Esterline
Control & Communication Systems

49887 Rev. A
November 28, 2016

REPAIR STATION MANUAL

FOR

FAA APPROVED REPAIR STATION NO. KE7R393J

Prepared for:
Federal Aviation Administration (FAA)

Prepared by:
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RECORD OF REVIEW AND HISTORY

REV	DESCRIPTION	APPROVED	
		DATE	BY
-	New Release. Supersedes Repair Station Manual, PO520001 Rev. 08/10/2012. Per ECO0119662.	2013-05-22	JHL
A	Revisions required to incorporate additional rating of Instrument, change in accountable manager role, and other minor updates, per ECO0140323.	2016-11-28	JPC

See separate ECO for revision approvals.

Initiated by Lada Hekala, Lead Auditor Quality Assurance 2013-05-22

NOTE: Most recent changes are underlined. Hard copy of the revised manual with identified changes will be submitted to the FAA for review via mail.

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LIST OF FIGURES

1. CERTIFICATE

Korry's Federal Aviation Administration (FAA) Repair Station Certificate and Operations Specifications are located on-line at http://www.esterline.com/controlsystems/KORRY/ and on Korry's internal Quality Management System (QMS) Website.

Korry's certificate or rating is effective from the date of issue until surrendered or the FAA suspends or revokes it.

Korry must apply for a change to its certificate in a format acceptable to the FAA if:

(1) The location of the repair station changes, or

(2) Requests to add or amend a rating.

If Korry sells or transfers its assets, the new owner must apply for an amended certificate.

2. APPLICABLE DOCUMENTS

2.1 Government Documents

14 CFR 145	Repair Stations
14 CFR 43	Maintenance, Preventive Maintenance, Rebuilding, and Alteration
14 CFR 65	Certification: Airmen Other Than Flight Crewmembers

2.2 Non-Government Documents

The following documents form a part of this document to the extent specified herein.

AS9100C	Quality Management Systems - Requirements for Aviation, Space and Defense Organizations

2.3 Other Documents, Drawings, and Publications

KORRY ELECTRONICS CO.

	Operations Specifications
46902	Quality Manual
33924	Document Control Procedure
48055	Counterfeit Parts Control Plan (CPCP)
49628	Record Control Plan
49629	Non Conforming Material Procedure
49631	Corrective Action Procedure
49682	Audits Procedure
49901	European Aviation Safety Agency (EASA) Supplemental Reference to FAA FAR-145
49817	FAA Repair Station Training Program – Policy
	ESD Handling Procedure
3.300	General Calibration Procedure for Measurement and Test Equipment
49926	Foreign Object Debris (FOD) Prevention

2.4 Order of Precedence

In the event of a conflict between this document and the references cited herein, this document takes precedence.

3. REVISION CONTROL OF RSM

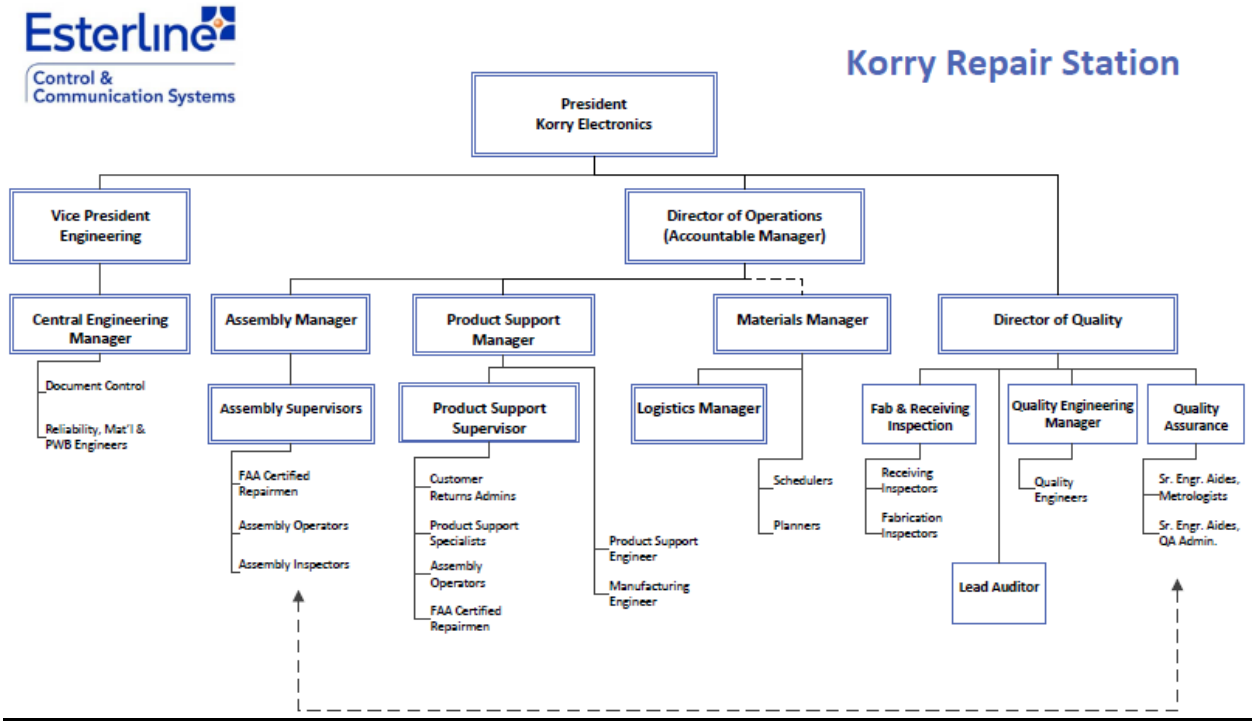
The Repair Station Manual (RSM) will be revised annually. The changes will be reviewed/accepted by the Director of Operations (Accountable Manager) and the Product Support Manager.

The revised hard copy of the RSM will be submitted for FAA acceptance via mail in accordance with the Document Control Procedure 33924.

The changes will be implemented in the Repair Station after official release of approved RSM in PLM system.
When needed, the Repair Station Manual is revised to support the FAA Repair Station process. Changes are reviewed and documented per ECO process in accordance with the Document Control Procedure 33924. ECO records are kept in the Product Lifecycle Management (PLM) system, including the review by the Director of Quality. Changes to the RSM are submitted for approval based on the level of the impact of the change that is being done prior to incorporation. All changes require review and signoff per ECO process including acceptance/signatures of FAA Flight Standards District Offices (FSDO).

4. ORGANIZATIONAL CHART

Korry's FAA Repair Station Organizational Chart is shown below.



Dotted line relationships between Assembly Inspectors and the Quality Assurance group, represent
oversight regarding quality policies, processes, and procedures independent of the direct, functional reporting structure.

Figure 1. Korry Electronics Co. FAA Repair Station Organizational Chart

5. RESPONSIBILITIES

The Director of Operations (Accountable Manger) and the Product Support Manager maintain this Repair Station Manual (RSM) and are responsible for the implementation of the requirements of this document.

6. SECTION IDENTIFICATION AND CONTROL

6.1 Section Names, Section Title, and Page Numbers

The Table of Contents in this document identifies the section names as subjects, the subject titles, and the page number that the subject starts on. The page numbers are identified in the footer section of each page. The page numbers of the whole document are identified in the footer section of each page in a Page X of Y format.

6.2 Pages and Document – Changes/Revision Dates

The pages within this document are not treated as individual pages and are not given individual page revisions or names. The pages are combined to make up this one whole document. The revision of this document is Rev. (dash, A,B, C…X) and a date format of MONTH DD, YYYY for identifying the month date, year. The revision history is documented in the Record of Review and History section. The current revision date is identified in both the Record of Review and History section and in the top of each page.

For example, if a change is done on page four of the document, the revision date in the top right corner is changed on all of the pages and a summary of the change is stated in the Record of Review and History section of this document.

6.3 Revising RSM

See section 3 of this RSM

6.4 Submitting Changes to the FAA

See section 3 of this RSM

7. RSM LOCATION

Korry's Repair Station Manual is located on Korry's Quality Management System webpage and PLM database. All Korry personnel will have access to this manual via computer.

A hardcopy of this Repair Station Manual and the applicable Quality Control Procedures will be provided to the FAA Flight Standards District Offices (FSDO).

8. INTRODUCTION

This inspection procedures repair station manual (RSM) has been prepared in accordance with the current FAA 14 Code of Federal Regulations (CFR) and the policies of the Korry Electronics Co.

This manual explains the internal inspection system in detail, excluding the continuity of inspection responsibility due a) one shift only and b) no split on inspection (if the job could not be completed by the first inspector, a second inspector would re-inspect the entire job). It gives samples of inspection forms used and the method of execution. The manual gives a detailed explanation of the following portions of the inspection system: incoming materials, preliminary inspection, hidden damage, inspection continuity, and final inspection of the article being maintained or altered at this facility.

The general repair, overhaul or alteration of products will be performed in accordance with the current Federal Aviation Regulations, manufacturer's data, drawings, specifications and bulletins, or other approved technical data for Korry Products. The Limited Accessory or Instrument rating activities for Korry Products will be performed in accordance with the procedures outlined in the Korry Electronics Quality Management System latest revision approved by the Federal Aviation Administration (FAA) Seattle Flight Standards District Office (Seattle FSDO).

This repair station will not maintain or alter any item for which it is not rated (in its FAA Operations Specifications located in its Lobby), and will not maintain or alter any article for which it is rated if it requires technical data, equipment, Materials, facilities or trained personnel that are not available.

Each supervisor and inspector working for this repair station will have access to a current copy of this manual and should thoroughly understand its contents. It will also be available to other repair station personnel.

The performance of any maintenance, preventive maintenance, alteration or required inspections for an air carrier or commercial operator having a continuous airworthiness program under FAA 14 CFR Part 121, Part 125 operator inspection program, or 135, will be performed in accordance with the requirements of FAA 14 CFR Part 145.

FAA definition of the following terms can be found in FAA AC 145-9:

Accountable Manager, (b) Article, (c) Directly in Charge, and (d) Line Maintenance.

9. HOUSING AND FACILITIES

Korry's Repair Station is co-located with its manufacturing facility at 11910 Beverly Park Road, Everett, WA 98204 USA. This facility has 1 building consisting of 216,000 square feet suitable for manufacture and repair of all Korry products.

The repair station existence within the manufacturing facility enables the repair station to work effectively. As a manufacturer, Korry has both fabrication and assembly functions. The fabricated components are assembled into product by assemblers and inspected by assembly inspectors.

If product is returned, any needed repairs, and assembly inspection functions are done within the same manufacturing department that produced that product initially. These interactions make the assembly function essential to the effective processing of a returned product. The returned product is then submitted to Korry manufacturing FAA Certified Repairmen personnel for the return to service function.

When the Korry manufacturing FAA certified Repairmen personnel perform their return to service duties, the repairmen are performing a FAA function. However, when the repairmen are not performing the FAA function, they are performing Korry manufacturing functions.

10. ROSTER

Human Recourses maintains a database Roster that is located on the Korry electronic network. The Roster includes the authorized Certified Repairman for the return to service of product. The hiring date and current position information are kept on the Korry network. This Roster also contains the names of the managers / supervisors who oversee the repair station maintenance functions and the Certified Repairmen.

The Roster also lists other information such as inspection stamp number and/or repairman certificate number for reference.

Within 5 business days of when the status of the employee is changed Human Resources updates the roster. Status changes are termination, reassignment, change in duties or scope of assignment, or addition of personnel.

Employment Summaries of experience prior to joining Korry are recorded on the roster, the employee's résumé is kept by Human Resources in the Employee's file and used as a reference. The employee's different positions held at Korry are kept in the HR database. Copies will be provided to the FAA while on-site or upon specific request. These summaries include the title, total years of experience and the type of work performed, past relevant employers and periods of employment, scope of present employment, and the type of certificate held with its ratings identified – if applicable.

11. AUTHORITY DELEGATION

The following is the list of duties that are applicable to Korry's FAA Certified Repair Station only. For a complete list of duties, see Job Description duties listed in the Korry Human Resources Database.

President: Leader of the Organization. The President has overall responsibility for the operation of Korry Electronics. This includes a top level delegation of duties to qualified persons. This top level delegation of duties does not relieve the President of the overall responsibility.

Director of Operations (Accountable Manager): Reports to the President. Responsible for the operations of Korry Electronics, profit and loss, product quality, and on-time delivery. Responsibilities are FAA liaison (Accountable Manager), FAA Repair Station Manual, FAA Repairman certification, Operations Specifications.

Director of Quality: Reports to the President. Responsible for assuring the integrity of the organization's quality system. Notifies customers and regulatory bodies of product escapes. Manages Quality Manual, related procedures, inspection stamps, inspection standards, inspector training, corrective actions, material review boards, and calibration. Responsible for the Calibration and Scrap Program. Back-up for Internal, customer and regulatory audits.

Lead Auditor: Reports to the Director of Quality. Responsible for the Audit Program including internal, customer, and regulatory audits. Back-up for the Quality Manual and related procedures, corrective actions.

Product Support Manager: Reports to the Director of Operations. Oversees administration of Customer Return Job Orders, including contract review and negotiation with customers. This function has multiple duties which include the handling of quotes, orders and customer interface and the handling of the materials. Manages the repair activity that is repaired in Product Support area. This includes: FAA "Directly in Charge" overseeing operators and inspection activities on returned products, including FAA Certified Repairmen, Inspectors, and Operators, responsible for Training of their personnel. Responsible for annual review of RSM, Operations Specifications and related procedures.

Product Support Supervisor: Reports to the Product Support Manager. Supervises the repair activity that is repaired in Product Support area: FAA "Directly in Charge" overseeing operators and inspection activities on returned products, including FAA Certified Repairmen, Inspectors, and Operators.

Customer Returns Administrator (CRA): Reports to the Product Support Supervisor. Responsibilities include issuing return material authorization (RMA) numbers, creating return customer orders, maintaining status of return product, determining cost and lead-time of repair, submitting quotes to customers for approval, and fielding returns questions from customers.

Product Support Specialist (PSS): Reports to the Product Support Supervisor. Responsibilities are to perform analysis on all return products to determine, as received condition, manufacturing findings, cause of failure, corrective action (if required), repair action on unit, and final acceptance test procedure (ATP) testing required on repaired unit. The PSS documents findings in the Teardown database.

Product Support Engineer (PSE): Reports to the Product Support Manager. Responsibilities are to provide technical assistance for both Korry internal and customer questions regarding issues in returned articles, provide guidance and assistance to Product Support Specialists as needed in the preparation of teardown reports and other PSS responsibilities, and provide guidance and assistance to Customer Returns Administrators as needed when resolution of technical issues helps to facilitate CRA responsibilities.

Operations Engineering Manager: Reports to the Vice President of Operations. Responsibilities are: manages Engineering and back-up Manufacturing Engineering functions and related procedures.

Quality Engineering Manager: Reports to the Operations Engineering Manager. Manages Quality Engineering and Supplier Quality Engineering functions and related procedures.

Quality Engineer: Reports to the Quality Engineering Manager. Back-up for Quality Engineering and Supplier Quality Engineering functions and related procedures.

Quality Assurance: Sr. Engineering Aide, QA Administration: Reports to the Director of Quality. Administers Corrective Actions. Back-up for the Scrap Program.

Quality Assurance: Sr. Engineering Aide, Metrologist: Reports to the Director of Quality. Administers and maintains calibration records. Calibrates equipment. Back-up for the Calibration Program.

Receiving and Fabrication Inspection: Reports to the Director of Quality. Receiving Inspectors and Fabrication Inspectors inspect product per FAA Approved Data.

Receiving Inspector: Reports to the Director of Quality. The inspector will signify acceptance of work performed by stamping the appropriate section on the job order or inspection form along with the date the work is accepted. As applicable, log book

entries, inspection forms, and FAA forms are stamped or signed using their name and in ink by the inspector completing the inspection. Inspectors must not inspect their own workmanship. Inspectors must pass a test administered by Quality before they are issued their inspection stamp. The Director of Quality or Sr. Engineering Aides can pull an Inspector's stamp for violations of Korry's Inspection procedures.

Fabrication Inspector: Reports to the Director of Quality. The inspector will signify acceptance of work performed by stamping the appropriate section on the job order or inspection form along with the date the work is accepted. As applicable, log book entries, inspection forms, and FAA forms are stamped or signed using their name and in ink by the inspector completing the inspection. Inspectors must not inspect their own workmanship. Inspectors must pass a test administered by Quality before they are issued their inspection stamp. The Director of Quality or Sr. Engineering Aides can pull an Inspector's stamp for violations of Korry's Inspection procedures.

Assembly Manager (Directly in Charge – Lead Certified Repairmen and Assembly Supervisor): Report to the Vice President of Operations. Manage the Assembly areas, FAA (Lead) Certified Repairmen, FAA "Directly in Charge" overseeing operators and inspection activities on returned products in Assembly areas, including FAA Certified Repairmen, Inspectors, and Operators, responsible for Training of their personnel.

Assembly Supervisors: Report to the Assembly Manager. Supervises the assembly area, FAA (Lead) Certified Repairmen, "Directly in Charge" of overseeing operators, and inspection activities in Assembly areas, including FAA Certified Repairman, Inspectors, and Operators, responsible for Training of their personnel. Back-up Shelf Life Program

FAA Certified Repairmen: Reports to the Product Support Manager, Product Support Supervisor, Assembly Manager, or Assembly Supervisor. Responsible for official "Return to Service" from Repair Station.

Assembly Operators: Reports to the Assembly Supervisor or Product Support Supervisor. Assembly operators assembles Korry products using approved documents and procedures.

Assembly Inspectors: Reports to the Assembly Supervisor and via a dotted line to the Director of Quality. Inspect product per FAA Approved Data. The Inspector will signify acceptance of work performed by stamping the appropriate box on the job order or inspection form along with the date the work is accepted. As applicable log book entries, inspection forms, and FAA forms must be stamped or signed using their name and in ink by the Inspector completing the inspection. Inspectors must not inspect their own workmanship. Inspectors must pass a test administered by Quality before they are issued their inspection stamp. The Director of Quality or the Sr. Engineering Aides can pull an Inspector's stamp for violations of Korry's Inspection procedures.

Materials Manager: Reports to the Vice President of Operations. Responsible for material planning and scheduling, including Customer Returns. Responsible for the Shelf Life Program

Planner: Administrates material planning at Korry, including Customer Returns material movement and job order creation.

Scheduler: Administrates material schedules at Korry, including Customer Returns.

Vice President of Engineering: Reports to the President. Responsible for design and development, product and program management. Back-up for the document control and configuration management.

Central Engineering Manager: Reports to the Vice President of Engineering. Responsible for Document Control, configuration management, Reliability and Material Engineering and PWB layout. Responsible for the Technical Data Program.

Reliability, Materials, and PWB Engineers: Back-up responsibility for the Technical Data Program.

12. TRAINING

The Repair Station Training Program 49817 applies to all personnel who supervise, perform, or verify work that affects the quality of products within the Korry Electronics Repair Station. This Repair Station Training Program includes all personnel under the Korry Electronics Repair Station certificate for Korry Electronics.

The Accountable Manager has the overall authority for Korry's Repair Station training program. Any changes to the training program will be coordinated with the Accountable Manager. Revisions to the Repair Station Training Program are submitted to the FAA FSDO prior to incorporation for approval via mail. In addition to submitting revisions to the FAA FSDO, this is a policy top level document in the Korry Quality Management System and notification of all levels of changes to it are submitted to the FAA Manufacturing Inspection District Office (MIDO) for notification of the FAA-PMA or TSO product affect.

Training of repair station FAA Certified Repairmen, Inspectors, Operators, and other personnel will be accomplished by classroom instruction plus factory and on the job training (OJT) as necessary.

The Repair Station Training Program includes procedures to ensure that Inspection personnel are familiar with the applicable regulations and are proficient at inspecting the articles they are assigned to inspect. Testing, formal training, recurrent training, or a combination of these methods is used to maintain the proficiency of inspection personnel.

- Noncertificated persons who perform maintenance, preventive maintenance, or alterations for the repair station are qualified.
- The noncertificated person follows a QC system equivalent to the system followed by the certificated repair station;
- The certificated repair station remains directly in charge of the work performed by the noncertificated person;
- The certificated repair station verifies, by testing and/or inspecting, that the work has been performed satisfactorily and that the article is Airworthy before approving it for RTS; and
- The noncertificated person's contract allows the FAA to inspect or observe work being performed on any articles for the certificated repair station.

NOTE: The ability to inspect a noncertificated person can only be accomplished while the contract is in force. This requirement does not give ASIs access to non-FAA-certificated facilities if there is no work being performed under contract for a certificated repair station

Classroom training will be accomplished by the Assembly Manager, Certified Repairmen, Director of Quality, & Quality Engineering Manager, or authorized trainer.

Factory training will be scheduled as necessary for personnel to become familiar with new aircraft and aviation products or product improvements.

Current records will be maintained for each employee by the Human Resources (HR) Department. The record will indicate the type of training (detailed), date of completion, and include the name of the instructor that conducted the classroom and on the job training. These records are kept on the training database by HR.

13. INSPECTION

13.1 Inspection System - General

The Assembly Manager (Directly in Charge – Lead Certified Repairmen) and the Product Support Manager are responsible for full compliance with all procedures outlined in this system as appropriate to any item being inspected, repaired, overhauled, or altered by the repair station. The airworthiness of those items and compliance with record requirements of the operators of those items and of the repair station depends upon conformity of the procedures of this system.
Employees are initially chosen for Inspector positions based on their relevant employment experience. Upon being chosen, for an inspector position, inspection personnel must pass a test administered by Quality before they are issued their inspection stamp. The proficiency of an inspector is maintained by the performance of their daily inspection duties. Inspection proficiency results are reviewed during periodic managerial and/or supervisory reviews.

13.2 Inspection Personnel

Inspection personnel are required to be thoroughly familiar with all inspection methods, techniques, and equipment used in their area of responsibility to determine the quality of airworthiness of an article undergoing maintenance, or repair. All personnel must also maintain proficiency in the use of the various types of inspection aids to be used for inspection of the particular items undergoing inspection. Available to all inspection personnel are current specifications involving inspection tolerances, limits, and procedures as set forth by manufacturer of the product undergoing inspection and other forms of inspection information such as FAA airworthiness directives, manufacturer's bulletins, etc. Files of Korry drawings, maintenance manuals, engineering letters, service letters, FAA regulations, etc., are maintained in the Central Engineering.

Inspection personnel assigned to repair station operations are required to familiarize themselves with FAA regulations applicable to such operations with particular emphasis on the following:
FAA 14 CFR Part 21 – Certification Procedures for Products and Parts
FAA 14 CFR Part 39 – Airworthiness Directives
FAA 14 CFR Part 43 – Maintenance, Preventive Maintenance, Rebuilding, and Alteration
FAA 14 CFR Part 65 – Certification: Airmen Other Than Flight Crewmembers
FAA 14 CFR Part 145 – Repair Stations
FAA 14 CFR Part 125 – Operator Inspection program
FAA 14 CFR Part 135 – Air Taxi Operators and Commercial Operators

13.3 Inspectors, Mechanics, and Supervisors

All supervisors, inspectors, and mechanics are required to be thoroughly familiar with the requirements of this manual, Korry's Quality Management System QMS, FAA

regulations, airworthiness directives and bulletins, manufacturer's service letters, and engineering orders. The basic inspection system requires mechanics to initial and date for work performed by them prior to submitting the item to inspectors for final acceptance. Inspectors will indicate their acceptance of work performed with the application of the inspector's acceptance stamp next to the item on the work forms. See the end of this manual for sample forms and instructions for their use.

13.4 Parts Receiving Policy

All incoming materials, AN or MS and other hardware, parts, components, equipment and other products procured for use by the repair station are subject to receiving inspection to assure conformance to part number, purchase order and/or other applicable specifications. A record of receiving inspections will be recorded.

All adhesives, sealers, primers, finishing and other materials having limited shelf-life are identified by material control labels showing the expiration date of the shelf-life as established by applicable specifications. Any materials found in the shop or store rooms without such identification or with expired shelf-life will be disposed.

The detailed functions of material inspection are covered by the manufacturer's quality assurance directive and inspection bulletins, which will be used to implement the operation of the repair station with respect to the control and identification of materials, parts and equipment received for direct use in the repair station. All parts new or overhauled, purchased from vendors, will be checked for proper approval documentation, identification, and traceability, conformity to a specification and acceptable quality, shelf life, contamination, shipping damage, state of preservation prior to release for installation by the repair station. Proper approval documentation items are certificates of conformance, first article inspection documentation, test results, drawings, purchase orders, work orders, etc.

14. JOB ORDER AND TEARDOWN REPORT

Upon receipt of a work request for the maintenance or repair on an accessory or instrument by the repair station, the Customer Returns Administrator will issue an RMA number. This RMA number is the return material authorization number that is issued to the customer. The RMA number is a computerized unique number that will be the basic reference for the product's maintenance record and tracking through the repair process. Each RMA number identifies the customer, ship to address, the product for which it was issued, quantity, reason for return, and special instructions.

A teardown report is completed for each Repair Station's RMA number. A Product Support Specialist or qualified designee completes the teardown report. They identify the as received condition; including checking for Hidden Damage and any Airworthiness Directives on the part. They document the manufacturing findings, required repairs, root cause and corrective action, and the inspection and testing required to return the product to service.

After the Product Support Specialist finishes the teardown report, the Customer Returns Administrator creates a Customer Order. The Planner then creates the Job Order from the Customer Order. The job orders are then tracked in Korry's electronic system. This electronic system is Korry's ERP system that is used throughout the company. In this system, the job order is not only created, but the job order is a real time entity, until the product is shipped out of Korry. The job order is a record of work and the content of the job order is printed at its creation and remains with the product throughout the product's time at Korry. While in work at Korry, the job order can be monitored in the ERP system to find the location of the product. The product on the job order is electronically transferred in the ERP system to the applicable assembly operator and inspection work centers when the product is physically moved to those work centers. The job order packet now contains the assembly and inspection acceptance indications, the repairmen documentation, and inspection and test reports.

The Assembly Operators repair the product and Assembly Inspection inspects the product per the Product Support Specialist instructions on the teardown report. The Certified Repairman releases the product on a FAA Form 8130-3. The job order is then processed in the ERP system on through to the shipping process and out to the customer. Upon shipping, the job order packet is part of the permanent record of work on the product.

It will be the responsibility of the Assembly Manager and Assembly Inspection to assure that proper supplemental instructions are used to assure proper progressive servicing, inspection, and testing of the product involved.

Assembly Operators will enter work accomplished and use their assembly stamp to sign-off their work. Assembly Inspectors will use their inspection stamp to sign off

inspections. A list of Assembly Inspectors and stamp numbers are retained by the Quality Assurance Administrator.

See examples of Job Order and Teardown Report forms at the end of this manual.

14.1 Record of Work

A detailed record shall be kept of all work performed by the repair station. A copy of each job order with all attached supplementary documents by date shipped will be maintained. Each work record is checked by an inspector for work accomplished, parts used, buy-off, and inspectors who performed maintenance. Records are maintained for eleven (11) years minimum as identified on the Record Control Plan 49628.

15. PRELIMINARY INSPECTION

The Product Support Specialist (PSS) or qualified designee is responsible for the performance of appropriate inspections including functional and nondestructive tests to assure that all units delivered to the repair station for maintenance, alteration, or repair under the privileges of the repair station certificate are subjected to a preliminary inspection to determine the state of preservation and any defects on the items involved.

The preliminary inspection includes the check for:

- Proper documentation, identification, and traceability;
- Shipping damage and contamination;
- State of preservation;
- Life limits;
- Airworthiness Directives (AD) and Service Bulletins (SB);
- Functional test or tear-down inspections;
- FAA approval of new articles; and
- Determination of what repairs are necessary.

This inspection will be recorded on the Teardown Report with any discrepancies noted and the form must be attached to the job order identified with the unit involved. It will remain with the applicable inspection records until the unit is released for service. Appropriate supplemental forms will be used to record the results of functional and nondestructive tests. Those forms will show the job order number and will be routed attached to the job order.

Before any work is begun, the Product Support Specialist (PSS) will, in the case of work to be performed for an air carrier under the continuous airworthiness requirements of FAA 14 CFR Parts 121, 125, or 135, make sure that all necessary current information and specifications are included or referred to in the work instructions that are to accompany the article through the repair station, and that the work is done in accordance with the air carrier's manual.

16. INSPECTION FOR HIDDEN DAMAGE

Inspection for hidden damage applies when returned parts have been involved in an aircraft accident.

The preliminary inspection is not limited to the area of obvious damage or deterioration, but include a thorough and searching inspection for hidden damage in areas adjacent to the damaged area and/or in the case of deterioration, a thorough review of all similar materials or equipment in a given system or structural area. The scope of this inspection will be governed by the type of unit involved with special consideration accorded previous operating history, Service Difficulty Reports, service bulletins and Airworthiness Directives notes applicable to the unit involved. The PSS is responsible for listing all discrepancies noted during inspection on the job order prior to release for return to service. See the end of this manual for the Teardown Report.
If parts were involved in an accident, Korry supports customer to witness and record the details during the product teardown process (see teardown section 34 of this manual).

17. PROGRESSIVE INSPECTION

Authorized PSS, Quality Engineers (QE), QE aides, and Inspectors will be assigned to make inspections at various stages of Teardown, overhaul, and repair of all units or components received by the repair station for service. Progressive inspections are accomplished with a frequency determined by applicable manual recommendations and/or repair station originated work forms.
Section 8 of this manual reference the exclusion of the continuity of inspection responsibility due a) one shift only and b) no split on inspection (if the job could not be completed by the first inspector, a second inspector would re-inspect the entire job).

18. MAINTENANCE INSPECTION

The status of each job order is kept current in Korry's Manufacturing Database within Korry's Material Resource Planning (MRP) system.

19. HANDLING OF PARTS

All items or components undergoing maintenance, repairs and/or modifications in the repair station shall have the component parts segregated and in containers in order to assure that all parts of the same unit(s) are kept together. Suitable trays, racks, stands, and protective coverings (as required) are to be provided in shop areas to ensure maximum protection of all parts. Rejected parts will be identified by the use of a discrepancy report (DR) and final disposition will be the responsibility of Quality Engineering.

Job Order – Parts are accepted through last operation with inspection stamp.
Rework Tag – Parts require noted rework.
Discrepancy Report – Parts are rejected as identified on (DR).

20. SHELF LIFE

For those items having a specific shelf life, a shelf life label is completed by the receiving inspector or by the supplier on vendor managed items upon receipt of material.

Components or parts that have exceeded allowable shelf life limits will be removed from the Repair Station and disposed of by Facilities per environmental requirements.

21. TECHNICAL DATA

Documents are received from Engineering, Contracts, Quality, etc. Documents are reviewed and authorized by the Configuration Control Board (CCB). Document Control manages electronic records.
Records are legible, readily identifiable and retrievable.
All documents are converted to electronic images and are released into the online manufacturing system.
Design changes are identified and records maintained.
The changes and current revision status of the documents are identified on engineering change orders (ECO).
Upon notification from the CCB of a change, updates are made to the online manufacturing system. All relevant personnel are made aware of the changes electronically.
Document control tracks and emails the changes with the ECO Change Notice.
Superseded or obsolete documents are moved to an online archive folder and records are maintained.
Approved Technical Data is listed in the Operations Specification and is either an approved component maintenance manual (CMM) or General Process Specification.

22. HARDWARE AND EQUIPMENT STORAGE

The Materials Director is responsible for the operation of the stockroom and is responsible for controlling, segregating, and maintaining all stock. In addition, the Materials Director is required to:
Properly store, segregate, and protect materials, parts, and supplies.
Provide suitable storage facilities for storing standard parts, spare parts and assure that raw materials are separated from shop and working space.
Provide for preservation of all articles or parts, while in inventory, that are subject to deterioration and shelf-life specification.
Only acceptable parts and supplies will be issued for any job. Acceptable industry practices shall be followed for the proper protection and storage of materials.
Tools are maintained by the Assembly Managers' Tooling departments.

23. RECORD OF INSPECTIONS

Where a record of the inspection by dimensions, tests, or calibration is required by the manufacturer's technical data such records shall be made on the Teardown Report properly identified with the Job Order; it must also be dated and signed by the operator performing the inspection, tests or calibration and/or the inspector as appropriate.

24. RECORD OF TESTS AND CALIBRATION OF PRECISION EQUIPMENT

A system is maintained on all precision test equipment that will properly identify each piece of equipment. A Calibration database is maintained to properly identify the equipment and record the date and person testing or calibrating each individual piece of precision equipment.

25. WORK BY OUTSIDE CONTRACTORS

Korry may contract out maintenance of articles to other persons per the requirements of Part 145.217.

The FAA approves the maintenance function to be contracted to the outside source. Korry Repair Station maintains and makes available to FSDO in a format acceptable to the FAA, the following information:
a. The maintenance functions contracted to each outside facility; and
b. The name of each outside facility to whom the repair station contracts maintenance functions and the type of certificate and ratings, if any, held by each facility.

Korry requests an RMA number from the Contractor. When an RMA number is received, the purchase order (PO) is created including the requirements per Q-Notes. Receiving Inspector performs the inspection including the visual and paper work verification per Inspection Procedure.

Korry conducts periodic audits to ensure that Contractor meets Korry's requirements and the requirements of Part 145.217.

Korry Repair Station may NOT contract a maintenance function pertaining to an article to a non-certificated person.

Korry Repair Station may not provide only approval for return to service of a complete type-certificated product following contract maintenance, preventive maintenance, or alterations.

26. CONTROL OF PRECISION TOOLS AND TEST EQUIPMENT

Precision tools, gauges, scales, pressure gauges, ammeters, ohmmeters, voltmeters, radio, electronic, x-ray, eddy current and ultrasonic test equipment used in the repair station operations are subject to periodic checks and calibration in accordance with appropriate repair station procedures.

All repair station personnel, before using test equipment, are responsible to check that the testing unit has a current calibration label attached. Any piece of test equipment found in the repair station without a current calibration label attached shall be given to the inspection department for recalibration.

27. TEST EQUIPMENT CALIBRATION REQUIREMENTS

Test equipment shall be calibrated at periodic intervals established on the basis of stability, purpose, and degree of usage. The calibration interval is controlled by the General Calibration Procedure for Measurement and Test Equipment 3.300.
Each piece of test equipment will be labeled. The label will identify the unit by Korry asset number (K_ _ – _ _ – _ _ _). The attached label must indicate the last calibration date and next calibration due date.
Inspection verifies the calibration dates of their equipment prior to use. At no time will any person be permitted to perform work on components using test equipment which is out of calibration. The test equipment labels will be checked by supervisors at random to assure that equipment in use is in calibration. If at any time a piece of test equipment inadvertently exceeds its calibration due date, it will immediately be removed from service until a calibration check has been performed. A check is done to determine if any product were processed using equipment that had exceeded its calibration due date. If product had been processed, quality engineering investigates the need to recall the product.
Standards used to calibrate test equipment must be traceable to the National Institute of Standards and Technology (NIST) or an approved foreign country's standards by certificate from the testing facility. Frequency for calibration standards may vary for different units but must never exceed a 12-month interval.

28. FINAL INSPECTION AND RELEASE TO SERVICE

Prior to approval for return to service, irrespective of the method to be used to indicate such approval, the Assembly Inspector will review the records "package" as identified by the work order, to determine that all work has been inspected as required for compliance with this inspection system and the applicable FAA 14 CFRs. They will indicate final acceptance by their inspection stamp in the final inspection operation on the work order.

When approval has been given to the above, the certified repairman will approve the article for return to service with an FAA Form 8130-3.

This approval will be accomplished as appropriate to the work done, the article involved, the records available with the article, and the instructions of the customer. Care will be exercised to comply with FAA 14 CFR Part 43 in every case.

No unit may be released for return to service until the work order and other records have been revised for completeness and final acceptance cleared by inspection. Particular attention shall be accorded the status of applicable airworthiness directives.

29. SERVICE DIFFICULTY REPORT

Korry Electronics Co. will report to the FAA within 96 hours after it discovers any serious failure, malfunction, or defect of an article. The report will be in a format acceptable to the FAA.

Service Difficulty Reports (SDR) on-line form will be completed per FAA Service Difficulty Reporting website instructions located at:
http://av-info.faa.gov/sdrx/Default.aspx SDR
SDR should be submitted on SDR "Log-in" portion.

Suspected Unapproved Parts (SUP) Report will be completed on FAA Form 8120-11. This form includes instructions to complete, and identifies the information needed to initiate, an SUP investigation. The electronic copy of FAA Form 8120-11 with the instructions is available on the FAA website at:
http://www.faa.gov/aircraft/safety/programs/sups

30. MECHANICAL RELIABILITY REPORTS

When work is being accomplished for an air carrier and a defect as described under the Service Difficulty Report is found, the air carrier will be notified in order that a Mechanical Reliability Report may be issued by the air carrier.

31. RESPONSIBILITY FOR SUBMITTING REPORTS

The Director of Quality is responsible for preparing and submitting a Service Difficulty Report to the FAA.

32. PERFORMANCE OF MAINTENANCE, PREVENTIVE MAINTENANCE, ALTERATIONS & REQUIRED INSPECTION UNDER THE CONTINUOUS AIRWORTHINESS REQUIREMENTS OF FAA 14 CFR PARTS 121, 125, AND 135

All Korry products receive a functional test and visual examination before return to service in accordance with the Air Carriers or commercial operators manual. All maintenance under a Continuous Airworthiness Maintenance Program (CAMP) shall be performed in accordance with the operator's manual. Maintenance, preventive maintenance, or alterations performed for an air carrier or commercial operator that has a CAMP under part 121 or 135 shall be performed according to the air carrier or commercial operator's maintenance program, or applicable sections of its maintenance manual. Korry shall follow the operator's FAA-approved inspection program when performing inspections for a certificate holder conducting operations under part 125. Maintenance, preventive maintenance, or alterations performed for a foreign air carrier or foreign operator operating a U.S.-registered aircraft under part 129 shall be performed according to the operator's FAA-approved maintenance program.

33. PERFORMANCE OF MAINTENANCE AT A LOCATION OTHER THAN THE REPAIR STATION

Korry will provide maintenance service for its customers on an emergency on-call basis at a place away from the repair station. Korry can only provide this service for work for which the repair station is rated. Only the Product Support Manager or Assembly Manager with the concurrence of the Director of Quality is authorized to initiate a work order for such work.

The Product Support Manager or Assembly Manager will be responsible for assigning the personnel necessary to perform the work and appoint a person to be in charge of the work force. The Director of Quality will assign the inspector(s) responsible to inspect the work and assure that all required forms and work are completed as necessary. The Director of Quality will assign one inspector with the responsibility for returning the article to service.

The Product Support Manager or Assembly Manager will ensure that the article to undergo maintenance and the work force will be in an area safe for the work to be performed and that they will be protected from the elements. The Product Support Manager or Assembly Manager will be responsible for providing all the necessary manpower, work forms, technical data, tools, and equipment necessary for the accomplishment of the maintenance. The Product Support Manager or Assembly Manager will establish a system of communications between the field and the repair station.

The Materials Manager will be responsible for assigning a stockperson who will provide parts and supply support between the repair station and the field force. All articles removed by the field force from a product undergoing maintenance at a location away from the repair station will be routed through the stockroom parts receiving department. The article(s) will be inspected in accordance with the repair station inspection procedures and either routed to the repair station shops or to contract repair agencies as appropriate.

All personnel assigned to accomplish work away from the repair station shall accomplish the specific function of work in the same manner as when performed at the repair station and in accordance with applicable FAA 14 CFRs.

34. CUSTOMER/JOB ORDER, TEARDOWN REPORT, AND FAA FORM 8130-3 WITH METHOD OF EXECUTION

34.1 Customer/Job Order

The Customer Order is created by the Customer Returns Administrator using Korry's ERP system. The Job Order is created by the Planner. The Customer Order and Job Order are combined into one document. The Customer Order section includes all applicable Customer information and the Job Order section includes all applicable information and operations required to repair the part to Airworthy condition. Instructions for creating Customer / Job Orders are found in EPAK training located on Korry network. Each Customer / Job Order has a unique number that can be tracked by a number of factors which segregate it from production Customer / Job Orders. The travelers are printed on blue paper for articles having work performed in the Repair Station.

34.2 Teardown

The Teardown Report quality record is a printout from an electronic Customer Returns database that contains all applicable data regarding the actual work done on the returned part. The Teardown is organized in four sections.

Section 1: Most of the information is transferred from the electronically RMA number on the ERP system. Korry serial number / customer serial number, date code and customer purchase order is entered manually by the Product Support Specialist or qualified designee.

Section 2: The Product Support Specialist (PSS) or their qualified designee reviews the Customer's Rejection, conducts and records the results of their "preliminary inspection" in the "As Received Condition:" area and also notes any other relevant findings such as "hidden damage" in the "Manufacturing Findings:" area.

Section 3: The Product Support Specialist (PSS) or their qualified designee reviews Manufacturing Findings and determines the "Discrepancy:" Cause:", and determines and assigns "Corrective Action:" for the part and the quality or manufacturing system to prevent recurrence.

Section 4: The Product Support Specialist (PSS) or their qualified designee defines the testing to be performed and special requirements for the part to return it to Airworthy condition.

34.3 FAA Form 8130-3

The FAA Certified Repairman reviews the Job Order and Teardown Report to assure that all requirements and operations are complete and the part is Airworthy and then

completes the FAA Form 8130-3 per the requirements of FAA Order 8130-21 latest revision. Reference to the applicable CMM is recorded in the Remarks section of the FAA Form 8130-3.

34.4 Records

All documentation listed below are stapled together and kept for eleven years minimum as a “Quality Record”. These quality records are kept on-site for approximately three months and then stored off-site for the remainder of eleven years minimum. All Quality Records are available within 5 business days.

1. Completed Customer / Job Order with all Operations closed by Operator’s buy-off or Inspector’s Stamp.

2. Completed Teardown Report.

3. Completed FAA Form 8130-3.

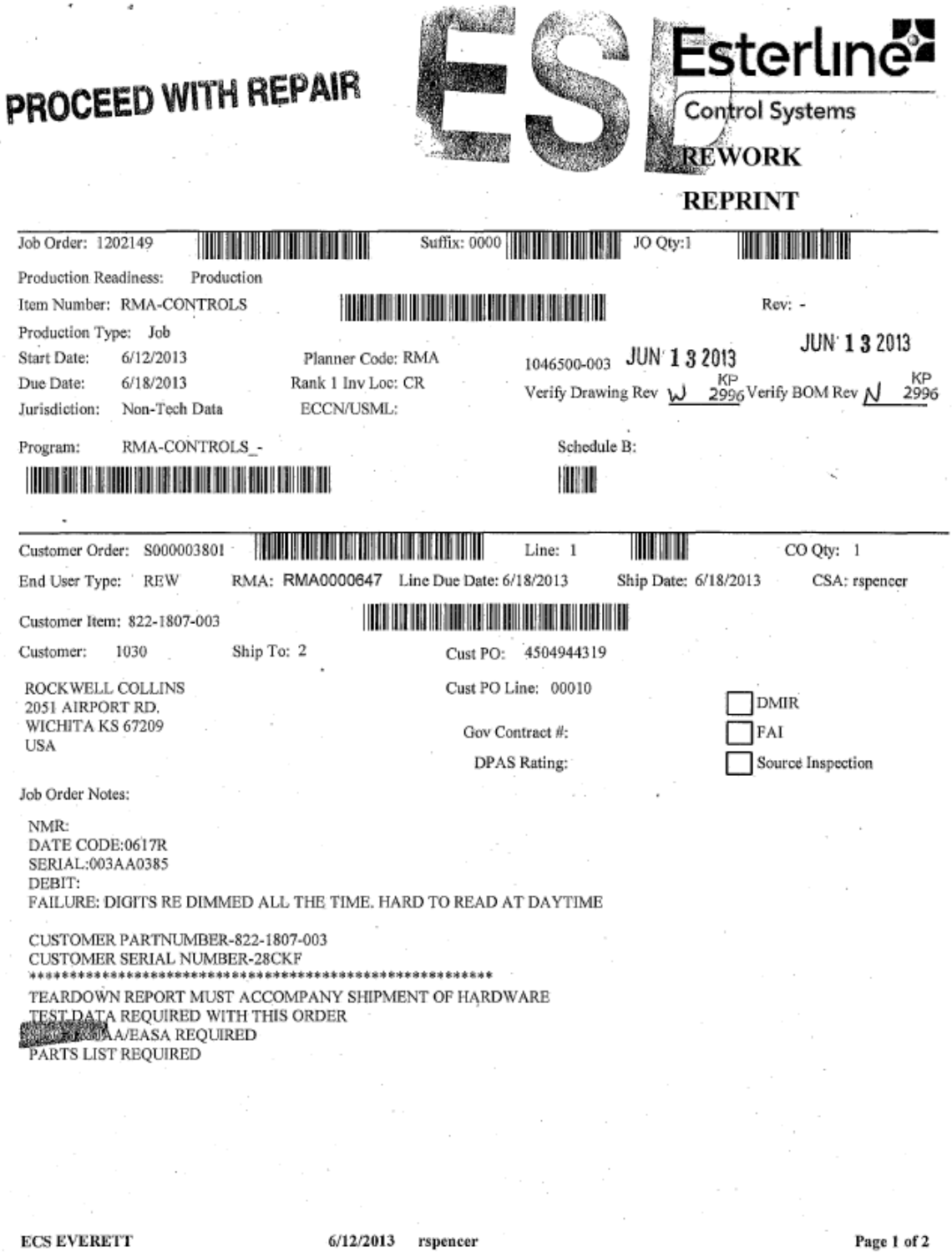
4. Other documents as specified by Customer.

Examples of Work Order, Teardown, and FAA 8130-3 are at the end of this document.

35. TAKING CORRECTIVE ACTION ON DISCREPANCIES

Some articles demonstrate one or more nonconformances that suggest corrective or preventive action be taken to reduce the likelihood of shipping additional articles with the same nonconformance. The Product Support Specialist (PSS) or Quality Engineer (QE) reviews sections 2 and 3 of the Teardown Report and determines if such action is warranted. If so, the PSS or QE issues a corrective action (CA) per Korry Corrective Action Procedure 49631. On occasion, the benefits of a CA can be determined prior to, or in the absence of, receipt of any nonconforming article. When this occurs, the QE issues a corrective action per Korry CA Procedure 49631.

36. EXAMPLE 1 – CUSTOMER/JOB ORDER (CUSTOMER INFORMATION)



PROCEED WITH REPAIR

ESL Esterline Control Systems

REWORK

REPRINT

Job Order: 1202149 Suffix: 0000 JO Qty:1

Production Readiness: Production

Item Number: RMA-CONTROLS Rev: -

Production Type: Job

Start Date: 6/12/2013 Planner Code: RMA

Due Date: 6/18/2013 Rank 1 Inv Loc: CR

Jurisdiction: Non-Tech Data ECCN/USML:

1046500-003 JUN 13 2013 JUN 13 2013

Verify Drawing Rev W KP 2996 Verify BOM Rev N KP 2996

Program: RMA-CONTROLS_-

Schedule B:

Customer Order: S000003801 Line: 1 CO Qty: 1

End User Type: REW RMA: RMA0000647 Line Due Date: 6/18/2013 Ship Date: 6/18/2013 CSA: rspencer

Customer Item: 822-1807-003

Customer: 1030 Ship To: 2 Cust PO: 4504944319

ROCKWELL COLLINS
2051 AIRPORT RD.
WICHITA KS 67209
USA

Cust PO Line: 00010

Gov Contract #:

DPAS Rating:

☐ DMIR
☐ FAI
☐ Source Inspection

Job Order Notes:

NMR:
DATE CODE:0617R
SERIAL:003AA0385
DEBIT:
FAILURE: DIGITS RE DIMMED ALL THE TIME. HARD TO READ AT DAYTIME

CUSTOMER PARTNUMBER-822-1807-003
CUSTOMER SERIAL NUMBER-28CKF
****
TEARDOWN REPORT MUST ACCOMPANY SHIPMENT OF HARDWARE
TEST DATA REQUIRED WITH THIS ORDER
[redacted]AA/EASA REQUIRED
PARTS LIST REQUIRED

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37. EXAMPLE 2 – CUSTOMER/JOB ORDER (ROUTING OPERATION AND BUYOFF)

Job Order: 1202149 Suffix: 0000

JO Qty: 1.00 Start Date: 6/12/2013

Item Number: RMA-CONTROLS Due Date: 6/18/2013

Rev: - **REWORK**

Production Readiness: Production **REPRINT**

OpSeq	WC	Description	Setup Hours	Run Hours	Total Hours
20	CRCP	CONTROL P. RETURNS	0.00	1.290	1.290

Item	Description	Rev	U/M	Type	Total Req
RMA-CONTROLS		-	EA	M	0.00

REPAIR PER TEARDOWN

KP 2996 JUN 13 2013 KP 2996 JUN 13 2013

OpSeq	WC	Description	Setup Hours	Run Hours	Total Hours
50	QCCP	CONTROL PRODUCT INSP	0.00	0.000	0.000

Item	Description	Rev	U/M	Type	Total Req
					0.00

FINAL INSPECT

K312 JUN 15 2013

OpSeq	WC	Description	Setup Hours	Run Hours	Total Hours
60	TRANS	TRANSIT	0.00	0.000	0.000

Item	Description	Rev	U/M	Type	Total Req
					0.00

SHIP SN 2863 4/18/13

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38. EXAMPLE 3 – TEARDOWN REPORT

Teardown Report

Customer Name ROCKWELL COLLINS **RMA Number** RMA0000647-1

Product Group No.	Korry Part No.	Customer Part No.	Customer Reject No.	Quantity
1550	1046500-003	270-2774-030	N/A	1

Korry Serial No. 003AA0385
Customer Serial No. 28CKF
Date Code 0617R

As Received Condition Type
Used

Shop Findings

Customer Rejection

DIGITS ARE DIM ALL THE TIME.

As Received Condition

MOD 1, 2, 3, 4, 5, 7, 9 & 10 marked on UID label. Mfg Rev N / Customer Rev K marked on UID. Unit received with front protective cover. Display window filter has smudges. Housing has scratches. There is "ROCKWELL/COLLINS" label on the side of housing. Connectors have ESD caps.
Unit was tested for function per ATP D104611/Rev B & PTR D1046342/Rev F, it passed.
Received dim setting @ 12.

Manufacturing Findings

Customer rejection could not be replicated. Unit passed functional test.
Display illumination illuminated evenly and changed from dim to bright when exposing photo conductor to bright light.
All rotary switches had good detents and functioned properly when turned.
All pushbutton switches had good tactile and functioned properly when pressed.
Panel backlight illuminated evenly.
Unit had good communication and transmitted codes properly to test software.
No Fault Found.
NOTE:Photos on file at L:\Customer Returns\Customer Folders\1030-2\Control Products\Teardown Pics CTL-92E\RMA0000647-1 003AA0385 folder.

Completion Date	Name
5/6/2013	LVO

Quality Section

Discrepancy

Customer rejection could not be replicated.

Cause

NFF.

Corrective Action

No Corrective Action required.

CG 1389 6/13/13

Order Type	Name
NFF	LVO

Shop Action

Action Description

MOD upgrade:
MOD 11 not required per SB1046-34-11.

Clean the unit, final inspect and test unit for function per ATP.

Note: Creation or submittal of ATP test data is according to the ATP or applicable inspection alerts or PO requirements.

ATP Required Section

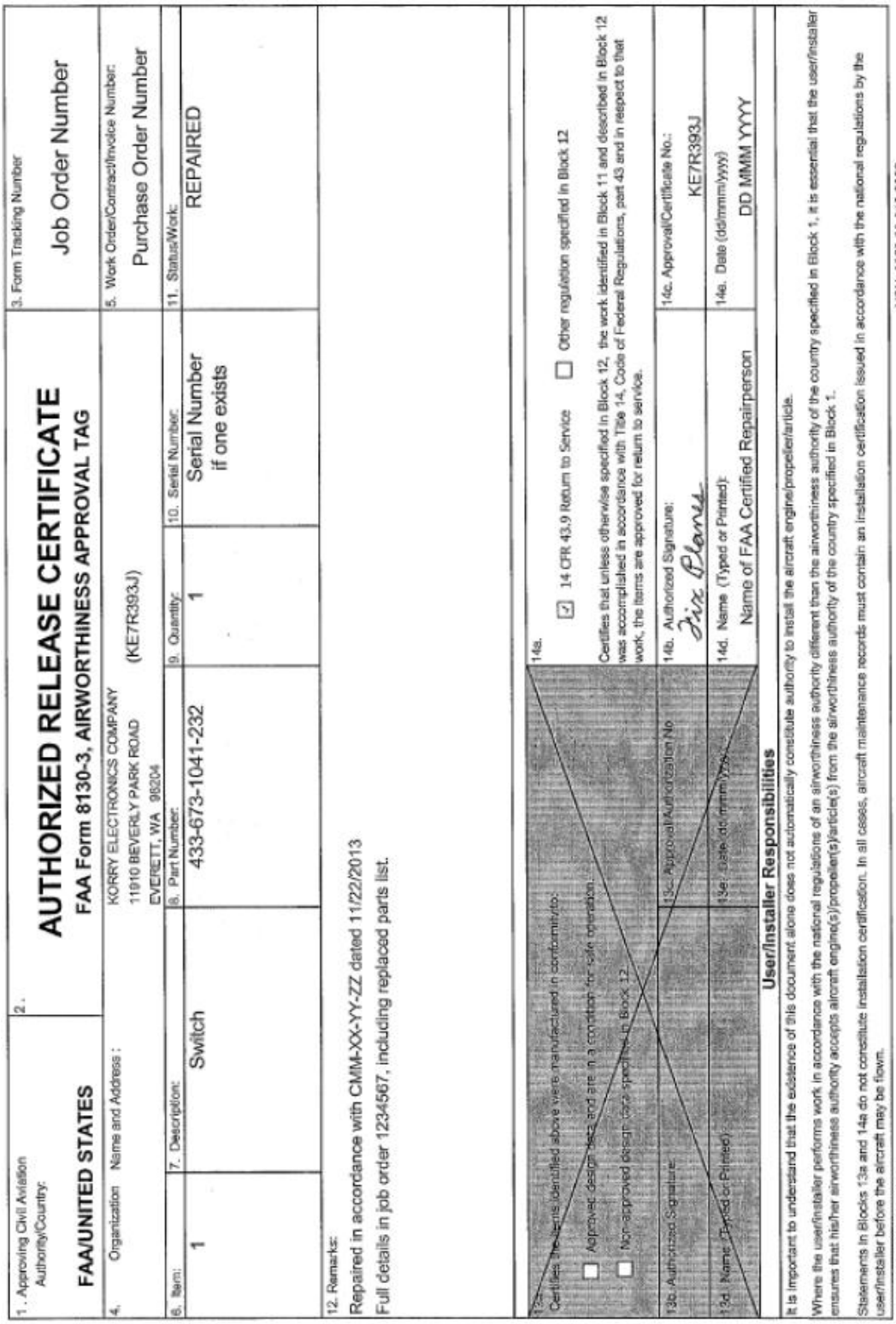
Functional ☒	Dielectric ☐	Insulation Res. ☐	ESS Burn In ☐	Visual Verification ☒	
Actuation Force ☐	Actuation Travel ☐	Switch Contact Res. ☐	Lamp Contact Res. ☐	Electrical Bonding ☐	

Lighting Test Required

Brightness ☐	Color ☐	Contrast ☐	NVIS Compat. ☐	Even Illumination ☐	Light Leaks ☐	Light Standard ☐

Printed: 6/11/2013 8:18:48 AM | Customer Returns \ Teardown Report | Page 1 of 2

39. EXAMPLE 4 –FAA FORM 8130-3 (DOMESTIC AIRWORTHINESS TAG)



1. Approving Civil Aviation Authority/Country: FAA/UNITED STATES

2. AUTHORIZED RELEASE CERTIFICATE
FAA Form 8130-3, AIRWORTHINESS APPROVAL TAG

3. Form Tracking Number: Job Order Number

4. Organization Name and Address: KORRY ELECTRONICS COMPANY
11910 BEVERLY PARK ROAD (KE7R393J)
EVERETT, WA 98204

5. Work Order/Contract/Invoice Number: Purchase Order Number

6. Item:	7. Description:	8. Part Number:	9. Quantity:	10. Serial Number:	11. Status/Work:
1	Switch	433-673-1041-232	1	Serial Number if one exists	REPAIRED

12. Remarks:
Repaired in accordance with CMM-XX-YY-ZZ dated 11/22/2013
Full details in job order 1234567, including replaced parts list.

13. User/Installer Responsibilities

13a. Certifies the items identified above were manufactured in conformity to:
- ☐ Approved design data and are in a condition for safe operation.
- ☐ Non-approved design data specified in Block 12

13b. Authorized Signature:

13c. Approval/Authorization No:

13d. Name (Typed or Printed):

13e. Date (dd/mmm/yyyy):

14a.
- ☑ 14 CFR 43.9 Return to Service
- ☐ Other regulation specified in Block 12

Certifies that unless otherwise specified in Block 12, the work identified in Block 11 and described in Block 12 was accomplished in accordance with Title 14, Code of Federal Regulations, part 43 and in respect to that work, the items are approved for return to service.

14b. Authorized Signature: Joe Blow

14c. Approval/Certificate No.: KE7R393J

14d. Name (Typed or Printed): Name of FAA Certified Repairperson

14e. Date (dd/mmm/yyyy): DD MMM YYYY

It is important to understand that the existence of this document alone does not automatically constitute authority to install the aircraft engine/propeller/article.

Where the user/installer performs work in accordance with the national regulations of an airworthiness authority different than the airworthiness authority of the country specified in Block 1, it is essential that the user/installer ensures that his/her airworthiness authority accepts aircraft engine(s)/propeller(s)/article(s) from the airworthiness authority of the country specified in Block 1.

Statements in Blocks 13a and 14a 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.

FAA Form 8130-3 (02-14) NSN: 0052-00-012-9006