jamco – IFE/Seats.

Human Factors

- Qantas LAMES working on-site to oversight a major maintenance activity away from home. At the time of this audit redundancies were discussed, some were successful with internal transfers some were not, with the possibility of preparing to leave Qantas on there minds.

- END OF REPORT –

Appendix 2. 2

Administrative Appeals Tribunal

DECISION AND REASONS FOR DECISION [2010] AATA 500

ADMINISTRATIVE APPEALS TRIBUNAL)
) No 2008/0261, 2385
GENERAL ADMINISTRATIVE DIVISION)

Re **WAYNE VASTA**
MICHAEL MCKINNON

Applicants

And **CIVIL AVIATION SAFETY AUTHORITY**

Respondent

DECISION

Tribunal Mr P W Taylor SC, Senior Member

Date 6 July 2010

Place Sydney

Decision The Tribunal directs, pursuant to section 35(2)(b) of the *Administrative Appeals Tribunal Act 1975*, that public disclosure or publication of the Quality System Compliance Internal Audit Report dated 10 August 2006 and 6 October 2006, (Exhibit A11) be prohibited and that disclosure of the document be restricted to the Senior Member hearing the proceedings, the Tribunal staff, the Auscript staff, CASA and its legal advisers, and the Applicants and their legal advisers and experts.

.....[sgd].....
Mr P W Taylor SC
Senior Member

CATCHWORDS

PRACTICE AND PROCEDURE – proceedings – freedom of information – application for confidentiality order – basis for consideration – order granted

Administrative Appeals Tribunal Act 1975 s 35

Australian Securities and Investments Commission v Administrative Appeals Tribunal [2009] FCAFC 185; (2009) 181 FCR 130

Australian Securities and Investments Commission v PTLZ (2008) 48 AAR 559

Hans Pet Constructions Pty Ltd v Cassar [2009] NSWCA 230

Re Pochi and Minister for Immigration and Ethnic Affairs (1979) 26 ALR 247

REASONS FOR DECISION

6 July 2010 Mr P W Taylor SC, Senior Member

1. In the course of these proceedings the Applicants tendered a Qantas Airways Limited ("Qantas") internal audit report. The report is dated 6 October 2006 and relates to an audit carried out on (or perhaps more accurately, commenced on) 10 August 2006. Qantas seeks an order under s 35(2) of the Administrative Appeals Tribunal Act ("AAT Act") restricting the disclosure of that document.

2. The internal audit report is related to a deal of public controversy, in the period from about mid 2006 until mid 2007, about air safety issues, particularly in relation to Qantas. I summarised the background to that controversy in the section of the substantive Reasons for Decision on the review applications by Mr McKinnon and Mr Vasta. The heading for that section of the Reasons for Decision is "Background to the information requests". It is plain from that summary that the general thrust of the internal audit report, was reported in the media and on more than one occasion. The Applicants contend, in effect, that the contents of the report have, in a real practical sense, already entered the public domain. Alternatively, they contend that the disclosure of the report is desirable to permit proper and informed evaluation of matters that are in the public domain.

3. Section 35(2) of the AAT Act confers four specific powers that apply generally to Tribunal proceedings. They include powers:

(a) to prohibit or restrict publication to the parties of evidence given to the Tribunal, and matters contained in documents lodged with, or received in evidence by, the Tribunal;

(b) to prohibit or restrict other publication of evidence given to the Tribunal and matters contained in documents lodged with, or received in evidence by, the Tribunal.

4. In the exercise of the powers conferred by s 35(2) of the AAT Act the Tribunal must take as the "basis of its consideration" the principle expressed in AAT Act s 35(3). That principle is that it is desirable that:

(a) hearings of proceedings before the Tribunal should be held in public, and

(b) the public and the parties should have access to:

(i) evidence given before the Tribunal,

(ii) the contents of documents lodged with the Tribunal or received in evidence by the Tribunal.

5. In taking that principle as the "basis of its consideration" the Tribunal must, nevertheless, pay "due regard" to the reasons given to the Tribunal why the hearing should be held in private, or why publication or disclosure of the evidence or the matter contained in the documents should be prohibited or restricted.

6. The obligation to pay "due regard" to the reasons proffered for publicity restrictions is beguiling in its apparent simplicity, but potentially complex in practice. In *Australian Securities and Investments Commission v Administrative Appeals Tribunal* [2009] FCAFC 185; (2009) 181 FCR 130 the Federal Court was concerned with orders the Tribunal had made staying the operation and implementation of an

ASIC banning order under Corporations Act s 920A requiring the Tribunal applicant to be referred to by pseudonym, providing for a private hearing and restricting the publication and disclosure of evidence and lodged documents.

7. The principal focus of the judgment was the scope of the Tribunal's stay powers under AAT Act s 41(2), in the face of apparently mandatory publication obligations the original decision triggered under the Corporations Act. But the Court emphasised the approach required by proper exercise of the AAT Act s 35 power. This emphasis is apparent in the following passage of the judgment of Downes and Jagot JJ:

> *[74] ... it is important to emphasise certain aspects of the statutory provisions. Although s 35(1) is subject to the balance of the section, it establishes a norm. The norm is that the proceedings before the AAT shall be in public. This norm is reinforced by the requirements of s 35(3) which expressly confirm the principle that it is desirable that hearings be held in public. It follows that when deciding whether it is satisfied that it is desirable to exercise its powers under s 35(2), the AAT is required to form a state of satisfaction which recognises the existence of the norm and the values it is intended to protect. This, no doubt, is why Brennan J in Re Pochi and Minister for Immigration and Ethnic Affairs (1979) 36 FLR 482 at 510 described the power in s 35(2) to depart from this norm as one to be exercised "sparingly". It also explains the approach in Australian Securities and Investments Commission v PTLZ (2008) 48 AAR 559; [2008] FCAFC 164 at [6], [41] and [42] ... emphasising that the words of s 35(3) require this principle of the desirability of hearings to be in public to be "the basis" of the AAT's consideration of adopting a different approach (in contrast, for example, to "a basis" for that consideration).*

8. The decision referred to in this passage - *Australian Securities and Investments Commission v PTLZ* (2008) 48 AAR 559 at [41] and [42] - had emphasised the primacy of the "public hearing" desirability. In so doing it warned against conflating the task involved in exercising the s 35(2) power with other powers which, while also containing the general "desirability" criterion, lacked the additional emphasis provided by "the basis of ... consideration" provision in AAT Act s 35(3). It would seem that the purpose of this warning was to discourage exercise of the AAT Act s 35(2) powers merely by an impressionistic comparison of the factors for and against public accessibility.

9. This emphasis is consistent with other statutory provisions that dictate regard to particular considerations in the exercise of a statutory power. In *Hans Pet*

Constructions Pty Ltd v Cassar [2009] NSWCA 230, the NSW Court of Appeal had this to say about a statutory requirement "to have regard to" specified considerations:

> *[41] The content of the statutory requirement "to have regard to" a specific matter has been discussed often and is not in dispute. Spigelman CJ (with whom Macfarlan JA and Young JA agreed) said the following in Commissioner of Police for New South Wales v Industrial Commission of New South Wales & Raymond Sewell [2009] NSWCA 198 at [73]:*
>
> > *[73] A statutory requirement to "have regard to" a specific matter, requires the Court to give the matter weight as a fundamental element in the decision-making process. (R v Hunt; Ex parte Sean Investments Pty Ltd (1979) 180 CLR 322 at 329; R v Toohey; Ex parte Meneling Station Pty Ltd (1982) 158 CLR 327 at 333 and 337–338; Zhang v Canterbury City Council [2001] NSWCA 167 ; (2001) 51 NSWLR 589 at [71]–[73]). An equivalent formulation is that the matter so identified must be the focal point of the decision-making process. (See Evans v Marmont (1997) 42 NSWLR 70 at 79–80; Zhang supra at [73].)*

10. The potential import of the "basis of ... consideration" obligation is apparent from Brennan J's observation in *Re Pochi and Minister for Immigration and Ethnic Affairs* (1979) 26 ALR 247 at 270:

> *To exclude the public from a hearing is a serious step, for the Tribunal is required by statute (s 35(3)) to "take as the basis of its consideration the principle that it is desirable that hearings of proceedings before the Tribunal should be in public". This is a principle which is binding upon courts of justice ... and which is calculated to ensure that public confidence in proceedings to administer justice is both warranted and maintained. It is a principle of particular importance to a Tribunal which is engaged in reviewing the exercise of administrative power, for administration has hitherto been a cloistered process ... and its exposure to public scrutiny is calculated to enhance greater public confidence in it.*

11. The AAT Act does not specify the considerations that inform assessment of desirability as against the sufficiency of the reasons advanced to justify restriction. But two general considerations are discernible. First, there is a concern to uphold the intrinsic efficacy of the Tribunal's review function. The concept of "intrinsic" efficacy addresses both general and particular interests. The general interest is that of discouraging perceptions of secrecy in the review process lest that perception undermine both confidence in the impartiality, and the true reality, of rigorous merits review. The particular, and perhaps partly competing, interest is the apprehension of a merely Phyrric determination of the contentious issues, where disclosure either inhibits, or entirely negates, the real practical impact of the proceedings. Secondly,

there is the concept of "procedural" efficacy, which can be regarded as a concern with the adequacy of the information available to the review process. In that regard Brennan J suggested in *Pochi* at 272 that the basic purpose of the s 35(2) powers was:

> *... to secure to the Tribunal the availability of as much relevant information as possible, without violating the confidentiality which a party, a witness or the public is properly entitled to preserve (though a proper entitlement to confidentiality is not lightly established). A court may be constrained to violate that confidentiality in order to conduct its proceedings in public; but the Tribunal's powers are intended to facilitate the flow of relevant information to it, and if the exclusion of the public or even of a party is essential to preserve the proper confidentiality of the information needed to determine the application, that is a price which has to be paid, however reluctantly.*

QANTAS' CONTENTIONS

12. Qantas contends that the internal audit report is an internal document, expressed in direct language, that properly reflects focussed internal discussion and concern, but which is inappropriate for public dissemination. It complains that publication of the report, and the information it contains, could be misleading, and significantly adverse to Qantas' commercial business.

13. An additional contention is that disclosure would contravene the principles, of restricted disclosure of air safety related information under the Convention of International Civil Aviation 1944 ("the Chicago Convention"). I summarised Qantas' general contentions in relation to this Convention in the Reasons for Decision on the substantive applications (under the heading "Qantas' position in relation to the SDRs"). Although the matters I there summarised were directed to the question of disclosure of the "Service Difficulty Reports", substantially the same emphasis can be placed on the question of disclosure of the internal audit report.

THE APPLICANTS' CONTENTIONS

14. The Applicants' contention is that there has already been substantial disclosure of the controversy to which the internal audit report relates. Indeed, there has been a degree of public debate, including responses from CASA, Qantas and SIA Engineering Co. (I referred to these matters in paragraphs 8 and 10 of the

substantive reasons.) The Applicants contend that since that degree of public debate has occurred, and at least with the partial participation of the entities I have just named, it is inappropriate to make or continue any limited disclosure order in relation to the internal audit report.

15. The Applicants contend Qantas' submissions relying upon the Chicago Convention, and Annexure 13 in particular, are misplaced. There is no relevant departure by Australian domestic practice from the International Civil Aviation Organization Standards or Recommended Practices. The Applicants note that Qantas' submissions effectively concede that, in Australian law, the Chicago Convention does not operate to preclude disclosure of the contentious audit report. The Applicants say, and ultimately Qantas did not really dispute, that the Chicago Convention principles were merely relevant considerations. But the controlling principles were provided by the Tribunal's powers under AAT Act s 35.

DECISION – RESTRICTED DISCLOSURE

16. I reject the Applicants' basic contentions in support of disclosure of the internal audit report. Despite the "basis of consideration" principle, it is necessary to pay due regard to the nature of the document in question. It is also necessary to pay due regard to both its role in the present proceedings and its independent status under the FOI Act, as if it had been one of the documents to which the substantive requests directly related.

17. So far as the nature of the document is concerned it is self evidently a critically important document. Moreover, it is one that would not ordinarily be expected to be available for public discussion. Indeed, given the extraordinary energy and complexity that is involved in airline maintenance and safety issues (and to which I allude in the substantive Reasons for Decision) it is difficult to conceive any circumstances in which such a document would be publicly released. Its very purpose is to facilitate critical internal evaluation of safety related problems, or potential problems. Such a purpose is fundamental to achieving and maintaining proper standards. It is a purpose that is unlikely to be achieved without candour, plain language and lack of undue sensitivity to the risks and vagaries of public

discussion, misunderstanding or malicious manipulation. In my opinion, it is highly undesirable that documents that owe their origin to such a particular purpose, and which do express criticism intended to prompt appropriate intra organisational responses, should be the subject of public disclosure. It is undesirable unless good reasons exist to demonstrate that public disclosure is desirable and appropriate.

18. So far as the role of the document in the present proceedings is concerned, its tender served three purposes. First, it underscored the general public interest in aviation safety. It did this by giving a degree of content to the subject matter of the controversy and public discussion to which I referred in paragraphs 8 and 10 of the substantive Reasons for Decision. Second, it tended to highlight the likelihood that documents responsive to the Vasta and McKinnon requests had not been produced. Third, it tended to demonstrate the legitimacy of the public interest in, and concern about, the matters to which the internal audit report related. The Applicants' general contention was that, having regard to the substance of the matters in the report, there were very real arguments that disclosure of the documents to which their respective document requests related was (i) very much in the public interest and (ii) most unlikely to have any unreasonable adverse effect – either on Qantas or on the future supply of information to CASA.

19. But whilst the internal audit report had a relevance to the substantive FOI applications, it was not a document that fell within their scope (because Qantas not CASA, had possession of it). It is nevertheless instructive to consider the question of the likely disclosure of the internal audit report if it had been identified as a document in CASA's possession, and was responsive to either of the two FOI applications. Having regard to its contents, I have no doubt that it would have been an exempt document. This is so for substantially the same reasons that I considered the documents I described as "Qantas SDR documents" are exempt. The internal audit report is an internally generated document produced for Qantas' own purposes in relation to a critically important, and highly sensitive, aspect of its commercial operations. The discipline and perspective with which it was created likely owe nothing to the legitimate self interest restraints that would apply to the authorship and content of such a document if the risk of public dissemination had been taken into account. I consider that public disclosure of such a document, if its production had

been sought from CASA, would have been quite precluded by the exemption ground in FOI Act s 43(1)(c)(ii) – at the least.

DECISION

20. I direct that public disclosure or publication of the Quality System Compliance Internal Audit Report dated 10 August 2006 and 6 October 2006, (Exhibit A11) be prohibited and that disclosure of the document be restricted to the Senior Member hearing the proceedings, the Tribunal staff, the Auscript staff, CASA and its legal advisers, and the Applicants and their legal advisers and experts.

I certify that the 20 preceding paragraphs are a true copy of the reasons for the decision herein of Mr P W Taylor SC, Senior Member

Signed:

.....[sgd].....

Associate

Dates of Hearing	19-22 April 2010
Date of Decision	6 July 2010
Counsel for the Applicants	Mr T Brennan
Solicitor for the Applicants	Ms R Eagles, Sparke Helmore
Solicitor for the Respondent	Mr A Anastasi, CASA
Solicitor for Qantas Airways Limited	Mr M Mackrell, Norton White

Appendix 3. 3

COA 100

Australian Government
Civil Aviation Safety Authority

Initial Issue of or Change to particulars of a COA Assessment Control Document

Use this control document when an initial issue of, or a change to a Certificate of Approval, is sought. Attach a scanned copy of this document and any reference documents to WMS and retain the original on file in accordance with Records Management procedures.

WMS Job Number: _____ **Proposed COA number:** 1-21141

Legal Entity: SIA ENGINEERING COMPANY LTD ARN: 759139

Trading Name: _____ Company representative: _____

Area Office File Reference: 06/4219

Airworthiness Team Leader

Documents identified in CSC Instruction Sheet attached to WMS or received: Yes ☐ No ☐

CSC Estimate reviewed: Yes ☐ No ☐ Refer folio: N/A

Pre-assessment meeting scheduled Yes ☐ Not required by CSC ☐

Assessing AWI nominated Yes ☐ Name: N/A

Phase dates entered into WMS Yes ☐ Job accepted in WMS Yes ☐

Team Leader name: B.C. HAWKS Signature: Date: 20/09/2006

Inspector

COA holder's compliance history reviewed: Yes ☐ No ☑ Refer folio: INITIAL ISSUE

COA activity scope reviewed (AIRS): Yes ☐ No ☑ Refer folio: _____

Pre-assessment meeting completed: Yes ☐ No ☑ N/A ☑ Refer folio: _____

Documentation Evaluation complete ☑ Inspections and Tests complete ☑ Certification phase complete ☑

The following checklists completed and placed on file:

COA 200	☑	COA 201	☐	COA 202	☑	COA 300	☐	COA 400	☐	COA 500	☑
COA 600	☐	COA 601	☐	COA 602	☐	COA 603	☐	COA 604	☐	COA 605	☐
COA 606	☐	COA 607	☐	COA 608	☐	COA 700	☑	COA 800	☐		

Application for initial issue / change recommended: Yes ☑ No ☐ Refer folio: _____

Inspector name: D. HAMSTRA Signature: ..... Date: 22/9/2006

Airworthiness Team Leader

Recommendation for initial issue / ~~change supported~~: Yes ☑ No ☐ Refer folio: N/A

Statement of Reasons completed and attached to WMS: Yes ☐ N/A ☐ Refer folio: N/A
(applicable to recommendations not to issue only)

Recommendation of COA activity scope supported: Yes ☐ No ☐ Refer folio: N/A.

SFR drafted ☑ Estimate of Actual Costs completed ☑ Actual Hours field in WMS updated ☐

Team Leader name: _____ Signature: ..... Date: 20/09/2006

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CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

System of Quality Control and Procedures Manual — COA 200

General

CAR 30(2)

Applicant: SIA ENGINEERING CO LTD File Ref: 06/4219 DO: .....

Pursuant to regulation 30(2) of the Civil Aviation Regulations, an applicant for the grant of a Certificate of Approval must submit:

- In all cases, an acceptable written system of quality control (the "system")
- In the case of maintenance of Class A aircraft, an acceptable procedures manual which incorporates a written system of quality control.

Carry out an assessment of the applicant's System of Quality Control/Procedures Manual to ensure that they meet the minimum requirements of CAR 30(2D), as applicable.

> **Note:** CAR 30(2D) nominates Australian Standards AS3900 through AS3904 as providing suitable guidance for the content of a system of quality control.

> **Important: The scope and size of the applicant's proposed organisation will determine the applicability of the checklist items. The content of the checklist is not absolute.**
>
> **The checklist is provided in the form of questions to respond to, which are *not* in all cases intended to indicate essential requirements, but to aid the person performing the assessment in addressing the requirements of CAR 30.**

Written System of Quality Control

Yes, No or N/A

Quality Standard

Does the organisation hold accreditation with Standards Australia or equivalent? YES
ISO 9001
17025
14001

Organisational Structure

Structure:

- Is the position controlling the activity nominated? YES
- Is the organisational structure satisfactory? YES
- Are the persons nominated as responsible for the control of activities satisfactory? YES
- Do the persons nominated for the control of activities have sufficient authority? YES

Staff:

- Is the number of staff acceptable? YES
- Are qualifications and experience acceptable? YES
- Are the qualifications and experience of the applicant and employees satisfactory? YES

Work carried out under an arrangement with another organisation:

- Are the qualifications and experience of the other organisation's staff satisfactory? N/A
- Can satisfactory control be exerted over the organisation? N/A

COA 200

Yes, No or N/A

Management Responsibility

Do the quality management procedures identify:

- The personnel authorised to perform quality control checks and to amend the organisation's procedures — YES
- The tools, equipment and documents used by quality control personnel? — YES

Do management familiarise staff:

- With the system — YES
- With changes to the system? — YES

In relation to staff training, are there procedures for:

- Alerting management to personnel's training needs — YES
- Identifying the content of necessary training — YES
- Identifying an appropriate trainer — YES
- Identifying personnel who need training — YES
- Developing an implementation plan, if necessary — YES
- Forwarding training package submissions to CASA for approval, if applicable — N/A
- Proper record-keeping of training received? — YES

In relation to the audit system:

- Is management's commitment clearly stated — YES
- Are communication lines clear — YES
- Are the audit periods satisfactory? — YES

Are there procedures to ensure the validity of employees' Instrument of Appointment, licences and authorities? — YES

In relation to defect reporting, is there a procedure for:

- Investigating defects — YES
- Safeguarding against recurrence of defects — YES
- Notifying defect occurrences? — YES

Are there procedures for:

- Rejecting non-conforming aircraft components and materials — YES
- Notifying CASA of rejections — YES
- Retention of documentation? — YES

Control of Work

Are there procedures that:

- Describe activities — YES
- Ensure that work forms are clear and concise — YES
- Address an approved system of certification? — YES

Does the system address shift change procedures? — YES

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

COA 200

Yes, No or N/A

Tools and Equipment

Are there procedures for storage, maintenance, control and calibration of equipment? YES

Are the specified calibration periods acceptable? YES

Are there means to control tools that are borrowed or hired? N/A

Stores Control

Do the procedures for the storage of goods cover the following:

- Suitable size and construction for the activities YES
- Segregation of volatile or corrosive materials YES
- Segregation of commercial goods from aircraft components and materials YES
- Shelf-life procedures and periods YES
- Rubber goods YES
- Gyros and other delicate components YES
- Storage of flexible goods in a 'no stress' situation YES
- Sheet metal YES
- Fitting of blanks to ports of components and hoses YES
- Electrostatic-sensitive components YES
- Storage of dangerous goods YES
- Aircraft tyres YES
- Inhibiting requirements of components and materials YES
- Provision of ample and suitable storage space for goods held at the location YES
- Catering for special storage provisions YES
- General packaging YES
- Manufacturers' requirements YES
- Compressed gas cylinders? YES

Quarantine Facility

Do the procedures ensure that:

- Unserviceable items are identified YES
- Adequate security is provided YES
- Serviceable and unserviceable items are segregated? YES

Documentation

Do the procedures ensure that:

- Incoming goods are checked against, and identified by, incoming documents YES
- Stored items and accompanying documentation are matched YES
- Outwards documentation contains sufficient information to maintain traceability YES
- Record-keeping practices are acceptable YES
- Labelling is adequate? YES

CIVIL AVIATION SAFETY AUTHORITY AUSTRALIA

COA 200

Yes, No or N/A

Documentation (cont.)

In relation to release documentation:

- Is CASA form DA1 utilised ..... NO
- If not, does the alternative form contain the required regulatory information? ..... YES

Data

Does the applicant hold current copies of appropriate regulatory documents and technical data? ..... YES

Is technical records control satisfactory? ..... YES

Are there procedures for regular amendment of data? ..... YES

Do employees have easy access to current data? ..... YES

Accommodation and Amenities

Does the system cover the following:

- Administration office facilities (including filing cabinets, desks etc.) ..... YES
- Lighting, work benches, stands and other equipment ..... YES
- Environmentally-controlled and dust-free areas ..... YES
- Protection against the elements ..... YES
- Compressed air ..... YES
- Water ..... YES
- Electricity ..... YES
- Ventilation ..... YES
- Provision for keeping the premises clean and tidy? ..... YES

Segregation of Activities

Does the system address prevention of contamination to adjacent areas from:

- Component maintenance areas ..... YES
- Battery charging – lead acid & nickel cadmium ..... YES
- Machine shops ..... YES
- Painting operations ..... YES
- Fabric work ..... N/A
- Composite materials ..... YES
- Grit or bead blasting ..... YES
- Volatile fluids ..... YES
- Cleaning ..... YES
- Special or unique inspection areas? ..... YES

COA 200

Yes, No or N/A

Mobile Facilities

Does the system adequately address any mobile facilities available to the applicant? N/A

Will such facilities as described:

- Carry all required tools and equipment N/A
- Carry all regulatory and technical documents N/A
- Carry all aircraft components and materials safely and securely N/A
- Segregate aircraft components and materials from contaminants? N/A

Locations

Are the quality system procedures in relation to remote locations appropriate to the activities, limitations, procedures and reporting requirements? N/A

Are the remote location to main location communication facilities and reporting procedures adequate? N/A

Does the system cover the use of temporary locations? N/A

Procedures Manual

General

Does the procedures manual contain all the information necessary for a system of quality control as detailed above? YES

Does the procedures manual contain the following manual control items:

- Applicability YES
- Log of pages YES
- Index YES
- Amendment record YES
- Amendment procedures YES
- Register of manual holders? YES

Does the manual address the following topics:

- Implementing and complying with a Certificate of Registration holder's system of maintenance YES
- Notifying the Certificate of Registration holder that the system of maintenance is defective, or no longer applicable YES
- Changing the Certificate of Registration holder's system of maintenance where a contractual arrangement exists? YES

Assessment completion date: 22/9/2006

Name of person performing the assessment: D. HAMSTRA

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

System of Quality Control — COA 202

System of Computer Control

CAR 30(2A) and 30A

Applicant: SIA ENGINEERING CO LTD. File Ref: 06/4219 DO: .....

This checklist is to be used if the applicant proposes to use a computer for the control of activities where the storage of essential information or data is required to meet his or her commitments under CAR 30, and no equivalent hard copy documentation is to be utilised for this purpose.

Use this checklist in conjunction with:

- COA 200: System of Quality Control and Procedures Manual: General.

Yes, No or N/A

Power Supply

Do the procedures address the avoidance of data loss in the event of power interruptions, including:

- Detection of variations in supply voltage — YES
- Provisions to indicate to the user that a power supply interruption has occurred — YES
- Automatic power supply transfer to a backup system in the event of excessive supply variations? — YES

System Back-up

Are there procedures for:

The production of a daily backup copy of data on a suitable storage medium — YES

Storage of backup tapes or discs in a secure fire-proof location remote from the installation? — YES

Data Access

Is the computer system software and data protected from unauthorised access – e.g., passwords? — YES

Trial Period

Have trial period details been specified? — N/A

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

COA 202

Yes, No or N/A

Computer Systems Operations Manual

Besides general operating instructions for the system, does the computer systems operation manual contain:

- A procedure that will ensure that system software cannot be corrupted, where the system permits the periodic dumping of data held on consolidated tapes or discs intended for storage — YES
- A procedure for identifying and isolating any software viruses — YES
- A copy of all hardcopy documents used with the systems — YES
- Full details of any electronics certification procedures employed — YES
- A procedure to ensure that the manual is available to persons authorised to operate the system — YES
- Procedures to ensure software and hardware security? — YES

Remarks: FOUR IDENTICAL SERVERS LOCATED AT SEPARATE LOCATIONS. THE OPERATING SYSTEM IS BACKED UP DAILY. THE ANTI VIRUS SYSTEM IS MICROSOFT TREND. ACCESS TO THE SERVERS IS LIMITED BY KEY. PROCEDURES ARE IN PLACE TO LIMIT ACCESS TO OPERATING SYSTEM BY PASSWORD. THERE IS LIMITED SPACE ALLOCATED ON THE SERVER AND UTILISATION IS MONITORED. ALL FOUND SATISFACTORY.

Assessment completion date: 22/9/2006

Name of person performing the assessment: D. HAWSTEAD

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

Manufacture and Maintenance of Aircraft COA 500

CAR 30(2A) and 30A

Applicant: SIA ENGINEERING CO LTD File Ref: 06/4219 DO: .....

Carry out an assessment of the applicant's System of Quality Control/Procedures Manual to ensure that they meet the requirements of CAR 30(2D).

In conjunction with an acceptable manual and facilities inspections, assess the application against the criteria of this checklist.

During the inspection(s) interview principal staff to ensure that each fully understands the content of the applicant's System of Quality Control/Procedures Manual and its implications.

Research should be undertaken with each application to determine what items are fundamental and to ensure that the applicant has the necessary fundamentals to satisfactorily carry out the tasks for which he/she has applied.

The diverse activity of manufacture and maintenance of aircraft is such that is impractical to produce dedicated checklists and because a fundamental item is not on this checklist does not imply that there is no requirement for the item.

> **Important: The scope and size of the applicant's proposed organisation will determine the applicability of the checklist items. The content of the checklist is not absolute.**
>
> **The checklist is provided in the form of questions to respond to, which are *not* in all cases intended to indicate essential requirements, but to aid the person performing the assessment in addressing the requirements of CAR 30.**

As applicable, use this checklist in conjunction with:

- COA 200: System of Quality Control and Procedures Manual: General
- COA 201: System of Quality Control: Design and Manufacture of Aircraft, Aircraft Components and Materials for Complex Locally Designed Products
- COA 202: System of Quality Control: System of Computer Control
- COA 300: Design of Aircraft and Aircraft Components and Materials.

General

Verify by inspection and interview that the procedures laid down in the System of Quality Control/Procedures Manual have been put in place at the location(s) outlined in the application.

Organisational Structure

Remarks: ORGANISATIONAL STRUCTURE DETAILED IN SIA ENGINEERING COMPANY EXPOSITION CHAPTERS 1.4, 1.5 & 1.5 CONSIDERED ADEQUATE FOR THE SCOPE OF THE APPLICATION.

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

COA 500

Management Responsibility

Remarks: MANAGEMENT RESPONSIBILITIES DEFINED IN SIAEC CHAPTER 1.5. WILLIAM TAN IS IDENTIFIED AS THE ACCOUNTABLE MANAGER. DUTIES & RESPONSIBILITIES DOCUMENTED. REPORTING CHAIN FOUND SATISFACTORY.

Control of Work

Remarks: FOUND SATISFACTORY DURING ON-SITE AUDIT.

Tools and Equipment Listed on File

Check the Tools and Equipment List on file against items at the Applicant's disposal. Note any discrepancies.

Remarks: TOOLING LIST RELATIVE TO THE SCOPE OF THE APPLICATION PROVIDED AND FOUND SATISFACTORY.

	Yes, No or N/A
General	
Towing facilities:	
◦ Are the towing facilities adequate for the aircraft the applicant is likely to maintain?	YES
Ground support:	
◦ Oxygen charging trolleys	YES
◦ Engine oil charging rigs	YES
◦ Hydraulic rigs	YES
◦ Electrical ground power	YES
◦ Compressed air source (engine starting).	YES
Is the equipment adequately maintained and not likely to contaminate aircraft systems?	YES
Ramp handling equipment:	
◦ Check its serviceability status (battery terminal protection, engine exhaust system, and so on).	YES.

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

COA 500

Yes, No or N/A

Does the applicant have access to the following equipment and is it adequately maintained:

- HP air/nitrogen regulator, oleo adaptor ...YES...
- Breathing oxygen refill regulator ...YES...
- Compressor, regulators, water traps, hoses etc. ...YES...
- Cleaning equipment and cleaning area ...YES...
- Lubrication – oil cans, grease guns, pumps and storage ...YES...
- Spray paint equipment ...YES...
- Jacks, trestles, benches, stands, hoists etc. ...YES...
- Machinery – lathe, drill press, grinder, belt sander, guillotine, metal shears, sheetmetal folder etc. ...YES...
- Wing and fuselage fixture jigs ...YES...
- Aircraft levelling and alignment tools – trammels, plumb-bobs, spirit levels etc. ...YES...
- Scales, spring balance ...YES...
- General hand-held tools – air drills, tension wrenches, cable tensiometers, micrometers etc. ...YES...
- Riveting equipment ...YES...
- Rigging tools, inclinometers, control surface balancing equipment etc. ...YES...
- Wheel balancer, tyre pressure gauge ...N/A YES...
- Spark plug cleaner and tester ...N/A...
- Cylinder leak down or compression tester ...N/A...
- Timing lights and indicator plates ...N/A...
- HT lead tester ...N/A...
- Pressure gauges and hoses – fuel, propeller etc. ...YES...
- Manufacturers' specific tools and equipment ...YES...
- Inspection Aids – mirrors, magnifying glass ...YES...
- Lights – portable inspection, torches ...YES...
- NDT inspection equipment? ...YES...

	COA 500 Yes, No or N/A
Helicopters	
Main/tail rotors tracking device	N/A
Balancing equipment.	N/A
Wood and Fabric	
General hand-held tools – clamps, saws etc.	N/A
Fabric tester	N/A
Acceptable heat source (fabric tensioning)	N/A
Fabric repair tools – various.	N/A
Fibre-reinforced Plastics	
General hand-held tools	YES
Resin/accelerator dispensing equipment	YES
Wet and dry bulb thermometer (humidity measurement)	YES
Accurate thermometer	YES
Vacuum source (pressure application)	YES
Lay-up table and jigs	YES
Storage racks (for materials)	YES
Humidity control	YES
Autoclave.	NO
Electrical, Instrument and Radio	
Battery charger, hydrometer (located in suitable area)	YES
Instrument calibration equipment	YES
Pitot/static leak tester	YES
Hand-bearing compass	YES
Electrical plugs/sockets assembly and crimping tools, wire strippers	YES
Measuring and testing equipment – megger, multi-tester, bonding tester, accurate voltmeters and ammeters, digital devices, etc.	YES
Soldering equipment	YES
Radio simulators – Nav, Com, ILS, MLS, Marker, Transponder, DME, etc.	YES

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

COA 500

Remarks: SIAEC BASE MAINTENANCE TOOLING, EQUIPMENT AND FACILITIES ALL FOUND SATISFACTORY DURING ON SITE AUDIT.

Calibration of Tools and Equipment

Check that all tools and equipment requiring calibration are nominated by the proposed calibration system.

Remarks: CALIBRATION OF TOOLS AND EQUIPMENT CARRIED OUT IN ACCORDANCE WITH SIAEC EXPOSITION CHAPTER 2.5. FOUND SATISFACTORY.

Storage of Tools and Equipment

Check that all tools and equipment are stored so that they remain suitable for their intended function.

Remarks: ALL TOOLING AND STORAGE SITES FOUND SATISFACTORY.

Stores Control

Remarks: STORES CONTROL UNDER VICE PRESIDENT MATERIALS TAN CHIN HIANG. CONTROL FOUND SATISFACTORY

Stores Quarantine Facility

Remarks: STORES QUARANTINE FACILITY FOUND ADEQUATE. ACCESS TO FACILITY BY KEY.

COA 500

Stores Control (cont.)

Stores Documentation

Remarks: STORES DOCUMENTATION FOR RECEIPT, DISPATCH, SEGREGATION, TRACEABILITY AND SUSPECTED UNAPPROVED PARTS FOUND SATISFACTORY.

Yes, No or N/A

Data

Does the applicant hold current copies of the appropriate regulatory documents:

- *Civil Aviation Act 1988* YES
- *Civil Aviation Regulations* YES
- *Civil Aviation Orders* YES
- Civil Aviation Advisory Publications YES
- Airworthiness Advisory Circulars? YES

Assess the applicant's current technical data:

- Manufacturers' maintenance, parts and structural repairs manuals YES
- Approved data associated with manufacture N
- Service Bulletins/Letters. YES

Remarks: SIAEC HAS ACCESS TO THE CASA WEB SITE. ARRANGEMENTS FOR TECHNICAL DATA ARE ADEQUATE AND APPROPRIATE WITH THE CUSTOMER TO SUPPLY.

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

COA 500

Yes, No or N/A

Accommodation and Amenities

Carry out an inspection of the available manufacture/maintenance area to ensure that:

- The area accommodates the largest aircraft likely to be accommodated by the applicant ..YES..
- The accommodation meets the plans submitted by the applicant. ..YES..

Remarks: SIAEC MAINTENANCE FACILITIES ACCOMMODATE SHORT AND LONG RANGE AIRCRAFT. THEY HAVE A TOTAL OF FIVE HANGARS AT CHANGI AIRPORT COMPRISING APPROXIMATELY 48,000 SQ MTS.

Segregation of Activities

Remarks: SEGREGATION FOUND SATISFACTORY

Mobile Facilities

Remarks: N/A

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

COA 500

Locations

Carry out an inspection of each of the applicant's locations which are not nominated as the main location. If the location is overseas:

- Request location advice re local ID/Security pass and customs/protocol requirements
- Check if the location is subject to audit by foreign airworthiness authorities or other QA personnel
- Establish date of last visit, if applicable.

Remarks: ALL BASE MAINTENANCE IS CARRIED OUT @ AT THE MAIN FACILITY – SINGAPORE CHANGI AIRPORT.

Overall Inspection Assessment

Remarks: INSPECTION OF THE BASE MAINTENANCE FACILITIES DEMONSTRATED THE REQUIRED COMPLIANCE WITH QUALITY SYSTEM PROCEDURES TO BE SATISFACTORY WITH REGARD TO CASA REGULATORY REQUIREMENTS FOR THE SCOPE OF THE APPLICATION.

Assessment completion date: 22/9/2006

Name of person performing the assessment: D. WAMSTEKER & R. BAYLISS.

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

Non-destructive Testing COA 700

CAR 30(2A) and 30A

Applicant: SIA ENGINEERING CO LTD. File Ref: 06/4219 DO: .....

Carry out an assessment of the applicant's system of quality control and procedures manual to ensure that they meet the requirements of CAR 30(2D).

In conjunction with an acceptable manual and facilities inspections using checklists COA 500 and COA 600, as appropriate, assess the application against the criteria of this checklist.

During the inspection(s) interview principal staff to ensure that each one fully understands the content of the applicant's system of quality control and procedures manual, and their implications.

Research should be undertaken with each application to determine what items are fundamental and to ensure that the applicant has the necessary fundamentals to satisfactorily carry out the tasks for which he or she has applied.

Important: The scope and size of the applicant's proposed organisation will determine the applicability of the checklist items. The content of the checklist is not absolute.

The checklist is provided in the form of questions to respond to, which are *not* in all cases intended to indicate essential requirements, but to aid the person performing the assessment in addressing the requirements of CAR 30.

Note: As a guide, Aviation Safety Surveillance Program Checklist ASSP 454 refers to the industry standards employed in the various processes.

As applicable, use this checklist in conjunction with:
- COA 200: System of Quality Control Procedures Manual: General
- COA 202: System of Quality Control: System of Computer Control
- COA 500: Manufacture and Maintenance of aircraft
- COA 600: Manufacture and Maintenance of Aircraft Components and Materials.

General **Yes, No or N/A**

Check that the applicant has access to the following tools and equipment as applicable.

Ultrasonic Inspection

Equipment:
- A-scan, ~~Digital~~, ~~C-scan immersion~~ etc. YES

Ancillary Equipment:
- Probes, leads, stand-off/angle devices etc. YES

Standards:
- Calibration:
  - IIW (calibration blocks), mini angle-beam, distance-amplitude, area-amplitude etc. YES
- Reference Standards:
  - Thickness gauge/step wedge, test sample etc. YES

Remarks: CALIBRATION OF EQUIPMENT COMPLETED BY SIAEC CALIBRATION LAB.

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

COA 700

Eddy Current Inspection	Yes, No or N/A
Equipment:	
• Low frequency, high frequency.	YES
Ancillary Equipment:	
• Probes, leads, probe guides etc.	YES
Standards:	
• Calibration	YES
• Reference standards, test samples etc.	YES

Remarks: THE MAJORITY OF CALIBRATION IS PROVIDED BY SIAEC CALIBRATION LAB. SOME SPECIALISED EQUIPMENT RETURNED TO THE OEM FOR CALIBRATION.

Radiographic Inspection	Yes, No or N/A
Equipment:	
• X-ray – low KV, high KV (should be constant potential/small focal spot)	YES
• Gamma ray – source.	NO
Ancillary Equipment:	
• Film, film cassettes, lead screens, dosimeters, area monitor, IQIs (Image Quality Indicators), plumb bob, tape measure	YES
• Film identification characters	YES
• Characteristic/exposure curves.	YES
Film processing equipment:	
• Immersion tanks, temperature control etc.	YES
• Chemical storage	YES
• Safelights, drying cabinet, timing equipment etc.	YES
• Fresh water rinse facility.	YES
Viewing equipment:	
• High intensity, fluorescent etc.	YES
• Magnifying lenses	YES
• Densitometer.	YES
Standards:	
• Step-wedge densities, test samples.	YES
Local government approval for operation? Sighted approval document.	YES

Remarks: COPY OF LICENCE TO USE IONISING IRRADIATING APPARATUS - LS/00791/0058
LICENCE TO POSSESS IONISING IRRADIATING APPARATUS L3/00791/0011.

COA 700

Magnetic Particle Inspection	Yes, No or N/A
Portable Equipment:	
• Articulated electromagnet, pole pieces etc.	YES
• Spray ink(s), contrast lacquers etc.	YES
Fixed Equipment:	
• Magnetic particle bench: ammeter, timer etc.	YES
• Head stocks, head stock adjustment (pneumatic/manual)	YES
• Coil, current controls etc.	YES
• Fluid reticulation system	YES
• Demagnetising coil (may be included with bench).	YES
Ancillary Equipment:	
• Black light, black light intensity meter, darkened inspection area	YES
• Centrifuge tube, gauss meter, permanent magnets etc.	YES
Standards:	
• Reference standards, Ketos ring, cracked parts etc.	YES

Remarks: ALL FOUND SATISFACTORY

Liquid Penetrant Inspection	Yes, No or N/A
Cleaning:	
• Appropriate solvent cleaning equipment — preferably vapour degrease.	YES
Aerosol cans:	
• Penetrant, solvent cleaner, non-aqueous developer.	YES
Dip tanks:	
• Penetrant — water wash, post emulsifiable SPRAY ONLY	NO
• Emulsifier — lipophilic, hydrophilic. WATER WASH	NO
Rinse Station:	
• Coarse water/air spray	YES
• Black light illumination.	YES
Developer Application:	
• Ventilation, dry powder applicator.	YES
Inspection Station:	
• Black light	YES
• Black light intensity meter	YES
• Darkened environment.	YES
Standards:	
• Reference standards, Eishen panels, cracked parts etc.	YES

Remarks: ALL FOUND SATISFACTORY.

CIVIL AVIATION
SAFETY AUTHORITY
AUSTRALIA

COA 700

Additional Tools and Equipment — Yes, No or N/A

Tools and equipment not covered by this checklist:

NDT CARRIES OUT BOROSCOPE INSPECTIONS FOR BASE MAINTENANCE.

NDT Classes

Determine the appropriate class of the applicant's proposal.

Organisations using NDT methods are divided into 4 classes as follows:

1. 'NDT Class 1' – an organisation that has been granted:
   (a) A Certificate of Approval for the manufacture or maintenance of aircraft or aircraft components; and
   (b) Approval from the Authority to register NDT personnel in its employ.
2. 'NDT Class 2' – an organisation that has been granted:
   (a) A Certificate of Approval for the manufacture or maintenance of aircraft or aircraft components; and
   (b) No approval from the Authority to register NDT personnel in its employ.
3. 'NDT Class 3' – an organisation that has been granted:
   (a) A Certificate of Approval for the maintenance of Class B aircraft only; and
   (b) No approval from the Authority to register NDT personnel in its employ.
4. 'NDT Class 4' – those organisations not directly involved in the aircraft industry, but which perform NDT on aircraft or aircraft components as a service to the industry.

NDT Class: CLASS 1

Remarks: 4 OFF LEVEL 3

14 OFF LEVEL 2

NO LEVEL 1

APPROVED BY CASA CERTIFICATE OF APPROVAL AN1/01

Assessment completion date: 22/9/2006

Name of person performing the assessment: D HANSARA

STANDARD FORM RECOMMENDATION

TO: Group General Manager – Air Transport Operations Group

FROM: Manager, *Sydney Air Transport Field Office (SATFO)*

COA No: *New Certificate issue, number 1- 21I41*

SUBJECT: *COA* initial issue for *SIA Engineering Company Ltd (SIAEC)*

Amendments

1. *Details of any changes to the existing approval*

   This is an initial application for a Certificate of Approval.

Supporting Comments *{as applicable}*

1. *Background;*
   SIAEC is a maintenance and overhaul facility located at Changi International Airport, Singapore. 31 Airline Road Singapore is the location nominated for this application.
   The company currently has 145 approval from EASA approving Base and Line Maintenance on Airbus, Boeing (including B747-100/200/300 & 400 series) and Learjet 31/31A aircraft.
   They also hold EASA approval for the following:
   Engines – Rolls Royce RB211 700/800 Series
   Components – In accordance with the capability list defined in the Company Exposition
   Specialised Services - NDT
   They also hold FAA Repair Station Approval covering Radio / Instrument and limited Airframe, Powerplant, NDT, Emergency Equipment and Specialised Services.

2. *Airworthiness aspects satisfactorily assessed;*

   All Airworthiness aspects of the application have been assessed and found satisfactory.

3. *Comments on the current and proposed surveillance and monitoring;*

   An initial inspection of SIAEC facility was carried out as part of the assessment process for the grant of an Australian CAR 30 Certificate of Approval. The inspection revealed that the facility and its operation met and in many areas exceeds industry standards for this type of facility.

   On-going surveillance program to be determined by the SATFO after SIAEC have been issued with an Australian CAR 30 Certificate of Approval. Validity period for initial issue of a Certificate of Approval is limited to 12 months.

4. *Supporting comments for inspections not required e.g. for new aircraft or ports/locations;*

   Not applicable to this application.

5. *Comments and implications relating to new/outstanding RCAs, Safety Alerts and Voluntary Undertakings and effect on variation;*

   Not applicable to this application.

6. *Comments regarding changes to the audit schedule;*

   SATFO to determine the audit schedule. This will be based on the Certificate of Approval Procedures Manual and the Surveillance Procedures Manual requirements.

7. *Proposed operational conditions or restrictions;*

   Not applicable to this application.

8. *Proposed future AOC/COA developments;*

   NIL.

9. *Additional issues that the delegate may not be aware of;*

   NIL.

Impact {*as it relates to the request*}

1. *Risk management assessment, including comments against risks associate with this change* – Not applicable, initial issue.

2. *Expansion implications and trend indicators* - Not applicable, initial issue NIL.

3. *Company personnel and management structure status* – Staff level of over 250 technical employees plus a comprehensive management structure.

4. *Operational restrictions or conditions* - NIL.

Supporting documentation

1. *COAPM checklists* - 100, 200, 202, 500 and 700 completed for assessment of this application – File reference 06/4219

2. *Comments when checklists are not supplied/required* - Not applicable to this application.

3. *List of existing findings including new and outstanding RCAs, Safety Alerts and Voluntary Undertakings* –

   Not applicable to this application.

4. *Additional documentation pertinent to COA issue;*

   Correspondence from the Organisation – Completed CASA Form 690 requesting the grant of a CAR 30 Certificate of Approval together with a copy of the SIAEC Maintenance Organisation Exposition (MOE) and the SIAEC Exposition (CASA – Australia Supplement)

   Additional data from the SATFO - A 'draft' copy of Certificate of Approval

   No. 1- 21141

Recommendation

1. *Reason for requesting a reduced validity period;*
   Initial issue – Twelve month validity period to comply with the CoA manual
2. *Recommendation for any operational conditions or restrictions – Nil.*
3. *Instructions for distribution of the certificate once signed* – Forward original of the Certificate to the Sydney Air Transport Field Office, who will on-forward the document to the organisation.

COA initial issue – The ***SATFO*** is satisfied that the applicant meets, or is capable of meeting, the requirements for the certificate issue in accordance with Regulation 30 of the CARs 1988, and is able to carry out, in a satisfactory manner, the activities to which the application relates, and that all relevant information pertaining to the certificate issue has been forwarded to the delegate for consideration.

Recommended/~~Not Recommended~~

Signed:

Name: Don Hamstra

Title: Aviation Safety Auditor

Date: 22/9/2006.

Recommended/~~Not Recommended~~

Signed:

Name: Barry Laws

Title: T/L A/W, SATFO

Date: 22/09/2006.

Recommended/~~Not recommended~~

Signed:

Name: Ron Bartsch

Title: Manager, SATFO

Date: 23/09/2006

Appendix 4. 4

From:
Sent: Thursday, 5 November 2009 1:01 PM
To: 'Garniss Suzanne'
Cc: Executives
Subject: RE: response [SEC=UNCLASSIFIED]

Hi Suzanne,

The ALAEA has reviewed the CASA and Qantas responses to my complaint and would ask that the ATSB seek further information from those parties that appears to have been overlooked by both CASA and /or Qantas. The first relates to the one washer only being installed. CASA said -

> At a subsequent maintenance visit it was reported by the operator's engineers that the mount bolts on a couple of engines were installed with only one flat washer fitted. This in fact is not a defect as the Aircraft Maintenance Manual and the operator procedures allow for the fitment with only one flat washer. It was thought to be the 'normal' operator's practice to fit two washers. No Service Difficulty Report to CASA was required for this matter.

They either were not informed or have forgotten to mention that the one washer installed was the wrong size. There is no Maintenance Manual that endorses the use of incorrect sized washers. By doing so the bolt effectively becomes longer and when torque settings are applied by the Engineers, the bolt would be tightening onto itself to achieve the correct setting. The engine then is not mounted to the correct torque setting on the firewall. This alone could lead to an engine detaching in flight, particularly when all bolts across a number of engines has been involved.

The second of our concerns relates to this answer.

> At the same visit, it was reported that on one of the engines, 3 mount bolts had the countersunk washers fitted incorrectly, ie upside down. This was considered a maintenance error and was investigated by the maintenance organisation and the operator. The bolts were removed and examined for damage by the operator, with no significant findings or indications that would suggest any reduced in tensile strength. The bolts were replaced as an extra precaution.
> A review was conducted by the maintenance organisation for this maintenance error and it was not conclusive as to how the error occurred. The maintenance organisation sent a reminder to all engineers about the event. The errors were reported at the time of discovery by the operator to the CASA office oversighting the operator.

CASA have not answered the question. Why was this not reported under the SDR program. Yes the operator investigated. The MRO couldn't work out why this happened and Qantas had phoned CASA. No SDR report was submitted. It is mandatory. A submitted SDR report should have lead to a formal investigation by someone other than the operator and warnings via Boeing to all users of this facility. A proper investigation may prevent a disaster by other operators checking that their engines are installed correctly.

CASA have not answered these questions satisfactorily and seem to be supporting/assisting an airline to ignore the CARs.

Can you please advise me asap if the ATSB will be taking any further action.

Cheers
Steve Purvinas

From: Garniss Suzanne
Sent: Friday, 30 October 2009 11:40 AM
To:
Subject: response [SEC=UNCLASSIFIED]

Dear Steve
This is a copy of the responses from CASA and the operator that is proposed to go in the Flight Safety Australia magazine:

Operators Service Difficulty Report system

R200900038

Report narrative:
The reporter expressed safety concerns that one of the operator's aircraft flew for approximately 6 weeks with some of the aircraft's engine mounts incorrectly installed. The mounts were reported to have been installed at another maintenance facility. The reporter also expressed concerns that a Licensed Aircraft Maintenance Engineer had submitted an internal form to report to the operator that a serious defect had been found and that it was required to be reported to CASA via the CASA Service Difficulty Report system. The reporter believes that this report was not then submitted to CASA via their Service Difficulty Report system as the operator assessed the defect as not to meet the Service Difficulty Report requirements.

REPCON comment:

REPCON supplied the operator with the de-identified report. The operator advised that they had received a similar report through their internal reporting system. In accordance with published procedures the information contained in the report was reviewed. The review determined that the nature of the occurrence was such that no Service Difficulty Report was warranted as airworthiness was not affected.
They also advised that a further evaluation has taken place as a consequence of the submitted REPCON and this evaluation confirmed the appropriateness of the original decision.

REPCON supplied CASA with the de-identified report and a version of the operator's response. CASA advised that they have reviewed the issues raised in the REPCON and liaised with the operator. CASA provided the following comments:

The maintenance was carried out by an organisation highly experienced on this aircraft type appropriately approved to do so by CASA (and many other National Airworthiness Authorities).
At a subsequent maintenance visit it was reported by the operator's engineers that the mount bolts on a couple of engines were installed with only one flat washer fitted. This in fact is not a defect as the Aircraft Maintenance Manual and the operator procedures allow for the fitment with only one flat washer. It was thought to be the 'normal' operator's practice to fit two washers. No Service Difficulty Report to CASA was required for this matter.
At the same visit, it was reported that on one of the engines, 3 mount bolts had the countersunk washers fitted incorrectly, ie upside down. This was considered a maintenance error and was investigated by the maintenance organisation and the operator. The bolts were removed and examined for damage by the operator, with no significant findings or indications that would suggest any reduced in tensile strength. The bolts were replaced as an extra precaution.
A review was conducted by the maintenance organisation for this maintenance error and it was not conclusive as to how the error occurred. The maintenance organisation sent a reminder to all engineers about the event. The errors were reported at the time of discovery by the operator to the CASA office oversighting the operator.

All the best

Suzanne

Suzanne Garniss

Manager REPCON
Australian Transport Safety Bureau (ATSB)
Reply paid 600, PO Box 600
Civic Square,
ACT, 2608, Australia.

REPCON Aviation Confidential Reporting Scheme
http://www.atsb.gov..au/voluntary/repcon.aspx

REPCON Marine Confidential Reporting Scheme
http://www.atsb..gov.au/voluntary/cmrs/index.aspx

Aviation Self Reporting Scheme (ASRS)
http://www.atsb..gov.au/voluntary/asrs/index.aspx

Appendix 5.

001

QANTAS ENGINEERING AUTHORITY

EA: SM05724

SUBJECT/PART DESCRIPTION:				ATA:
INBD TRAILING EDGE FLAP - DIMENSION "Y" VARIATION				27-51----
AIRLINE/OPERATOR:	A/C OR ENG TYPE:	AIRCRAFT REGISTRATION:	PART NUMBER:	SERIAL NUMBER:
QF	743	VH-EBX	N/A	N/A

MANUAL REFERENCE:	ORIGINATING JOB/WORK REF (S.I/C/AWD):	ORIGINATOR'S REF:	ORIGINATOR'S PHONE/FAX NUMBER:	
AMM 27-51/58	T/L SEQ 295/313	N/A	852 2767 6144/6872	
ORIGINATOR'S NAME:	DEPARTMENT:	DATE RAISED:	DATE REQUIRED:	SUPERVISOR'S SIGNATURE:
M. RHODES	HEAVY MAINT - HKG	03/06/2008	03/06/2008	

REASON:
INBD T/E FLAP BALLSCREW DIMENSION "Y" VARIATION AND FLAP INDICATION AT 10 AND 25 U

This EA SM05724 cancels and supersedes EA SM05723

BACKGROUND: During flight crew acceptance checks following "SA" checks in Hong Kong, the indication for the Inbd T/E flap system was found outside of the "tee" at the 10 unit position by approx 2-3 needle widths (below "tee"). Indications at 20, 25 and 30 units were also marginal. No work was performed on the flap system other than the normal "SA" check inspection/defect/rectification/lubrication. However the Inbd aft flap was removed/installed for an unrelated repair. During subsequent trouble shooting the following anomalies were observed/rectified.

- Cable tensions of indication synchro drive mechanisms were found outside MM limits and were adjusted per AMM 27-58-00
- Flap position transmitters were adjusted iaw AMM 27-58-01
- The "Y" dimensions were found out of limits on all of the Inbd screw jacks with the #5 contacting. Troubleshooting procedures AMM 27-51-00 Procedure 4 was carried out
- Hydraulic module P/No 68160-3 was replaced iaw AMM 27-51-10
- No coast drag brake was replaced and adjusted iaw AMM 27-51-42

EA SM05723 was issued on the 1st June 2003 to allow continued operation with the inbd trailing edge flap indicators both indicating approx one needle width LOW at the 10 unit position only, all other positions were within limits.

****

Subsequently further flight crew checks found the force required to operate the Flap lever was excessive and further investigation was required.

Continued on page 2

FAXED

PERMANENT: Yes	FOLLOW-UP REQUIRED: Yes	PLANNING ACTION REQUIRED BY:

FOLLOW-UP ACTION
Aircraft planning to schedule rectification after HKG/SYD leg (non revenue) and before further flight. Discussions with Tech services to identify appropriate rigging procedures re DWG 61B04007 and 65B04007.

VALID FOR: THIS APPLICATION ONLY

DISTRIBUTION	LOCATION / FAX
Maintenance Watch - Boeing QCC2	2-1811
Heavy Maintenance - HKG via Mwatch	852 2767 6872
Avionics Engineering	S-AB1/3

COMPILED BY (INITIAL SURNAME): A.Roberts

PHONE NUMBER: 2-9240

PAGE: 1 OF 2

APPROVED BY:

SIGNATURE: CAR 42ZS (1)

DATE: 03-Jun-08

ARN 665256

QANTAS

ENGINEERING AUTHORITY CONTINUATION SHEET

EA: SM05724

Significant re-rigging and adjustment was carried out of the inbd flap control system to balance the conflicting requirements of dimension "X" and "Y" ball screw limits as well as Flap lever input forces. The following anomalies now exist with the inbd trailing edge flap system.

- Flap control cable tensions (WFA and WFB) are per AMM limits and the inbd T/E flap ballscrew dimension "X" (FLAP UP POSITION) is approaching minimum limits of 0.600-0.650 inches with the AMM dimension being min 0.540 inches (inside AMM limits).
- The inbd T/E flap ballscrew dimension "Y" (FLAP 30 POSITION) at ballscrew #3 is 0.530 inches, #4 is 0.530 inches, #5 is 0.500 inches and #6 is 0.500 inches with the AMM min dimension being 0.720 inches (outside AMM limits)
- The flap lever handle requires approx 14 lbs force to engage the 30 UNIT detent, and has a preload which will result in approx 0.6 inch spring back of the lever if disengaged. **FLIGHT CREW must assess this anomaly from an operational perspective. The additional forces are not considered detrimental to the mechanism.** (The AMM limits for flap lever forces is 4 lbs in each direction with an additional 7 lbs to engage the detent at flaps 30.)
- The inbd T/E flap indication now indicates a needle width on the low side of the TEE at the 10 and 25 unit position and in the upper portion of the "TEE" when at the full UP position.

ACTION: This EA authorises the continued operation of VH-EBX with the referenced inbd trailing edge flap anomalies subject to the following limitations:

1. The operating flight crew are presented with a copy of this EA before flight.
2. If accepted by the flight crew the aircraft is operated for only ONE sector on a NON REVENUE basis before further rectification is to take place per AMM procedures and Boeing production rigging specifications drawings.
3. Delete the NTC issued under EA SM05723

FAXED

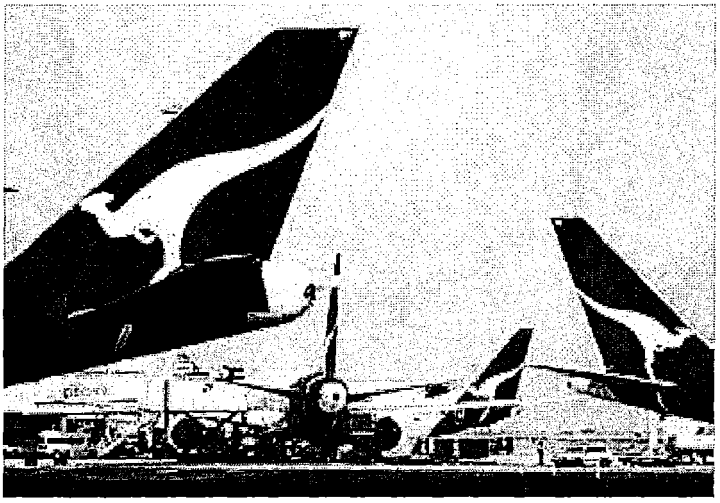
APPROVED BY		
		03-Jun-08
PAGE	SIGNATURE	DATE
2 of 2	CAR 42ZS (1)	ARN 565256

Appendix C. 346

THE AUSTRALIAN

Overseas crew switches off plane's emergency air

BY GEOFF EASDOWN HERALD SUN MARCH 22, 2007 12:00AM



Deadly ... an overseas maintenance crew sealed off a Qantas jet's back-up oxygen supply. Source: No credit

Emergency oxygen sealed off by ground crew
A330 Qantas plane flies Manila to Sydney
Experts say the bungle could have been fatal

A QANTAS passenger jet flew from Manila to Australia without emergency oxygen because it had been sealed off by Philippines maintenance workers.

The fault was discovered only after the 300-seat A330 Airbus landed at Sydney airport.

Angry pilots and engineers have called for a Senate inquiry into maintenance policies at Qantas, and the airline has ordered an urgent internal investigation.

The plane, on a ferry flight after a major overhaul, was carrying a flight crew and possibly some Qantas staff.

A damaging audit report on poor maintenance of a 747-400 Jumbo in Singapore last year was also revealed this week.

The incidents add to concerns among airline staff and politicians that maintenance standards could fall if an $11.1 billion bid for the carrier succeeds.

A leaked maintenance report on the Airbus seen by the Herald Sun and dated March 11 says: "On investergation (sic) found crew oxy bottle shutoff valve in the closed position and lockwired."

The report notes the valve was opened to the flow position by engineering staff at Sydney's Mascot airport.

Angry pilots and maintenance engineers compared the problem with the situation Prime Minister John Howard confronted in a smoke-filled RAAF Hercules in Iraq at the weekend.

"If there had been smoke in the (Qantas) aircraft, the crew would have needed that oxygen," said Capt Mike Glynn, acting president of the Australian International Pilots Association and a qualified A330 pilot.

"This oxygen is meant to be provided to flight crew during an emergency."

Capt Glynn said if the problem was missed in a pre-flight check, it could have led to "potentially dire circumstances".

Steve Purvis, federal secretary of the Australian Licensed Aircraft Engineers Association, said "that plane would have dived in the dirt in an emergency without oxygen in the cockpit".

David Cox, Qantas executive general manager, engineering, said a back-up oxygen bottle had been on the plane.

Both Capt Glynn and Mr Purvis said the oxygen incident and flaws in work carried out on a Boeing 747-400 by a Singapore contractor highlighted the need for a Senate inquiry into Qantas maintenance.

Mr Cox acknowledged that the A330 was flown to Australia with the oxygen valve wired shut.

He said the Airbus, registered VH-EBA, carried only the cockpit crew and "possibly several other staff" on the flight.

The plane had returned from Manila where Lufthansa Technik, an offshoot of Germany's international airline, had carried out a major C-check overhaul.

"No facility is perfect, every facility has problems," said Mr Cox, arguing that it was the diligence with which maintenance issues were managed that was what eventually counted.

He would not discuss how the problem occurred, noting that a "quality resolution was in play with Lufthansa Technik". Pressed again how the problem came about, Mr Cox replied: "I don't think that's appropriate for me to speculate.

"We are running an investigation with the provider. We will run it down to root cause.

"We will not give up if we are going to use that facility again until the specifics of that issue have been resolved."

Mr Cox said the leaked details involved confidential information from the Qantas audit system and it could become a criminal matter that the document was in someone else's hands.

The oxygen issue is the latest in a series of complaints airline staff have raised about contracting maintenance to low-cost overseas workshops.

A report in The Australian yesterday noted that a Qantas investigation had raised doubts over whether maintenance carried out on its planes overseas was meeting the airline's own standards or those of the Civil Aviation Safety Authority.

Mr Cox said of maintenance contracts: "If the standards are not up to our expectations we will go in and

deal with that."

Comments *(#social-comments)*

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Appendix 7.

national
column 8
spike
world
opinion
business
technology
sport
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classifieds
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Home > National News > Article

Two Qantas jumbos grounded after crack discovered

September 27, 2003

Print this article
Email to a friend

Qantas has grounded two 747-400 planes after a crack was found in the fuselage of one of the jumbo jets.

A Qantas spokeswoman said the crack was found during a regular heavy maintenance check of the jet and the airline was working with manufacturer Boeing to determine the extent of the damage.

The Civil Aviation Safety Authority (CASA) had been informed of the crack and would be advised of the outcome of an investigation.

"As part of a regular heavy maintenance check we discovered some low level damage to the fuselage of a 747-400 aircraft," the Qantas spokeswoman said.

"We're investigating the cause of that damage and we're working closely with Boeing, the aircraft manufacturer, as we go through it.

"We have advised CASA and we will be keeping them up to date and advising them of the outcome of our investigating."

She said a second Boeing 747-400 purchased and being repainted at the same time as the first aircraft was also being inspected as a safety precaution.

"It is on the ground for a couple of weeks while we inspect that aircraft," the spokeswoman said.

"The first aircraft was already out of service and was going to be for some weeks because it was undergoing its major maintenance check."

She said Boeing planes were designed to sustain such cracks in the fuselage.

"The aircraft is designed by Boeing to be able to sustain that type of damage in between its regular heavy maintenance check," the spokeswoman said.

But she refused to say what caused the crack.

"That will all be part of the investigation, the cause of the damage," the spokeswoman said.

National
- Dogs cock leg on family tree
- Hounds master the foxtrot in hunt for self-expression
- International flights delayed two hours by jet fuel shortage

World
- Clash of cultures looms as Starbucks marches on France
- On hold - the US ban on phone marketing
- Oops ... scooters in safety recall

Opinion
- Double Bay, double benefit
- Tips fit for a right royal prince on crocs, blueys and the shout
- Life of the Liberal Party

Business
- Playing hardball on trade
- Stanbroke combatants await Tuesday's call on cattle
- Market drops as investors question global recovery

Technology
- The world's best blogs
- SIMply red
- All keyed up

Sport
- Baddeley thwarted with a sub-60 in his sights
- Ferdinand tips United's new crew will help steady the ship
- Brother's tragic death inspires Matildas star

Entertainment
- Soft-boiled, hard to crack
- Why do people throw their old shoes onto overhead wires so they hang down by their laces?
- A hairy area in which to dice with semantics

Appendix 8

12 September 2012

25 Stoney Creek Rd Bexley 2207 NSW
Ph: (02) 9554 9399 Fax: (02) 9554 9644
Email: alaea@alaea.asn.au
Web: www.alaea.asn.au
ABN: 84 234 747 620

Peter Cromarty

Executive Manager of Operations

CASA

Re FAA AD Mandated Scribe line inspections aircraft Boeing 737-400

Dear Peter,

The Australian Licenced aircraft Engineers Association (ALAEA) has recently become aware of a potential safety issue concerning several Boeing 737-400 aircraft that have undergone FAA AD 2010-05-13 mandated fuselage scribe line inspection using an FAA Approved laser measuring system.

The Association was contacted by a person involved in the development and use of the only FAA approved measuring system for aircraft for unrestricted return to service.

It was reported to us that an aircraft that is now registered as SE-RET underwent maintenance at the Malaysian Airlines Maintenance facility in January 2012 and as part of that maintenance underwent a fuselage scribe line inspection. The person that made the reports to us was concerned that the measurements used during the inspection were not accurate and that the pre inspection preparation was not done in accordance with the procedures, which would make the inspection results invalid. His considered observation was that the teams performing the inspections were not competent to do so.

A second report was made to us that an aircraft registered as OO-VEP recently underwent maintenance at the ST AEROSPACE facility in Singapore and had a mandatory fuselage skin scribe line damage inspection carried out. It was reported to us that there was a likely possibility that the measuring equipment used was not in calibration at the time of the inspection and had an error margin that if applied to the inspection results would have resulted in the aircraft being requiring extensive repair before further flight.

The ALAEA is bringing these reports to your attention as both of these facilities have CAR30 approvals to carry out maintenance on Australian aircraft. At the time of the scribe inspection aircraft SE-RET carried the Australian registration VH-VBM.

Our preliminary investigations suggest that the aircraft SE –RET is currently operated by Scandinavian Airlines, and OO – VEP may be operated by either Brussels Air or Enter Air. We believe that both aircraft are owned by GE Capital Aviation Services (GECAS).We are writing to these parties to express our concerns.

We are also writing to the European Aviation Safety Agency (EASA) as the aviation regulator responsible for those aircraft as they are currently operated and the United States FAA as the aviation regulator responsible for the approval of the measuring system that was used.

As the information that has been reported to us and the accompanying documentation is quite complex the ALAEA requests that a CASA representative be made available to meet with the Association to discuss the reports that we have been provided with in order to progress an appropriate investigation into the use and practices of scribe line inspections.

We look forward to your prompt attention to this matter.

Yours Sincerely,

Stephen Re
Trustee and Technical Affairs
Australian Licenced Aircraft Engineers Association

Australian Government

Civil Aviation Safety Authority

OPERATIONS DIVISION

TRIM Ref: EF12/8034

15 November 2012

Mr Stephen Re
Trustee and Technical Affairs
Australian Licenced Aircraft Engineers Association
25 Stoney Creek Road
BEXLEY NSW 2207

By Email: alaea@alaea.asn.au

Dear Mr Re

The Civil Aviation Safety Authority (CASA) thanks the Australian Licenced Aircraft Engineers Association (ALAEA) for bringing this matter to our attention. CASA notes that neither aircraft remain on the Australian register. We also note the ALAEA has communicated concerns regarding these aircraft to the European Aviation Safety Agency.

In order to conduct an appropriate investigation CASA will need additional specific information from the ALAEA about the concerns raised by the reporter.

Such information would include the specific nature of the inaccuracies surrounding the measurements and the specific deficiencies in training associated with the inspections at Malaysian Airlines Maintenance; and the specific equipment that it is alleged was used at ST Aerospace and was not calibrated.

In the meantime CASA has used the information provided by the ALAEA to scope surveillance of Malaysian Airlines Maintenance and ST Aerospace CAR 30 approvals.

Yours faithfully

Peter Cromarty
Acting Executive Manager
Operations

16 November 2012

25 Stoney Creek Rd Bexley 2207 NSW
Ph: (02) 9554 9399 Fax: (02) 9554 9644
Email: alaea@alaea.asn.au
Web: www.alaea.asn.au
ABN: 84 234 747 620

Peter Cromarty

Executive Manager of Operations

CASA

Re: FAA AD Mandated Scribe line inspections aircraft Boeing 737-400

Dear Peter,

Thank you for your attention to this matter.

The ALAEA is more than happy to provide CASA with the additional specific information requested.

Can you please advise us of the most appropriate way to relay this information to CASA. As mentioned in previous correspondence the information is quite in depth and will require some discussion.

Yours Sincerely,

Stephen Re
Trustee and Technical Affairs
Australian Licenced Aircraft Engineers Association

Australian Government
Civil Aviation Safety Authority

RECEIVED
05 DEC 2012
BY: .....

OFFICE OF THE DIRECTOR OF AVIATION SAFETY

File Ref: GI12/1221

30 November 2012

Mr Stephen Re
Trustee and Technical Affairs
Australian Licenced Aircraft Engineers Association
25 Stoney Creek Rd
BEXLEY NSW 2207

Email: alaea@alaea.asn.au

Steve

Dear Mr ~~Re~~

I refer to your letter dated 16 November 2012 addressed to Mr Peter Cromarty, Executive Manager, Operations Division at the Civil Aviation Safety Authority (CASA) regarding Federal Aviation Administration (FAA) Airworthiness Directive (AD) Mandated Scribe line inspections in Boeing 737-400 aircraft.

I am advised that the most appropriate way to relay the specific information is in writing, along with any supporting evidence that is available, to Mr Gerard Campbell, Acting Executive Manager, Operations Division, on email gerard.campbell@casa.gov.au.

Once this information is received by CASA, the Regional Manager for Sydney Region, Mr Roger Chambers, will convene a meeting with the ALAEA and CASA technical specialists to explore the matters raised. This will ensure that CASA can reasonably establish any matters requiring further examination and, where needed, clarify the information provided.

Yours sincerely

Carolyn Hutton
Manager
Corporate Relations

Trustee 1- Steve Re

From: Trustee 1- Steve Re
Sent: Friday, 30 November 2012 3:44 PM
To: 'CAMPBELL, GERARD J'
Subject: FAA AD Mandated Scribe Line inspection on 737-400 Aircraft
Attachments: Tech Report 1197.pdf; Tape with pointer.jpg; Linear Slider broken.jpg; DSCF9745.JPG; DSCF9744.JPG; Rvs_OO-VEP@120417_091428.jpg; Rvs_OO-VEP@120417_091428m00.bmp; Rvs_OO-VEP@120417_094024.jpg; Rvs_OO-VEP@120417_094127.jpg; Final Report on VH-VBM-rev1.pdf

Dear Gerald,

I refer to correspondence from Carolyn Hutton 30 November 2012 advising that the most appropriate way to relay specific information regarding our concerns relating to scribe line inspections that have been carried out in offshore CAR 30 facilities is to supply the information to you via email, which will enable a further meeting to be convened with the ALAEA and CASA Technical Experts.

Due to the large amount of information that I have been provided it may be difficult to email all of it, so at this stage I am emailing a sample of that material for assessment. I am willing to email more if required, however it may be easier to provide CASA with a storage device such as a USB drive with all of the information on it when the follow up meeting is convened.

Please let me know what you would prefer.

In relation to ST AREO

I have attached:
A technical report from the equipment manufacturer for ST AERO's unit SDMS 1197
Images from SDMS 1197 relevant to the report
Images from ST AERO using SDMS 1197

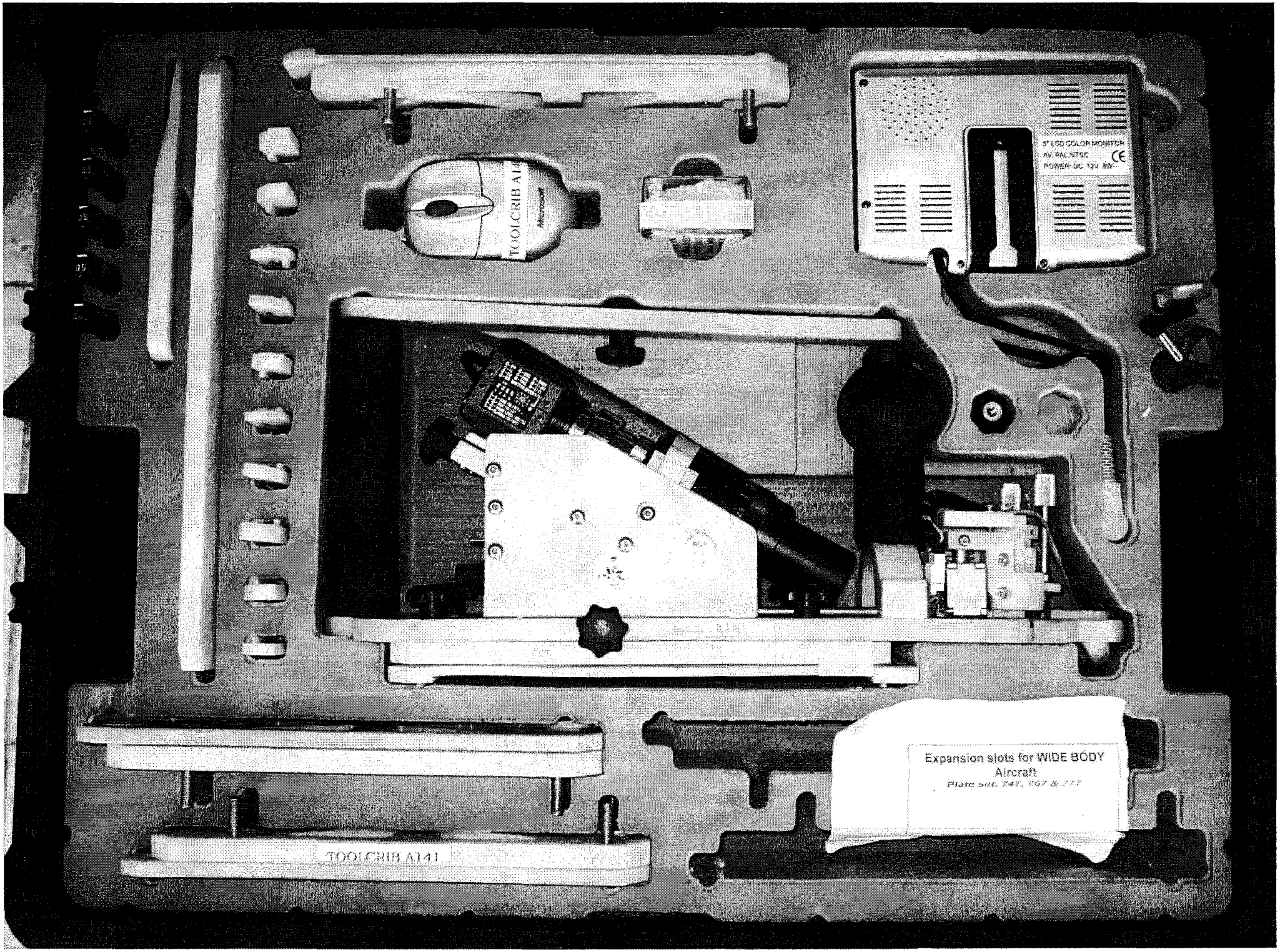
In relation to MAS

I have attached:
A report by the equipment manufacturer on VH-VBM Scribe Line Measurements at MAS 11 March 2012.

Regards

Steve Re

Stephen Re | Technical Affairs and Trustee | **Australian Licenced Aircraft Engineers Association**
25 Stoney Creek Road, Bexley NSW 2207
P: 02 9554 9399 | F: 02 9554 9699
e: trustee1@alaea.asn.au | w: www.alaea.asn.au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Expansion slots for WIDE BODY
Aircraft
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info@remotevs.com
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P/N:SDMS-VM-
S/N:1197
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Hextronics Pty/Ltd
ABN 22 350 386 160

154 Margetts Road, Yea, Victoria 3717. Australia.
Postal Address, PO Box 249 Yea, Victoria, 3717. Australia.
Email hextron@bigpond.com
Tel: +61 (0) 432 438 248

11th March, 2012

Report on VH-VBM Scribe Line Measurements at MAS

1) Synopsis

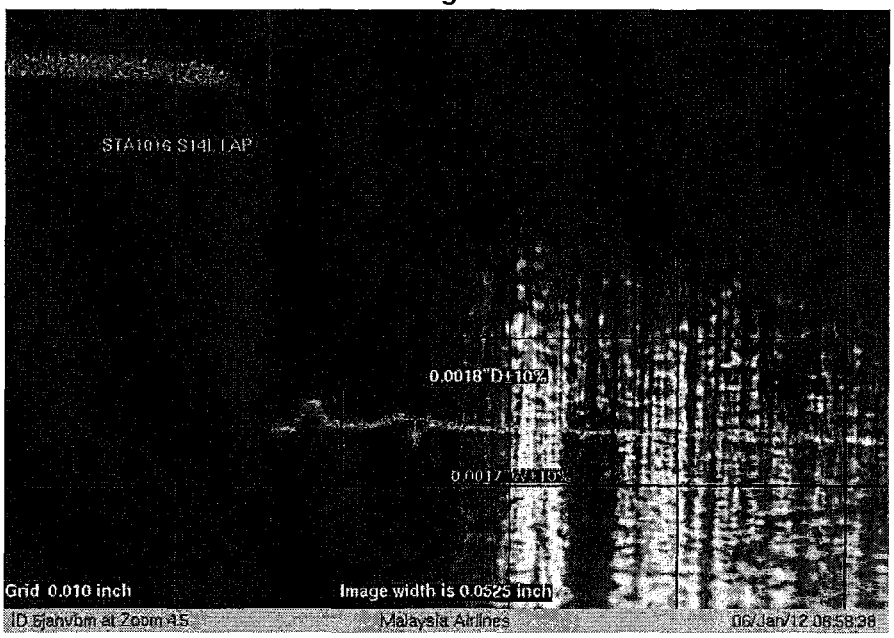
Due to concerns that Scribe Line measurements on VH-VBM were not conducted correctly I travelled, (after I examined images stored on the MAS InspectCam in my Workshop) under contract to PARC Aviation Services to MAS, Kuala Lumpur. Personal from MAS conducted a series of Scribe Line measurements while I observed the procedure and results. The observation of the Aircraft and the Inspection procedures showed lack of knowledge in using the SDMS, lack of team work, lack of understanding of the requirements of Boeing and substantial evidence of incorrect surface preparation.

2) Concerns from examining Inspection Results in Australia.

When I examined the results, stored under ID's **VH-VBM** and **6thjanvbm** on the MAS InspectCam at my workshop in Australia prior to travel to MAS; I detected two fundamental types of errors!

2a) The Image shown below (from ID 6thjanvbm) was captured and measured with a software zoom setting of 4.5. This is the requirement of all Boeing documentation for the 1 thou scribe line limit (0.001"). The image CLEARLY showed that the lens WAS NOT set to match the Software setting of 4.5.

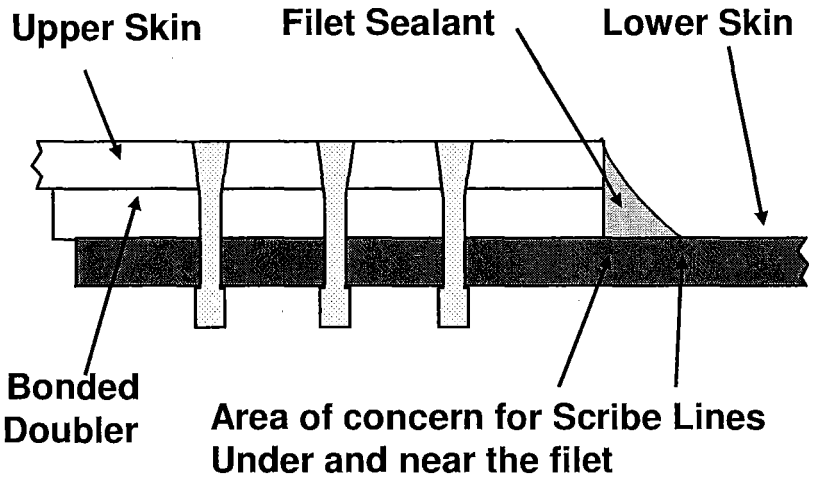
Image 1



The Step in the Lap Joint is approximately 25 thou, (from the grid on the Image). See Drawing 1 below for what this should be.

Drawing 1

Typical 737 Lap Joint Detail



The above shows the structure of the bonded doubler on a 737 Lap Joint, on the 737-700 each sheet is close to 40 thou in thickness, the step should therefore be in the order of 80 thou, NOT 25 thou as per **Image 1**.

It is my considered opinion that this error should have been rapidly noted by the personal conducting the Inspection. Also QC at MAS should have detected the error.

During training on the use of the SDMS and clearly stated in the operational manuals supplied with the system is the requirement that Hardware and Software Zoom setting MUST MATCH!
This was clearly NOT the case for 7 of the 18 images in ID 6janvbm. This shows a MAJOR operational error in using the SDMS! As a result of these errors the entire Inspection contained with ID 6thjanvbm must be considered invalid.

From The RVS InspectCam Manual (page 12), as supplied to MAS

6.4 InspectCam Measurement Zoom Controls

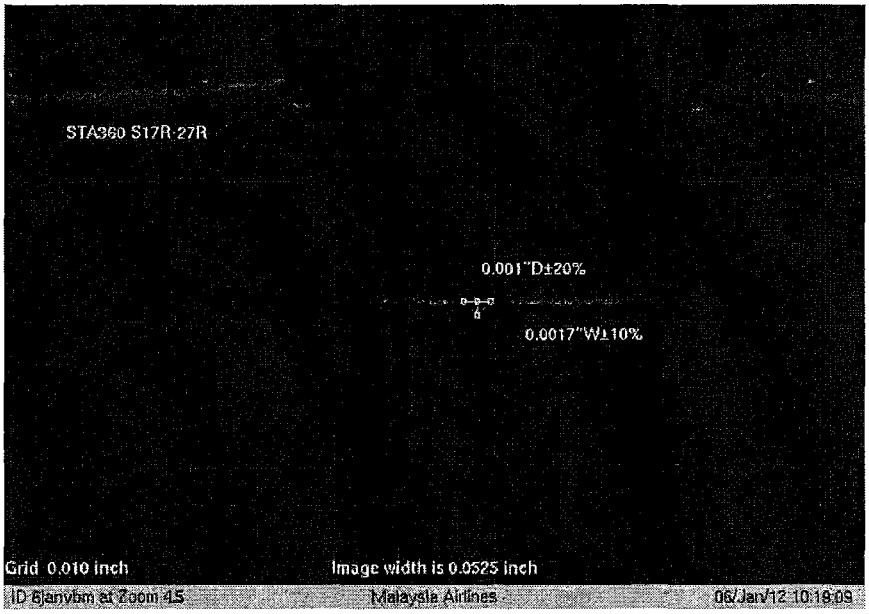
When the InspectCam is interfaced to Laser Measurement Module, ***the user MUST ensure that the zoom factor on the lens of the LMM matches the zoom factor set on the InspectCam.*** *The zoom factor is displayed central just under the image on the InspectCam screen.*
(See Appendix B)

The zoom of the lens on LMM can be adjusted by rotating the „lens ring that is located in the centre of the lens. The zoom settings of lens are etched next to the aligning marks. Rotating the ring can zoom in or out to gain the best view to measure the subject. (Zoom factors range from 0.7-4.5) All measurements of 5 thou" (0.005") or less MUST be made with an image stored with "Zoom 4.5". This gives an image magnification factor of about 170.

To change the zoom factor on the InspectCam, press the TAB key, then press the number keys from 1 to 9 to set the zoom factor ranging from 0.7 to 4.5 respectively. Finally, press „Enter to confirm selection. For example, to set zoom factor as 3.0, press „TAB –> „6 –> „Enter.

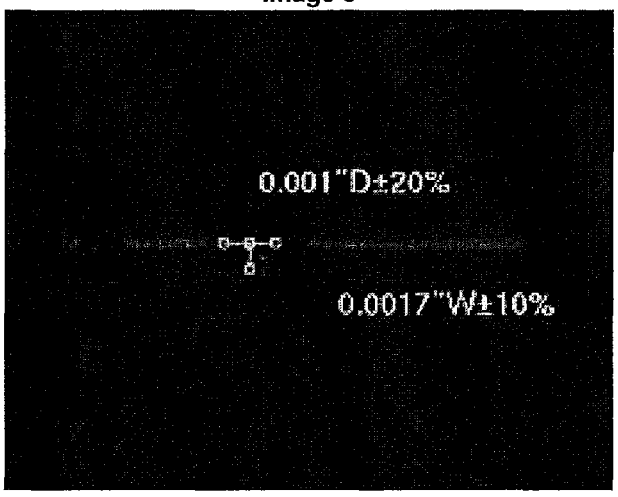
2b) A second fundamental error can be established via the image below.

Image 2



To clearly see the problem requires the detail of the measurements to be enlarged.

Image 3



NOTE:- For those that are not familiar with the measurement features of the SDMS please read **Appendix A "SDMS Measurement Features"** before proceeding!

The errors in the above Image 3 are:-

2b-1)
The measurement shown as 0.0017"W+-10% is in fact not a measurement. The W command was used here as a means of drawing a base line across the image. W stands for Width! The use of the W command to draw a Base Line is INCORRECT! In should be the "B" command. B being for Base line! (Appendix A explains the detail of why "W" cannot be used for a base line).

2b-2)
Regardless of the usage of "W", the selection of the starting point for the W line is too high! The selection must always be at the bottom of the Laser Line. (Appendix A explains why)

2b-3)
The use of "D" is NOT recommended. (The "D" command was used in Image 3; the small square at the junction shows that clearly!)
PLEASE Note. D stands for Depth and on the face of it seems a valid command to use! In practice the use of "D" for depth to measure depth is not as accurate as using "J". (Join)

Appendix B addresses the issue of "B" & "J" with regard to Boeing NDT Part 10, 53-30-01 Rev 16 Nov 2010. There are "Typos" in this document and some contradictions.

2b-4)
The step in the Butt joint is approximately 13 thou, once again the wrong Zoom setting on the LMM.

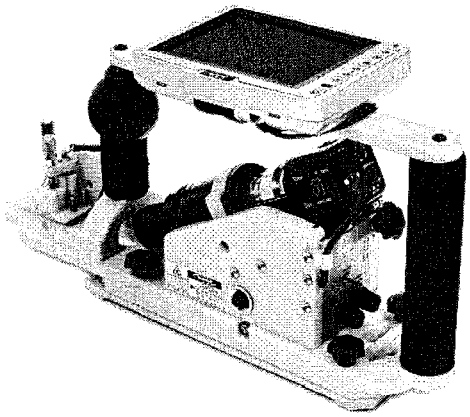
I am concerned that QC at MAS did not establish that the above problems had occurred.

3) Notes about using the SDMS.
The SDMS is an unusual measurement system. It performs the measurement task with repeatable accuracy, but requires a focused approach with a team of at least two personal. The team must be just that, a TEAM THAT WORKS TOGETHER!

The LLM is the key to the SDMS system. It has controls near both front and rear handles.

As shown below.

LMM



The major difficulty in using the LMM is the depth of field at full zoom which gives an image magnification of approximately M=170.
The width of the viewed section of metal when at full Zoom (4.5) is about 52.5 thou. Or about 1.3mm. The depth of field is only 6 thou, or about 0.15mm. **This is very small.** Therefore the LMM MUST be held STEADY! The weight of the LMM is 1.9kgms. Therefore after 10 to 20 mins a rest is needed. Various techniques are taught in the training class to make the task as easy as possible. One MAJOR recommendation pointed out in training is the use of a TEAM to carry out the Inspection. The recommended team is 3 persons. But always no less than 2! The solution is that the team rotate inspection duties! Highly important is that all team members have all the required knowledge and skills to take any role in the Inspection. Critical is that the team member holding the LMM is supported by at least 1 other team member. The technique being "One Holds the LMM, the Other Adjusts as required." The reason that we suggest 3 team members is operational safety. The third person maintains "Situational Awareness". He watches out for cables around feet, etc. His position is recommended always to be close to the InspectCam to assist with pressing the store key! It has been observed that most users have adopted a 3 team approach.

4) On Site at MAS, Thursday 1st Feb.

The Inspection was primarily carried out by two MAS personal. One of which I recognised as been in the training course conducted at MAS on July 2 & 3, 2008.

I noted the following during the Inspection!

4a) The **Team was poorly organized** with regard to positing themselves to "work together". The person X holding the LMM must be in the best position with regards to the work surface, Person Y assisting must be able to adjust either front or rear controls.

4b) This became very obvious during the Inspection. For person X holding the LMM, and person Y assisting with adjustment, they require to talk to each other to do this. No such interaction was occurring. They require very close physical cooperation. It was not happening.

4c) Hence the Inspection produced results at a slow rate. I then "suggested" various changes to the procedure. They were very slow to take up the suggestions!
When it came to using the measuring software on a captured image the same problems arose as per the 6th Jan Inspection. Errors in setting a "Base Line" via a "W" command. This was quickly fixed when I stated "Use B". But slower when I stated "use J", not D!
It is my considered opinion that these two operators have little or no experience working as a team with the SDMS. The difference in knowledge level between to two people was large. This prevented any chance of a time effective Inspection!

4d) In all fairness to the personal concerned, allow me to point out the following observations:-
The "Operational Errors" can easily be corrected by further intense training. The functioning as a team is not so easy. These people must have the chance to develop team skills. The teams need to be fixed. Both members need similar skill levels. I see the failure more as one of management in nature. The teams cannot be expected to retain skills without periodic use of those skills. I feel the whole issue of Scribe Inspection is not treated by MAS with the required level of seriousness.

5) Results for the InspectCam of VH-VBM as conducted on Thursday, 1st Mar.

The results for this Inspection are VALID, as I took steps to ensure each required Scribe was Captured and measured Correctly. This required intervention at some parts of the Inspection. PLEASE REFER TO (6b) BELOW REGARDING LRTS.

6) Other observations relating to the Aircraft VH-VBM and MAS

6a) Surface Preparation.

Boeing has published many documents and conducted many Training & Information Seminars relating to the Scribe Line Problem.

The industry should by now be very aware of the issues and procedures to follow.

The first and most important step in Scribe Line Inspection is Surface Preparation. This was clearly not carried out correctly at MAS for the Jan 6th Inspection. The area that MUST be observed very closely, is right up to the edge of the Lap Joint! The Sealing Filet must be removed. The Image below shows that was not the case. The image clearly shows a substantial amount of the filet still in place. This Image also shows, once again; incorrect setting of the Hardware Zoom. The image magnification should be about 4.3 times larger. This would give a filet of at least 18 thou width. Plenty of room to hide a Scribe Line! On all the areas Inspected on Thurs 1st Mar I carefully checked for this problem. All were clean. The question remains, how was the rest of the Aircraft? This is a concern!

Image 4

Areas of the Butt points clearly showed a high level of surface working. I believe that NONE of the surfaces that I saw on the 1st Mar were the same surfaces as per the Jan 6th Inspection. Very substantial "Cleaning" had occurred since 6th Jan.

Image 5

This image shows a high level of "Surface Work". The surface shows that extensive rubbing has occurred, most likely with Scotch Brite. The "Land" is well rounded, a feature of Scotch Brite.

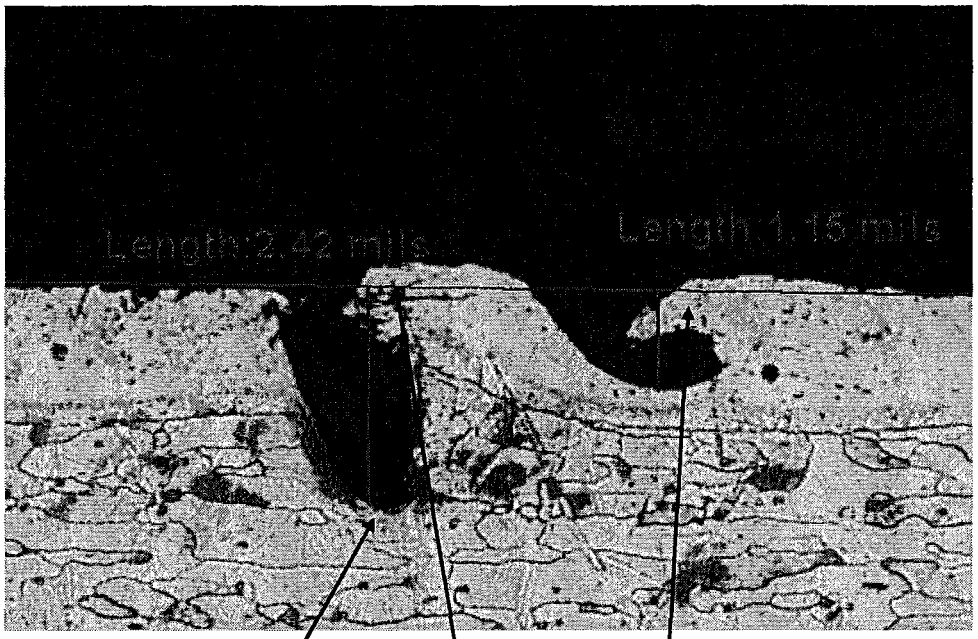
From Boeing Document NDT Part 10, 53-30-01 rev 16 Nov 2010.

Page 1, Section 3, Part A (1)

Note:

Remove paint and sealant from the inspection surface so as to not damage the part. Do not use abrasives such as abrasive paper or Scotch Brite pads. The use of Abrasives can cause the scribe line inspection or depth measurement to be incorrect. etc.

Image 6



Contamination of Scribe Impossible to Clean

Folded Lands

The above image shows why Scotch Brite etc are such a problem. They cause the lands to collapse and fold over. This can trap contaminates in the scribe line as well as moisture. Also the folded lands can prevent the Laser seeing the true bottom. Therefore the depth reading will always be too low! No Scotch Brite is ALWAYS covered in detail during training on the SDMS.

6b) I have carefully examined ALL images that I have from VH-VBM, I consider that the surfaces were rubbed with an abrasive PRIOR to the first Inspection as stored in ID 6thjanvbm. From examining the detail of the surfaces I believe the material used was Scotch Brite, most likely the Brown (dark red) Grade. This is a very coarse grade!
(I hold 1000's of images showing surface damage from many tools and Scotch Brite)

I am concerned with the surface work practices used at MAS.
From various Boeing documents come the following directives:-

737 AMM 51-21-21
–Says to use abrasive pads

- Do NOT use abrasives for scribe inspection zones not yet inspected for scribes
- Abraded surfaces can hide scribes and or prevent an inaccurate depth measurement

Areas that have be abraded have limited options

- LRTS
- Repair

On the basis of the above I would consider that NO SCRIBES found on VH-VBM can fall into the "allowable damage' category. This would mean VH-VBM is LRTS.

7) Other Observations

I cannot verify the following statements; they were passed on to me during the visit.
"MAS stated that the SDMS is only for Lap Joints".
WRONG!
From **Boeing Document NDT Part 10, 53-30-01 rev 16 Nov 2010.**
Page 1, Section 1, part A.
"Use this procedure to find scribe lines and measure scribe line depths in the fuselage skin and butt joint splice plates."

"MAS measured 1.6 thou with the SDMS but the Optical Micrometer measured 1 thou, they wrote up 1 thou"

The Optical micrometer is only approved by Boeing for the 6 thou limit!

Conclusions.

Operational and Procedural errors were clearly seen by me during my observations of the stored InspectCam images prior to my visit and while on site at MAS. I believe the basis for these errors go far beyond operator competence and are management questions! I saw no evidence of effective QC oversight addressing these issues.

The major areas that need addressing are:-

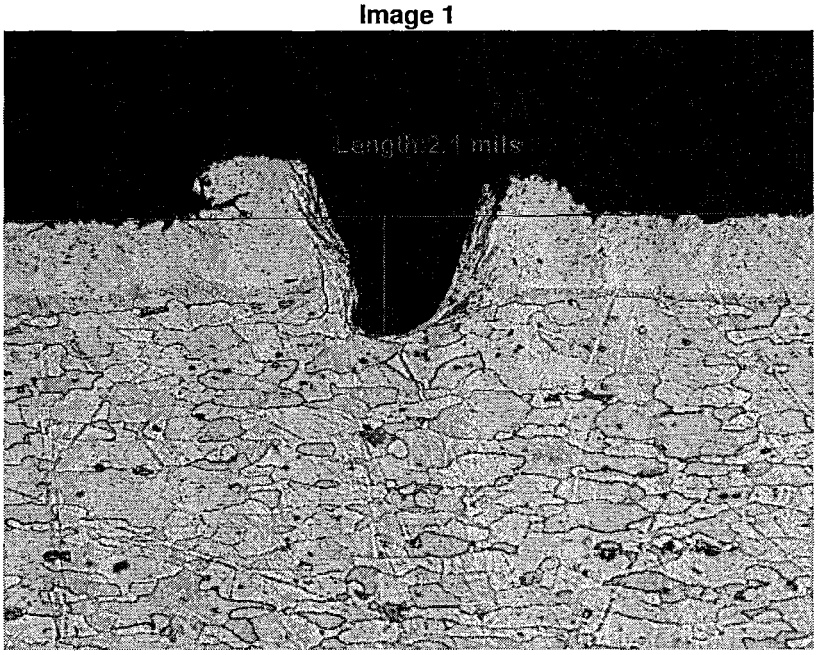
a) Retraining to ensure correct operational produces are followed with both the LMM and the measurement Software.
b) Team skills must be developed to allow time effective and accurate work.
c) The entire question of Surface Preparation must be addressed at MAS.
d) QC needs to address why they did not detect the problems

Russell P Hexter
C P Eng, FRMIT
Director of Engineering, Hextronics P/L

Appendix A SDMS Measurement Features

1) Boeing Requirements for Scribe Line measurements.

Image 1



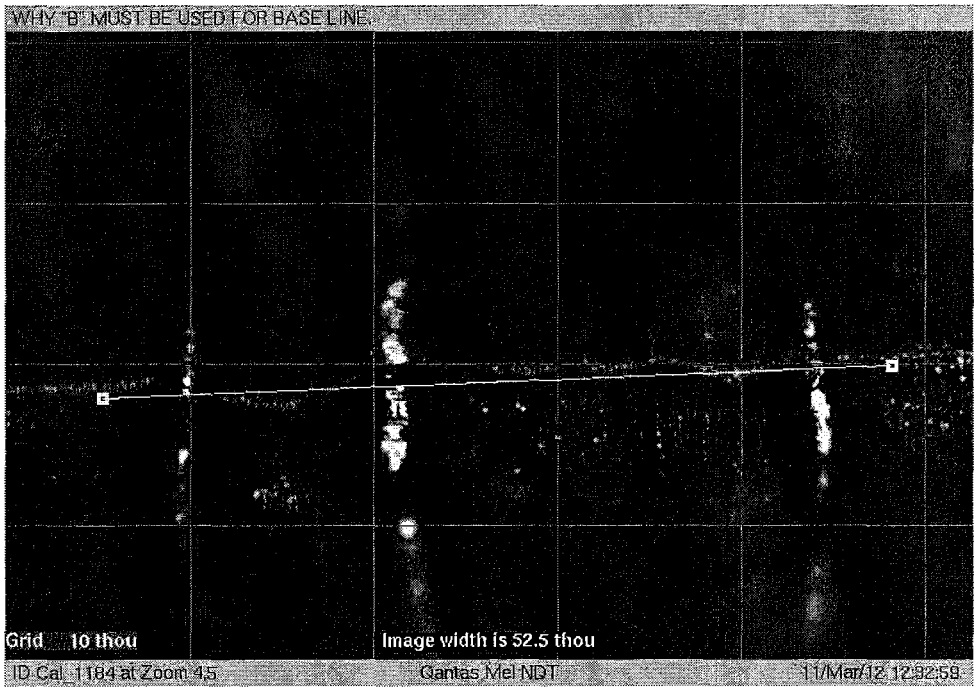
The above is a cross sectioned Scribe Line, showing the damage below the surface. Note this scribe goes below the Protective Cladding and down into the pure Aluminum. Boeing requires the depth of the Scribe BELOW THE UNDAMAGED SURFACE. Hence in the above image a "Base Line" has been drawn. This was a flat sheet of Aluminum. Easy! In practice on an Aircraft nearly all surfaces have a curvature! This must be allowed for.

The solution was to be able to draw a Base Line on the stored InspectCam Image.

Image 2

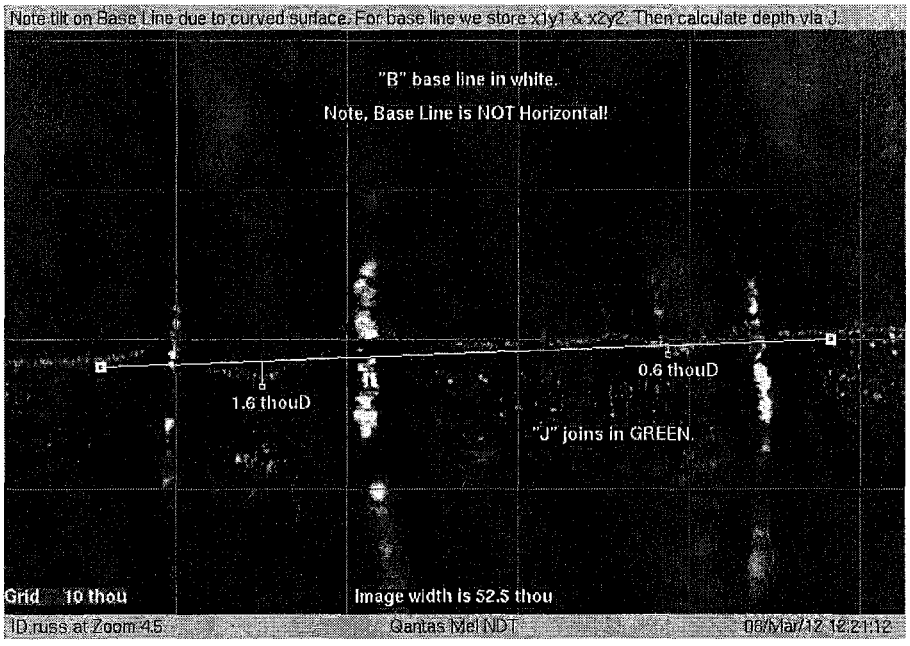
Above is the RAW captured Image, shows 3 "Lands with damage between them". The Base line is required to join undamaged surfaces. Hence we draw the Base Line as shown below.

Image 3



The damage that is of concern is always BELOW this Line!
Note that this line is NOT drawn as a vector, but as a "stair case approximation".
This is due to using a pixel based display screen. When we draw a Base Line we store X1 Y1 & X2 Y2, This allows the internal mathematics to be preformed as if the Base Line was a true vector.
The recommended procedure now is to use "J" to join up to the base line.

Image 4



Note that a "J" line just touches the base line, no small square is shown.

2) Boeing requires the use of a Base Line for all Scribe Line Measurements.

From Boeing Document, **NDT Part 10, 53-30-01 rev 16 Nov 2010. (The latest rev)**

Page 3,
Section F
Part (5):-

Draw a base line as shown in Fig. 9 as follows:

(a) Use the "B" function and put the cursor on the left hand side of the scribe line on the surface of the part that is not damaged and do function"3".

3) Further Notes to Image 4

a) When we use "J" we still draw the line to the "stair case approximation", BUT the result is based on vector maths. Not the approximation!

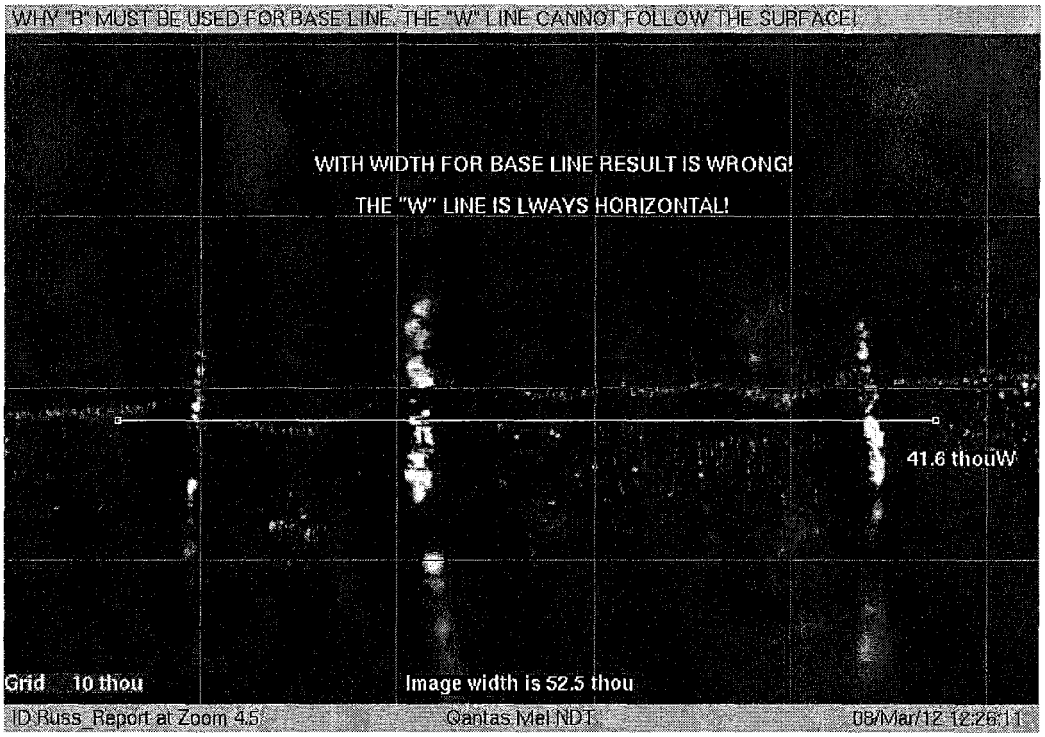
b) The selection points are ALWAYS the bottom of the laser line. This is where the interference pattern that we see as the laser line is hitting the surface. Never do we use the middle or top of the line!

4) Using "W" to draw a Base Line.

The InspectCam can also measure width. Width on the stored image is the linear distance in the Y direction. The "W" line is ALWAYS drawn HORIZONTAL, as this is the true width!

Using a "W" as a base line would result in the following!

Image 5



This line cannot be used to reference the damage of the Scribe Line!

END APPENDIX A

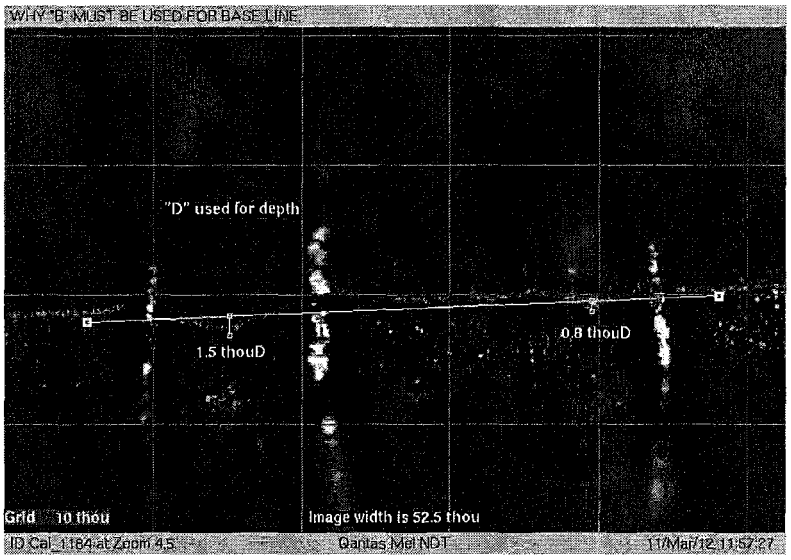
Appendix B "D" & "J" Boeing NDT

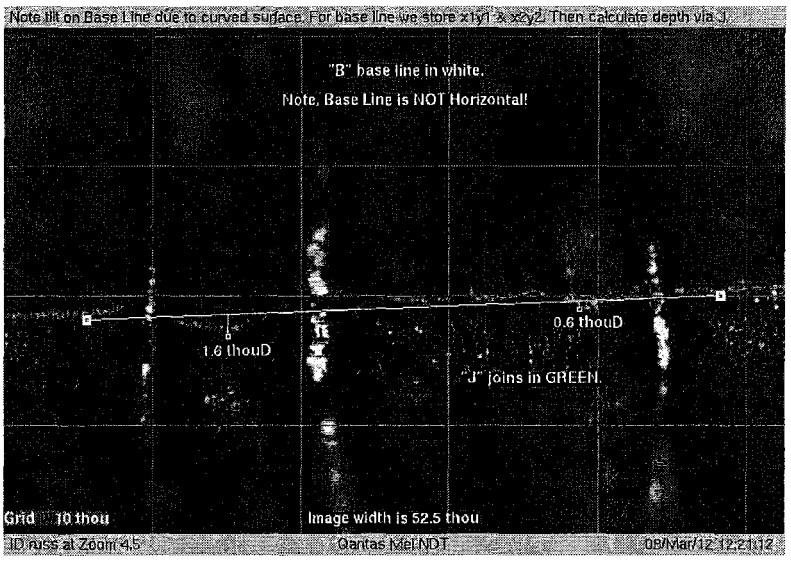
The Boeing Document, **NDT Part 10, 53-30-01 rev 16 Nov 2010** can cause some problems and confusion. Mainly with the use of "J" and "D".
While the document is consistent with the use of "B" for base line, it is NOT consistent with the use of "D" & "J".
For example

Page 2c, part (10) Press the "J" key for the join function.
(This is for a depth measurement)

Page 3, Section F, part (6) Do a "D" or depth function.
(This is ALSO for a depth measurement)

To clear the confusion we always train to use "J".

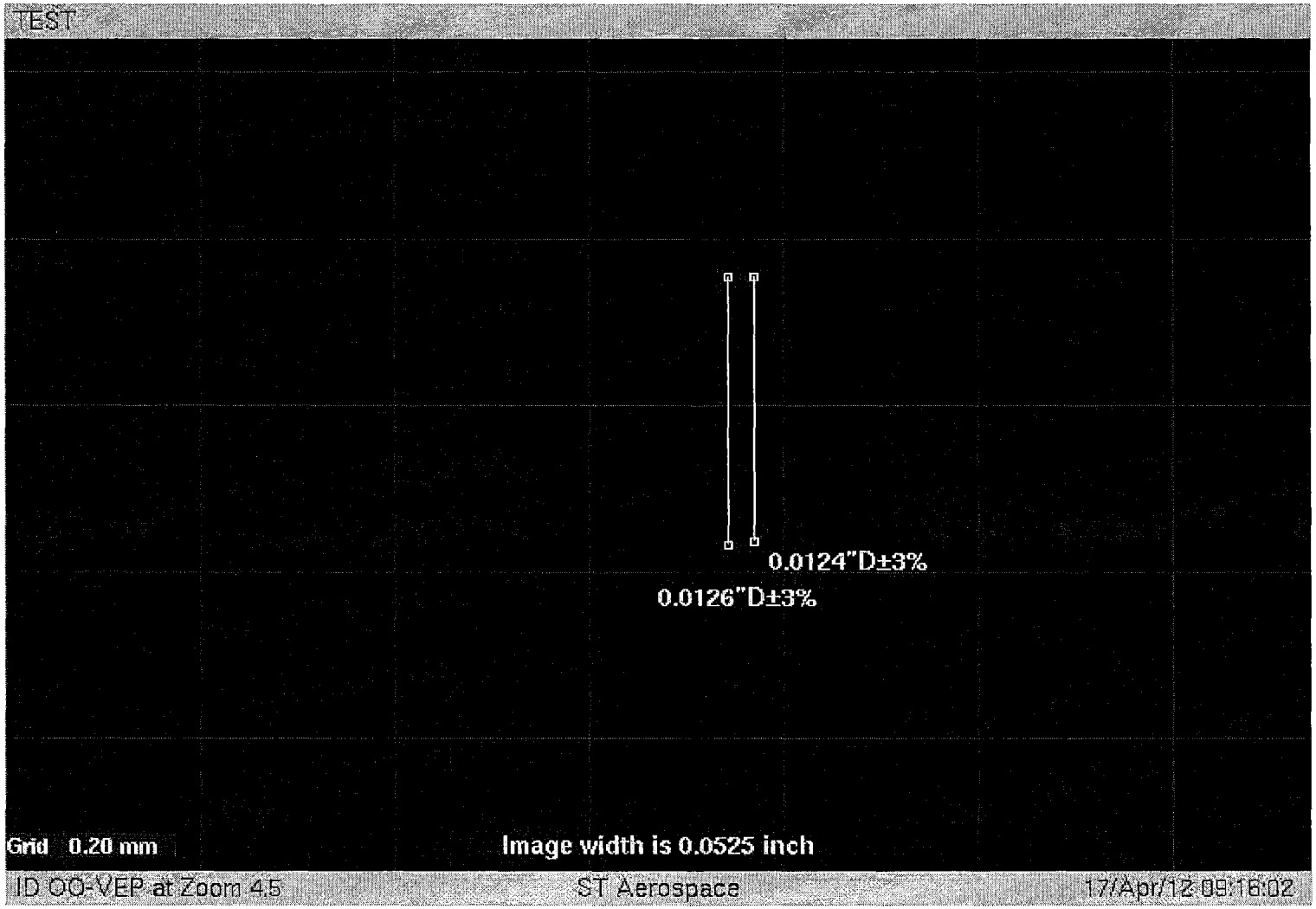


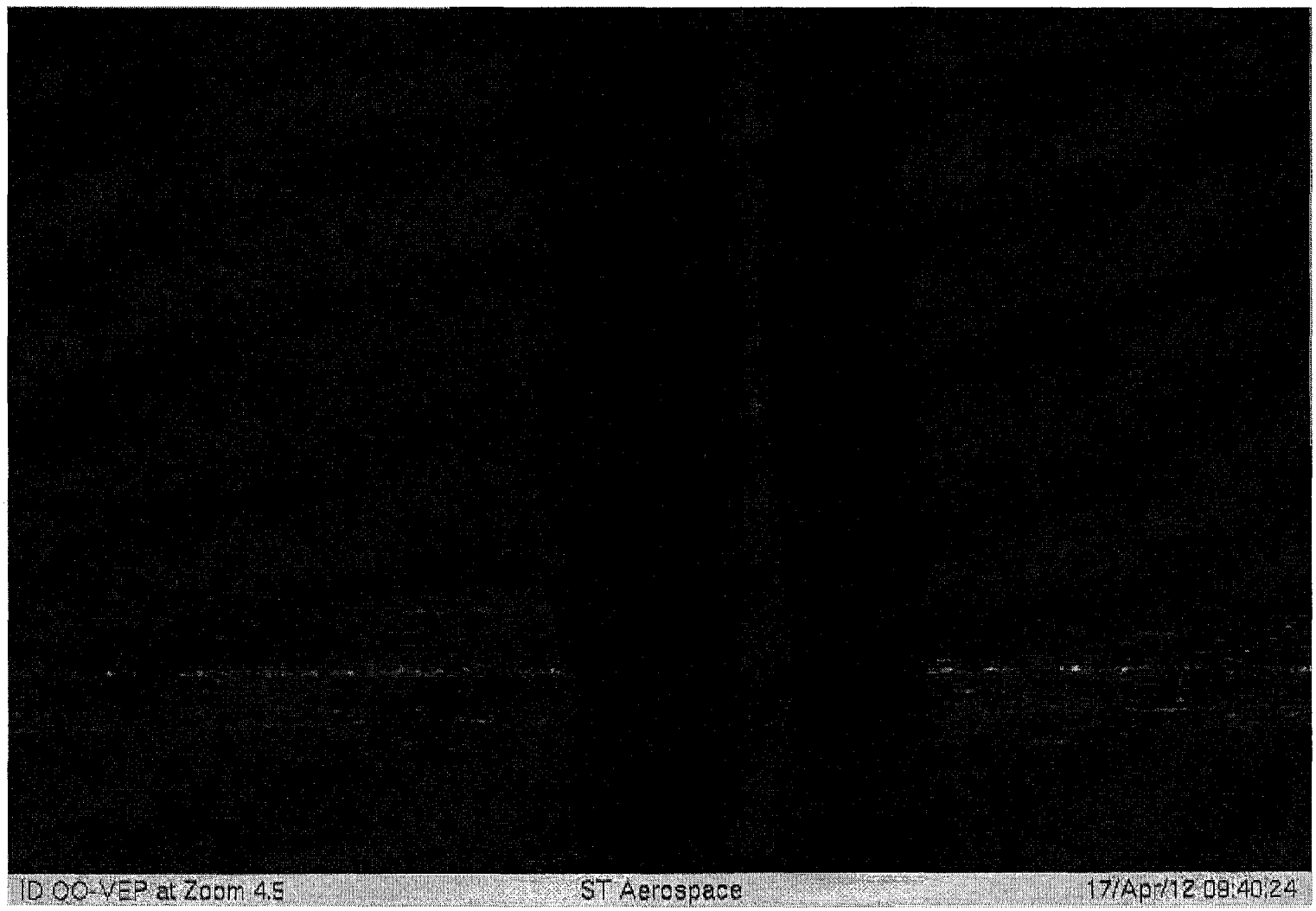


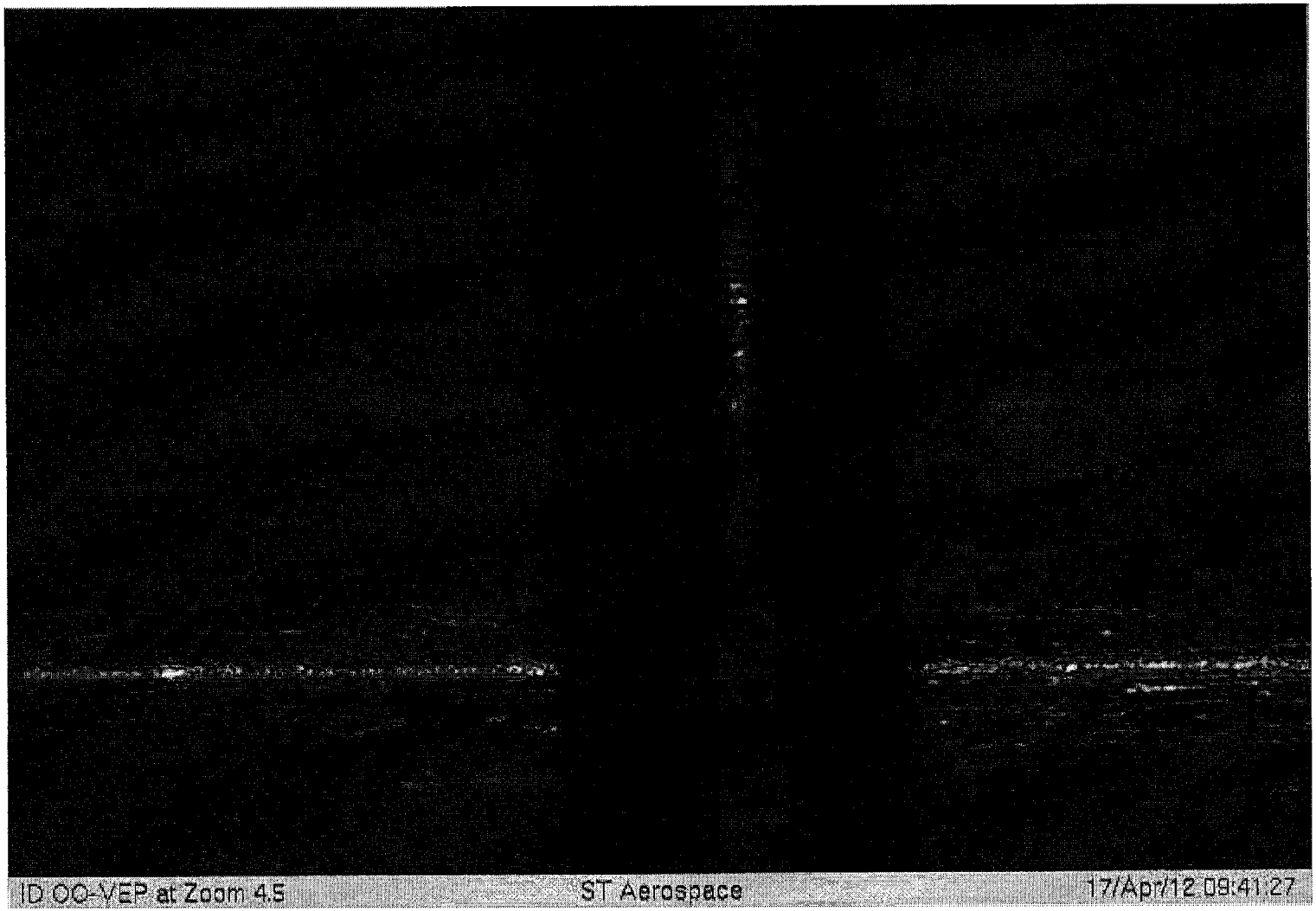
As can be seem from the above two samples, the top one with "D", the lower with "J", only a small difference. But "J" is more accurate!

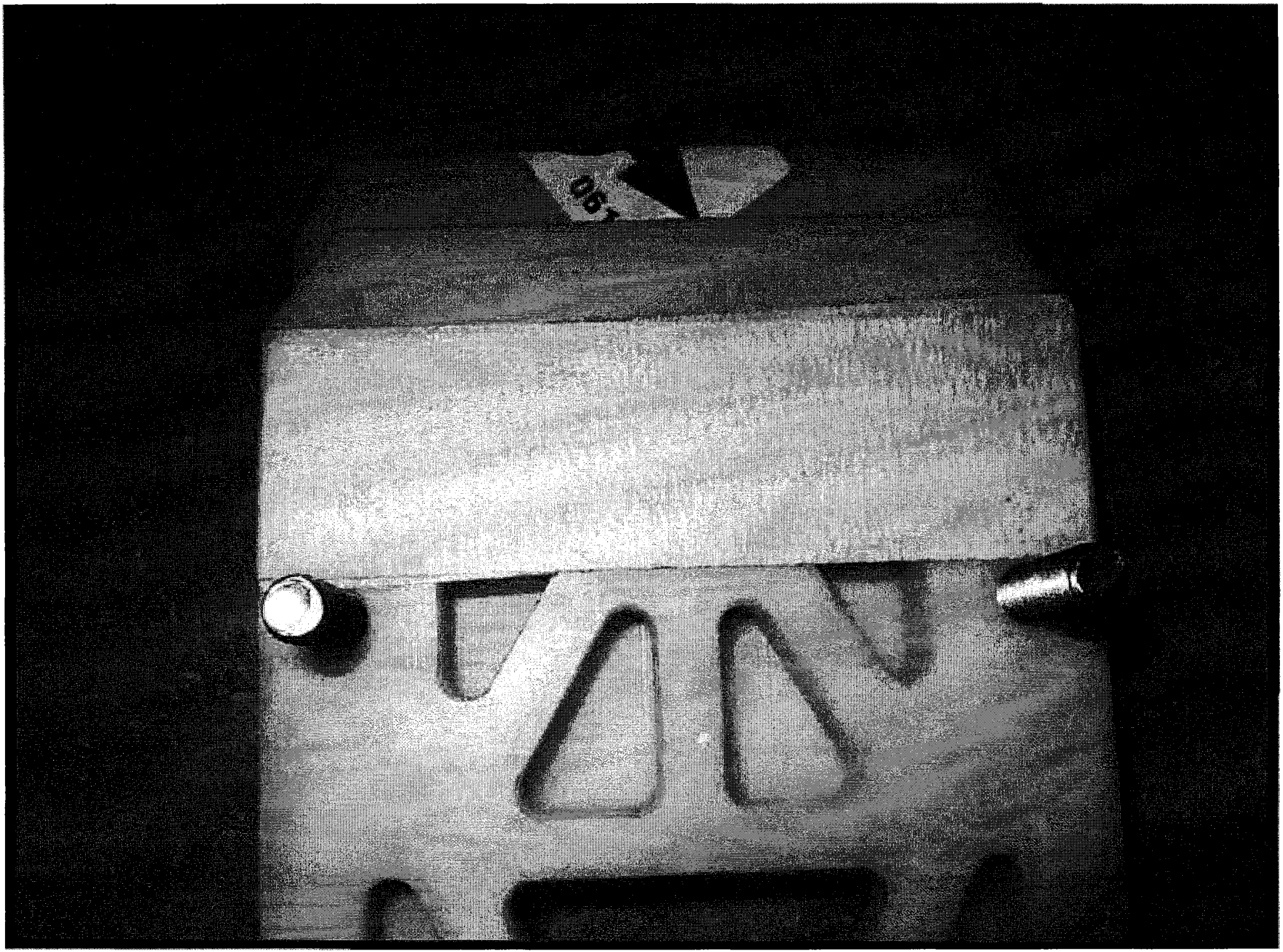
END OF APPENDIX B


TEST
ID OO-VEP at Zoom 4.5
ST Aerospace
17/Apr/12 09:14:28


TEST
0.0124"D±3%
0.0126"D±3%
Grid 0.20 mm
Image width is 0.0525 inch
ID OQ-VEP at Zoom 4.5
ST Aerospace
17/Apr/12 09:16:02


ID QQ-VEP at Zoom 4.5
ST Aerospace
17/Apr/12 09:40:24


ID OQ-VEP at Zoom 4.5
ST Aerospace
17/Apr/12 09:41:27



STTR Pty/Ltd
ABN 61 132 315 569
154 Margetts Road, Yea, Victoria 3717. Australia.
Postal Address, PO Box 249 Yea, Victoria, 3717. Australia.

Tel: +61 (0) 432 438 248

7th June, 2012

Report on SDMS 1197

To Aaron Chua
SAB - BLS TOOLCRIB
Address :
ST AEROSPACE ENGINEERING PTE LTD

Singapore 797654

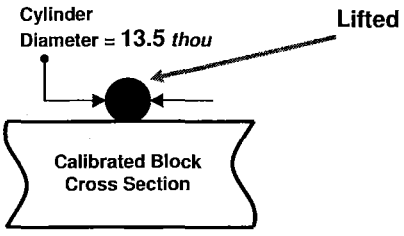
Dear Aaron,

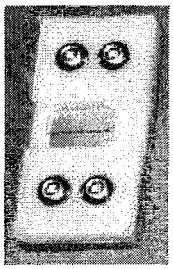
The following details the work on the SDMS S/N 1197 carried out between 18th May and 6th June.

1)
The system had a report of a potential "Electrical Safety' problem. This required a through check and series of tests. Under Australia law the tests included Electrical Safety and Electro-Static Discharge Tests. The InspectCam also had to be opened (Main & Monitor panel removed) to ensure that all wiring was correct and firmly locked/tighten/soldered.
The system passed all tests with no problems noted.

2)
The system also had a report of "Calibration Failure". An image was supplied by ST Aerospace Eng showing a measurement of 12.5thou being obtained, instead of 13.5 thou (plus tolerances). This section of work proved to be time consuming!

a)
On first testing the Calibration Block S/N 197 was found to be faulty! It should have been 13.5 thou (WORST CASE +/- 3%) It was measured to be 14.1 thou! This is an error of over +4%. The block showed no sign of physical damage, but on close inspection it was found that the 13.5 thou steel wire had a "bow" in it, lifting it about 0.6 thou of the surface. The block cannot be easily repaired and was therefore destroyed! (As per the internal QC requirements of both STTR and Hextronics).

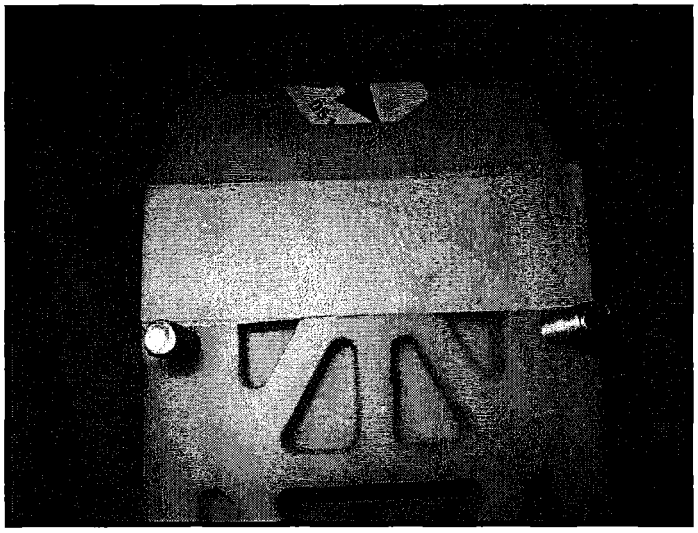




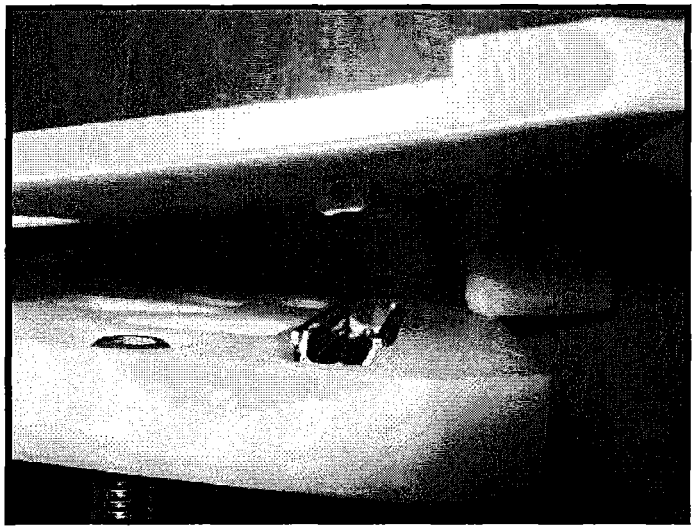
A new Calibration Block was manufactured, S/N 421.

b)
When we tried to make a Calibration measurement we found that the "Dings" Plate set had a broken Slider. See below!

Tape on the Dings Plate!



The Broken Slider!



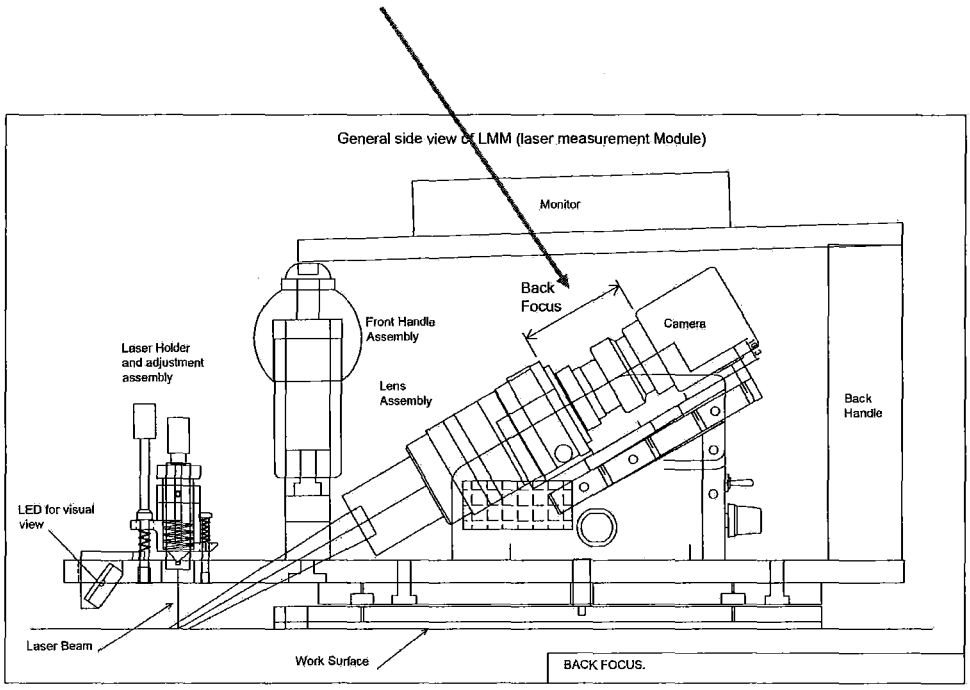
I have sought feedback from ST Aerospace as to whether there are any reports the system was dropped! No reply!
The Slider was replaced!

c)
The SDMS system 1197 was then tested against the internal standards held by STTR. The result was poor. It showed that the LMM was consistently measuring our standard Calblock at about 12 Thou.

While the new Calibration Block was in production the LMM was examined to find the potential cause for the error. This was found in the "Back Focus" dimension!

d)
Back Focus

Please see drawing below. Back Focus,



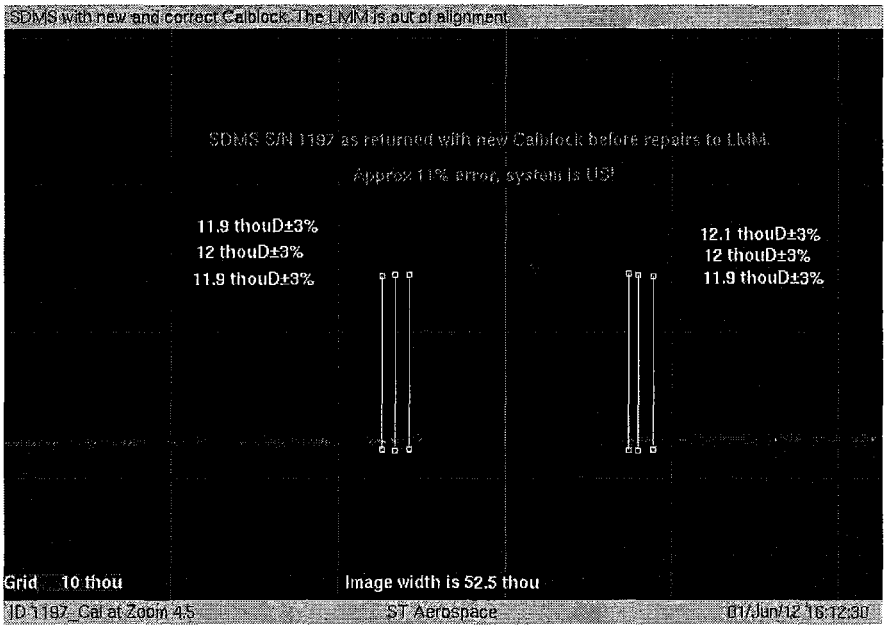
From our internal notes this should have been 50.4mm, I measured 50.9mm on the system as returned. Unfortunately it is not simple to just change this back to 50.4mm. Although we measured 50.4mm during production of this system, the actual dimension is much more critical. It required the lens/camera assembly to be put into our alignment jig! We decided to wait for the new Calibration Block before doing this.

On close Inspection it was the Camera that had moved backwards by about 0.5mm. But I found the lock screw to be tight! This suggests a drop or VERY hard knock!

With the new block the following image was obtained.

See next page!

First result with new calblock 421. This is SDMS system AS RETURNED!
The Calblock 421 was known to be 13.5 thou! Taking 12 thou as the average for the 6 measurements below we have a measurement error of approximately of 11%.



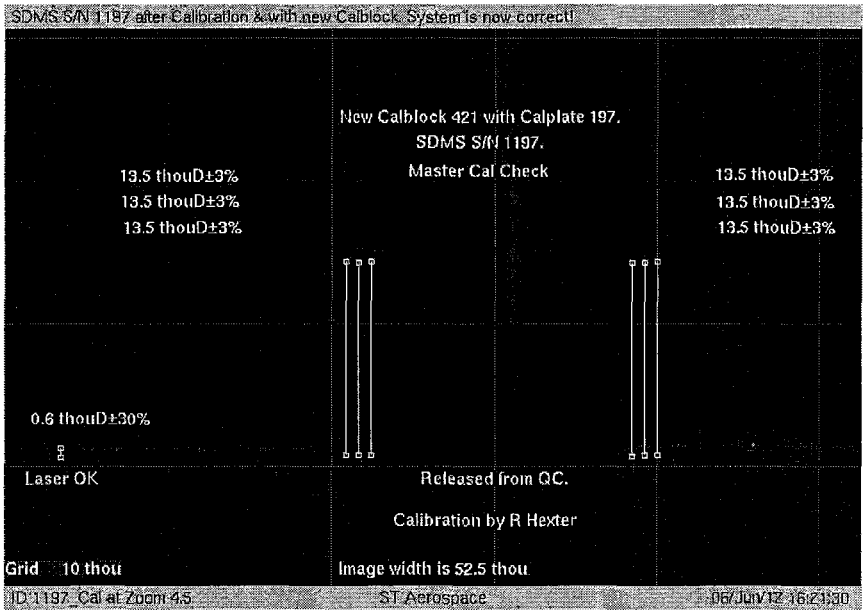
In this condition the system is Un-Serviceable! And should not be used for an Inspection!

The Lens/Camera was removed, placed in a jig and realigned!

Then the LMM was re-assembled, and a Calibration check preformed.

Result is below!

After repair with New CalBlock 421!



e)
The entire system was cleaned and all required Calibration documents prepared.

They are attached to this email.

MOST IMPORTANT!

PLEASE CHECK THAT THESE DOCUMENTS MEET THE REQUIREMENTS OF ST AEROSPACE!

Total time on the job, about 30 hours!

Russell P Hexter
Director of Engineering

Attachments!

1) Certificate of Conformance

2) Certificate of Conformity

3) Calibration Statement for calblock 421

4) Metrology Report.

Trustee 1- Steve Re

From: Trustee 1- Steve Re
Sent: Wednesday, 20 February 2013 4:06 PM
To: 'HUTTON, CAROLYN'
Cc: Federal Secretary
Subject: Scribe Line Inspections
Attachments: 20121205_ICI_CASA_Carolyn Hutton_Steve Re_Response to 16 November 2012 Letter.pdf; 20121130 email Gerard Campbell Scribe lines.pdf

Dear Carolyn,

I Refer to your advice on 30 November 2012 in relation to providing CASA with specific advice regarding scribe line inspections.

That same day I provided material via email to Gerard Campbell as advised, I am yet to receive any acknowledgment or invitations to meet to provide more data.

As almost three months have now passed are you able to advise me on CASA's actions to date in relation to this matter.

Regards

Steve Re

Stephen Re |Technical Affairs and Trustee | **Australian Licenced Aircraft Engineers Association**
25 Stoney Creek Road, Bexley NSW 2207

Australian Government

Civil Aviation Safety Authority

RECEIVED
01 MAY 2013
BY: .....

OPERATIONS DIVISION

File Ref: GI12/1221

18 April 2013

Mr Stephen Re
Trustee and Technical Affairs
Australian Licenced Aircraft Engineers Association
25 Stoney Creek Road
BEXLEY NSW 2207

Email: alaea@alaea.asn.au

Dear Mr Re

I refer to your correspondence dated 16 November 2012 to the Civil Aviation Safety Authority (CASA) in relation to the Federal Aviation Administration (FAA) Airworthiness Directive (AD) Mandated Scribe line inspections in Boeing 737-400 aircraft, and to subsequent correspondence of 30 November 2012.

As a result of investigations into this matter, CASA understands that the inspections were ultimately carried out appropriately prior to release of the aircraft from maintenance. CASA will be reviewing further material from the maintenance organisations and the equipment manufacturer to determine if any breaches of civil aviation regulatory requirements have occurred.

In relation to Malaysian Airlines, CASA is conducting surveillance within the Part 145 assessment process. Additional surveillance will be conducted on the specific issues that you have raised. CASA will take any responsive action that may be necessary and appropriate under the circumstances.

Thank you for bringing these matters to CASA's attention.

Yours sincerely

Gerard Campbell
Acting Executive Manager Operations

Smith-Roberts, Jennifer

From: CHAMBERS, ROGER
Sent: Wednesday, 2 January 2013 10:03 AM
Subject: FW: FAA AD Mandated Scribe Line inspection on 737-400 Aircraft [SEC=UNOFFICIAL]
Attachments: Tech Report 1197.pdf; Tape with pointer.jpg; Linear Slider broken.jpg; DSCF9745.JPG; DSCF9744.JPG; Rvs_OO-VEP@120417_091428.jpg; Rvs_OO-VEP@120417_091428m00.bmp; Rvs_OO-VEP@120417_094024.jpg; Rvs_OO-VEP@120417_094127.jpg; Final Report on VH-VBM-rev1.pdf

UNOFFICIAL

Peter

Please write to both companies detailing the nature of the concerns and requesting a formal response to the actions.

The corro indicates that the complainant has already written to the companies however I would not send the letters just pull the relevant details and keep the reporter anonymous.

If following their response breaches of CAR 30 are identified please issue NCNs and if required ASRs through the relevant oversighting office.

Please record the activity as a Level 2 surveillance event in Sky Sentinel.

Corro – I suggest a response to the ALAEA thanking them for the additional information and advising that CASA has ongoing enquiries into this matter. Also advise them that the information provided is sufficient for our enquires at this time and that there is no requirement for a meeting with the ALAEA.

Thanks

Roger Chambers
Manager Sydney Region
Operations Division -- Civil Aviation Safety Authority

From: DENBY, SIMON
Sent: Monday, 3 December 2012 11:41 AM
To: CHAMBERS, ROGER
Cc: CASA Operations Correspondence
Subject: FW: FAA AD Mandated Scribe Line inspection on 737-400 Aircraft [SEC=UNOFFICIAL]

UNOFFICIAL

Roger,

More information in relation to the ALAEA Scribe line issue.

Regards

Simon.

From: CAMPBELL, GERARD J
Sent: Monday, 3 December 2012 10:25 AM

To: DENBY, SIMON
Subject: FW: FAA AD Mandated Scribe Line inspection on 737-400 Aircraft [SEC=UNOFFICIAL]

UNOFFICIAL

From: CAMPBELL, GERARD J
Sent: Friday, 30 November 2012 4:24 PM
To: SINGH, NICK
Cc: Huang, Yi-Ching
Subject: FW: FAA AD Mandated Scribe Line inspection on 737-400 Aircraft [SEC=UNOFFICIAL]

UNOFFICIAL

From: Trustee 1- Steve Re _____
Sent: Friday, 30 November 2012 2:44 PM
To: CAMPBELL, GERARD J
Subject: FAA AD Mandated Scribe Line inspection on 737-400 Aircraft

Dear Gerald,

I refer to correspondence from Carolyn Hutton 30 November 2012 advising that the most appropriate way to relay specific information regarding our concerns relating to scribe line inspections that have been carried out in offshore CAR 30 facilities is to supply the information to you via email, which will enable a further meeting to be convened with the ALAEA and CASA Technical Experts.

Due to the large amount of information that I have been provided it may be difficult to email all of it, so at this stage I am emailing a sample of that material for assessment. I am willing to email more if required, however it may be easier to provide CASA with a storage device such as a USB drive with all of the information on it when the follow up meeting is convened.

Please let me know what you would prefer.

In relation to ST AREO

I have attached:
A technical report from the equipment manufacturer for ST AERO's unit SDMS 1197
Images from SDMS 1197 relevant to the report
Images from ST AERO using SDMS 1197

In relation to MAS

I have attached:
A report by the equipment manufacturer on VH-VBM Scribe Line Measurements at MAS 11 March 2012.

Regards

Steve Re

Stephen Re | Technical Affairs and Trustee | **Australian Licenced Aircraft Engineers Association**
25 Stoney Creek Road, Bexley NSW 2207

Appendix 9

QANTAS AIRWAYS LIMITED

ABN 16 009 661 901

PRELIMINARY MONTHLY TRAFFIC AND CAPACITY STATISTICS JULY 2009

Summary of Traffic and Capacity Statistics

Month of July 2009

July Group (comprising Qantas Domestic, QantasLink, Jetstar Domestic, Qantas International and Jetstar International) passenger numbers increased by 4.6 percent over the previous year. RPKs decreased by 2.1 percent and ASKs were down 2.8 percent, resulting in a revenue seat factor of 82.9 percent, which was 0.7 percentage points higher than the previous year.

Total Domestic (Qantas, QantasLink and Jetstar Domestic operations) yield excluding foreign exchange for the financial year to July 2009 was 12.3 percent lower when compared to the same period the prior year. Total International (Qantas and Jetstar International operations) yield excluding foreign exchange for the financial year to July 2009 decreased by 21.4 percent compared to the same period the prior year.

Recent Developments

On 19 August, Qantas announced a profit before tax of $181 million for the full-year ended 30 June 2009.

On 20 August, Qantas welcomed the announcement by the Australian and New Zealand Governments regarding improvements to aviation passenger facilitation between the two countries. Qantas Group Executive Government and Corporate Affairs, Mr David Epstein, said "The ultimate goal should be to enable travel between domestic terminals and from more airports on both sides of the Tasman."

Update on Hedging and Foreign Ownership

Qantas has hedged 80 percent of its expected fuel requirement in 2009/10 at a worst-case crude oil price of US$89 per barrel including option premium. At current rates, Qantas has 78 percent participation in falling oil prices for the remainder of the year.

While not required under ASX Listing Rule 3.19, Qantas confirms that a subsequent reconciliation undertaken following the update of foreign ownership on 30 June 2009 found the level of foreign ownership to be 46.9%. Qantas remains subject to an aggregate foreign ownership limit of 49%.

QANTAS AIRWAYS LIMITED
ABN 16 009 661 901

PRELIMINARY MONTHLY TRAFFIC AND CAPACITY STATISTICS

JULY 2009

	Month			Financial Year to Date		
	2009/10	2008/09	Change	2009/10	2008/09	Change
Qantas Domestic						
Passengers carried ('000)	1,433	1,432	0.1%	1,433	1,432	0.1%
Revenue Passenger Kilometres (m)	2,128	2,141	(0.6)%	2,128	2,141	(0.6)%
Available Seat Kilometres (m)	2,549	2,608	(2.3)%	2,549	2,608	(2.3)%
Revenue Seat Factor (%)	83.5	82.1	1.4 pts	83.5	82.1	1.4 pts
QantasLink						
Passengers carried ('000)	367	363	1.2%	367	363	1.2%
Revenue Passenger Kilometres (m)	260	268	(3.2)%	260	268	(3.2)%
Available Seat Kilometres (m)	364	368	(1.2)%	364	368	(1.2)%
Revenue Seat Factor (%)	71.4	72.9	(1.5) pts	71.4	72.9	(1.5) pts
Jetstar Domestic						
Passengers carried ('000)	734	726	1.1%	734	726	1.1%
Revenue Passenger Kilometres (m)	841	834	0.8%	841	834	0.8%
Available Seat Kilometres (m)	1,031	1,040	(0.9)%	1,031	1,040	(0.9)%
Revenue Seat Factor (%)	81.6	80.2	1.4 pts	81.6	80.2	1.4 pts
Qantas International						
Passengers carried ('000)	520	686	(24.2)%	520	686	(24.2)%
Revenue Passenger Kilometres (m)	4,544	5,052	(10.1)%	4,544	5,052	(10.1)%
Available Seat Kilometres (m)	5,309	5,992	(11.4)%	5,309	5,992	(11.4)%
Revenue Seat Factor (%)	85.6	84.3	1.3 pts	85.6	84.3	1.3 pts
Jetstar International						
Passengers carried ('000)	303	154	96.7%	303	154	96.7%
Revenue Passenger Kilometres (m)	807	689	17.1%	807	689	17.1%
Available Seat Kilometres (m)	1,072	915	17.3%	1,072	915	17.3%
Revenue Seat Factor (%)	75.2	75.3	(0.1) pts	75.2	75.3	(0.1) pts
Jetstar Asia						
Passengers carried ('000)	157	-	-	157	-	-
Revenue Passenger Kilometres (m)	218	-	-	218	-	-
Available Seat Kilometres (m)	287	-	-	287	-	-
Revenue Seat Factor (%)	76.0	-	-	76.0	-	-
Total Group Operations						
Passengers carried ('000)	3,514	3,361	4.6%	3,514	3,361	4.6%
Revenue Passenger Kilometres (m)	8,797	8,984	(2.1)%	8,797	8,984	(2.1)%
Available Seat Kilometres (m)	10,612	10,923	(2.8)%	10,612	10,923	(2.8)%
Revenue Seat Factor (%)	82.9	82.2	0.7 pts	82.9	82.2	0.7 pts

Notes

Any adjustments to preliminary statistics will be included in the year to date results next month. Where figures have been rounded, discrepancies may occur between the sum of the components of items and the total and in percentage changes which are derived from figures prior to rounding.

The number of passengers carried is calculated on the basis of origin/destination (ie. one origin/destination journey represents one passenger regardless of the number of stage lengths undertaken).

Key

(m): Millions
RPKs: The number of paying passengers carried multiplied by the number of kilometres flown
ASKs: The number of seats available for sale multiplied by the number of kilometres flown

QANTAS AIRWAYS LIMITED

ABN 16 009 661 901

PRELIMINARY MONTHLY TRAFFIC AND CAPACITY STATISTICS

JULY 2013

Summary of Traffic and Capacity Statistics

Month of July 2013

Qantas Group passenger numbers for July 2013 increased by 1.9 per cent from the previous year. Group ASKs decreased by 0.4 per cent and RPKs decreased by 0.6 per cent, resulting in a revenue seat factor of 79.8 per cent which was 0.2 percentage points lower than the previous year.

ASKs for QantasLink were higher than the prior corresponding period, mainly due to the reconfiguration of nine B717 aircraft.

Qantas Group yield was lower than the prior corresponding period. Group Domestic yield (comprising Qantas Domestic, QantasLink and Jetstar Domestic) was flat.

Qantas International yields were lower than the prior corresponding period due to continued market capacity growth and competitor response to the Qantas Emirates partnership.

Recent Developments

On 29 August 2013, Qantas Group announced the sale of its wholly owned subsidiary Qantas Defence Services (QDS) to Northrop Grumman Australia, a subsidiary of Northrop Grumman Corporation, for a price of $80 million for the business and other related assets. The proceeds from this sale will be realised in 2013/14.

On 29 August 2013, Qantas previewed the new interiors that will feature on all 30 of the Airbus A330 fleet from late 2014, including Marc Newson-designed business suites with lie-flat beds. Ten A330-300s for Qantas International will also feature new economy cabins, and 20 A330-200s for Qantas Domestic will see their economy seats refurbished.

On 28 August 2013, Qantas and MasterCard released the new Qantas Frequent Flyer membership card, expanding its uses to include storing foreign currency, accessing cash worldwide via ATM withdrawals and earning points on spending in Australia and overseas.

On 23 August 2013, Jetstar Hong Kong's application to the Air Transport Licensing Authority in Hong Kong was gazetted and progressed to a public consultation process. Jetstar Hong Kong will continue to work with the relevant authorities throughout the process, and anticipates approval by the end of 2013.

On 15 August 2013, QantasLink relocated to Qantas' exclusive domestic terminal at Sydney Airport, Terminal 3. Customers travelling to and from Sydney Airport will enjoy smoother connections, reduced check-in times and improved access to Qantas' premium lounges.

On 14 August 2013, Qantas International announced improvements to its network including a new route, Perth-Auckland (to be offered on a seasonal basis), upgrading the number of return Sydney-Hong Kong A380 services to five per week, and increasing Brisbane-Los Angeles frequency to daily.

On 24 July 2013, Qantas Domestic announced it had secured a three year air services agreement with the $10 billion Roy Hill Iron Ore project in Western Australia.

QANTAS AIRWAYS LIMITED
ABN 16 009 661 901

PRELIMINARY MONTHLY TRAFFIC AND CAPACITY STATISTICS

JULY 2013

	Month			Financial Year to Date		
	2013/14	2012/13	Change	2013/14	2012/13	Change
QANTAS DOMESTIC (INCLUDING QANTASLINK) - SCHEDULED SERVICES						
Passengers Carried ('000)	1,915	1,923	(0.4)%	1,915	1,923	(0.4)%
Revenue Passenger Kilometres (m)	2,499	2,543	(1.7)%	2,499	2,543	(1.7)%
Available Seat Kilometres (m)	3,287	3,324	(1.1)%	3,287	3,324	(1.1)%
Revenue Seat Factor (%)	76.0	76.5	(0.5) pts	76.0	76.5	(0.5) pts
QANTAS DOMESTIC (EXCLUDING QANTASLINK) - SCHEDULED SERVICES						
Passengers Carried ('000)	*1,454*	*1,481*	(1.8)%	*1,454*	*1,481*	(1.8)%
Revenue Passenger Kilometres (m)	*2,193*	*2,254*	(2.7)%	*2,193*	*2,254*	(2.7)%
Available Seat Kilometres (m)	*2,813*	*2,899*	(3.0)%	*2,813*	*2,899*	(3.0)%
Revenue Seat Factor (%)	*78.0*	*77.7*	0.2 pts	*78.0*	*77.7*	0.2 pts
QANTASLINK - SCHEDULED SERVICES						
Passengers Carried ('000)	*461*	*442*	4.3%	*461*	*442*	4.3%
Revenue Passenger Kilometres (m)	*306*	*289*	5.7%	*306*	*289*	5.7%
Available Seat Kilometres (m)	*475*	*425*	11.7%	*475*	*425*	11.7%
Revenue Seat Factor (%)	*64.4*	*68.0*	(3.7) pts	*64.4*	*68.0*	(3.7) pts
JETSTAR DOMESTIC - SCHEDULED SERVICES						
Passengers Carried ('000)	1,041	981	6.1%	1,041	981	6.1%
Revenue Passenger Kilometres (m)	1,290	1,223	5.4%	1,290	1,223	5.4%
Available Seat Kilometres (m)	1,552	1,512	2.6%	1,552	1,512	2.6%
Revenue Seat Factor (%)	83.1	80.9	2.2 pts	83.1	80.9	2.2 pts
QANTAS INTERNATIONAL - SCHEDULED SERVICES						
Passengers Carried ('000)	516	490	5.2%	516	490	5.2%
Revenue Passenger Kilometres (m)	4,208	4,161	1.1%	4,208	4,161	1.1%
Available Seat Kilometres (m)	5,078	5,031	0.9%	5,078	5,031	0.9%
Revenue Seat Factor (%)	82.9	82.7	0.2 pts	82.9	82.7	0.2 pts
JETSTAR INTERNATIONAL - SCHEDULED SERVICES						
Passengers Carried ('000)	422	439	(4.0)%	422	439	(4.0)%
Revenue Passenger Kilometres (m)	1,186	1,285	(7.7)%	1,186	1,285	(7.7)%
Available Seat Kilometres (m)	1,569	1,658	(5.3)%	1,569	1,658	(5.3)%
Revenue Seat Factor (%)	75.6	77.5	(1.9) pts	75.6	77.5	(1.9) pts
JETSTAR ASIA - SCHEDULED SERVICES						
Passengers Carried ('000)	314	294	6.5%	314	294	6.5%
Revenue Passenger Kilometres (m)	484	512	(5.5)%	484	512	(5.5)%
Available Seat Kilometres (m)	622	630	(1.4)%	622	630	(1.4)%
Revenue Seat Factor (%)	77.8	81.2	(3.4) pts	77.8	81.2	(3.4) pts
QANTAS GROUP OPERATIONS						
Passengers Carried ('000)	4,207	4,128	1.9%	4,207	4,128	1.9%
Revenue Passenger Kilometres (m)	9,666	9,724	(0.6)%	9,666	9,724	(0.6)%
Available Seat Kilometres (m)	12,108	12,156	(0.4)%	12,108	12,156	(0.4)%
Revenue Seat Factor (%)	79.8	80.0	(0.2) pts	79.8	80.0	(0.2) pts

Notes
Any adjustments to preliminary statistics will be included in the year to date results next month. Where figures have been rounded, discrepancies may occur between the sum of the components of items, the total and percentage changes which are derived from figures prior to rounding.

The number of passengers carried is calculated on the basis of origin/destination (ie. one origin/destination journey represents one passenger regardless of the number of stage lengths undertaken).

Key
(m): Millions
RPKs: The number of paying passengers carried multiplied by the number of kilometres flown
ASKs: The number of seats available for sale multiplied by the number of kilometres flown

Appendix 10

Qantas confirms Jetstar Japan cash injection

October 2nd, 2012 — First time

Matt O'Sullivan
Business Reporter
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Qantas has confirmed that it will inject another $60 million into Jetstar Japan as it faces the impact of a weak yen making fuel more expensive and delays to establishing a second base in the country.

Following speculation about the need for further funding, Qantas said today that both it and Japan Airlines – the two largest shareholders – would make a combined injection of 11 billion yen ($120 million).

It will result in Qantas and Japan Airlines both boosting their stakes in Jetstar Japan from 41.7 per cent to 45.7 per cent.

But the budget airline's two smaller shareholders – Mitsubishi and Century Tokyo Leasing – will have their stakes drop from 8.3 per cent to 4.3 per cent each because they are not participating in the share placement.

Qantas said the equity injection would "support Jetstar Japan's future fleet and infrastructure growth, enabling the carrier to capitalise on the significant potential of the low cost carrier market in the world's third largest economy".

However, the budget airline is facing the challenge of a weaker yen making jet fuel – one of its biggest costs – more expensive and hold ups to establishing a second base at Kansai International Airport near Osaka.

Qantas has previously committed just over $5 billion to Jetstar Japan.

Since it began flying in July last year, Jetstar Japan has become the largest budget airline in Japan with a fleet of 18 A320 aircraft flying to nine domestic destinations.

The airline intends to eventually boost its fleet to 24 planes.

The cost of entering the Japanese market has weighed on the financial performance of Jetstar, which booked $50 million in start-up losses from Jetstar Japan and Jetstar Hong Kong in the year to June.

Macquarie Equities has estimated that Jetstar Japan is losing about $50 million a year as it competes against Peach and AirAsia Japan, which is about to be rebranded Vanilla Air.

Malaysian budget airline AirAsia decided several months ago to pull out of the airline joint venture in Japan.

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Appendix 11

The questions were and still are:

1. How much did each segment of the Group pay and what amount was allocated to each segment, for advertising in FY 2011? What amount was paid by or allocated to the Qantas International business?

2. On the Qantas finger Brisbane at Gate 25, Qantas Crews have been unable to dock when all other gates were taken. Gate 25 in some cases was not being used for several hours but the aircraft and passengers have waited, burning Jet fuel in the process until another bay was free. Why was this gate in the Qantas Brisbane finger not available for Qantas use? Are there any other Gates in Qantas fingers that Qantas weren't able to regularly use?

3. In regard to aircraft owned or leased by the Qantas segment of the Group, what were the lease costs charged or allocated to each other segment when those aircraft were leased or sub-leased to that other segment in FY 2011?

4. How much did each segment of the Group pay and what amount was allocated to each segment for upkeep of the Qantas intranet and all its parts such as the directory in FY 2011? What amount was paid by or allocated to the Qantas International business?

5. How much did each segment of the Group pay and what amount was allocated to each segment, for Directors, Executive Directors and Group Executives remuneration in FY 2011? What amount was paid by or allocated to the Qantas International business?

6. We understand that Jetstar equipment was held in Qantas storage areas (formerly QCD). How much did Jetstar pay and what amount was allocated to Jetstar for the cost of storage in FY2011?

7. How much did each segment of the Group pay and what amount was allocated to each segment for 'Group Security' in FY 2011? What amount was paid by or allocated to the Qantas International business?

8. When a Qantaslink or Jetstar passenger uses the Qantas Club or Chairman's lounge facilities, what processes ensure that the cost is re-couped from those parts of the business?

9. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of Oldmeadow Consulting and associated entities for FY 2011? What amount was paid by or allocated to the Qantas International business?

10. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of staff car parking for FY 2011? What amount was paid by or allocated to the Qantas International business?

11. How much did each segment of the Group pay and what amount was allocated to each segment for the administrative costs of fuel hedging for FY 2011? What amount was paid by or allocated to the Qantas International business?

12. How has Qantas charged other parts of the Group for ground services equipment use?

13. What part of the business paid the expense for the two managers seconded to Jetstar Pacific who were kept under house arrest? Who paid for the other managers who went up to rescue them?

14. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of consultant's fees, including Bain and Co., reviewing the overall business in FY 2011? What amount was paid by or allocated to the Qantas International business?

15. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of sending senior executives to appear before Senate inquiries, including their legal representation and associated costs for FY 2011? What amount was paid by or allocated to the Qantas International business?

16. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of the Crisis Control Centre on 5th floor QCC2 in FY2011? What amount was paid by or allocated to the Qantas International business?

17. Please confirm whether all Group aviation fuel bills get charged to the Qantas segment. How much did each segment of the Group pay and what amount was allocated to each segment, for the cost of fuel for FY 2011? What amount was paid by or allocated to the Qantas International business? What processes were used to charge each part of the business for its fuel use?

18. How much did Jetstar pay or what cost was allocated to Jetstar, for the use of Qantas Long Haul Route manual supplement information?

19. Who paid the bill for ACARS use and what cost was allocated to each segment of the Group? What amount was paid by or allocated to the Qantas International business?

20. Has Jetstar ever used Qantaslink check in counters at T2 Sydney? If so, how much did they reimburse Qantaslink for that use?

21. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of insuring the Group aircraft fleet for FY 2011? What amount was paid by or allocated to the Qantas International business?

22. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of production and distribution of the Annual Report and the cost of the Annual General Meeting for FY 2010? What amount was paid by or allocated to the Qantas International business?

23. Which part of the business pays the wages of the ground staff in Bali?

24. Who paid for the self-check in units, their installation and upkeep?

25. In 2009 Qantas admitted that it has *"seconded employees and various support services"* to Jetstar Asia. How many employees were seconded in FYs 2008, 2009 and 2010. Who paid their wages?

26. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of refuelling the Group's ground equipment in FY2011? What amount was paid by or allocated to the Qantas International business?

27. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of maintaining Qantas Group airbridges in FY2011? What amount was paid by or allocated to the Qantas International business?

28. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of jointly used conveyor belts and associated costs in check-in areas in FY2011? What amount was paid by or allocated to the Qantas International business?

29. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of the General Manager Group Government and Industrial Affairs salary in FY 2011? What amount was paid by or allocated to the Qantas International business?

30. From the December 31st 2010 half year report, what made up the $520 million of intersegment revenue received by Qantas?

31. From the December 31st 2010 half year report, what made up the $98 million of intersegment revenue received by Jetstar?

Maintenance Related

32. At outstations where any Qantas Group A330 aircraft flew, who have the spare A330 parts used been billed to?

33. Who is paying for the $21 million refurbishment of Hangar 245 that will predominantly house 787's?

34. Why were LAMEs told not to fill out form 2350's (customer billing sheets) when additional work or equipment is required on non- Qantas mainline aircraft? How much was charged to Jetstar through this process in FY2011?

35. The following appears in the Jetstar manuals -

> *JETSTAR AIRWAYS HAS BEEN SPONSORED BY QANTAS AS AN EQUALISED MEMBER OF THE IATP SPARES POOLING AGREEMENT. JETSTAR AIRWAYS DOES NOT PROVIDE ANY SPARES FOR THE POOL BUT RELIES UPON QANTAS FOR THEIR PROVISION. THE POOLING SYSTEM WILL BE OPERATED BY QANTAS ON BEHALF OF JETSTAR AIRWAYS IN ACCORDANCE WITH THE PROCEDURES SET DOWN IN THE QANTAS E&M PROCEDURES MANUAL (CHAPTER 4-60-005) AND RELATED DOCUMENTS.*

What do Jetstar pay for this service?

36. In Perth and Darwin from time to time check in staff are required both Qantas and Jetstar uniforms. Who pays their wages?

37. Has Jetstar used the Qantas Maintenance Watch for their A330? How much were they charged for this use in FY2011?

38. Is Jetstar charged for the compilation and distribution of work packages by Qantas planners for the Jetstar A330 transits and overnight work in domestic and international ports?

39. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of Engineering Manager Rod Pullbrook's salary in FY2011? What amount was paid by or allocated to the Qantas International business?

40. Has any Qantas tooling been sold or transferred to Jetstar. How much paid to Qantas or what cost was allocated to Jetstar for the tooling?

Crewing

41. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of Sim, Emergency Procedures and medical training for Tech and Cabin Crew in FY2011? What amount was paid by or allocated to the Qantas International business?

42. Has any part of the business been required to send Tech crew overseas for training because Australian facilities were being fully utilised? If so, which part, what was the cost and how much did each segment of the Group pay and what amount was allocated to each segment in FY 2011? What amount was paid by or allocated to the Qantas International business?

43. When Tech and Cabin Crew are required to pax to another port for duty, what processes are used to allocate costs between the different segments?

44. When Qantas Long Haul Crews fly Domestic sectors, does Qantas Domestic pay their wages?

45. What was the financial cost to mainline of transferring aircraft to Jetstar and Qantas carrying a pilot surplus for the last 3 years?

46. How much did each segment of the Group pay and what amount was allocated to each segment for the cost of Jetstar NZ cadets staying in hotels in Australia in FY 2011? What amount was paid by or allocated to the Qantas International business?

Freight

47. How much did each segment of the Group pay and what amount was allocated to each segment, for the cost of QF AKE baggage containers, including upkeep, in FY2011? What amount was paid by or allocated to the Qantas International business?

48. Have there been times where the Group has been required to hire containers from other operators due to shortages? If so, what part of the business bears the expense or hire charge?

49. How much did each segment of the Group pay and what amount was allocated to each segment for the legal fees, fines and associated costs of the freight cartel issue from FYs 2006-11? What amount was paid by or allocated to the Qantas International business?

50. Do Qantas pay a fixed price for Cargo space on any Jetstar service? If so, how much revenue did they earn from the cargo and how much did they pay for the space?

51. If Qantas pay a fixed price for Cargo space on Jetstar services, when that space is not used, do they get revenue back from Jetstar?

52. How much did each segment of the Group pay and what amount was allocated to each segment, for the cost of Freight Sales and Reservations Department and staff in FY2011? What amount was paid by or allocated to the Qantas International business?

53. Did Qantas pay a fixed price to Jetstar to carry freight on flights to Japan and other areas that saw those flights cancelled due to natural disasters? If so was the money paid back?

Flight sharing

54. Did Qantas buy a fixed number of seats on Jetstar/Qantas codeshare flights operated by Jetstar in FY2011? If so how many did they buy and what price was charged? What load factor did Qantas have on these purchased seats? If Qantas didn't sell the seats, could Jetstar then sell them? If Jetstar sold the seats how was the revenue dealt with?

55. For cancelled Jetstar flights, was this revenue refunded to Qantas?

56. Did Jetstar buy a fixed number of seats on Jetstar/Qantas codeshare flights operated by Qantas in FY2011? If so how many did they buy and what price was charged? What load factor did Jetstar have on these purchased seats? If Jetstar didn't sell the seats, could Qantas then sell them? If Qantas sold the seats how was the revenue dealt with?

57. When Jetstar took over the Cairns-Darwin-Singapore route replacing the QF 61/62, was an agreement struck which saw Qantas pay a fixed sum in revenue for use of that service annually?

58. When a delay on a QF aircraft is incurred whilst waiting for passengers from other parts of the business, who pays this cost?

59. What amount was paid to Qantas each time they were chartered to fly services to recover stranded Jetstar passengers?

60. Does Qantas have an agreement between the various parts of the Group dealing with Disruption Handling including, but not limited to, the cost to be paid or allocated for carrying disrupted passengers?

61. When a passenger purchases a Qantas ticket but flies on Jetstar, how is the revenue from ancillary charges paid or allocated between Qantas?

Appendix 12

Lufthansa Technik Philippines
TIN 205-275-073-000-VAT

Lufthansa Technik Philippines, Inc.
A Joint Venture with MacroAsia Corporation
MacroAsia Special Economic Zone,
Villamor Airbase
Pasay City 1309 Philippines
Tel. (6-32) 855-2222
Fax (6-32) 855-9392

Invoice

NUMBER 3300001071

DATE: 01/09/2009 Page: 1 of 1

BILL TO: QANTAS AIRWAYS LIMITED
MICHAEL O'DONNEL
Manager Planning & Support S-AB2/3 203 Coward St.
MASCOT NSW 2020 Sydney AU

YOUR REFERENCE :

OUR REFERENCE: AOC 12-08-15

TERMS: PAYABLE WITHIN 30 DAYS DUE DATE: 02/08/2009

CUSTOMER CODE: 500000041

ITEM	DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE	AMOUNT
001	NR MHR AD-SB Items VH-EBE 1C-Check Nov30-Dec8, '08	HR	14.00	45.00	630.00 ✓
002	Materials Provided by LTP		1		19,137.38 ✓
003	Request for Additional Work	MH	345.00	45.00	15,525.00 ✓
004	Security Staff Manhours	DAY	51.00	68.00	3,468.00 ✓
005	Handling Charge		1		1,913.74 ✓

RECEIVED 19/01/09

ACCOUNT 34747 SITE ID METRO MANILA #88810
GLCC 100705
WKC 809
WORDEL 314162 'M' $21,051.12
314162 'S' 16,155.00
313762 'S' 3,468.00
$(USD) 40,674.12

VAT Zero Rated 40,674.12

Total Amount Payable USD 40,674.12 ✓

PREPARED BY	REVIEWED BY	APPROVED BY	APPROVED BY
ANDRIE NEIL M. PARREÑAS FINANCIAL ANALYST	RENATO P. SULATON SECTION MANAGER	REYNALDO L. AUSTRIA DIVISION MANAGER	TROY D. TROWER VP/DEPUTY CFO

ORIGINAL

Payment can be made by wire transfer:

Account Name : LUFTHANSA TECHNIK PHILIPPINES, INC.
Bank : Union Bank of the Philippines
Branch : Insular Ayala Branch
Address : Ayala Ave. cor. Paseo de Roxas Ave.
Makati City, Philippines

USD S/A No. : 03-001-000062-6
PHP Account No. : 00-001-007095-3
SWIFT Code : UBPHPHMM

Account Name : LUFTHANSA TECHNIK PHILIPPINES, INC.
Bank : DEUTSCHE BANK
Branch : 26th Flr. Tower One Ayala Triangle, Ayala Ave.
Makati City, Philippines

EURO AC No. : 100-6154-305
Swift Code : DEUTPHMM
Intermediary Bank: DB Frankfurt

Note: All bank charges incurred by paying bank shall be charged to customer

The Parties in the aforementioned contract of service hereby stipulate and agree that the venue in case of court suit arising out of the preceding transaction shall be vested in the competent courts of Pasay City, Philippines and, further the debtor agrees to pay a 1.5% interest per month compounded daily or whatever stated in the contract on accounts due.

BIR PERMIT #: 051-CAS-092208-000019 Date Issued: 09/22/08 Series: 3300000000-3399999999

HM Outsource Program

Invoice Approval

Date Form Initiated:	20 January, 2009
Aircraft Rego:	VH-EBE
Check Type:	C CHECK
Supplier:	LTP
Invoice No.:	3300001071
Invoice Date:	09/01/2009
Invoice Amount: (excl. GST)	$(USD) 40,674-12

Comment / Description (if required):
VH-EBE SUPPLEMENTAL INVOICE.

Signatories

				Approved Elements (tick)					
				AWRs confirmed & signed	Supplementary charges (ie. Hotels, Phones, etc.) confirmed	Work Scope confirmed per Contract	Invoice accurate & consistent with contract terms	Cost allocation complete & confirmed	Cost incurred within RFA Approval
Team Leader	M. RHODES	J		☐	☐	☐	☐	☐	☐
	Name	Signature	Date						
Quotations Manager	PAUL PINA	N/A.		☐	☐	☐	☐	☐	☐
	Name	Signature	Date						
Program Manager			20/1/2009	☐	☐	☑	☑	☑	☑
	Name	Signature	Date						
Financial Controller				☐	☐	☐	☐	☐	☐
	Name	Signature	Date						
Group General Manager									
	Name	Signature	Date	Delegation Code					

VH-EBE Jetstar Airways Airbus A330-202 - cn 842

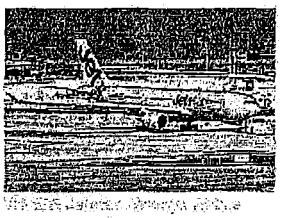
Airframe Details	
Construction Number (MSN)	842
Aircraft Type	Airbus A330-202
First Flight	29-05-2007
Age	6.8 Years
Test registration	F-WWYV
Airframe Status	Active

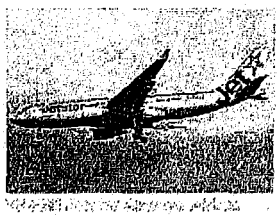
Send in corrections

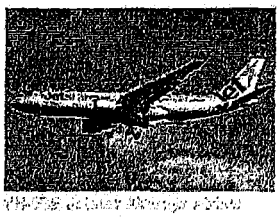
Operator History

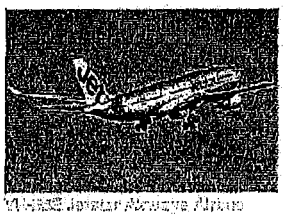
Reg	Aircraft Type	Airline	Engines	Config	Delivered	Remark
VH-EBE	Airbus A330-202	Jetstar Airways	2x GE CF6-80E1A3	C38Y265	21-06-2007	

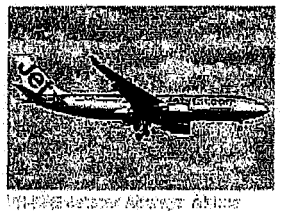
Aviation Photos Airbus A330-202 - 842

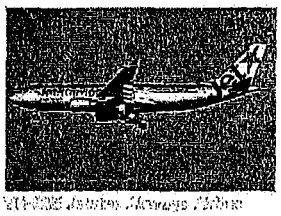












Appendix 13

ABC NEWS

CASA defends against claim Qantas engine not attached correctly after offshore maintenance

AM By Natalie Whiting

Posted Sat 15 Mar 2014, 12:26pm AEDT

The Civil Aviation Safety Authority (CASA) has hit back at claims that it is failing in its duty to oversee safety in the industry.

During a Senate inquiry into Qantas yesterday, an engineering union official accused CASA of failing to properly supervise maintenance and of favouring the national airline.

The federal secretary of the Australian Licensed Aircraft Engineers Association, Steven Purvinas, said that the engines of a Qantas jet were not properly attached after it was serviced in Hong Kong.

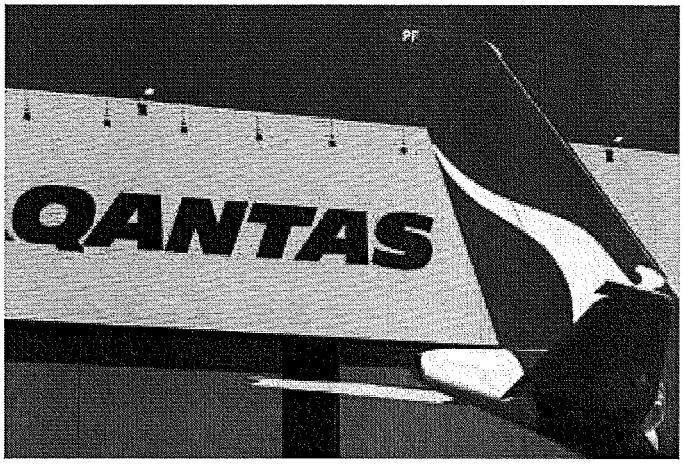


PHOTO: CASA has been accused of being "nothing more than another arm of Qantas' industrial relations department". (Flickr: Sheba_Also)

RELATED STORY: Alan Joyce defends Qantas job cuts at inquiry

RELATED STORY: Virgin runs loss-making 'strategy directed at weakening Qantas'

RELATED STORY: Qantas maintenance workers heartbroken to leave

MAP: Australia

He says the jet flew for about a month afterwards before an Australian engineer discovered that three of the four engines were not bolted on correctly.

He raised concerns that sending maintenance offshore was putting public

safety at risk.

The Senate inquiry was meant to be investigating the future of Qantas and its decision to shed 5,000 jobs.

"I have a very dim view on CASA's oversight of maintenance in this country and outside of Australia. We do not have confidence in CASA to provide effective oversight," Mr Purvinas said.

But CASA spokesman Peter Gibson told the inquiry that Mr Purvinas's account of the defect was not correct.

"As it turned out, it was one washer on one bolt on one engine that had been incorrectly installed. And naturally that shouldn't happen, but that's the scope of what it was," he said.

Mr Purvinas alleges the defect was not documented properly and that CASA failed to submit a mandatory report.

AUDIO: Listen to Natalie Whiting's story. (AM)

While Mr Gibson was not able to confirm if the report had been filed or not, he says the regulator took appropriate action.

But Mr Purvinas accused CASA of being "nothing more than another arm of Qantas' industrial relations department".

"I think they've been a victim of corporate capture. They've gotten too close to the airline," Mr Purvinas said.

"A lot of them are friends with people who work for Qantas.

"And I just think that corporate capture, Stockholm Syndrome, whatever you want to call it," he said.

Mr Gibson says there is no difference to CASA whether maintenance is conducted onshore or offshore.

"They must work to Australian standards and they must continue to meet those standards at all times," he said.

Mr Gibson rejected that Qantas received preferential treatment

"We certainly do not favour any particular airline. We certainly do not turn a

blind eye to any practices," he said.

"Where we have evidence of safety standards slipping, we step in and take action."

Qantas chief executive Alan Joyce has also rejected claims that the airline has a special relationship with the aviation safety regulator.

Topics: business-economics-and-finance, air-transport, federal-government, australia

Appendix 14

Form 500 09-Q00240

All fields with dark grey background titles are mandatory.

Registered By:	ANDREW RYAN	Registered Date/Time:	06/01/2009
Form 500 Report Title:	#2 ENG MOUNT BOLTS WASHERS INCORRECTLY INSTALLED	A/C Registration:	OJG
Model:	747-438	Occurrence Date:	06/01/2009
Nature of Report:	Quality Report, Engineering Report, Customer Complaint	Occurrence Time:	0900 (Local 24 Hr)
Secondary Rework:	Yes	SDR/Reportable Defect?	Yes
AD Related?:	No	AD Reference No.:	
Near Miss?		Operator:	QF - Qantas
Flight No:	QF32	Submitting Department:	BASE MAINTENANCE 001
This Station:	SYD BM - SYD BASE MAINT	Next Station:	BKK - BANGKOK
		S.T.D:	(Local 24 Hr)
		Estimated Cost:	$1K - $10K
Maintenance Error:	Installation Error	Maintenance Error Type:	Required equipment/part not installed
Insurance:	Yes	Insurance Works Order:	
Occurrence Category:	Other	Document Reference:	DR&R 006027
Part Quarantined:	No		

Detected: On Ground ETOPS No

ATA: 7120 00 MOUNTS

Component Description	Part Number	Serial No.	Position

Details: Andrew ARY11 Ryan on 6/01/2009 11:54:02 AM
INSP OF#2 ENG. TWO OF AFT ENG MOUNT BOLTS & ONE OF FWD ENG MOUNT AFT BOLTS FOUND WITH INCORRECT WASHER ORIENTATION.

Corrective Actions Taken: ALL BOLTS CHANGED DUE ENG CHANGE.

Possible Consequences of Defect/SDR: SHEARING OF BOLTS

Mark MST41 Stanton/SYD/QANTAS

Send Copy To / CC :	Rodney RPU05 Pulbrook/SYD/QANTAS Greg GBO01 Boyce/SYD/QANTAS Craig CHO59 Howell/SYD/QANTAS Andrew ARY11 Ryan/SYD/QANTAS

Severity:	Moderate	Likelihood:	Unlikely
Followup Allocated To:	ALEX PARPAIOLA QUALITY SYSTEM STANDARDS 458	Risk:	Medium
Secondary Alllocated To:		Due Date:	21/01/2009

Action Taken:	Alex APA25 Parpaiola on 7/01/2009 9:16:27 AM Review for possible sdr/mei. Alex APA25 Parpaiola on 7/01/2009 1:56:03 PM Refer to MEI 09/SI/12

Report Status:	Closed	AQD Ref:	
Manhours:		Manhour Costs:	0.00
Other Costs:	0.00	Total Costs:	0.00

Distribution

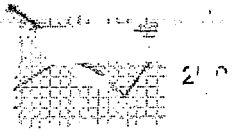
Engineering Report Department	Powerplants Rolls Royce
Local Quality Coordinator	Engineering Services
Quality System & Risk Management	

Attachment: No

Print | Exit

Modification History

Form500 raised by Andrew ARY11 Ryan on 6/01/2009 11:54:02 AM
Modified by Alex APA25 Parpaiola on 7/01/2009 9:16:28 AM
Status updated by Alex APA25 Parpaiola on 7/01/2009 9:16:28 AM from For Review to Followup
Local Quality Coordinator' updated by Alex APA25 Parpaiola on 7/01/2009 9:16:28 AM from Heavy Maintenance to Engineering Services
Modified by Alex APA25 Parpaiola on 7/01/2009 1:56:03 PM
Status updated by Alex APA25 Parpaiola on 7/01/2009 1:56:03 PM from Followup to Closed
Local Quality Coordinator' updated by Alex APA25 Parpaiola on 7/01/2009 1:56:03 PM from Heavy Maintenance to Engineering Services
Modified by Alex APA25 Parpaiola on 7/01/2009 1:59:44 PM
Risk updated by Alex APA25 Parpaiola on 7/01/2009 1:59:44 PM from Low to Medium
Local Quality Coordinator' updated by Alex APA25 Parpaiola on 7/01/2009 1:59:44 PM from Heavy Maintenance to Engineering Services



cc

bcc

Subject Fw: Form 500 - Ref:09-Q00240 Reg:OJG SYD BM - SYD BASE MAINT

To: Mark MST41 Stanton/SYD/QANTAS@QANTAS, Rodney RPU05 Pulbrook/SYD/QANTAS@QANTAS, Greg GBO01 Boyce/SYD/QANTAS@QANTAS, Craig CHO59 Howell/SYD/QANTAS@QANTAS, Andrew ARY11 Ryan/SYD/QANTAS@QANTAS
From: do-not-reply@QANTAS.com.au
Sent by: Qantas AgentExec/QANTAS
Date: 01/06/2009 11:54AM
Subject: Form 500 - Ref:09-Q00240 Reg:OJG SYD BM - SYD BASE MAINT

Do not reply to this e-mail!
The Form 500 Report has been raised by ANDREW RYAN from location SYD BM - SYD BASE MAINT
Report Title: #2 ENG MOUNT BOLTS WASHERS INCORRECTLY INSTALLED

This report has been sent to you for information.

This report contains Confidential and Private information and should not be forwarded without the expressed permission of a Qantas Engineering Manager.

Click on the link to access the document...
http://QFSYDAPP01.QANTAS.com.au/Apps/Form500.nsf/vwAllByUNID/A77790E2066D1D77CA2575360004F264?OpenDocument

09-Q00240

Form 500 -

Registered By	ANDREW RYAN	Registered Time/Date	06/01/2009
Report Title	#2 ENG MOUNT BOLTS WASHERS INCORRECTLY INSTALLED	A/C Registration	OJG
Occurrence Date	06/01/2009	Model	747-438
Nature of Report		Occurence Time	0900
Secondary Rework		SDR/Reportable Defect?	
AD Related?		AD Reference No.	
Near Miss?		Operator	QF - Qantas
Flight Number	QF32	Submitting Department	BASE MAINT 001
This Station	SYD BM - SYD BASE MAINT	Next Station S.T.D	BKK - BANG
		Estimated Cost	$1K - $10K
Maintanence Error	Installation Error	Maintanence Error Type	Required equi installed
Insurance		Insurance Work Order	
Occurence Category	Other	Document Reference	DR&R 00602'
Part Quarantined		Quarantine Reason	
Detected		ETOPS	
ATA	7120 00 MOUNTS		

Component Description	Part Number	Serial No	Position

Details	Andrew ARY11 Ryan on 6/01/2009 11:54:02 AM INSP OF#2 ENG. TWO OF AFT ENG MOUNT BOLTS & ONE OF FWD ENG MOUNT AFT BOLTS FOUND WITH INCORRECT WASHER ORIENTATION.		
Corrective Action Taken	ALL BOLTS CHANGED DUE ENG CHANGE.		
Possible Consequences of Defect/SDR	SHEARING OF BOLTS		
Send Copy To / CC	MARK STANTON;032598;MST41;Mark MST41 Stanton/SYD/QANTAS		
Severity		Likelihood	
Followup Allocated To		Risk	
Secondary Alllocated To		Due Date	
Action Taken			
Report Status	For Review	AQD Ref	
ManHours		Manhours Costs	0.00
Other Costs	0.00	Total Costs	0.00
Distribution			
Engineering Report Department	Powerplants Rolls Royce		
Local Quality Coordinator	Heavy Maintenance		
Quality System & Risk Management			
Has Attachment			

Modification History Form500 raised by Andrew ARY11 Ryan on 6/01/2009 11:54:02 AM

cc

bcc

Subject Fw: Form 500 - Ref:09-Q00238 Reg:OJG SYD BM - SYD BASE MAINT

To: Mark MST41 Stanton/SYD/QANTAS@QANTAS, Rodney RPU05 Pulbrook/SYD/QANTAS@QANTAS, Greg GBO01 Boyce/SYD/QANTAS@QANTAS, Craig CHO59 Howell/SYD/QANTAS@QANTAS, Andrew ARY11 Ryan/SYD/QANTAS@QANTAS
From: do-not-reply@QANTAS.com.au
Sent by: Qantas AgentExec/QANTAS
Date: 01/06/2009 11:28AM
Subject: Form 500 - Ref:09-Q00238 Reg:OJG SYD BM - SYD BASE MAINT

Do not reply to this e-mail!
The Form 500 Report has been raised by ANDREW RYAN from location SYD BM - SYD BASE MAINT
Report Title: #3 ENG FWD MOUNT BOLTS(AFT) MISSING WASHERS

This report has been sent to you for information.

This report contains Confidential and Private information and should not be forwarded without the expressed permission of a Qantas Engineering Manager.

Click on the link to access the document...
http://QFSYDAPP01.QANTAS.com.au/Apps/Form500.nsf/vwAllByUNID/E11E2F9BC7505598CA25753600029723?OpenDocument

Form 500 - 09-Q00238

Registered By	ANDREW RYAN	Registered Time/Date	06/01/2009
Report Title	#3 ENG FWD MOUNT BOLTS(AFT) MISSING WASHERS	A/C Registration	OJG
Occurrence Date	06/01/2009	Model	747-438
Nature of Report		Occurence Time	0900
Secondary Rework		SDR/Reportable Defect?	
AD Related?		AD Reference No.	
Near Miss?		Operator	QF - Qantas
Flight Number	QF32	Submitting Department	BASE MAINT 001
This Station	SYD BM - SYD BASE MAINT	Next Station S.T.D	BKK - BANG
		Estimated Cost	$1K - $10K
Maintanence Error	Installation Error	Maintanence Error Type	Required equi installed.
Insurance		Insurance Work Order	
Occurence Category	Other	Document Reference	DR&R 00602
Part Quarantined		Quarantine Reason	
Detected		ETOPS	
ATA	7120 00 MOUNTS		

Component Description	Part Number	Serial No	Position

Details	Andrew ARY11 Ryan/SYD/QANTAS on 6/01/2009 11:28:18 AM INSP OF#3 ENG FOUND FWD ENG MOUNT AFT BOLTS HAVE ONLY ONE WASHER UNDER NUTS.(SHOULD HAVE 2 WASHERS UNDER EACH NUT)
Corrective Action Taken	DUE TWO THREE OUT OF THE FOUR ENG HAVING INCORRECT BOLT FITMENT,ALL BOLTS ARE TO BE CHANGED ON #3 ENG
Possible Consequences of Defect/SDR	OVER TORQUE BOLTS
Send Copy To / CC	MARK STANTON;032598;MST41;Mark MST41 Stanton/SYD/QANTAS

Severity		Likelihood	
Followup Allocated To		Risk	
Secondary Alllocated To		Due Date	
Action Taken			
Report Status	For Review	AQD Ref	
ManHours		Manhours Costs	0.00
Other Costs	0.00	Total Costs	0.00

Distribution	
Engineering Report Department	Powerplants Rolls Royce
Local Quality Coordinator	Heavy Maintenance
Quality System & Risk Management	
Has Attachment	

Modification History Form500 raised by Andrew ARY11 Ryan/SYD/QANTAS on 6/01/2009 11:28:18 AM

Appendix 15

Australian Government
Civil Aviation Safety Authority

Civil Aviation Advisory Publication

November 2012

Defect Reporting

CAAPs provide guidance, interpretation and explanation on complying with the Civil Aviation Regulations (CAR) or Civil Aviation Orders (CAO).

This CAAP provides advisory information to the aviation industry in support of a particular CAR or CAO. Ordinarily, the CAAP will provide additional 'how to' information not found in the source CAR, or elsewhere.

A CAAP is not intended to clarify the intent of a CAR, which must be clear from a reading of the regulation itself, nor may the CAAP contain mandatory requirements not contained in legislation.

Note: *Read this advisory publication in conjunction with the appropriate regulations/orders.*

Contents

The relevant regulations and other references

- Part 4B of CAR 1988, deals with reporting of defects on Australian aircraft or components.

This CAAP will be of interest to:

- Aircraft Registered Operators
- Certificate of Approval holders
- Air Operator's Certificate holders
- Aircraft Engineer Licence holder
- Pilots or other persons authorised to carry out maintenance.

Why this publication was written

Regulations 51, 51A, 51B and 52 of the Civil Aviation Regulations (CAR 1988), require the reporting of defects in aircraft and aircraft components to the Civil Aviation Safety Authority (CASA).

This Civil Aviation Advisory Publication (CAAP) provides guidance as to the kind of defects that must be reported to CASA and when. This CAAP does **not** deal with defect reporting required by Part 42 of the Civil Aviation Safety Regulations 1998 (CASR 1998).

Status of this CAAP

This CAAP replaces CAAP 51-1(1) dated June 2001. The CAAP has been amended to address a mismatch between established practices and new technology which has emerged over the past decade.

For further information

Contact the CASA Service Difficulty Reporting (SDR) Unit on 131 757

1. Acronyms

AD Airworthiness Directive

AOC Air Operator's Certificate

CAAP Civil Aviation Advisory Publication

CAR Civil Aviation Regulations 1988

CASA Civil Aviation Safety Authority

CASR Civil Aviation Safety Regulations 1998

MLG Main Landing Gear

OEM Original Equipment Manufacturer

RO Registered Operator

SDR Service Difficulty Reporting

2. Definitions

The *CASR Dictionary* defines MAJOR DEFECT to mean:

- in relation to an aircraft, a defect of such a kind that it may affect the safety of the aircraft or cause the aircraft to become a danger to persons or property; and
- in relation to an aircraft component that is not fitted to an aircraft, a defect of such a kind that if the component is fitted to an aircraft it may affect the safety of the aircraft or cause the aircraft to become a danger to persons or property.

CASA regards a DEFECT as any defect that is not a major defect and is something that is an imperfection that impairs the structure, composition, or function of an object or system of an aircraft or component.

MALFUNCTION - when a part of an aircraft structure, aircraft engine, propeller, system or component fails to operate in the manner for which it was designed.

FAILURE - the lack of expected or satisfactory performance. (Example: the overloading or overstraining of a structure to such an extent that it can no longer perform its required function).

3. Introduction

3.1 The purpose of the defect reporting scheme is to:

- permit the assessment of reports to detect trends in the Australian aircraft fleet and products;
- permit timely airworthiness and safety oversight of the Australian aircraft fleet;
- provide feedback to industry to promote aircraft & product improvement; and
- assist in long term improvement in design, manufacturing and maintenance standards.

3.2 CASA uses SDRs as a means of identifying trends in design and maintenance reliability. Reports are entered into a database by CASA and a de-identified summary of submitted SDR data is available on CASA's website. It is of benefit to both CASA and the aviation industry that the database contains as much accurate information as possible. CASA may use this information as a basis for an Airworthiness Directive (AD), other advisory publications, such as Airworthiness Bulletins and other appropriate regulatory purposes. From this database, information may be obtained to provide reliability statistics and trend monitoring of aircraft, engines, propellers, systems and components. CASA shares this information with other regulatory authorities.

3.3 CASA publishes monthly and yearly summaries of SDR information on its website. Archived records are also available from the CASA SDR Unit. You can access summaries of Australian and Foreign defect reports from the following web sites:

CASA: http://www.casa.gov.au/airworth/sdr/

FAA: http://av-info.faa.gov/sdrx/

TC: http://wwwapps3.tc.gc.ca/Saf-Sec-Sur/2/CAWIS-SWIMN/

3.4 CASA also makes a selection of SDR summaries that may be of interest to the aviation community and publishes them in its Flight Safety magazine.

4. Reportable defects

4.1 Regulations 51, 51A, 51B and 52 of CAR 1988 state that those who own, operate or maintain Australian aircraft must advise CASA (in accordance with Regulation 52A of CAR 1988) of the existence of any:

- major defect related to an aircraft;
- defect discovered while complying with an AD or a direction given by the Authority under Regulation 38 of CAR 1988; and
- defect in an aircraft or an aircraft component that if installed in an aircraft would affect its safety or result in a danger to person or property.

4.2 The Regulations make a distinction between 'defects' and 'major defects'.

Regulation 51A of CAR 1998 - major defects

4.3 All major defects to which Regulation 51A of CAR 1988 applies discovered in an aircraft must be reported to the Authority immediately. Regulation 51A of CAR 1988 applies to major defects:

- that have caused, or that could cause, a primary structural failure in an aircraft;
- that have caused, or that could cause, a control system failure in an aircraft;
- that have caused, or that could cause, an engine structural failure in an aircraft; or
- caused by, that have caused, or that could cause, fire in an aircraft.

Other major defects or defects

4.4 All other major defects and other defects (being those covered by regulations 51, 51B and 52 of CAR 1988) must be reported to CASA within two (2) working days of their discovery. These include:

- a defect discovered in an aircraft in the course of complying with an Airworthiness Directive or a Regulation 38 of CAR 1988 direction (but if the defect discovered is a CAR 51A major defect it should be reported immediately);

- a defect discovered in an aircraft component when:
  - a person engaged in the maintenance of an aircraft component becomes aware of a defect in the component;
  - a person engaged in the maintenance of an aircraft becomes aware of a defect in an aircraft component that the person proposed to install in the aircraft in the course of that maintenance;
  - a person who holds a certificate of approval that covers the maintenance of aircraft components becomes aware of a defect in an aircraft component that he or she owns; or
  - a person who holds an Air Operator's Certificate (AOC) becomes aware of a defect in an aircraft component that he or she owns and intends to install in an aircraft used in operations under that AOC.

4.5 A list of examples of major defects can be found in Appendix A of this CAAP.

4.6 Failure to report a defect when required by the Regulations is an offence of strict liability and may result in prosecution and/or administrative action.

4.7 Any defective parts must be kept in a state that will allow CASA to investigate the defect for a period of 12 months after the defect is reported. CASA can and usually does, on request release parts for repair or disposal at an earlier time.

4.8 CASA encourages reporting of defects the Regulations do not require be reported, where the reporter considers the provision of such information could be of value to CASA or the aviation community. For example, a non-major defect found during the normal course of inspection may be reported if in the opinion of the person performing the inspection, the defect may highlight maintenance errors.

5. Reporting guidelines

5.1 General

5.1.1 To assist in reporting defects in accordance with the requirements of Regulation 52A of CAR 1988, CASA has produced a Defect Report Form (CASA Form 404). This form provides a standard format which facilitates the submission of complete data and reduces the time and cost associated with submitting a report. CASA Form 404 is available at http://www.casa.gov.au/manuals/regulate/mdr/form404.pdf.

5.1.2 When reporting a defect, you should provide as much descriptive information as possible on the cause of the problem. Any attachments, such as photographs and sketches of defective parts, are also appreciated. However, you should not submit any physical parts to CASA unless directed to do so by CASA.

5.1.3 A defect report must be submitted within the time limits required by the regulations. However, when all of the required information is not available within the required time for submitting the report, the submitter should state on the defect report that the report is still open. When the investigation has been completed, the submitter must file a final defect report. If the investigation will take more than two months to complete, the submitter should provide one or more follow-up (interim) reports. These reports should be submitted whenever the investigation has reached one of its milestones or a finding significant for the safety of operation has been established.

5.1.4 It is the responsibility of the Registered Operator (RO) to ensure that any necessary investigation of the cause of the defect is carried out and the results submitted to CASA.

5.1.5 The use of abbreviations in defect reports should be kept to a minimum, unless used universally (e.g. MLG).

5.1.6 In relation to major defects, the RO of the aircraft may, in a contractual agreement with a maintenance organisation, assign the task of submitting the major defect report to CASA. However, the ultimate responsibility for submission of the required report remains with the RO of the aircraft.

5.1.7 Instructions for completing CASA Form 404 are included in Appendix B of this CAAP.

6. Where to submit defect reports

6.1 Defect Reports

6.1.1 You may submit a defect report to CASA by any of the following means:

- **By Mail:**
  Mail, free of postal charge from anywhere within Australia, a completed Defect Report Form (CASA Form 404) to the following address:

  Civil Aviation Safety Authority
  SDR Unit
  Airworthiness and Engineering Branch
  Reply Paid 2005
  Canberra ACT 2601

- **By Facsimile:**
  Fax the CASA Form 404 to the following number: (02) 6217 1920

- **On-line:**
  Submit a defect report through the CASA web site via the following link:
  http://www.casa.gov.au/airworth/sdr/

- **Email:**
  sdr@casa.gov.au

6.1.2 If you have your own reporting system and wish to submit reports generated by your system to CASA, please liaise with CASA SDR staff to organise the format of the report before commencing.

6.2 Major defect Reports

For defects requiring immediate notification, CASA only requires a notification of the defect. There is no need to complete either CASA Form 404 or the online form initially, CASA will expect a complete report to follow up the initial notification.

- **By Phone:**
  Contact the AD/SDR cell on 131 757 (business hours)

- **On-line:**
  Submit a defect report through the CASA web site via the following link:
  http://www.casa.gov.au/airworth/sdr/

- **Email:**
  sdr@casa.gov.au
- **By Facsimile:**
  Fax a notification of the defect to the following number: (02) 6217 1920

7. Use and disclosure of reported information

7.1 CASA will only use or disclose information reported under the defect reporting scheme for purposes consistent with the interests of safety and in accordance with applicable laws.

Executive Manager
Standards Division

November 2012

Appendix A

Examples of Major Defects

Listed below are some representative examples of major defects. The list is **not** exhaustive. If you have any doubt about whether a defect is a major defect, you can seek advice from the CASA SDR Unit by email sdr@casa.gov.au or phone 131 757:

(a) fires during flight, whether or not the related fire warning system operated correctly;

(b) false fire warning during flight;

(c) smoke, toxic or noxious fumes inside the aircraft;

(d) an engine exhaust system that causes damage during flight to the engine, adjacent structure, equipment or components;

(e) unscheduled engine shut-down;

(f) on a multi-engine helicopter, loss of drive from one engine;

(g) inability to feather or unfeather a propeller, to shut-down an engine or to control thrust;

(h) fuel system malfunction affecting fuel supply and distribution;

(i) significant contamination or leakage of fuel, oil or other fluids;

(j) use of incorrect fuel, oil or other fluids;

(k) landing gear failing to extend or retract, or uncommanded opening or closing of landing gear doors during flight;

(l) brake system defects that result in inability or reduction in ability to brake when the aircraft is in motion on the ground;

(m) malfunction, stiffness, slackness or limited range of movement of any flight controls;

(n) significant failure or malfunction of the instrument, electrical, hydraulic, pneumatic, ice-protection, radio, navigation system or emergency equipment or a defect that could cause such a failure;

(o) a defect causing uncontrollable cabin pressure;

(p) cracks or corrosion in the primary structure:

- Corrosion levels are defined as follows:
  - Level 1 – Corrosion damage occurring between successive inspections, that is localised and can be blended-out to within allowable limits as defined by the Original Equipment Manufacturer (OEM), and surface treated appropriately.
  - Level 2 – Corrosion damage occurring between successive inspections, that exceeds allowable limits as defined by the OEM that requires blending, rework or replacement as well appropriate surface treatment action.
  - Level 3 – Severe corrosion damage, significantly in excess of OEM guidelines, that requires urgent structural reinforcement, component replacement and appropriate surface treatment.

    Note: *A defect report must be submitted for corrosion on discovery of levels 2 and 3 only.*

(q) any malfunction, failure or defect that affects or could affect the performance of any system or component essential to the safe operation of the aircraft;

(r) (removed);

(s) malfunction of systems or components, or a defect that could cause such a malfunction - including auxiliary power units, essential to the safe operation of those aircraft approved for extended diversion time operations irrespective of the type of operation being, or intended to be, conducted;

(t) failure of helicopter driveline components;

(u) separation of any part of an aircraft, which may become a hazard to the aircraft or persons;

(v) Failures in digital computer based equipment and systems, categorised as critical or essential (i.e. level A or B software), and the digital computer software used in this equipment, or system which is software whose anomalous behaviour, would cause or contribute to a failure of system function resulting in a hazardous condition for the aircraft.

(w) any other defect which the operator believes may be of interest to the regulator or the aviation community.

Note: *Definitions for the classification of equipment, systems and software are contained in Radio RTCA Inc. publication RTCA/DO-178B.*

Appendix B

Instructions for completing CASA Form 404 by the submitter:

1. *Aircraft Registration* - Enter the complete aircraft registration mark.

2. *Date of occurrence* - Enter the date the failure, malfunction, or defect occurred, or was discovered. This entry should be made in a numeric format (dd/mm/yy).

3. *Operator Name* - Enter the name of the registered operator of the aircraft.

4. Major Equipment Identity:
   - AIRCRAFT - Enter the aircraft manufacturer's name.
     - Aircraft Model - This should be the official designation of the aircraft as listed in the Aircraft Specification or Type Certificate Data Sheets.
     - Aircraft Serial Number - The serial number assigned by the manufacturer.
     - Time Since New (TSN) - Enter the aircraft's total time since new in whole hours. Enter the aircraft's accumulated cycles. Mark the appropriate box to indicate the time units used.
     - Time Since Last Maintenance Check (TSLMC) - Enter the aircraft's total time since its last maintenance check in whole hours. If applicable, enter the aircraft's accumulated cycles. Mark the appropriate box to indicate the time units used.
   - Engine - Enter the engine manufacturer's name, model/series and serial number. Engine time related information is TSN or TSO (Time Since Overhaul).
   - Propeller - Enter the propeller manufacturer's name, model/series, and serial number should be entered. The propeller's time related information is TSN or TSO.

   Note 1: *When an engine or propeller problem or condition is being reported, it is a requirement to include engine or propeller information and the aircraft make and model information. This information is needed because of the inter-changeability of engine and propeller models on various aircraft.*

   Note 2: *Model and serial numbers should include prefix letters, if appropriate, but should not incorporate dashes, slashes, or blank spaces. If the component is amateur built, use the kit name. Avoid informal names and marketing titles.*

5. Aeronautical Product (Component):
   - Name - Enter the name of the aeronautical product that contains the part. For example, when the defective part is a bearing, the aeronautical product will be the unit that contains the bearing, such as a starter or alternator. For a defective exhaust valve, enter the cylinder identity, etc. This level of identification is important for output data sorting, interrogation, and trend analysis. A defect report submitted as an open report may only contain information on the aeronautical product until teardown reveals the specific part that was defective.
   - Manufacturer - Enter the manufacturer's name of the component/assembly being reported.
   - Model Number - Enter the applicable manufacturer's model number of the aeronautical product.
   - Serial Number - Enter the applicable manufacturer's serial number of the aeronautical product.

6. *Part* - Enter information about the specific part causing the problem. For example, bearing, spar, etc. In some instances, it may be possible to further identify the specific part, within a aircraft component, that failed, malfunctioned or was defective. For example, if a VHF communication system malfunctions and during the investigation of the VHF system, a damaged wire is discovered to have caused the malfunction. In this example, the wire is the specific part to be reported. The submitter would, therefore, be required to report all information pertaining to the wire:

- Part Name - Enter the manufacturer's part name of the specific part causing the difficulty.
- Part Number - Enter the applicable manufacture's part number.
- Part Condition - Enter the word(s) that best describes the condition of the part. Avoid the use of such terms as "unserviceable" or "repairable." If multiple word(s) are needed to describe the condition, enter the most significant word in the "Part Condition" block.
- Location on Aircraft - Enter location of the defective part or the defect. For example, right gearbox, aeroplane jack point, left outboard, etc.
- Time Since New (TSN) - Enter the total service time of the part since new in whole hours (HRS), accumulated cycles (CYCS) or landings (LNDS), or the part's total calendar time in months (MTHS), as applicable. Mark the appropriate box to indicate the time units used. In the case of a turbine engine, it is required to enter the number of cycles since new.
- Time Since Overhaul (TSO) - Enter the service time of the part since the last overhaul, in whole hours (HRS), accumulated cycles (CYCS) or landings (LNDS), or the part's total calendar time in months (MTHS), and mark the appropriate box to indicate the time units used, if applicable. If the part has not been overhauled since it was new, no information would be entered in this block.
- Available for Inspection - Mark the appropriate box if the defective part is available for inspection by the Authority.

7. When was the defect found?

Mark the appropriate box that best describes the stage of flight, ground or maintenance operation the aircraft was engaged in when the reported malfunction, failure or defect occurred, or was observed. This includes defects found after an accident, during compliance with an AD or Service Bulletin. Mark the box 'Other' if the stage of operation is unlisted and enter the operation - for example, preflight check.

If any AD, Service Bulletin, modification etc. exists, enter the document reference and mark the appropriate compliance status box.

8. *Opinion as to the cause of the defect* - At times, it is likely that the defect may appear to have been due to multiple reasons that led ultimately to the, failure, malfunction or defect. Seek to be as objective as possible in determining the contributing factor or root cause.

Mark the box or boxes, provided in this section of the form, that best describe the reason for the failure as follows:

- Design - Where the component does not meet its intended function or it is being required to do something outside the design scope.
- Manufacture - Where the component has not been appropriately manufactured or properly finished. For example, stress concentrators were not removed.
- Fatigue - Where the defect or failure exhibits classic fatigue symptoms.
- Corrosion - Corrosion, environment and age are closely related, particularly in older aircraft.

- Inadequate maintenance - Where the defect or failure is attributed to poor maintenance practices arising from lack of data, incorrect procedures, inadequate quality control, lack of appropriate training etc.
- Human factors - Where the defect occurred as a result of personnel error while carrying out maintenance. For example, failure to follow the correct instructions, use of inappropriate equipment/tools, or the use of incorrect fuel or lubricants.
- Suspected unapproved parts - Where the defect occurred as a result of the use of counterfeit or life expired parts. With older aircraft and the lack of approved spares, counterfeit parts are an increasing problem. This can also be related to personnel error or inadequate maintenance. The identification of counterfeit parts is of paramount importance.
- Operational - Where the defect occurred as a result of incorrect, inadvertent or uncommanded operation. This can also be related to personnel error other than during maintenance.

9. Defect description and investigation result - describe the defect, the circumstances under which it occurred, any indications or warnings and its non-apparent effects on the aircraft or other systems. State the probable cause, action taken to rectify the defect and recommendations to prevent recurrence.

10. Submitter's details - Enter the submitter's name, Aviation Reference Number (ARN) if any, company name, address (including postcode), telephone number (including area code) where the submitter or another person with knowledge of the defect may be contacted if the Authority needs further clarification regarding the defect report.

Enter the date when the report is submitted to the Authority. This is not the date when the failure, malfunction, or defect was discovered.

11. Defect Report Type - Mark the appropriate box as follows:

- Notification of defect with complete investigation results - Where no further submissions are anticipated.
- Initial defect notification only - Where the report does not contain all the required information or investigation results and a follow-up report is required to be submitted.
- Follow-up report from earlier defect notification - Where additional information or investigation results are being submitted following the initial defect notification.

12. Submitter Reference Number - Enter your own report reference number for future reference.

Appendix 16

QUALITY ISSUE LIST - Outsourced Heavy Maintenance Check

Important Notes:

1	All risk ratings to be performed in accordance with the 'Qantas Group - Risk Assessment Guide'
2	Issue list to be emailed to Qantas Management Team every 'Friday Afternoon' for the duration of the aircraft check (refer comment within this text box for mailing list)
3	Weekly email to be accompanied with 'Summary of Significant Issues'. This is to be in the form of a 'Dot Point' list and contain 'only' significant issues for the readers attention
4	High or Extreme Risk issues to be highlighted to Qantas Management immediately

Aircraft Rego	VH-TJX
Check Location (MRO)	ST Aerospace
Check Type	HM 1
Check Commencement Date	15-June-2010
Quality Representive (name)	
Date List Updated	

STATUS
OPEN
PROGRESSING
CLOSED
TO BE ADDRESSED / DISCUSSED AFTER CHECK COMPLETION

Risk Matrix

Likelihood	Consequence 1. Negligible	2. Insignificant	3. Minor	4. Moderate	5. Major	6. Catastrophic
A. Almost certain	L	M	H	E	E	E
B. Likely	L	M	H	E	E	E
C. Possible	VL	L	M	H	H	E
D. Unlikely	VL	L	L	M	H	H
E. Rare	VL	VL	L	L	M	H
F. Very rare	VL	VL	VL	L	M	M

Risk level	VL Very low	L Low	M Medium	H High	E Extreme

Issues to Monitor on TJX (from issues arisen on TJG)

Issue No#	Date Discovered	Issue Details	Assigned To	Perceived Risk Rating	Quality Deficiency Raised Yes / No?	Status Open / Progressing / Closed	Remarks/Action Taken
8	06-Apr-10	LAE's working far to many hours, no fatigue management evident. Roland called in on only day off for several weeks 04/04/10	ST Aero	M	No	Monitor with TJX	Lim Yan Boon to print attandance sheets and copy of Ministry of Manpower requirements to confirm status of ST staff (Ministry of Manpower web-site provided for verification of working hrs policies) Fatigue being managed up to date with TJX. Will continue to monitor until end of check.
10	08-Apr-10	Reinstallation cards found certified with A/C still being inspected. Copies taken. Similar issue to item 5 cards not being fully understood	ST Aero	M	No	Monitor with TJX	Cards taken to Lim, who was already aware of issue. 8/04/10. Toolbox meeting 16-Apr to address Verify meeting minutes. Conducted more docs & procs sessions on July 13 & 14 with all STAE employees working on QF aircraft. Issue discussed at this session .
11	08-Apr-10	DRC's found raised for task cards. Duplication of paper work.	ST Aero	VL	No	Monitor with TJX	Concerns taken to Lim Yan Boon , who said this was done to clear inspection cards, was told these would be 0 hr DRC's. Toolbox breif to staff c/out 16/4/10 Verify meeting minutes. Conducted more docs & procs sessions on July 13 & 14 with all STAE employees working on QF aircraft. Issue discussed at this session .
24	19-Apr-10	ST Aero staff being constantly moved between aircraft, possible confusion on tasks and continuity.	ST Aero	M	No	Monitor with TJX	Disscusions held with St Aero over this issue. Revisited 23/04/10. St Aero agreement to mimimse practice. Reaffirmed 30-Apr, All movements to be communicated to Team Leader Movements on TJX are being monitored & found to be satisfactory to date. Team Leader being notified of LAE exchanges or loans.

27	23-Apr-10	Control column found with no restraint to prevent turning of wheel, Tape has been applied several times but is continualy removed.	ST Aero	VL	No	Open	Disscusions held with staff, awaiting ST Aero preventative actions for future aircraft (remains outstanding, LAE Teo C K is tasked to provide the proposed solution) Review QF	Trng 4 tool.
28	24-Apr-10	Several S/Metal AME's found working on aircraft with NO LAE coverage.	ST Aero	M	No	Monitor with TJX	QF staff shut down all non covered areas of aircraft. (A revised roster has been produced, minimum of 2 AC & 1 AV LAE will be available outside normal working time when there is works being done) Adequate LAE numbers have been maintained on all shifts throughout TJX to date. Will be monitored to check completion.	
31	27-Apr-10	Avionics AME's found working on aircraft with NO LAE coverage.	ST Aero	M	No	Monitor with TJX	QF staff stopped Avionics work. (A revised roster has been produced, minimum of 2 AC & 1 AV LAE will be available outside normal working time when there is works being done) Adequate LAE numbers have been maintained on all shifts throughout TJX to date. Will be monitored to check completion.	
32	28-Apr-10	3 Avionics kits inspected and found with various unservicable or uncalibrated tooling.	ST Aero	M	No	Open	Work in progress, Avionics technical rep working with QF staff to creat servicable kit. (Tools sent for calibration) Verification of calibration required	Calib
34	28-Apr-10	Can't sign some CIR tasks where job has been completed but not paperwork not completed by LAE	ST Aero	VL	No	Monitor with TJX	Comm's to QF LAME's re CIR tasks. LAE's wont certify cards until CIR complete. As such cards should be certified in front of LAME if CIR involved. (LAE now certify tasks before CIR. LAME will sign on log sheet after Inspection)	
40	07-May-10	Incorrect strippers used to strip accelerometer wiring	ST Aero	L	No	Open	(Tool procured. Awaiting for delivery). Require proof of tool being procured.	✓
45	16-May-10	Observed personel using plastic tube to drain fwd Lav pluming after leak test, which resulted in leakage over floor.	ST Aero	VL	No	Open	(Staff were instructed to drain the residue water to container instaed of plastic bag. STA is also looking into suitable adaptor which can be connected directly to the drain coupling - Leong/mike Tan following up) Require verification Not wearing correct safety gear.	O
55	06-Jun-10	Process for progressive certification of CIR's req'd	QANTAS	VL	No	Monitor with TJX	Maint Systems and planning reviewing current process. Process being incorporated on TJX.	
56	06-Jun-10	A form for defects found by QANTAS that requires DRC to be raised & copy supplied	QANTAS	VL	No	Monitor with TJX	Process being trialled. Being monitored on TJX	
57	07-Jun-10	L/E slats independent insp signed but all R/H slat actuator attach bolts do not have retainers in place.	ST Aero	L	TBA	Open	LAE Siah Traceable through DRC Removed Formwork	toolbox brief. Docs & Procs.
60	07-Jun-10	Scribe line EI for LRTS signed of as incorperated on 18/05/10 but no tape applied to bare areas, no paperwork to cover the missing tape	ST Aero	L	TBA	Monitor with TJX	LAE Roland. Require verification on TJX	