AEROSPACE PROCEDURE
FOR
CONTROL OF NONCONFORMING PRODUCT

REVISIONS

Partially replaces QCP 111 - Revision “A/C”, Dated 01-03-96, see Work Instruction 006 for Preparation for Processing Rejection Reports.

Revision Letter	Page	Paragraph	Description	Date
N/C			Issued	12/5/1996
A			REVISED PER ECO/ECR9897	12/17/1997
B	5, 6		REVISED PER ECO	3/26/2002
C	4, 5, 6		REVISED PER ECO	3/4/2003
D	7		REVISED PER ECO	6/4/2004
E	Various		REVISED PER ECO	2/6/2006
F	2, 4, 5		REVISED PER ECO	9/15/2006
G	3, 4		REVISED PER ECO	2/16/2007
H			REVISED PER ECO/ECR19253	4/25/2008
J	4		REVISED PER ECO/ECR19465	7/9/2008
K			REVISED PER ECO/ECR19936	3/27/2009
L		6.3	REVISED PER ECO/ECR21455	5/2/2011
M		4.0, 5.3.2, 5.5.1	REVISED PER ECO/ECR21488	5/18/2011
N			REVISED PER ECO/ECR22193	12/29/2011
P	3, 5		REVISED PER ECO/ECR22404	3/16/2012
R	6		REVISED PER ECO/ECR22824	8/9/2012
T	All		REVISED PER ECO/ECR22948	10/9/2012
U			REVISED PER ECO/ECR23684	7/1/2013
V			REVISED PER ECO/ECR24478	2/28/2014
W			REVISED PER ECO/ECR24828	8/18/2014
Y			REVISED PER ECO/ECR25199	12/12/2014
AA			REVISED PER ECO/ECR25610	8/4/2015
AB			REVISED PER ECO/ECR26018	5/4/2016
AC			REVISED PER ECO/ECR26532	4/20/2017
AD			REVISED PER ECO/ECR26868	1/8/2018
AE			REVISED PER ECO/ECR27065	5/22/2018
AF			REVISED PER ECO/ECR27624	9/30/2019

1.0 PURPOSE

To establish the requirements for identifying product which does not meet blueprint or contractual requirements; segregating or controlling this product to prevent its inadvertent use or unauthorized shipment; establishing and maintaining a material review and disposition process for nonconforming product at Kavlico. To maintain compliance to AS9100, Kavlico Quality Management System AQMSM1001 and ensure the effective operation of Kavlico's Quality Management System (QMS).

2.0 SCOPE

This procedure applies to all materiel, components, hardware, subassemblies, and finished product.

3.0 RESPONSIBILITIES

- Quality Assurance (Process Owner)
- Manufacturing
- Supplier Management / Purchasing
- Engineering
- Contracts

4.0 REFERENCE DOCUMENTS

AS9100	Aerospace Standard, SAE
AS9131	Aerospace Standard, SAE, Nonconformance Documentation
AQMSM1001	Aerospace Quality Management System Manual, Kavlico
AP0410	Aerospace Procedure for Receiving Inspection
AP0410-1	Aerospace Procedure for In-Process Inspection
AP0410-2	Aerospace Procedure for Final Inspection
AP0414	Aerospace Procedure for Corrective and Preventive Action
AP0416	Aerospace Procedure for Control of Quality Records.
WI006	Aerospace Work Instruction for Preparation of Rejection Reports
WI007	Aerospace Work Instruction for Stock Purge
WI065	Aerospace Work Instruction for Stop Order Instructions
WI070	Aerospace Work Instruction for Supplier Corrective Action Instruction
WI072	Aerospace Work Instruction for Customer Deviations and Waivers
WI153	Aerospace Work Instruction for MRB Log Out Instructions
WI257	Aerospace Work Instruction for Kavlico MRB Authority
WI279	Aerospace Work Instruction for Creating Rework Router Instructions
WI367	Aerospace Work Instruction for Quality / Manufacturing Alerts
WI454	RMA Process for Aerospace Customer Returns
WI683	UAI Dispositioning for No MRB Authority
AF009	Aerospace Form for Engineering Stop Order
AF017	Aerospace Form for Rejection Report
AF021	Aerospace Form for Rejection Report Rational
AF088	LVDT/RVDT Defect Codes

AF094	Aerospace Form for Stock Purge
AF098	Aerospace Form MRB Log out Sheet
AF118	Aerospace Form Request for Waiver
AF121	Failure Analysis Investigation
AF144	Thru TAB Aerospace Form(s) for Specific In-Process Rework
AF143-1	Scrap Certificate
AF148	Aerospace Form for Quality / Manufacturing Alert
AF275	Aerospace Form for formal MRB Roster
AF326	No MRB Authority List
AF338	8D Problem Analysis Report
98-222	Aerospace Tag, Red, Identifying Rejected Material.

5.0 PROCEDURE

5.1 This procedure documents the system which will identify, segregate (or control if segregation is not practical) and properly dispose of nonconforming product. Corrective and preventative actions will be handled per AP0414.

5.2 Definitions:

5.2.1 Nonconforming Product - Any product, i.e., hardware, components, subassemblies or final assemblies that do not meet the requirements of the Engineering Drawing, governing process or material specification or workmanship standards. May be referred to as Discrepant Material.

5.2.2 MRB - Material Review Board

5.2.3 PMR - Preliminary Material Review

5.2.4 MRB Area - Secure area where nonconforming material is segregated to preclude unintended use in production.

5.2.5 MRB Roster - A roster identifying individuals authorized to enter the MRB Area and identifying those having the responsibility to affect and approve disposition of product processed through MRB.

5.2.6 System - Current ERP or MRP System used to control and monitor product in the possession of Kavlico.

5.3 Identification and Segregation

5.3.1 All personnel coming in contact with product have the responsibility to identify nonconformances and initiate a Rejection Report Form, AF017 per WI006. Personnel initiating the rejection form AF017 shall document the rejection form number and date in the relevant operation on the original router.

5.3.2 All Manufacturing and Inspection personnel are responsible to stop the job and alert Support members of any quality issue. Rejection Form AF017 must be initiated.

5.3.3 Preliminary Material Review (PMR) of all nonconforming products will be performed by Cell Support Team. The Cell Support Team should consist of Quality Assurance, Manufacturing Engineering, Design Engineering, Department Supervision and others, as needed, to accurately assess the nonconformity. The Cell Support Team performing PMR may be different individuals than those on the MRB Roster responsible for Formal MRB activity. However, the disposition authority on the rejection report will remain with the Quality Eng., Design Eng., and Manufacturing Eng. members of the team. The Cell Support Team will determine if the nonconformity can be reworked to Engineering Drawing Specification or if the material should be rejected to MRB for further evaluation. If defective material is identified and the Cell Support Team cannot address it immediately the product must be segregated and CONSPICUOUSLY IDENTIFIED WITH A RED REJECTION TAG 98-222 or Rejection Report form AF017. Product awaiting evaluation shall be tagged and separated from good product to preclude its unintended use until evaluation can be performed. A copy of the original Router and Rejection Report must remain with the suspect product.

5.3.4 When the Cell Support Team determines that Rework can be performed without further or formal MRB activity, the Rejection Report, AF 017, shall be dispositioned “Rework” and shall have the Manufacturing Engineer, Design Engineer, and Quality Engineer’s signature of approval. Rework Instructions must be noted on the Router, or on one of the documented Rework Forms, i.e., AF 144 thru TAB, added to the Router. Rework documentation becomes a permanent record that shall remain with the Router at all times. Rework Instructions must have an Inspection Operation following the Rework to validate conformance to Engineering Drawing Specification(s).

Note: AF144 thru TAB are standard blank rework forms to be utilized by the Manufacturing Engineer to provide Rework and Inspection steps necessary to return the nonconforming product to Engineering requirements. AF144 thru TAB define specific Rework that may occur more frequently and therefore Rework Instructions have been permanently documented to expedite the process.

5.3.5 Non-conformances can be identified at a lower level manufacturing process and the Cell Support Team can determine that Conformity can be or will be achieved at a higher level manufacturing process, in these cases the Cell Support Team shall clearly record on the Rejection Report the specific Operation and Process that will bring the product / feature into compliance. However, this can only take place if the correction can be made prior to the product being delivered to Stores. No product shall be in stores when it is known to be nonconforming.

5.3.6 Product needing further or Formal MRB Processing must be segregated and moved to the MRB area with the AF017 form completed per WI006.

5.3.7 Red Rejection Tags should accompany suspect product when it has been determined that Further MRB activity is necessary. If at a later time product is Reworked to Engineering

Drawing Specifications, Scrapped or, is determined to Conform to Engineering Specifications the Red Rejection Tag shall be removed and disposed of.

5.3.8 Rejection Reports shall be reviewed and approved by the Cell Support Team, to ensure the form (AF017) has been properly filled in. The reason for rejection shall be clearly defined. Any Rejection Report improperly filled out can be returned to the generating Cell for correction. Rejected product in any given Cell should be processed within one working day.

5.4 Segregation of Nonconforming Material

5.4.1 All nonconforming products that cannot be Reworked to Specification as defined in Section 5.3 shall be segregated by being delivered to and retained within the secured MRB area. Access to this area shall be limited to authorized MRB personnel and those accompanied by an authorized MRB member. Those authorized as MRB Members will be identified on a MRB Roster, which shall be conspicuously displayed in the MRB area.

5.4.2 Product delivered to the MRB area shall be transacted in the System to ensure its whereabouts is known.

5.4.3 Product being removed from the MRB area temporarily in order to facilitate some additional action shall be done in accordance with Work Instruction WI 153 and be recorded on the MRB Log Out Form AF098.

5.4.4 Once disposition has been agreed upon, product will be transacted in the System to reflect movement to a predetermined location, i.e., scrap, rework, etc.

5.4.5 MRB shall consider the effects of the nonconformance on other products and processes during the disposition phase. If it has been determined that other products or processes are affected, then appropriate actions shall be planned and implemented to contain the effect of nonconformity.

5.4.6 Rejected items transferred from an alternate site shall be routed to the MRB Lockup after going through the receiving process, even if marked “attention to” an individual person.

5.5 Material Review Board (MRB)

5.5.1 The Material Review Board consists of representatives from Manufacturing Engineering, Design Engineering and Quality Assurance. Representatives are selected based on individual required training, product knowledge, and personal experience. Other cognizant disciplines resources will be called upon as necessary to support the process..

5.5.2 Personnel qualified for MRB or PMR activities, shall have at least six months working experience in either quality, manufacturing or engineering, shall be knowledgeable of the manufacturing processes and attend a training session of this procedure

5.5.3 MRB and/or PMR personnel shall complete a periodic refresher training to maintain MRB authority. The training shall be complete every two years minimum

5.5.4 AF275 is the list of formal MRB Members, it is maintained by the Quality Manager and can be available thru our Document Control system.

5.6 Disposition of Nonconforming Material

5.6.1 All nonconforming material received into the MRB area requires review and disposition by an MRB member. Required signatures will be as described within the description of each disposition described below.

5.6.2 Additional approval signatures may be required as defined per Customer Contract. Review Contracts or MRB Authority list per WI-257. Customers can disapprove any portion or the entire proposed disposition.

5.6.3 As process owner, Quality Assurance shall be responsible for ensuring proper documentation and shall be the last person to sign off disposition after reviewing the rejection report for completeness and accuracy.

5.6.4 Nonconforming material can be dispositioned in one of the following five ways:

a. **Rework** - When it is determined that the Product can be made to meet specification rework should be seriously considered. Rework to design specifications can be determined during the PMR phase of this process as described in section 5.3.2 and 5.3.3 of this procedure. Rework instructions identifying rework performed are required. The disposition shall have the Design Engineer, Manufacturing Engineer, and Quality Engineer signatures. When disposition involves special process (i.e. welding or brazing), the applicable process spec shall be reviewed for limitations on Rework.

b. **Use as Is (UAI)** - When it is determined that the nonconformity will not affect Fit, Form, or Function for its intended application. Review No MRB Authority List (AF326) per procedure WI683.Nonconformities for lower level components or subassemblies falling into Type II nonconformity may not require a waiver to be submitted to the customer. Type I Nonconformities require a waiver to be submitted to the customer per Paragraph 5.9.1. UAI dispositions require the signature of the Quality Assurance representative, the cognizant Manufacturing Engineer, and the Design Engineer. If the nonconforming part is a purchased part and is determined Supplier responsibility, the Supplier Quality Engineer will notify Supplier per WI070.

c. **Scrap** - When it has been determined that the product is unsalvageable a scrap disposition is chosen. NOTE: Nonconforming Product supplied by an outside source should not be scrapped against Kavlico, unless it is determined to be Kavlico's responsibility. Scrap disposition requires Quality Assurance representative and the cognizant Manufacturing Engineer and the Design Engineer signature.

d. **Return to Supplier (RTS)** - Nonconforming Product received from an outside supplier should be returned to that supplier for Rework, Scrap, Repair, etc. at their expense. If it is in Kavlico's interest to keep the Product and disposition for internal use, the supplier should be notified, and Corrective Action Request initiated. Every effort should be made to supply the supplier with at least one example of the defective material when issuing them a Corrective Action. RTS dispositions require the signature of the Supplier Quality Assurance representative, and either the cognizant Manufacturing Engineer or Design Engineer. Note: Kavlico owned product rendered scrap as the result of a Process performed by an outside processor, (i.e., heat treaters, platers, etc. shall not be dispositioned RTS).

e. **Conforms** - When evaluating the nonconformity and it seems as though the validity of the Nonconformance is questionable and re-inspection determines that the Product does meet Engineering Specification(s) a Conforms disposition is appropriate. Conform disposition requires the signature of the Quality Engineer, Manufacturing Engineer, and Design Engineer.

Note: No repair dispositions are permitted without prior customer approval

5.7 Type I Non-conformances (Major)

5.7.1 Any non-conformance that could by itself, or by its relation to other components, result in failure or malfunction involving the safety of personnel using or maintaining the item. Any non-conformance that could adversely affect performance, reliability, durability, interchangeability, replaceability or otherwise result in failure of the End Item component / assembly. Non-conformances departing from the contractual or envelope drawing requirements are also included.

5.7.2 Non-conformances classified as Type I must be coordinated with the customer. Typically, this will require a Product Waiver, Nonconforming Material / Variance Authorization to be submitted to the customer.

Note: See paragraph 5.9.1 for details of this process.

5.7.3 Kavlico reserves the right to "Proceed at Risk", to continue processing the product through subsequent manufacturing processes in anticipation of a positive response from the customer. An example of when "Proceeding at Risk" might be exercised, i.e., when a very important delivery date is fast approaching, and replacement hardware is not immediately available. "Proceeding at Risk" should be concurred upon by cognizant manufacturing, contracts, or program management personnel and shall be approved by the cognizant Quality Assurance Representative. Records of approval to "Proceed at Risk" shall be kept with the routing package and as part of the quality record.

5.8 Type II Non-conformances (Minor)

5.8.1 Any nonconformance representing a departure from Kavlico Type Design or Standard(s), in a manner, or to a degree which has no significant bearing on the effective use or

operation of the item or related components, and which does not involve any of the factors listed in the description of the TYPE I Nonconformance (Major).

5.8.2 MRB Personnel representing Quality Assurance, Manufacturing Engineer, and Design Engineering must concur with Use As Is recommendations referred to MRB. Use As Is disposition require a Rejection Report Rational Form (AF021).

5.9 Customer Notification of Non-conformances and Quality Escapes

5.9.1 In the event of a Type I nonconformance being dispositioned, Use-As-Is. a waiver must be submitted to the customer for their review. Kavlico Work Instruction WI072 Customer Deviation and Waiver, and Kavlico Form AF118 Request for Waiver must be followed. In many cases Customers may require their Waiver Form be used, in these cases the Customer's Form and accompanying Procedure shall take precedence over Kavlico's. Most Type II nonconformance involve lower level components and assemblies that Kavlico is the Design Authority, unless contractually relinquished, Kavlico maintains MRB Authority at this level. Review MRB Authority List described in WI257, which can be found on the Intranet site. In the event a Type II Nonconformance occurs and Kavlico does not have MRB Authority, follow the Deviation and Waiver process identified above.

5.9.2 Completing the Request for Waiver form, AF118, shall be done by a Quality Assurance Representative.

5.9.3 Customer approved Waivers shall be reviewed by a Quality Assurance Representative and where special instructions are dictated by the Customer, the QA Representative must ensure steps are taken to comply.

5.9.4 Approved Waivers must remain with the Work Order package and be filed with the Work Order package.

5.9.5 Product where the Waiver was disapproved by the customer shall be handled accordingly, i.e., reworked to Engineering Specification or scrapped.

5.9.6 When a Non-conformity is identified which involves product delivered to the Customer, the cognizant MRB Quality Representative must immediately notify the Manager of Quality.

5.9.7 Steps to contain additional product must be initiated immediately, i.e., Stop Order, Stock Purge, Quality Alert, etc. to ensure no additional nonconforming product escapes.

5.9.8 An evaluation to determine the impact of the nonconformity in relationship to the criteria defined in Type I or Type II, sections 5.7 and 5.8 respectively must take place within one working day, maybe sooner depending on the urgency.

5.9.9 The impact and severity of the Nonconformity, as determined by the evaluation, shall be presented to the Manager of Quality. The Quality Manager and Cognizant Engineering Manager shall ultimately and jointly determine the level of impact on product and

application in the field. Consideration of all Customers affected must be taken into account.

5.9.10 When it has been determined that discrepant product has indeed been delivered to the customer(s), Kavlico must provide a notification of escape within 24 hours after confirming the discrepancy. In those cases, Kavlico shall issue an internal corrective action to document the non-conformance per AP0414 procedure. If necessary, Kavlico will request assistance from the customer's engineering and/or quality department in the related investigation activities.

5.9.11 A notification of escape shall be submitted to all affected customers in a form of an investigation report, AF338 - 8D Problem Analysis Report, or customer required format. The notification as a minimum shall have:

a. The affected Quantity and Serial Number Range. Note: Affected S/N Range should be identified as close as possible, it is better to err on the side of caution, if need be, S/N's on either side of the suspected range should be included to avoid having defective product in the field. If it is discovered that the affected S/N's needs to be revised, the Customer must be informed and provided a revised notification of escape.

b. The Defect must be described and its impact on the Assembly and, if possible, the impact on the application and its intended use

c. Detail Containment measures taken to ensure no additional escapes.

d. If available at the time of the initial notification of escape, the Root Cause and Corrective Action taken and implemented to eliminate the possibility of recurrence must be included.

e. Disposition of Product in the Customer's possession, i.e., return for rework, repair, replacement, etc.

Note: At the time of the initial notification of escape not all of the above detail may be known. Some details may need to be worked out after the Customer assesses the impact from their end. Product may be in various locations around the world, organizing and coordinating efforts may take some time.

This should not delay providing an initial notification of escape to the Customer.

6.0 CUSTOMER RETURNED PRODUCT

6.1 Customer Property that is returned to Kavlico by the Customer, or their customer, which is identified / claimed by the Customer to be a Warranty Return, or Quality Escape, or by Kavlico's assessment, represents a Quality Escape, shall be received in and then brought to the attention of the cognizant Quality Assurance Engineer and Contracts Coordinator.

6.2 Quality Escapes or Warranty Returns must be kept separated from units being returned to the FAA Repair Station from Customers or Air Lines.

6.3 Quality Escapes or Warranty Returns shall be addressed through the Preventive Action System. Note: Quality Escapes or Warranty Returns should be treated as a notification or alert to Kavlico that a Process or System may need to be revised. Often times a Preventive Action Request, or possibly a Corrective Action Request needs to be issued in order to eliminate recurrence. This will be evaluated and/or initiated by the cognizant Quality Assurance Engineer.

6.4 Processing Customer Returns shall be in accordance with WI454

6.5 Upon receiving customer notification of a Quality Escape, Kavlico shall immediately evaluate the condition, and if required, initiate a stock purge WI007, AF094, within 48 hours, or as required by customer.

7.0 QUALITY / MANUFACTURING ALERTS

7.1 Quality / Manufacturing Alerts may be used to highlight any internal quality related problems concerning hardware, software, process or procedure and to propose recommendations for correcting the problem(s).

7.2 Issuing of Quality / Manufacturing Alert shall be in accordance with WI367 and form AF148.

8.0 IDENTIFICATION AND DISPOSAL OF SCRAP MATERIALS

8.1 Material / Product determined to be scrap, shall be conspicuously identified as scrap in some manner to preclude its unintended use. Examples of conspicuous identification may be marked with indelible ink in a conspicuous location; physical damage, such to render the item unusable. Scrapped products shall be mutilated to prevent any further use within 30 days of disposition. Note: Occasionally scrap product may be kept for machine set-up purposes, sales examples, etc. Scrap material kept for such purposes shall be clearly identifiable as scrap.

8.2 Scrapped material being disposed of shall be physically damaged, such to render it permanently unusable. No efforts to rework or repair should be possible following the physical damage.

8.3 If it is necessary to generate a certificate of scrap, Kavlico will use form AF143-1. Quality department is responsible for the generation and control of certificates of scrap.

9.0 QUALITY RECORDS

9.1 All Rejection Reports and associated documentation shall be maintained in accordance with AP0416.