CONTINUING AIRWORTHINESS MANAGEMENT EXPOSITION (CAME)

Revision 11
Dated October 13, 2019

In accordance with COMMISSION REGULATION (EU) No 1321/2014 of 26 November 2014

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Introduction

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LIST OF EFFECTIVE PAGES

The list below indicates the Parts of the Continuing Airworthiness Management Exposition and shows the number of pages in each Part as well as the date and issue status of each Part.

Revisions carried out on any pages within a Part shall result in that complete Part being raised to the next Issue Number. Any amendment shall be outlined with a red font (Example).

A new list of effective pages shall be issued with each revision in order to provide a means for the manual holder to check that their manual is at the correct revision status.

Part	Pages	Revision	Amendment	Issue Date
INTRODUCTION	i thru vii	11	13.10.2019	31.03.2012
0 GENERAL ORGANISATION	1 thru 10	11	13.10.2019	31.03.2013
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AMENDMENT RECORD

The list below indicates the latest revision changes and date of the changes to the Continuing Airworthiness Management Exposition.

AMENDMENT NO:	DATE	AMENDMENT DETAILS	AMENDED BY	DATE OF INCLUSION
6	31.03.2012	Layout and editorial change based on customers' findings.	M. H. Jensen	31.03.2012
7	02.10.2013	Changes to competence assessment and handling of findings	C. Dannesbo	02.10.2013
7.1	17.03.2014	Update of facility postal address	M. H. Jensen	17.03.2014
8.0	16.01.2015	Organisation Chart and editorial change based on customers' findings.	M. H. Jensen	25.04.2015
9.0	29.06.2015	Change in management	C. Dannesbo	29.06.2015
10.0	13.11.2016	Changes due to handling of findings	C. Dannesbo	13.11.2016
10.1	18.11.2017	Minor editorial change Acc Mgr new last name	C. Dannesbo	18.11.2017
11	xx.10.2019	New address, and clarification of process in App A.	C. Dannesbo	13.10.2019

DISTRIBUTION LIST

DISTRIBUTION LIST DETA CAME		
POSITIONS	**CAME NO.**	**HOLDER NAME**
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The latest version of this CAME, approved by DETA management, will be available from DETA homepage *http://www.deta-trend.com/documents*.

NOTE: DETA cannot be responsible for any locally stored copies of the CAME and encourage to download the latest version when needed.

List of Abbreviations

ACAM ..... Aircraft continued Airworthiness Monitoring
AD ..... Airworthiness Directive
ADD ..... Acceptable Deferred Defect
AFM ..... Airplane Flight Manual
AMP ..... Aircraft Maintenance Program
AMC ..... Acceptable Means of Compliance
AOC ..... Air Operators Certificate
AOG ..... Aircraft on Ground
ARC ..... Airworthiness Review Certificate
ASB ..... Alert Service Bulletins
DAC..... Designated Analysis Center
DETA..... Danish Engine Trend Analyzing
DCAA ..... Danish Civil Aviation Authority
DTA ..... Danish Transport Authority
CAME ..... Continuing Airworthiness Management Exposition
CAM ..... Continuing Airworthiness Manager
C of A ..... Certificate of Airworthiness
CDL ..... Configuration Deviation List
CRS ..... Certificate of Release to Service
EASA ..... European Aviation Safety Agency
ECI ..... Emergency Conformity Information
ECTM ..... Engine Condition Trend Monitoring
GR ..... Generic Requirement
KOL ..... Kind Of Limitation
LDD ..... Luftdygtigheds Direktiv (Danish AD)
MEL ..... Minimum Equipment List
MO ..... Maintenance Organisation
MOE ..... Maintenance Organisation Exposition
MOR ..... Mandatory Occurrence Report
MPD ..... Maintenance Planning Document
MP ..... Maintenance Program
NAA ..... National Aviation Authority (for the aircraft state of register!)
OEM ..... Original Equipment Manufacturer
P&WC..... Pratt and Whitney Canada
POH ..... Pilot's Operating Handbook
QM ..... Quality Manager
SB ..... Service Bulletin
SIL..... Service Information Letter
SL..... Service Letter
TS..... Trafik Styrelsen (DCAA)

PART 0 GENERAL ORGANISATION

0.1 Introduction and Corporate Commitment by the Accountable Manager M.A.704:

Danish Engine Trend Analyzing (DETA)

CONTINUING AIRWORTHINESS MANAGEMENT EXPOSITION

This Exposition defines the organisation and procedures of DETA, and to what extend DETA will be committed to M.A. Subpart G Part M.

These procedures are approved by the undersigned and must be complied with, as applicable, in order to ensure that all the continuing airworthiness activities including maintenance for aircraft managed by DETA is carried out on time and to an approved standard.

It is accepted that these procedures do not override the necessity of complying with any new or amended regulation published by the Agency from time to time where these new or amended regulations are in conflict with these procedures.

Signed: ..... Date: 13.10.2019

Name: Margot Xavier Søborg Dehn Title: Accountable Manager, DETA

This Exposition is not approved by the competent authority as described in M.A.704(b).

DETA does not hold an EASA Part M approval. DETA undertake to follow the requirements of Commission Regulation (EC) No 1321/2014 as a subcontractor to operators that comply with Commission Regulation (EC) No 1321/2014 or equivalent. This so DETA's customers can more easily relate to DETA as a supplier because of the transparency and recognition.

Therefore, DETA is not obligated to notify changes in the organisation to authorities.

For DETA to be as compliant as possible to Commission Regulation (EC) No 1321/2014 with Amendments, the procedures in this CAME shall be audited annually by an external Quality Auditor/Monitor, approved by the DCAA to perform audits in Part- M organisations.

This signature testifies that this CAME has been audited, and the described procedures has, in general, been found in compliance with Commission Regulation (EC) No 1321/2014.

Signed: ..... Date: 13.10.2019

Name: Christian Dannesbo Title: Quality Manager and Auditor/Monitor

0.2 General Information

0.2.1 Description of the Organisation

DETA is owned and structured under the management of Margot X. Søborg Dehn. For the complete management structure refer to the organisations management chart in paragraph 0.4

For an overview of DETA's organisation see part 0.4.1 of this CAME.

In view of the fact that DETA is a one product service provider, there is no legal requirement to have a quality manager. It has however been decided to have an external auditor from an EASA PART-M Organization.

0.2.2 Relationship with other Organisations/Owners

DETA is a Designated Analysis Center (DAC) for WebECTM & Trend analysis to P&WC engine operators. Ref. P&WC SIL GEN-055 (latest revision).

P&WC and CAMP can in accordance with the DAC agreement perform audit of DETA upon request.

DETA receives, from P&WC and CAMP, information about software changes of the WebECTM as well as official publication such as service information letters to comply with generally accepted operational methods and processes.

The WebECTM software is a web based software subjected to licensing and is located at CAMP System International server in North America where it is designed, developed, tested, released, updated and upgraded on site.

Any design changes in WebECTM software that influences on the usage of the system are to be notified to DETA via e-mail, and the changes are being briefed to the analysts in DETA by the Quality Manager.

All data used by DETA is accessed by an encrypted VPN-access and administrated on a hosted server solution by Montes (a HP approved software and server supplier).

0.2.3 Engines Managed

DETA services customers worldwide
These customers are a mix of private operators with one or more aircraft, military customers with one or more aircraft and commercial operators with one or more aircraft. The work load generated by the operator varies largely depending on type of operation and equipment.
The data generated by the private operators for a large part is in some case limited to only 3-5 flights per months. For the military and commercial operators the amount of data varies from 15 to 30 flights per month.
Some operators upload the data themselves to the WebECTM portal, where DETA is only to perform the analysis. Others submit the data to DETA for upload and analysis, this data is submitted to DETA as manually pilot recorded data by fax or email. Data can also be recorded by onboard automatic data acquisition units, in this case the data is submitted to DETA by email as an attached file, or data can be recorded via the DETA developed APP, EasyTrend. (This works on IOS devices)
How data is handled by the individual customer shall be agreed in the maintenance contract.
Continuing awareness from the management side is placed on the work load for the individual analyst, so that he or she has sufficient time to perform the engine trend analysis and his or her other duties.

0.2.4 Scope of work

Organisation ECTM Capability:

Engine Type(s):	Managed at Site:
P&WC PW100 Series	DETA, Hjørring
P&WC PW150 Series	DETA, Hjørring
P&WC PW300 Series	DETA, Hjørring
P&WC PW500 Series	DETA, Hjørring
P&WC PW600 Series	DETA, Hjørring
P&WC PT6A/B Series	DETA, Hjørring
P&WC JT15D Series	DETA, Hjørring

0.2.4.1 Conversion Software

The following types of software is used by DETA to convert trend data files received from the customers to a standard WebECTM file format that can be uploaded to the WebECTM for further analysis.

Aircraft or Recording system:	Software name
ATR 42/72	SAGEM ERMS
Fokker 50	DCU-ECTM Software
Dornier 328-100	WinRGBS
Shadin ETM	Fleetview
Pilatus PC-12	PEF ECMS
P&WC ADAS+	Altair MLP
P&WC DCU	DPHM
Generic	Trim ECTM

0.3 Management Personnel

0.3.1 Accountable Manager

DETA Managing Director is the Accountable Manager in accordance with M.A.706 (a). Accordingly, she has the overall responsibility and corporate authority for ensuring that all continuing airworthiness activities can be financed and carried out to the required standard.

0.3.2 Quality Manager

The duties and responsibilities associated with this function is currently held by Christian Dannesbo

0.3.3 Quality Auditor/Monitor

The Quality Auditor/ Monitor has been contracted to provide an independent means of verifying compliance with Part M

0.3.4 Airworthiness Review Staff

Not Applicable for DETA

0.3.5 Duties and Responsibilities

0.3.5.1 Accountable Manager

The Accountable Manager has the overall responsibility for meeting the requirements of Part M as stated in this CAME and P&WC requirements for ECTM performed by DAC's. He/she is responsible for ensuring that all continuing airworthiness activities can be financed and are carried out to the standard required by the CAA and P&WC. In particular, he/she is responsible for ensuring that adequate contractual arrangements exist. This includes, amongst others, provision of: facilities, material and tools, sufficient competent and qualified personnel in relation to the work to be undertaken. All of this with a view to ensuring that all ECTM activities is performed on time and in accordance with the applicable requirements, regulations and approved standards set out by P&WC ref SIL No. GEN-055 (latest revision)

The Accountable Manager has the financial responsibility for all of the ECTM activities.

0.3.5.2 Quality Manager

The Quality Manager is responsible for:

a) Establishing an independent Management (Quality) System to monitor compliance with the requirements laid out in this CAME and P&WC requirements for ECTM performed by DAC's;
b) Implementing a Quality Audit Program in which compliance with the Management System and Management Procedures and all applicable regulations is reviewed at regular intervals.
c) Monitoring that a Technical Data (Archive) section is established and managed and that access thereto is controlled.
d) Monitoring all sub-contracted activities
e) Preparing and maintaining standard practices and management procedures for use within the organisation, derived from approved sources.
f) Monitoring that WebECTM is being maintained, with regards to, the latest and current version is accessible for the analysts.
g) Ensuring that the Quality System required by Part M.A.712 is effective in its application and any follow up actions required to address findings are completed.

NOTE 1: The Quality Manager has direct access to the Accountable Manager in the event of any reported discrepancy not being adequately attended to by the relevant person, or in respect of any disagreement over the nature of a discrepancy and has the power to order cessation of any activity where such compliance to requirements is not being met.

0.3.5.3 Quality Auditor/Monitor

The Quality Auditor/Monitor is contracted by DETA to provide an independent audit of the following functions:
The Quality Auditor/Monitor is responsible for:

a) Auditing the Part-M and associated aspects of DETA. The audit must follow the details outlined in the Quality Program. However, it is the Quality Auditor/Monitor's task to develop specific questions and an agenda for each audit.
b) If "Deviations" have been registered, a re-inspection must take place as soon as possible, after implementing a correction, but not later than 60 days.
If "Observations" have been registered, a re-inspection could take place as soon as possible, after implementing a correction, but not later than next annual audit.
It is the responsibility of quality manager to confirm that the "Deviations" and "Observations" are corrected, and changes to the CAME are incorporated to assure the findings shall not be repeated. Information about corrective actions to "Deviations" and "Observations" must be forwarded to the Quality Auditor/Monitor for planning purposes for future audits.
c) An annual assessment of the maintenance management against the procedures of the CAME of DETA.

0.3.6 Manpower Resources and Training Policy

0.3.6.1 Manpower Resources

1 man year =	Full Time Staff	Part Time Staff	Part Time Staff as Equivalent Full	Total Staff	Total Hours
1500 hours	(Number)	(Total hours per year)	Time staff (Number)		
Quality Audit and Monitoring	0,1	7,5	0,005	0,105	157,5
Trend Analysis	2,5	0	0	2,5	3750
Data processing	0,5	0	0	0,5	750
Customer Management	0,4	0	0	0,4	600
Accounting	0,2	105	0,07	0,27	405
Sales	0,3	0	0	0,3	450
Total	4	112,5	0,075	4,075	6112,5
Total Man Hours	6000		112,5		

Quality Audit and Monitoring:
Performed on the organisation in accordance with Part 2 of this CAME

Trend Analysis:
Analysis of engine trend data in accordance with Appendix A of this CAME

Data processing:
Upload to the WebECTM of trend data received from the customers

Customer management:
General management of the customer's accounts including, set-up of new aircrafts and engines, username and password administration.
General customer relation management

Accounting:
Invoicing, collection, payment of invoices, payment and admin salary and vacation.
All work related to TAX and VAT accounting as well as annual reports is outsourced to external accounting.

Sales:
General sales activities for maintaining existing customer database.
General sales activities for growing the customer database.

0.3.6.2 Training Policy

In order to achieve knowledge and experience, continuation training is provided to ensure that Analytic staff remains current in terms of procedures, human factors and technical knowledge and that the CAME approved management organization receives feedback on the adequacy of its procedures.

0.3.6.3 Training overview:

Training is provided by P&WC, CAMP, Flight Safety and other Part-147 approved training organisations, to ensure that each member of staff is adequately trained to carry out the functions of, and satisfy the responsibilities associated with, the Part M Subpart G as stated in this manual and P&WC requirements for DAC management functions.

DETA's training program involves 4 modules:

1. Engine or ECTM course
2. Analysis training (On-Job-Training)
3. Human factor training
4. CAME procedure

New employees are on job-training and classified as Trainees (Trainee Level) until confident to perform analysis independently and are operationally released after this the employees becomes classified as Analyst. The Trainee Level has a minimum duration of 24 months, during which the trainee passes the 4 module training program.

The operational release is achieved after minimum of two years of employment and by passing DETA's Analyst (I) test or alternative P&WC and CAMP's DAC test.

In addition to the P&WC training all employees undergo Human Factor course followed by recurrent training every 24 months to expose them to the awareness of human error and consequences with that matter.
Where changes occur to the organisation, its procedures and engine types trended etc. Then suitable continuation training shall be provided, where necessary.

P&WC Operators Conferences and other OEM Operators Conferences with reviews of engine technical topics can also be used as continuation training.

The organisation shall review training needs at intervals not exceeding two years or at more frequent intervals if, and when, significant changes occur to the organisation, procedures and engine types trended.

DETA's Analytic staff members are trained and certified by P&WC, CAMP or Flight Safety.
Some of the staff has a background as EASA, involving heavy maintenance experience and certification on P&WC engines. Continuing training shall take place to familiarize the Analytic staff members with line maintenance in order to have a real life feel on what outcome the trend analysis relates to during line maintenance.

Copies of training certificates and diplomas are kept in the staff file for each staff member

Recurring training shall be in the 4 basic modules as Trainees, and documentation for continuation training status shall be kept in the staff file for each staff member.

0.3.6.3 Training overview (cont´d)

Competence assessment shall be made by management on all staff members involved in DETA's activities every 12 months
The assessment are based on DETA's sub processes:

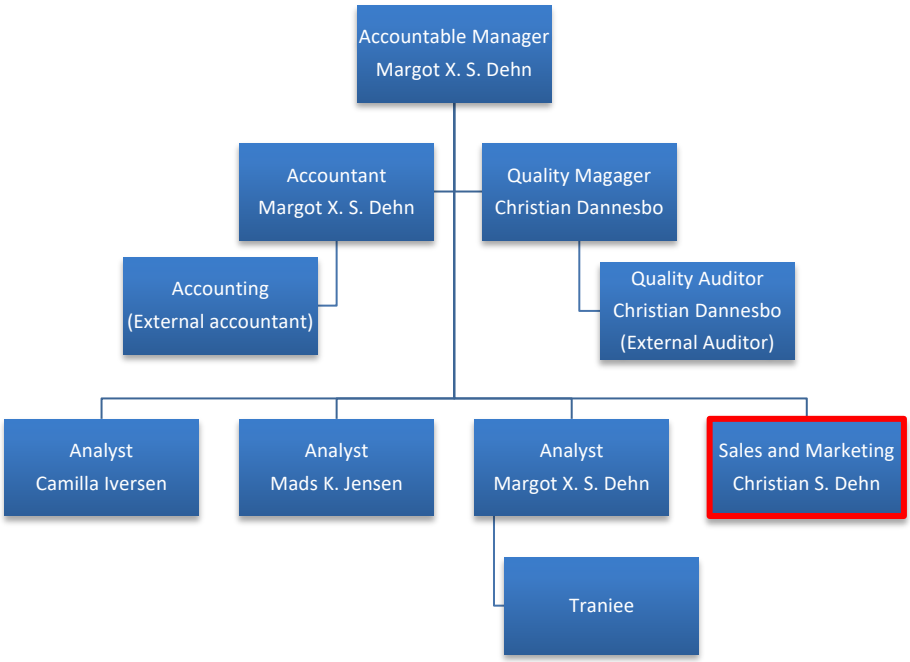
- DATA collection
- DATA processing
- DATA analyzing
- Customer contact

The assessment shall be documented on a scheme kept in the staff file for each staff member.
See example in part 5.1.5

Assessments are not carried out on staff from subcontracted organisations.

0.4 Management Organisation Chart

0.4.1 General Organisation Chart



0.5 Notification procedure to the competent authority regarding changes to the organisation's activities / approval / location / personnel.

DETA does not hold an EASA Part M approval. DETA undertake to follow the requirements of Commission Regulation (EC) No 1321/2014 as a subcontractor to operators that comply with Commission Regulation (EC) No 1321/2014 or equivalent. This so DETA's customers can more easily relate to DETA as a supplier because of the transparency and recognition.
Therefore, DETA is not obligated to notify changes in the organisation to authorities.

0.5.1 Changes

Any changes to the management or ownership that fall within the categories described in M.A.713, shall be notified to P&WC and CAMP as soon as practicable, by the Accountable Manager to enable P&WC to determine continued compliance with the P&WC requirement for Designated Analysis Canter's, to approve the change prior to incorporation and to make any necessary amendments to the P&WC SIL's that may be appropriate.

0.6 Exposition Amendment Procedures

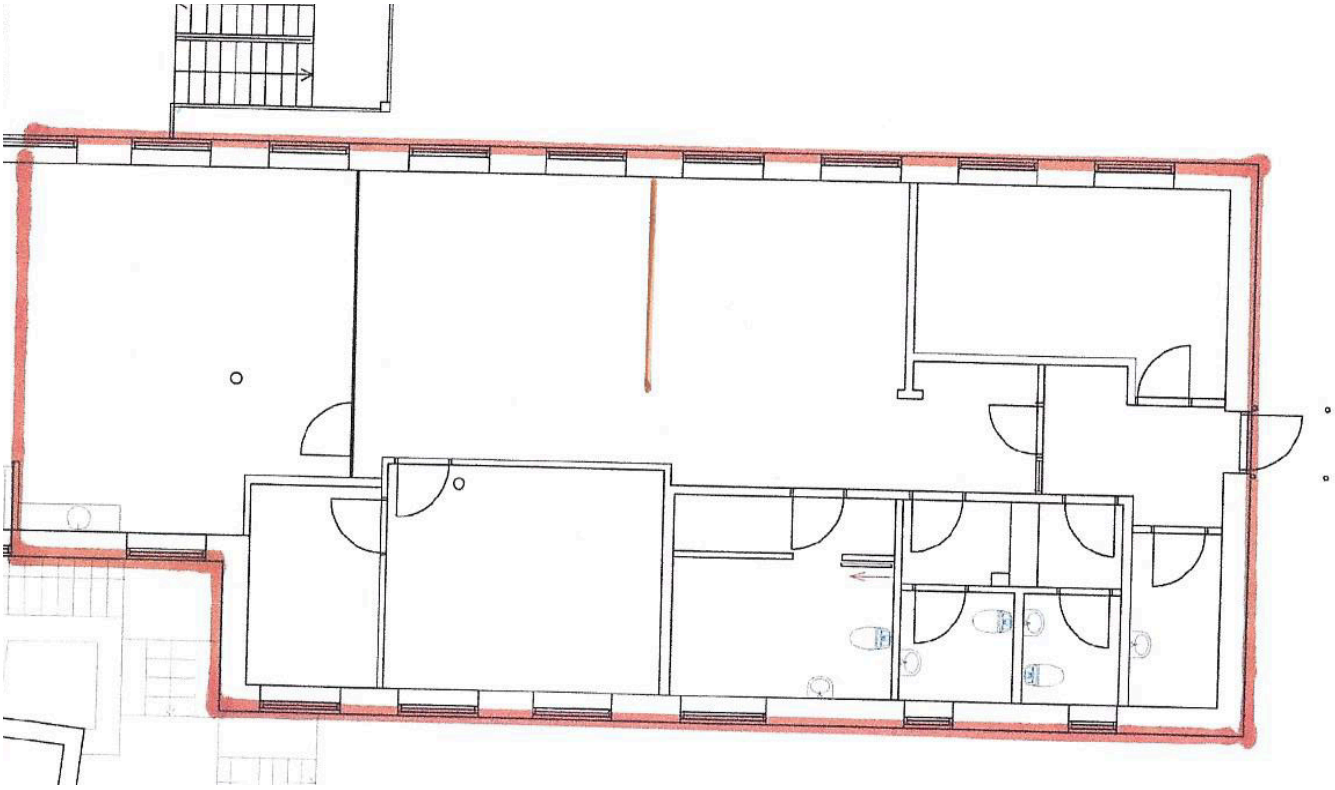
The Quality Manager is responsible for reviewing the CAME and for preparing any amendments. All amendments shall be reviewed by the Quality Auditor/Monitor.
Changes are issued by the Quality Manager and shall be evaluated by the Accountable Manager, Quality Manager and Quality Auditor/Monitor prior to publication.
Changes are, between the annual audits, numbered with a decimal number (X.1, X.2, X.3, etc.)
With the annual audit the CAME are examined and any findings shall be implemented and the afterwards the CAME shall be issued with the next integer (ex. 6.0)

0.7 Facilities

Office accommodation should be such that the incumbents, whether they are trend analysis, accounting, sales or quality staff, can carry out their designated tasks in a manner that contributes to good standards. Office accommodation should also include adequate space for meetings and storage of documents.

Address:
Vendelbogade 50a, st.
DK-9800 Hjørring
Denmark

- Office accommodation for:
  - Trend analysis
  - Accounting
  - Sales
- Toilet and shower
- Stores



PART 1 CONTINUING AIRWORTHINESS MANAGEMENT PROCEDURES

This part is not applicable to DETA

PART 2 QUALITY SYSTEM

2.1 Continuing Airworthiness Quality Policy, Plan and Audit Procedures

This Part Two of Danish Engine Trend Analyzing (DETA) CAME defines the continuing airworthiness quality policy, planning and procedures to meet the requirements of Part M Subpart G.

2.1.1 Continuing Airworthiness Quality Policy

DETA is committed to perform Trend analysis to P&WC engine operators to the highest standards of safety and airworthiness, and providing a punctual and reliable high standard of service to our customers.

2.1.2 Quality Program

The Quality System and associated Quality Assurance Program enables monitoring of DETA compliance with Part M, the Continuing Airworthiness Management Exposition and any other standards specified by DETA or EASA, to ensure engine condition trend monitoring if performed correctly
The Quality Manager in liaison with the Quality Auditor/Monitor shall develop the Quality Program. The Quality Manager shall implement an audit program that, during a twelve-month period, shall address the entire continuing airworthiness management activities and all of the aspects of Part M that has a bearing on the continuing airworthiness arrangements of DETA. (This includes any sub-contracting activities).
If need arises audits can be performed unscheduled when trends are identified. Other causes for unscheduled audits may be significant changes to management, organisation, operation, technologies and regulatory requirements.

The Quality Program shall also address those aspects of the individual aircraft engines ECTM Program

The Quality Program shall incorporate Sample Surveys of the aircraft engines ECTM Program managed by DETA.

The Quality Program Calendar forms Appendix B of the CAME.

It is the Quality Auditor/Monitor's task to develop specific questions and an agenda for each audit

The Quality Audit Questionnaire can be found on the in a folder in the QM office and with backup on the DETA server.

2.1.3 Quality Audit Procedure

The primary purpose of the audit(s) is to observe, in an objective fashion, a particular event/action/document etc. in order to verify whether established ECTM procedures and requirements are followed during the accomplishment of that event. This with a view to ensuring that the required standard is being achieved.

Every audit is undertaken by a Quality Auditor/Monitor as part of the overall audit program and shall be the subject of an audit report.

2.1.3.1 Audit Planning and Preparation: (M.A.708, M.A.710, M.A.712)

(a) The Quality Auditor/Monitor gathers general information relevant to the audit scope and determines the plan of the audit.
(b) The Quality Auditor/Monitor shall review previous audit report to familiarize himself with Non Conformances raised during such previous audits and shall verify that corrective actions taken remain effective.
(c) The audit plan is then presented to the Quality Manager of DETA so that appointments may be made.

2.1.3.2 Audit performance:

(a) During this phase, the Quality Auditor/Monitor gathers and records information from the audited persons and identifies and analyses non-conformances.

2.1.3.3 Audit Report:

(a) Every audit is subject to an audit report. The preliminary conclusion is made in cooperation with the persons audited.
(b) The manager responsible for taking corrective action and the Quality Auditor/Monitor determines in common the corrective actions to be taken, as well as the time allowed for implementation.
(c) The Accountable manager shall view and sign all audit reports prior to closure by the Quality Manager
(d) The corrective action should be determined taking into account the root of the finding or concern, so that the corrective action may be designed in order to prevent nonconformity reoccurrence.
(e) The audit report is distributed to the person responsible for the audited areas/department and the Quality Manager of DETA.

2.1.4 Quality Audit Remedial Action Procedure (M.A.712)

The Quality Manager in liaison with The Quality Auditor/Monitor and Accountable Manager shall conducts corrective actions review of the recommendations issued during audits, in order to ensure they have been appropriately implemented and that they are meeting the intended purpose.

Subsequent to the Quality inspection/audit, it should be established:

(a) The seriousness of any findings and any need for immediate corrective action.
(b) The origin of the finding.
(c) What corrective actions are required to ensure that the non-compliance does not reoccur?
(d) A schedule for corrective action.
(e) The identification of individuals or departments responsible for implementing corrective action.
(f) Allocation of resources by the Accountable Manager, where appropriate.

2.1.4 Quality Audit Remedial Action Procedure (M.A.712) (cont'd)

The Quality Manager should:

(a) Verify that corrective action is taken by the manager responsible in response to any finding of non-compliance.
(b) Verify that corrective action includes the elements outlined above.
(c) Monitor the implementation and completion of corrective action.
(d) Provide management with an independent assessment of corrective action, implementation and completion.
(e) Evaluate the effectiveness of corrective action through the follow-up process.

2.2 Monitoring of the Organisations Engine Condition Trend Monitoring Activities

The Audit Plan includes an assessment of the Engine Condition Trend Monitoring activities against the procedures defined in the CAME and in particular the ability of the Analysts ability to discharge their responsibilities effectively with respect to Part M.

2.3 Monitoring of the effectiveness of the maintenance programme(s).

Not applicable for DETA

2.4 Monitoring that all maintenance is carried out by an appropriate maintenance organisation

Not applicable for DETA

2.5 Monitoring that all contracted maintenance is carried out in accordance with the contract, including subcontractors used by the maintenance contractor.

Not applicable for DETA

2.6 Quality audit personnel.

All quality audit personnel shall be suitably qualified, trained and experienced to meet the requirements of the audit tasks.

Where quality audit personnel are contracted on a part time basis, the auditor must not be directly involved in the activity they have been asked to audit.

The Quality Manager has direct access to the Accountable manager and all parts of the organisations, subcontractors organisations.

The post of Quality Manager and Accountable manager may be combined, in the case of small organisations. In this event audits should be conducted by independent personnel (Quality Auditor)

The Independent Person for Quality Auditing shall be contracted for a period of 7,5 hours per annum (the period should reflect the necessity to conduct a minimum of one audits of the entire Organisation's continuing airworthiness management activities.

2.7 Findings (M.A.716).

All findings should be recorded and notified to the affected persons.

"Deviation": Is any significant non-compliance with Part-M requirements which lowers or could lower the safety standard and hazards seriously, or possibly hazards the flight safety and is in violation with the intend of the EASA regulations and/or the Company procedures, as described in the CAME and other procedure manuals.

"Observation": Is any non-significant non-compliance with Part-M requirements, and is in violation with the intent of the EASA regulations and/or the Company procedures, as described in the CAME and other procedure manuals.

"Recommendation": Is any non-significant recommendation, observed during the audit, that could influence the EASA regulations and/or the Company procedures, as described in the CAME and other procedure manuals.

All "Deviations" should be immediately notified to the management, and all necessary actions on aircraft in service should be immediately taken. Corrective actions should be implemented as soon as possible. A re-inspection must take place no later than 60 days after the finding.

"Observations" must be complied with in accordance with time frame given in the report. The timeframe shall normally be 60 days as an upper limit, with a possibility for an additional 30 days extension period for special purposes. A re-inspection could take place as soon as possible, after implementing a correction, but not later than next annual audit

"Recommendations" will not be re-inspected.

All occurrence reports should be reviewed with the aim for continuous improvement of the system by identifying possible corrective and preventive actions. This should be done in order to find prior indicators (e.g., notified difficulties in using current procedures and tools, systematic deviations from procedures, unsafe behaviors, etc.), and dismissed alerts that, had they been recognized and appropriately managed before the event, could have resulted in the undesired event being prevented.

Corrective and preventive actions should be approved by the department manager and implemented within the specified time frame.
Once the department manager is satisfied that the corrective action is effective, closure of the finding should be recorded along with a summary of the corrective action

The responsibility for rectification of findings ultimately belongs to the Accountable Manager.

PART 3 CONTRACTED MAINTENANCE

This part is not applicable to DETA

PART 4 AIRWORTHINESS REVIEW PROCEDURES

This part is not applicable to DETA

PART 5 APPENDICES

5.1 Sample of Documents

The sample documents as described in this part are kept in the same binder as the CAME. Amendments to the sample documents are, if not dictated by the software provided by P&WC/CAMP, based on daily experience and no amendments/changes are implemented without the approval by the Accountable Manager prior to implementation.

The Quality Manager is responsible for ensuring that the Accountable Manager is informed of any change of the sample documents:

ECTM Reports and ECTM Notifications used by DETA
Optional ECTM status Reports and EXCEEDANCE Reports

Part	Description	Issue/Date
5.1.1	ECTM Report	26/08/2010
5.1.2	ECTM Notification	29/06/2015
5.1.3	ECTM Status Report	26/04/2011
5.1.4	EXCEEDANCE Report	31/07/2008
5.1.5	Competence Assessment Form	18/03/2014

5.1.1 ECTM Report

[redacted] position 1

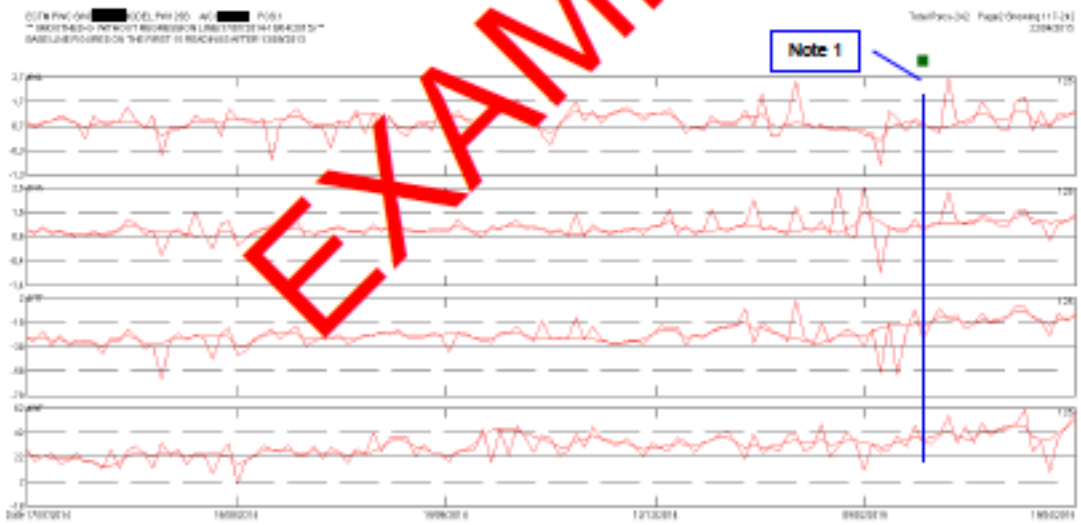
PCE-[redacted]:

Note 1: Around 09/03/2015 all graphs makes step changes increasing. At this point NL is slightly above the baseline, NH is 0,6% above the baseline, ITT is 22°C above the baseline and WF is 20 pounds above the baseline.
This looks like a cold section problem or bleed air leak, but could also be maintenance performed or an engine change that we were not informed about.

Recommendations:
If no maintenance or engine changes were performed around the date described we recommend that the following troubleshooting is done:

- Perform a compressor recovery wash.
- Check the bleed air and air cond. valves for proper operation and closure.
- Check the bleed air system for leaks.
- Check the impeller for FOD.
- Check the diffuser pipes for cracking or pipes partially obstructed by remains from bird strike
- Perform a power assurance check

Please inform DETA of any results of the troubleshooting.



5.1.2 ECTM Notification

ECTM Notification	Prepared by	Camilla Iversen	DETA
Ref. No. F[ ]-LSM-250810	Review by	Mads Jensen	

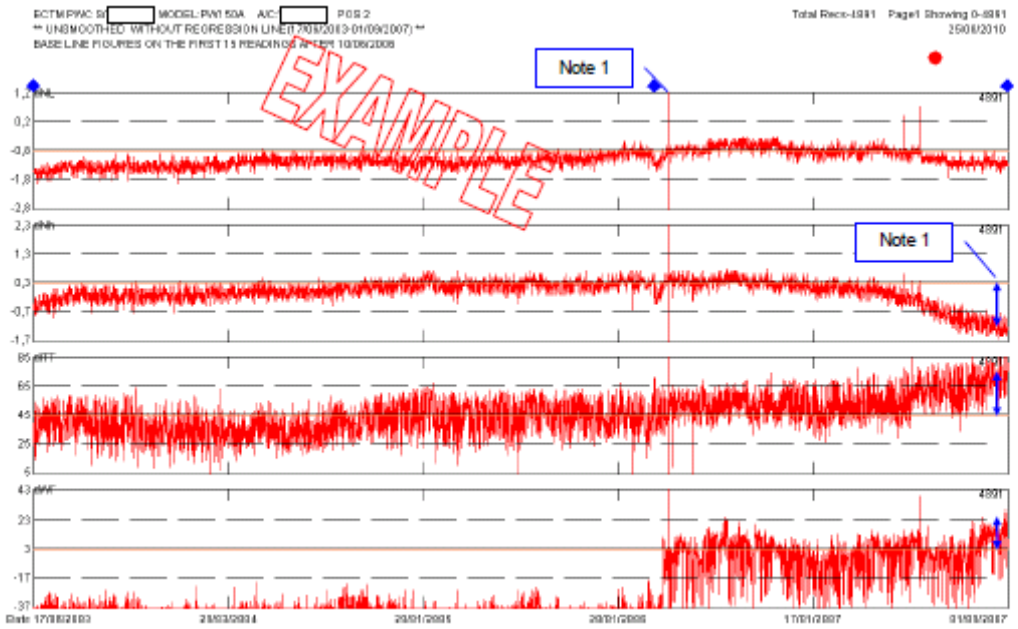
[ ]M Pos 2
PCE-F[ ]:

Trend data on file for the period between 17/06/2003 and 01/09/2007

Note 1: Baselines recalculated by previous DAC/Operator, possible because of work on the fuel flow indication system.

Note 2: NH decrease of 1,5%, ITT increase of 30°C and fuel flow increase of 15 pph.
This trend looks like the clear indication of Hot Section deterioration in the HP section of the engine.

Recommendation:
It's recommended to perform a power assurance check before next flight to verify the engine is producing sufficient power for safe operations.
As soon possible perform a borescope inspection and based on the findings determine if a hot section inspection should be performed.



5.1.3 ECTM Status Report

ECTM Status Report
1st Quarter 2011

Prepared by:	Kristoffer Magersholt	Reviewed by:	Mads Jensen
Issued Date:	26-04-2011		

No remarks
On watch
Alert

No	Aircraft	Eng Model	Installation	Pos	ESN	Last Upload	Status	Notes
1	EC-CQA		EMB120					
		PW118		1	115232	25-04-2011		No remarks
		PW118		1	115202	25-04-2011		No remarks
2	EC-HAK		EMB120					
		PW118		1	115147	21-04-2011		Possible cold section problem
		PW118		1	115055	21-04-2011		No remarks
3	EC-HCF		EMB120					
		PW118		1	115211	26-04-2011		No remarks
		PW118		1	115169	26-04-2011		No remarks
4	EC-HFK		EMB120					
		PW118		1	115361	19-04-2011		No remarks
		PW118		1	115017	19-04-2001		Hot section problem, awaiting borescope insp result
13	EC-IVP		ATR42					
		PW121		1	121029			No remarks
		PW120		1	121207			No remarks
14	EC-IYH		ATR72					
		PW124B		1	124410			ITT indication problem
		PW124B		1	124288			No remarks
15	EC-JAD		ATR42					
		PW120		1	120684			No remarks
		PW121		1	121209			No remarks

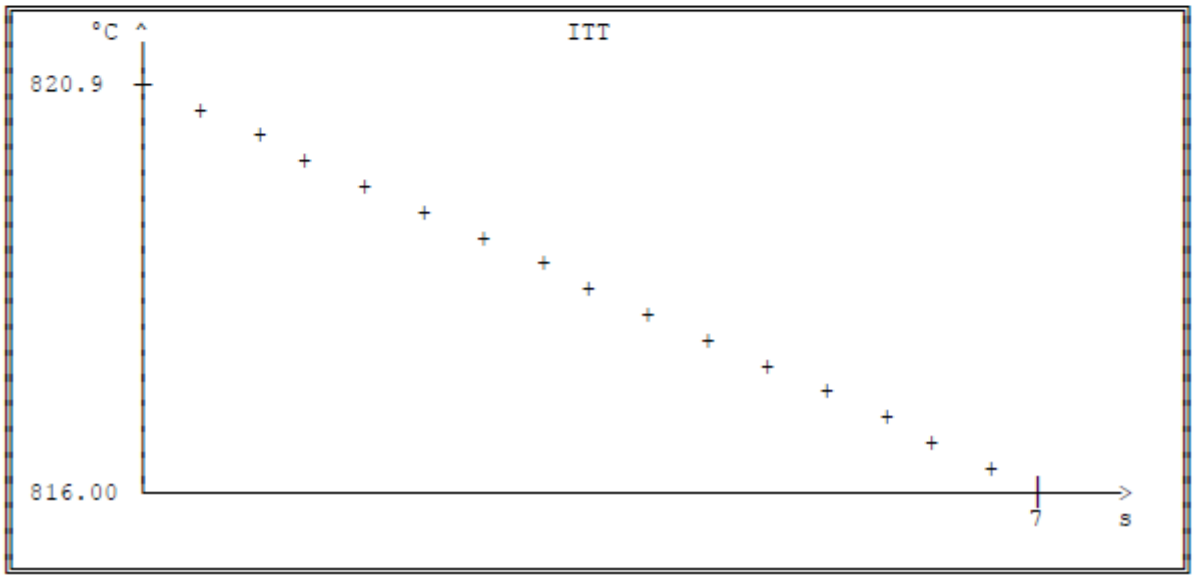
5.1.4 EXCEEDANCE Report

RPT 3	ATR 42 : [redacted]	DATE : 07/31/08	GMT : 17:33	FLT : 0018

PARAMETER	SYMBOL	L 120[redacted]	R 121[redacted]	UNIT
Indicated Air Speed	IAS	114.0		knots
Pressure Altitude	ALT	239.0		feets
Total Air Temperature	TAT	31.0		°C
High Pressure Gas Generator Speed	NH	98.1	97.2	%
Interturbine temperature	ITT	796.9	816.7	°C
Torq	TQ	100.2	97.7	%
Propeller Speed	NP	100.4	100.7	%
Low Pressure Gas Generator Speed	NL	95.9	97.0	%
Fuel Flow	FF	475.0	474.0	kg/h
Intensity Generator	IG	42.0	0.0	A
Air Conditioning HP Valve	HP	1	1	
Air Conditioning	AC	1	1	
Air Flow Control	N/H	1		

RPT 3	ATR 42 : EI-FXB	DATE : 07/31/08	GMT : 17:33	FLT : 0018

PARAMETER	SYMBOL	L 120[redacted]	R 121[redacted]	UNIT
Parameter Over Limit	PAR		ITT	
Maximal Value	MAX		820.9	°C
Maximal Value Delai	TOLM		6.0	sec.
Threshold 1	THRES1		816.0	°C
Time Over Limit 1	TOL1		7.0	sec.
Threshold 2	THRES2		850.0	°C
Time Over Limit 2	TOL2		0.0	sec.
Threshold 3	THRES3		950.0	°C
Time Over Limit 3	TOL3		0.0	sec.



5.1.5 Competence Assessment Form

DETA	Competence Assessment	Page: 1 Rev. No. 1.0 Date: 18.03.2014

Competence Assessment for: Kristoffer Magersholt

Competency	Competence Met?	Supporting comment of how the competency was evaluated
DATA collection	N/A	N/A
DATA processing	N/A	N/A
DATA analyzing	Yes	Sampling and evaluation of ECTM Reports and ECTM Notifications: • Air Traffic 2014 1 kvt • Pel-Air Aviation 2014 3 mth • PJ1267-VAI-110413 • PJ1218-LTF-110314
Customer contact	Yes	Sampling of emails send as follow-up: • Pel-Air Aviation • Lufttransport AS • Air Traffic

Competence has been satisfactorily demonstrated: ☒ Yes ☐ No

Reviewers Comments:

DATA collection and DATA processing is not part of Kristoffer's work routines

Corrective Actions:

None

Reviewers Name: Mads-Henrik Jensen	Signature:	Date: 19/03/2014

Ref: DETA CAME Chap 0.3.6.3

5.2 List of Airworthiness Review Staff.

DETA has no Airworthiness Review Staff

5.2.1 List of Approved Analysts.

Analytic Staff

The Analytic Staff is responsible for analysing the data, supplied by the operator, and in light of the analysis, to evaluate what measures should be taken.
All analysts within the organization are capable of performing ECTM on the engine's types listed on DETA's "Organisation ECTM Capability" list, due to fundamental identical ECTM theory and WebECTM software communality.

Approved Analysts:
Margot Xavier Søborg Dehn:

- Been working for DETA since 1999
- Have regularly attended P&WC training and P&WC engine operator's conference since 1999
- Have a background as accountant and diploma from a business college

Camilla Iversen:

- Been working for DETA since 2004
- Have regularly attended P&WC training and P&WC engine operator's conference since 2004
- Have a background as accountant and diploma from a business college

Mads Kristian Jensen:

- Been working for DETA since 2011
- Have regularly attended P&WC training and P&WC engine operator's conference since 2012
- Have a background as a computer technician and programmer together with a diploma from a technical college

5.2.2 List of Quality Auditor/Monitors.

Christian Dannesbo:

- Quality Manager at Danish Defense Maintenance Agency Workshop, Aalborg (EASA Part-145 approved)
- Have worked for ScanTech and before that Business Flight Service (both Part 145 maintenance organisations from 1995 to 2011 as Quality Assurance Manager.
- Have completed EASA CAMO Part M with Subpart G and I training
- CAA-DK accepted Auditor/Quality Assurance Inspector

Mads Kristian Jensen:

- See above

5.3 List of sub-contractors as per AMC M.A.201(h)1 and M.A.711(a)3.

5.3.1 The Main Server hosting the WebECTM application is located at:

CAMP Systems International (New York – Headquarters)
999 Marconi Avenue
Ronkonkoma NY 11779-7299)
USA

Backup is performed by CAMP Systems International of the data on the server once every day (overnight)

5.3.2 The Standby Server for the WebECTM application is located at:

CAMP Systems International (New York – Headquarters)
999 Marconi Avenue
Ronkonkoma NY 11779-7299)
USA

5.3.3 The Disaster Back-up Server for the WebECTM application is located at:

CAMP Systems International (New Hampshire)
32 Daniel Webster Hwy, Suite 10
Merrimack NH 03054
USA

5.3.4 Hosting of Back-Office applications.

DETA has contracted MONTES A/S to host it's IT-solution. MONTES are specialists in hosting of ERP systems, office applications and custom solutions. They handle all tasks around DETA in terms of IT support, backup, maintenance and updates of "Back Office" applications. Applications are run on an encrypted VPN-access.

Montes A/S,
Hedevej 3,
9800 Hjørring,
Denmark

5.4 List of approved maintenance organisations contracted.

NONE

5.5 Copy of contracts for sub-contracted work (Appendix II to AMC M.A.201(h)1).

Not applicable to DETA

5.6 Copy of contracts with approved maintenance organisations.

Not applicable to DETA

List of Additional APPENDICES.

APPENDIX A ENGINE CONDITION TREND MONITORING (ECTM) PROCEDURES

A.0 ECTM Procedures

This Part defines the continuing airworthiness management procedures which DETA uses to ensure compliance with the P&WC requirements for performing ECTM. Where some aspects of these functions are sub-contracted then this is clearly defined in the text.

Supporting documents:
P&WC SIL No. GEN-055 (latest revision)

Software to be used for ECTM:
P&WC Internet based WebECTM application

Staff qualifications for engine trend analysis:
Qualified personnel that have successfully completed ECTM training courses and an EASA Part 66 Module 9 “Human Factors” course (or equivalent).

ECTM Notification:
Is a one-page report for a specific engine and is issued the moment DETA identify an important trend, or upon request from the customer, for example to assist with troubleshooting of a specific problem.

ECTM Status Report:
Is a report containing the entire fleet of the contracted customer and is issued on a monthly or quarterly basis. The ECTM Status Report can be used for overall fleet planning and can also be used towards the CAA as documentation for an on-condition engine maintenance program. The report is also listing any issued ECTM Notifications for engines that DETA advise the operator to pay extra attention.

DETA is able to handle data form a variety of automatic trend data acquisition systems.
All that is required is that the operator email us the trend data once a week to trend@deta-trend.com
In case of infrequent operation, the trend data can be forwarded once a month or after every 5-7 days of flying. This will be specified in the contract

After the data has been received and processed, it will be upload to the WebECTM™ Internet portal from where the designated analyst, from DETA, will perform the trend analyses and if any irregularity is detected, it will be reported to the operator in the form of ECTM Notifications.
Otherwise the operator will receive the monthly/quarterly ECTM / EHM report.

All reports and notifications are reviewed by two analysts before they are submitted to the customer.

The operators CAMO also has access to the WebECTM Internet portal and is able to browse the trend graphs of their engines.

A.1 ECTM Data collection

In order for DETA to perform ECTM in accordance with P&WC guidelines Ref SIL No. GEN-055 (latest revision) the following systems are in place to ensure that the relevant airframe and engine parameters are available to allow for ECTM and maintenance recommendation to take place:

Ambient parameters (OAT, P.ALT, IAS) and engine performance data (TQ, NP/N1, NL/NH/NG/N2, ITT, WF) should be recorded by the operator once every day, or once every six (6) flight hours if the engine is flown more than 6 to 8 hours a day. It should then be processed the following day, either uploaded to the WebECTM by the operator for forwarded to DETA for upload. This data is to be inputted (processed) in the WebECTM® Services application at least every seven (7) calendar days or as specified by the applicable aircraft or engine maintenance manual.

Under exceptional circumstances, such as automatic recorder malfunction or adverse flying condition, a maximum of three (3) consecutive flying days or a maximum of eighteen (18) running hours of missing data is acceptable. The cause of the problem should be investigated promptly and rectified.

A.2 Engine qualification for engine trend analysis:

ECTM can be initialized anytime during the life cycle of the engine. However to qualify for scheduling of On-Condition HSI interval the engine trend is to be initiated with in the first 100 hrs of operation of a new engine or a newly overhauled engine or newly HSI'ed engine where also a compressor wash is performed.

Note: Any specific ECTM instruction provided in the applicable engine Maintenance Manual have precedence over this guideline.

A.3 ECTM Records: Responsibilities, Retention and Access (M.A.714)

ECTM data and supporting documentation provided by the Operator is to be maintained by the Operator or the Designated Analysis Center for a period of seven (7) years, or until the overhaul of the engine being analyzed, whichever is longer.
All trend data is uploaded by the Operator or DETA to the WebECTM Internet portal where it's also hosted.
Details of responsibility regarding uploading of trend data can be further described in the subcontractor agreement between DETA and the individual operator.

1 - The Main Server hosting the WebECTM application is located at:

CAMP Systems International (New York – Headquarters)
999 Marconi Avenue
Ronkonkoma NY 11779-7299)

Backup is performed by CAMP Systems International of the data on the server once every day (overnight)

2 - The Standby Server for the WebECTM application is located at:

CAMP Systems International (New York – Headquarters)
999 Marconi Avenue
Ronkonkoma NY 11779-7299)

3 - The Disaster Back-up Server for the WebECTM application is located at:

CAMP Systems International (New Hampshire)
32 Daniel Webster Hwy, Suite 10
Merrimack NH 03054

During update of the Main Server the data validity of the new software is secured by the following procedures:

Deployment and validation/test are taking place first on the main (Production) server Prior to deployment to production, data validity of the new software in performed on the DEV (development) server then on the QA (quality) server.

All other software and data used by DETA is run on an encrypted VPN-access and administrated and secured by backup on a hosted server solution by MONTES A/S (a HP approved software and server supplier).

The Main Server hosting other software and data is located at:
MONTES A/S (Hedevej 3, 9800 Hjørring, Denmark)

Backup is performed by MONTES A/S of the data on the server 3 times a day kl. 08:00, 12:00, 18:00.
The Main Back-up Server is located at MONTES A/S (Hedevej 3, 9800 Hjørring, Denmark)
The Remote Back-up Server is located at an external secure and undisclosed location in Copenhagen, Denmark

Update of Microsoft's operating system and Office programs are done at a continuing basis when security updates and critical updates are released, typical every second Tuesday.

A.3.1 Access to ECTM Records

All of the records may be accessed by the owner/operator at any reasonable time and remain the property of owner operator at all times. Access to the records by duly authorised members of the CAA shall be arranged where this is necessary.

A.3.2 Transfer of Continuing Airworthiness Records in the Event of a Sale or other Disposal of the Aircraft Engine

In the event of the owner operator wishes to sell the aircraft or move the ECTM of the Aircraft Engine, DETA is required to transfer the records to the new owner. Alternatively, all records shall be made available by DETA for direct transfer to a new DAC on the aircraft owner's instruction.

A.3.3 Access to Continuing Airworthiness Records in the Event of an Accident/Incident

In the event of an accident or serious incident the Accountable Manager shall hold the records secure until requested by the Accident Investigation Board.

A.4 Analysis

An analyst from DETA Analytic staff shall be assigned to each operator responsible of the ECTM of the operator's engines.

Optimized feedback shall be realized when the data is inputted (processed) and analyzed on a frequent and regular basis. P&WC recommends that the data be reviewed within a maximum interval of seven (7) calendar days of being inputted in the system.

The analysis is based on the P&WC WebECTM portal/software. As a reference the WebECTM online guide line/help menu and the engine maintenance manual can be used.

A.5 Liaison with P&WC and CAMP

The Accountable Manager is responsible for liaising with P&WC and CAMP on all matters concerning problems and findings with the WebECTM application

A.6 ECTM Reporting

The operator is to be informed about the result of the trend analysis with ECTM Reports issued quarterly or bi-annual, containing, for all the installed and active engines in the fleet, a plot of the trend graphs, observation and recommendations for future maintenance.

In case a negative developing trend is observed, in between the quarterly or bi-annual ECTM Reports, immediate notification should be given to the operator for the specific engine, with an ECTM Notification containing plot of the trend graphs, observation and recommendations for future maintenance.

Trend data can be uploaded to the WebECTM by either the customer or DETA further details can be described in a subcontractor agreement.

The operator can in case of a suspected problem or for maintenance planning request an ECTM Notification for a specific engine.

Exceedance Reports can be issued the operator as a voluntary option. This however requires that the ECTM data is forwarded to DETA for processing and that the ECTM data is recorded by an Automatic Data Acquisition System that facilitates Exceedance Monitoring

All ECTM Reports and ECTM Notifications are prepared by an analyst. It is then review by an independent analyst and signed by both persons before it is issued to the customer.

A.7 Reliability Programs

All notifications send to the operator, e.g. in ECTM Reports, ECTM Notifications or enquiry for missing data, shall be recorded on the WebECTM as a remark attached to the trend graphs. Feedback from the operator is also to be recorded on the WebECTM as a remark attached to the trend graphs.

A.8 Double Inspection and Quality Assurance:

ECTM Reports and ECTM Notifications are to be compiled by an Analyst/Trainee and review by double inspection by an independent Analyst (not Trainee) before released to the Operator.

APPENDIX B The Annual Audit Program

1st quarter	2nd quarter	3rd quarter	4th quarter	Review of
			X	CAME Part 0
			X	CAME Part 1
			X	CAME Part 2
			X	Subcontractors*

*Subcontractors:

Montes, Hedevej 3, 9800 Hjørring, Denmark