Maintenance/Repair Organisation Exposition

Approved by: Colin Choules

Date: 2nd April 2013
LATEST AMENDMENT

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PURPOSE
To describe the organization and management system of Esterline’s maintenance and repair facilities.

SCOPE
Weston Aerospace Farnborough and Waltham Cross locations

USERS
WAe LMT, ESS Europe Management, WAe Quality Management

REFERENCES
1. M11 Health and Safety Policy
2. CE4 Management Personnel
3. CE1 Company Exposition
4. QWI 102 Approval of Authorised Signatories for Regulated Documents
5. CE5 List of Authorised Signatories and Repair Station Personnel
6. CE3 Product Capability List
7. CE9 EASA Part 145 Compliance Matrix
8. CE7 FAR145 Compliance Matrix
9. GWI 102 Raising and Issuing Business Process Documents
10. MTB P01 Control of Business Management System documents
11. Form A200657 Test Results Check-List1
12. QWI 106 Measurement and Test Equipment
13. MWI 127 Production Process: Tooling
14. GWI 103 Training and Development
15. QWI 109 List of Approved Auditors
16. RWI 101 Maintenance Repair Overhaul
17. GWI 115 Control of Records
18. QWI 101 Product Release to Service
19. EMP 01 Environmental Policy
20. QWI 111 Management of Occurrences
21. QWI 105 Non-Conforming Material
22. ITWI 101 I.T. System Backup and Restore Policy
23. GWI 114 Root Cause and Corrective Action
24. QWI 108 Internal Audit

DEFINITIONS
CMM Component Maintenance Manual
DA Design Authority
ESS Esterline Sensor Services
IPR Intellectual Property Rights
MRO Maintenance Repair and Overhaul Organization
NDA Non Disclosure Agreement
SB Service Bulletin
TC Holder Type Certificate Holder: airframe or engine manufacturer responsible for airworthiness
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1 MANAGEMENT
1.1 Corporate Commitment by Accountable Manager

Company Policy

Quality and Safety Policy
The quality and reliability of our products is of first importance. Our products are used in aviation and other critical applications and the safety of all users of our products shall always be our prime consideration.

To promote quality, reliability and safety and to prevent error through human factors we will:

- Ensure the competence of our personnel by qualifications, experience and training
- Define clear processes and instructions
- Use and maintain suitable equipment and tools
- Employ error proofing methods
- Define check and inspection points
- Manage working time, shift and overtime systems

We will endeavour to provide a clean, safe and healthy working environment for all employees and visitors. Employees have a duty to take reasonable care for their own health and safety, for that of other people who may be affected by their acts or omissions and for the environment.

Employees are encouraged to report any quality or safety related incidents or issues arising during design, production or maintenance. It is the duty of all employees to comply with the business management system process, quality standards and regulations and to assist with regulatory auditors in an open manner.

Corporate commitment
This Exposition and referenced documents define the organisation and procedures upon which the Civil Aviation Authority EASA Part-21 Subpart G and EASA Part-145 approvals, FAR145 approval and ISO9001:2008, AS9100 and EN13680 approvals are based.

These procedures are approved by the undersigned and must be complied with, as applicable, when work/orders are being progressed under the terms of the EASA Part-21 Subpart G and EASA Part-145 approvals, FAR145 approval and ISO9001:2008, AS9100 and EN13680 approvals.

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

It is understood that the Civil Aviation Authority will approve this organisation whilst the Civil Aviation Authority is satisfied that the procedures are being followed and work standards maintained. It is further understood that the Civil Aviation Authority reserves the right to suspend or cancel the EASA Part-21 Subpart G and EASA Part-145 approvals of the organisation if the Civil Aviation Authority has evidence that procedures are not followed or standards not upheld.

Chris Ainsworth
Plant Director, Weston Aerospace Ltd.
16 May 2012

Geof Eeles
President, Esterline Advanced Sensors
16 May 2012
1.2 Safety and Quality Policy

The Company Policy shown in 1.1 above defines the company’s Quality and Safety policy.

An efficient and safe working environment is established through control of environmental conditions including temperature, cleanliness, noise and lighting. Regular risk assessments and safety audits are conducted, as detailed in the Health and Safety Policy.

1.3 Management Personnel

Named individuals carrying out management functions are listed in CE4 Management Personnel.

1.4 Duties and Responsibilities of Management Personnel

Duties and responsibilities of management and other personnel are defined by job descriptions. The HR department hold detailed organisation charts with names of personnel. Personnel with airworthiness responsibility are as follows:

1.4.1 Plant Director (Accountable Manager) (EASA part 145)

The Plant Director has responsibilities across the Maintenance and Production organisations, including:
- Establishing and promoting the quality and safety policy.
- Ensuring that approvals are maintained in accordance with regulatory requirements.
- Appointing and leading a management team.
- Conducting regular management review.

In the absence of the Plant Director, their regulatory duties and responsibilities are delegated to the Quality Director.

1.4.2 Quality Director

The Quality Director has responsibilities across the Maintenance and Production organisations, including:
- Ensuring that the company gains, maintains and complies with the appropriate regulatory and customer quality requirements and providing an independent quality management audit of compliance.
- Coordinating activities which affect airworthiness and acting as the primary liaison with the regulatory airworthiness authorities.
- Ensuring that regulatory documentation is maintained in an up-to-date condition and relevant information is disseminated to personnel concerned.
- Issuing and controlling authorisations for certifying staff.

In the absence of the Quality Director, their regulatory duties and responsibilities are delegated to the Quality Engineering Manager.

1.4.3 Operations Manager - MRO

The Operations Manager -MRO is directly responsible to the Managing Director for:
- Ensuring all work requested by the customer is performed correctly and inspected within the scope of the company approval covered by EASA Part 145.
- Planning work through the Maintenance Organisation.
- Staff levels, assignment to tasks and training.
- Ensuring current procedures and standards are available to staff to perform the tasks.
- Ensuring sufficient and adequate equipment is available to perform the tasks.
- Ensuring facility condition, layout and availability are sufficient to meet the tasks.
- Procurement of material and stock to meet the tasks.
- Timely response to closure of corrective actions resulting from quality system activities.
- Safety in all areas of the Maintenance Organisation’s work.
• Handling and storage of units during the Maintenance Organisation’s processes.
• Completion and safe archiving of all job records.

In the absence of the Operations Manager, their regulatory duties and responsibilities are delegated to the Quality Engineering Manager.

1.4.4 General Manager (Waltham Cross)
The General Manager is directly responsible to the Managing Director for:
• Ensuring that product is repaired within the scope of company approval covered by EASA Part 145.
• The administration of the, purchasing, stores and despatch facilities at the Waltham Cross site.

In addition to these maintenance responsibilities, the General Manager (Waltham Cross) also has responsibilities within the Production Organisation.

In the absence of the General Manager, their regulatory duties and responsibilities are delegated to the Quality Engineering Manager.

1.4.5 Quality Engineering Manager (Waltham Cross)
The Quality Engineering Manager is responsible to the General Manager for the administration, co-ordination and control of the Engineering facilities within the Waltham Cross Site.

The Quality Engineering Manager is responsible to the Quality Director for the implementation and control of the quality policies within the Waltham Cross site.

The Quality Engineering Manager acts as the Waltham Cross site co-ordinator with the CAA on airworthiness activities.

In the absence of the Quality Engineering Manager, his regulatory duties and responsibilities are delegated to the General Manager.

1.4.6 Additional Responsibilities (reference CASE)
The following personnel are responsible for key areas:
Technical Data: Primary – Document Controller, Back-up – Engineering Administrator
Shelf-lifed Materials: Primary – Chemical Laboratory Technician, Back-up – Stores Stock Controller
Calibrated Equipment: Primary – Quality Administrator, Back-up – Quality Engineer
Scrap Parts (maintenance): Primary – Operations Manager (MRO), Back-up – Quality Technician

1.5 Management Organisation Chart
A simplified organisation chart showing personnel with responsibilities maintenance management is presented au-dessous. Detailed organisation charts are issued and controlled by the Human Resources Department and are accessible through the company computer network. Named individuals carrying out management functions are listed in CE4 Management Personnel (2).
1.6 List of Certifying Staff

Certifying staff (authorised Quality signatories) are appointed on the basis of relevant education, training and experience. Initial training is given in regulatory requirements, company procedures and understanding of products and processes. Continuation training for certifying staff consists of update and refresher training. Update training is given whenever:

- Regulatory requirements change
- Company procedures are updated
- New products or technologies are introduced

A re-assessment of competence is made annually and refresher training is provided if a need is identified. This is outlined in \textit{QWI} 102 \cite{4}.

Certifying staff are listed in \textit{CE5} \cite{5}. They are issued with evidence of their scope of approval.

1.7 Manpower Resources

The Maintenance Organisation organisation consists of staff performing technical, certification, administration and commercial activities.

Human resource levels are managed through an annual budget process. The Operations Manager / General Manager is responsible for planning resource requirements and for managing short-term variations. Significant changes to manpower resources (>20\%) will be notified to the CAA/FAA.

The HR department manages organisation charts identifying the current contingent of staff.
1.8 Facilities

1.8.1 Farnborough Workshop

A workshop environment is provided to encompass all planned work. The area ensures segregation of parts from other company activities and provides a controlled environment such that the effectiveness of personnel is not impaired:

- Temperature is maintained such that personnel can carry out required tasks without undue discomfort.
- Dust and airborne contamination is kept to a minimum and not permitted to reach a level in the work task area where visible component surface contamination is evident.
- Lighting is such as to ensure each inspection and maintenance task can be carried out in an effective manner.
- Noise levels are not permitted to rise to the point of distracting personnel from carrying out inspection tasks.
- Secure storage facilities are provided for equipment and tools. Storage conditions ensure segregation of serviceable components from unserviceable components.

1.8.2 Farnborough Office

Office accommodation is provided for the management of the planned work. The area is used to perform scheduling of tasks, storage and use of technical records and report writing and archiving.

1.8.3 Farnborough Quarantine

A controlled store is provided for the storage of parts while disposition is decided. The parts are clearly identified and bagged to avoid contamination.

1.8.4 Farnborough Site Plan

The Farnborough Maintenance Organisation’s facilities utilise a small area of the overall site. They are located within a secured workshop and are therefore independent of other company activities.
1.8.5 Waltham Cross Facilities

Waltham Cross Maintenance/Repair Organisation facilities utilise an area within the Final Assembly Department and are independent of other company activities.

A plan of the manufacturing and Maintenance Organisation facilities is shown below:
1.9 Scope of Work
The Maintenance Organisation maintains a range of sensors, indicators and associated avionic equipment. Products certified for civil aviation use are listed in *CE3 Product Capability List*\(^{(6)}\). A database is also held containing a full part number list.

1.9.1 EASA Part-145 Maintenance; Scope of Work
Farnborough and Waltham Cross facilities
C7 Engine - APU
C13 Instruments
Compliance matrix to EASA Part 145 is shown in *CE9 EASA Part 145 Compliance Matrix*\(^{(7)}\).

1.9.2 FAR145 Maintenance; Scope of Work
Farnborough facility
Limited Accessory. Accessories listed in Capability List CE3, as revised.
Compliance Matrix to FAR145 is shown in *CE7 FAR145 Compliance Matrix*\(^{(8)}\).

1.10 Notification Procedure
Any significant changes of the organisation will be notified in writing to the CAA/FAA prior to implementing the change. Significant changes include but are not limited to:
- The name, legal entity or ownership of the organisation.
- The location of the organisation or additions to the location of the organisation.
- The Accountable Manager and Responsible Managers.
- Changes in the organisation structure especially those parts in charge of quality.
- Significant changes to the methods, capacity, scope of work, technology utilised or sub-contracting.
- Changes in the systems that may have an important impact on the conformity/airworthiness of each product, part or appliance.

It is the responsibility of the Quality Director, acting as the delegated representative of the accountable manager, to liaise with the appropriate departments of the CAA/FAA with respect to organisational changes.

1.11 Exposition Amendment Procedures
The Quality Director is responsible for administration and issue of the MOE. The exposition is only re-issued in full; no separate page issues are made. Changes to the MOE require formal notification to the CAA/FAA.

Changes to *CE3 Product Capability*\(^{(6)}\) will be made on a 6 monthly basis, unless no changes have occurred within that 6 month period.

Changes to designated individuals for Management Personnel and will be notified to the CAA within 5 working days; formal issue of *CE4 Management Personnel*\(^{(2)}\) will be made following CAA approval.

Any incorporated changes to the MOE and other CE documents which are not acceptable to the CAA/FAA will be amended by the Quality Director in consultation with the CAA/FAA. Records of CAA and FAA acceptance of changes will be maintained in quality department records as defined in *GWI 102 Raising and Issuing Business Process Documents*\(^{(9)}\) and *MTB P01 Control of Business Management System documents*\(^{(10)}\).
2 MAINTENANCE

2.1 Supplier Evaluation and Subcontract Control Procedure

2.1.1 Material Suppliers
Material used for repair and maintenance is controlled under the production organisation procedures for supplier evaluation and subcontract control. This is defined in CE1 Company Exposition (3).

2.1.2 Subcontract MRO Services
The MRO subcontracts work on an as-required basis to the Weston Aerospace Part 21 Subpart G Production Organisation as defined in Appendix 2 - List of Subcontractors. This activity is defined in RWI 101 Maintenance Repair Overhaul (16).

2.2 Inspection of Components/ Materials from Outside Customers
Material is inspected under the production organisation procedures defined in CE1 Company Exposition (3).

2.3 Storage, Tagging and Release of Maintenance Components/ Materials

2.3.1 Storage Conditions
Material required for maintenance is handled and stored under the production organisation procedures, as defined in CE1 Company Exposition (3).

2.3.2 Shelf Life Items
Items with a shelf-life are monitored and controlled by the material control system to ensure out-of-date materials are not used, as defined in CE1 Company Exposition (3).

2.3.3 Labelling of Returns
On arrival, each part or batch of parts is issued with a unique Job Card Number (JC No). This JC number then identifies the part(s) throughout the process. Once the status of the part has been established (e.g. To be Recertified, Under Investigation, To be Scrapped etc), it is identified on the form A200657 Test Results Check-List (11). A copy of this form remains with the part.

2.3.4 Issuing (including Free-Issue) of Components
Material required for maintenance/repair is released from stock under the production organisation procedures, as defined in CE1 Company Exposition (3).

2.3.5 Disposal of Unsalvageable Components
Non-conforming product which cannot be reworked is scrapped and mutilated prior to disposal in accordance with customer requirements, as defined in RWI 101 Maintenance Repair Overhaul (16).

2.4 Acceptance of Tools and Equipment

2.4.1 Control
The Maintenance Organisation has a selection of tools and equipment available sufficient to perform the standard maintenance and repair for which the organisation is approved. Tools and equipment used by the Maintenance Organisation are controlled by QWI 106 Measurement and Test Equipment (12). This document ensures that all measuring, gauging and test equipment used is in a known and acceptable state of calibration.

2.4.2 Availability
It is the responsibility of the Operations Manager (Farnborough) and Quality Engineering Manager (Waltham Cross) that the required tools and equipment are purchased and maintained.
The straightforward nature of the Maintenance Organisation’s work means that equipment is generally available when required. If additional equipment is required to be hired, it is the responsibility of the Operations Manager (Farnborough) and Quality Engineering Manager (Waltham Cross) to ensure it’s appropriateness and validity.

2.4.3 Alternative Tools and Equipment

Generally tools and equipment specified or recommended in the relevant Component Maintenance Manual (CMM) are used. Equivalent tools & equipment conforming to recognised standards may also be utilised. Equivalent test equipment is defined in the Authorised Equivalent CMM Test Equipment list. This is displayed in the Maintenance Organisation and is updated by the Operations Manager whenever a CMM changes.

2.5 Equipment Calibration

All of the Maintenance Organisation’s equipment requiring calibration, is calibrated and traceable to National Standards. The calibration interval is defined by the equipment specification and calibration history. The calibration status of equipment is clearly identified by colour code or by a label showing the calibration due date. Equipment found to be out of tolerance during calibration is reviewed by the quality function. Products whose performance or safety integrity is materially affected are quarantined or recalled from service. These controls are defined in QWI 106 Measurement and Test Equipment (12).

2.6 Use of Tooling and Equipment by Staff

2.6.1 Issue of Tools

All commonly used tools and equipment are dedicated to the Maintenance Organisation. They are stored and used within the Maintenance Organisation’s facility. For calibrated equipment, a record of it’s use is kept within the Test Sheet of each job.

2.6.2 Determining Tool Serviceability

New tooling and equipment designed and manufactured for the Maintenance Organisation is checked for conformity on receipt or prior to first use. This is defined in MWI 127 Production Process: Tooling (13).

2.6.3 Training and Control of Personnel Using Tools

Staff are instructed in the use of specified tooling and equipment. Their training is described in GWI 103 Training and Development (14).

2.6.4 Personal (own) Tools

No personal tools or equipment are used within the Maintenance Organisation.

2.6.5 Loan Tool Control

Tools are not loaned within the Maintenance Organisation.

2.6.6 Control of Alternate Tools

As described in 2.4.3 Alternative Tools and Equipment.

2.7 Cleanliness Standards

The cleaning of the maintenance facility is managed by the Site Services team. The floors are swept and worktops wiped every day. Additional cleaning of other surfaces etc is conducted periodically.

Keeping the working environment safe is detailed in M11 Health and Safety Policy (1).
Waste material disposal is detailed in the EMP 01 Environmental Policy (19).

2.8 Maintenance Instructions

2.8.1 Incorporation of Instructions for Continued Airworthiness Documents

The Quality Director shall review publications by the Airworthiness Authorities to identify any new Instructions for Continued Airworthiness every two weeks. The types of documents may be Airworthiness Directives (AD), Service Bulletins (SB), Service Information Letters (SIL) etc.

The Quality Director shall notify the Operations Manager -MRO of any documents pertaining to Maintenance, who will then incorporate the document into the Maintenance Instruction such that the maintenance task will encompass the new/additional requirements.

2.8.2 Maintenance Instructions Register

RWI 101 Maintenance Repair Overhaul (16) details how a register of all maintenance instructions is held as an electronic file. This provides the current revision of each document.

2.8.3 Original Documents & Uncontrolled Copies

RWI 101 Maintenance Repair Overhaul (16) details the storage and control requirements for these documents.

2.8.4 Customer Supplied Maintenance Instructions

Instructions provided by the customer shall be stored in their original format – electronic or paper. A reference to the customer’s instruction shall be added to the Maintenance Instructions Register.

2.9 Repair Procedure

2.9.1 Repair Documentation

Repairs are performed in accordance with pre-established procedures which may include:
- Maintenance Manual (CMM)
- Internal Repair Process
- Service Bulletin
- Airworthiness Directive

Items are released to the stipulations of the approved data used.

2.9.2 Repair Capability

Repairs within the organisation’s capability are identified in CE3 Product Capability List (6).

2.9.3 Parts & Material for Repair

Material used for repair and maintenance is obtained directly from the approved production organisation and is under the production organisation procedures for supplier evaluation and subcontract control (CE1 Company Exposition (3)). No parts are fabricated under the maintenance organisation approval.

Acceptance/inspection of aircraft components and material from outside contractors is inspected under the production organisation procedures. It is then handled, stored and released from stock under the production organisation procedures (CE1 Company Exposition (3)).

2.10 Aircraft Maintenance Programme Compliance

This is not applicable to the Maintenance Organisation.

2.11 Airworthiness Directives Procedure

The use of Airworthiness Directives is described in RWI 101 Maintenance Repair Overhaul (16).
2.12 Optional Modification Procedure
This is not applicable to the Maintenance Organisation.

2.13 Maintenance Documentation

2.13.1 Worksheets
A worksheet (form A200657) is generated for each job. For expediency, a template is used for all common activities. For non-routine tasks, a template would be modified before use. All worksheets shall contain the information defined in *RWI 101 Maintenance Repair Overhaul*\(^{(16)}\).

2.13.2 Assembly of Maintenance Work Packages
The Booking-In process defined in *RWI 101 Maintenance Repair Overhaul*\(^{(16)}\) describes the preparation of a maintenance work package.

2.13.3 Recording Test Results and Sign-off
*RWI 101 Maintenance Repair Overhaul*\(^{(16)}\) describes the completion and sign-off of the maintenance record.

2.13.4 Customer Supplied Worksheets
Customer's worksheets shall be completed in addition to the Maintenance Organisation's form A200657 and referenced in it.

2.14 Technical Records Control
The system for control, storage, retrieval and retention of records (paper or computer based) is identified in *GWI 115 Control of Records*\(^{(17)}\).

2.15 Rectification of Defects Arising During Maintenance

2.15.1 Defects Identified in Weston Aerospace Products
Defects with Weston Aerospace products, identified during maintenance, shall be addressed using Weston Aerospace's Occurrence Management and Reporting process. This is described in *CE1 Company Exposition*\(^{(3)}\).

2.15.2 Defects Identified in Non-Weston Aerospace Products
Defects with Non-Weston Aerospace products, identified during maintenance, shall be recorded within the test record (form A200657) and therefore notified to the customer. The Regulatory authority and TC holder may also be notified if the defect is considered to need this level of reporting.

Through agreement with the customer, a repair scheme may then be compiled.

2.16 Release to Service

2.16.1 Procedure
Products are released to service in accordance with *QWI 101 Product Release to Service*\(^{(18)}\).

2.16.2 EASA Form 1
The correct completion of the EASA Form 1 is described in *QWI 101 Product Release to Service*\(^{(18)}\). FAR-145 release or dual EASA PART-145/FAR-145 release is also identified. Appendix 1 - Sample Documents shows and example of a Form 1.

The Job Card number is cross referenced on the Form 1.
2.16.3 Qualified Staff
Staff approved to release products are identified in CE5 List of Authorised Signatories and Repair Station Personnel (5).

2.17 Records for the Operator
A copy of the release to service (EASA Form 1) is provided to the airline operator.

2.18 Reporting Defects to the Authority/Operator/Manufacturer

2.18.1 Methods of Reporting
Occurrences (failures, malfunctions or defects, including suspect unapproved parts) identified during maintenance and which could adversely affect aircraft performance, operation, safety etc. are logged, reviewed and managed in accordance with QWI 111 Management of Occurrences (20).

Occurrence reports will be made to EASA through the CAA as the competent authority and to the FAA, Operator and Type Certificate Holder. Reports to EASA/CAA/FAA will be made in writing, in a manner acceptable to EASA/CAA/FAA, and contain all known information pertinent to the defect/occurrence.

2.18.2 Suspected Unapproved Parts
Consideration shall be given to the identification of parts that are suspected to be unapproved. Training shall be given to staff undertaking the incoming inspection activities. FAA Form 8120-11, Suspected Unapproved Parts Report shall be submitted when appropriate.

2.18.3 Responsibility
The Quality Director is responsible for reporting occurrences/defects.

2.18.4 Reporting Timescale
Reports will be made as soon as practicable, but in any case within 72 hours of identifying the defect/occurrence.

2.19 Return of Defective Aircraft Components to Store
Defective products/components are separated, identified and removed from the working area to a secure quarantine store pending disposition. Quarantined products/components are formally reviewed and mutilated prior to disposal. As identified in QWI 105 Non-Conforming Material (21).

2.20 Defective Components to Outside Contractors
The Maintenance Organisation does not subcontract activities externally of Esterline. The Maintenance Organisation may occasionally need to sub-contract work to the Part-21 Subpart G Production Organisation. This activity is described in RWI 101 Maintenance Repair Overhaul (16).

2.21 Control of Computer Maintenance Records System
The system for control, storage, retrieval and retention of records (paper or computer based) is identified in GWI 115 Control of Records (17).

ITWI 101 I.T. System Backup and Restore Policy (22) identifies the company’s process for the back-up and restoration of electronic files. This process ensures that Job files can not be altered or deleted after completion.
2.22 Control of Man-hour Planning

2.22.1 Work Planning
A daily Material Review Board (MRB) is held within the Maintenance Organisation. This identifies the priority for each job and staff required to perform it. The completion date is defined, depending upon the complexity of the work and resources available.

2.22.2 Level and Organisation of Staffing
The level of personnel is established by annual budgeting to cover forward work-load based on historic data and forecast. The current contingent is as follows:
- Certifying Staff 1
- Test/Repair Staff 1
- Records/Commercial 2

Short periods of staff absence are usually covered by over-time. Staff from the Quality department, with sufficient training identified on their skills matrix, may also be used to cover temporary absence.

Longer term absences or an increase in the volume of work will be addressed by recruitment of new staff. The assessment and development of new staff is described in GWI 103 Training and Development (14).

The continual monitoring of Turn-Around-Time will give a timely indication of the team’s ability to meet the customer’s delivery expectations. Appropriate manning levels can then be assessed accordingly.

2.22.3 Human Factors
Human factors are considered when planning work load. In particular the following have been identified:
- Time of day – The Maintenance Organisation facility usually operates ‘office hours’.
- Duration of activity – Typically jobs are no more than 2 hours in length.
- Interruptions – The daily MRB plans the workload such that the operator can complete one job before moving to the next.
- Use of approved data – Full training is given and company systems are straightforward to use.
- Shift or task handovers – Generally each job is completed by one person. When handover is required, the Test Sheet clearly identifies the work completed and by whom.
- Time pressures - The daily MRB plans a realistic number of jobs for the day such that the operator does not feel undue pressure to complete a task.

2.23 Control of Critical Tasks
The execution of all critical or sensitive work will be conducted by an operator with the necessary qualifications. These will be identified within their training record in accordance with GWI 103 Training and Development (14).

2.24 Reference to Specific Maintenance Procedures
Not applicable to the Maintenance Organisation.

2.25 Maintenance Errors Detection and Rectification
Errors identified during maintenance are managed in accordance with QWI 111 Management of Occurrences (20). This process identifies how errors would be recorded, reported and investigated.

2.26 Shift/task Handover
Shift working is not performed. Task handover is controlled via the worksheet described in paragraph 2.13.1 Worksheets.
2.27 Maintenance Data Inaccuracies and Ambiguities

The organisation shall notify the TC holder with the query using their required method of discrepancy reporting.

Instructions then received by the TC holder shall be acted upon and recorded using the methods for control of Maintenance Instructions described in paragraph 2.8 Maintenance Instructions.

3 QUALITY SYSTEMS PROCEDURES

3.1 Quality Audit of Organisation Procedures

3.1.1 Audit Policy

Auditing of the Maintenance Organisation is the responsibility of the company’s Quality function. The company operates a combination of system, product and process audits to ensure the adequacy of and compliance with the company procedures.

3.1.2 Quality System Definition

CE1 Company Exposition defines the processes performed by the Quality function to provide an independent review of the Maintenance functions.

3.1.3 Audit Programme

A schedule of audits is issued annually with audits being performed by trained and qualified auditors, who are independent of the function being audited. The Maintenance Organisation receives a Process Audit annually.

Random Audits are also performed. These are a brief, regular check of the key processes within the MRO. They may be conducted by any member of staff and findings shall be reported back promptly to the team in order to support continuous improvement.

3.2 Quality Audit of Aircraft Equipment

Audits of products included in CE3 Product Capability List are performed under the responsibility of the Quality function.

3.3 Quality Audit Remedial Action

Remedial actions arising from an audit are managed by the Quality function. GWI 114 Root Cause and Corrective Action highlights the methods of identifying root cause of non-conformances and how to determine the corrective and preventive action required.

The company’s FRACAS (Failure reporting and corrective action system) database is used to log the issue to be addressed and to monitor progress to completion of the corrective action.

Each issue is monitored by monthly reviews to ensure that they are closed-out in a timely and effective manner. A periodic management review considers this performance and looks for trends across all issues.

3.4 Certifying Staff Qualification and Training

3.4.1 Experience and Training

Certifying staff (authorised Quality signatories) are appointed on the basis of relevant education, training and experience. Initial training is given in regulatory requirements, company procedures and understanding of products and processes.
3.4.2 Continuation Training

Continuation training for certifying staff consists of update and refresher training. Update training is given whenever regulatory requirements change, company procedures are updated or new products or technologies are introduced. As outlined in QWI 102 Approval of Authorised Signatories for Regulated Documents, a re-assessment of competence is made annually and refresher training is provided if a need is identified.

3.5 Certifying Staff Records

3.5.1 List of Authorised Signatories

CE5 List of Authorised Signatories and Repair Station Personnel contains a record of all certifying staff. Each person is issued with evidence of their scope of approval.

3.5.2 Staff Records

The control of Staff Records is described in GWI 103 Training and Development. Record retention is described in GWI 115 Control of Records.

3.6 Quality Audit Personnel

The selection and training of Auditors is described in QWI 108 Internal Audit. QWI 109 List of Approved Auditors is a list of approved auditors.

3.7 Qualifying Inspectors

3.7.1 Maintenance Operators

Staff conducting the maintenance of items have their initial skills assessed, initial training needs identified and ongoing training planned for.

3.7.2 Skills Assessment

On commencement of employment within the Maintenance Organisation, an individual’s skills and experience are assessed in accordance with GWI 103 Training and Development. A plan is compiled to detail the initial training required and longer term training/development needs.

3.7.3 Skills Matrix

A skills matrix (as described in GWI 103 Training and Development) is used to record the training completed and further requirements identified. The matrix also shows personnel able to deliver the training.

3.7.4 Recurring Training

Elements of training that require periodic repeats or updates will be identified in the Human Resources record as described in GWI 103 Training and Development.

3.7.5 Annual Review

Staff undertake an annual performance review. An element of this is the assessment of training taken and identification of future needs.

3.7.6 Staff Records

The control of Staff Records is described in GWI 103 Training and Development. Record retention is described in GWI 115 Control of Records.

The Stamp Database contains an employment history for each stamp holder. This details relevant qualifications and experience.
3.8 Qualifying Mechanics
The Maintenance Organisation has no requirement for qualifying mechanics.

3.9 Aircraft or Component Maintenance - Exemption Process Control
The Maintenance Organisation has no requirement for this activity.

3.10 Concession Control
Product, sub-assemblies or parts which do not conform to specified requirements are not released to service unless approved by the appropriate authority. This authority is defined by company procedures, customer contracts/standards and regulatory authority documents. Concessions are approved by the Design Authority and Quality Director/designate. As identified in QWI 105 Non-Conforming Material (21).

3.11 Qualification of Specialised Activities
Operators conducting activities such as welding, NDT etc will have their training controlled as described in 3.7 Qualifying Inspectors.

3.12 Control of Maintenance Working Teams
It is not the intention of the organisation to perform maintenance activity off-site. If this does become necessary however, it will be performed using the same procedures, equipment and personnel that are used for internal maintenance.

3.13 Human Factors Training
3.13.1 Aims and Objectives
All Maintenance Organisation staff undertaking the management of personnel who are engaged in product maintenance shall have received training in Human Factors. The delivery of this training is described in GWI 103 Training and Development (14). Record retention is described in GWI 115 Control of Records (17).

3.13.2 Staff to be Trained
The requirement for individuals to attend this training shall be identified on their Skills Matrix.

3.13.3 Delivery of Training
The training shall be delivered by either a suitable external body or an internal employee who has undergone ‘train-the-trainer’ guidance and is fully conversant with the principles of Human Factors. This ability will be indicated on their Skills Matrix.

3.13.4 Continuation Training
Human Factors training requires periodic repeats or updates. This will be identified in the Human Resources record as described in GWI 103 Training and Development (14).

3.14 Competence Assessment of Personnel
3.14.1 Skills Assessment
As described in 3.7.2 Skills Assessment, a person’s skill/competence is assessed and recorded.

3.14.2 Language
All company policies and procedures are written in English. It is a requirement that all employees are able to read and understand these documents.
4 AIRCRAFT, ENGINE, APU MAINTENANCE
The Maintenance Organisation has no requirement for this activity.
### APPENDICES

#### 5.1 Appendix 1 - Sample Documents

<table>
<thead>
<tr>
<th>Form</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1.1</td>
<td>Form 1</td>
</tr>
</tbody>
</table>

#### Form 1: AUTHORISED RELEASE CERTIFICATE

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Part No.</th>
<th>Qty</th>
<th>Serial No.</th>
<th>Status/Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Approving Competent Authority/Country</td>
<td>CA/UK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>AUTHORISED RELEASE CERTIFICATE</td>
<td>EASA FORM 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Form Tracking Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 4.   | Organisation Name and Address | Weston Aerospace Ltd  
Esterline Corporation  
124 Victoria Road, Farnborough, Hampshire, GU14 7RW, UK  
Telephone: +44(0) 1252 544 433, Fax: +44(0) 1252 371 216 |          |     |            |             |
| 5.   | Work Order/Contract/Invoice |          |     |            |             |
The work identified in block 11 and described herein has been accomplished in accordance with 14 CFR Part 43  
and in respect to that work the items are approved for return to service under Certificate No: AEGG034948  
Date:  
Signed: |          |     |            |             |
| 12a. | Certifies that the items identified above were manufactured in conformity to: | | | | |
| 12b. | Authorised Signature | XXXXXXXXXX | 12c. Approval/Authorisation Number | XXXXXXXXXXXXXXXXXXXXXXXX |
| 13a. | Certified as manufactured in accordance with SRM 9-2009 | | | | |
| 13b. | Authorized Signature | XXXXXXXXXXXXXXXXXX | 14a. | Part 145.A.59 Release to Service | Certified as manufactured in accordance with SRM 9-2009  
The work identified in block 11 and described in block 12, was accomplished in accordance with Part 145  
and in respect to that work the items are considered ready for release to service. | XXXXXXXXXXXXXXXXXX |
| 13d. | Name | XXXXXXXXXXXXXXXX | 13e. Date (dd-mm-yyyy) | XXXXXXXXXXXXXXXXXXXXXXXX |
| 14a. | Other regulation specified in block 12 | | | | |
| 14d. | Name | XXXXXXXXXXXXXXXXXXXXXXXX | 14e. Date (dd-mm-yyyy) | |

**USER/INSTALLER RESPONSIBILITIES**

This certificate does not automatically constitute authority to install the item(s). The user/installer performs work in accordance with regulations of an airworthiness authority other than the airworthiness authority specified in block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts items from the airworthiness authority specified in block 1. Statements in blocks 13c and 14e do not constitute installation certification in all cases, aircraft maintenance records must contain an installation certification issued in accordance with the national regulations by the user/installer before the aircraft may be flown.
5.2 Appendix 2 - List of Subcontractors
Weston Aerospace Limited, Esterline Advanced Sensors
124 Victoria Road, Farnborough, Hampshire, GU14 7PW, UK

5.3 Appendix 3 - List of Line Maintenance Locations
The Maintenance Organisation has no requirement for this activity.

5.4 Appendix 4 - List of Contracted Part 145 Organisations
The Maintenance Organisation has no requirement for this activity.