

# **INFORMAL REPORT IR 0451**

**BOEING MILITARY AIRCRAFT (BMA)  
St. Louis/St. Charles**

**Instructions for Submittal and Handling  
of External Nonconformance Documents**

Revised: 02/24/2015  
Supersedes: 06/22/2010

IR0451 Content Query: Liaison Engineering, [liasup@boeing.com](mailto:liasup@boeing.com)

## INTRODUCTION

The information contained in this report does not relieve the Supplier of any requirements invoked in the purchase order.

*The purpose of this document is to provide guidance on documenting nonconformances and instructions to complete the MAC 861MRB form by Boeing St. Louis (BSTL) Suppliers, Boeing Field Teams, or Commercial Customers (including Retrofit Mod Teams, Spares, etc.) for processing of nonconforming product or tooling.*

*This Report shall be used when discrepancies on BSTL procured or produced parts, assemblies or tools are identified and need to be processed through the Boeing St. Louis Material Review Board (BSTL MRB). Strict adherence to these guidelines is critical for timely completion of the disposition process.*

*The MAC 861MRB form, and the process described herein, is not to be used for:*

- 1. Post Delivery Contracts. When processing these types of discrepancies, including warranty claims, QDRs, RODs/SDRs, and FPRs, please refer to Boeing – St. Louis, “GOP 1.133 - Post Delivery Issues” and the IQDS on-line processes.*
- 2. Supplier disclosures or notices of escapement (NOE) for already delivered goods. Refer to the Purchase Contract for the appropriate NOE process or contact the Boeing Purchase Agent for guidance.*

## Table of Contents

Section	Subject
I.	<a href="#"><u>NONCONFORMANCE DOCUMENT (ND) INITIATION AND ROUTING</u></a>
II.	<a href="#"><u>NONCONFORMANCE DOCUMENT (MAC861MRB) COMPLETION GUIDELINES</u></a>
	A. <a href="#"><u>PARTS</u></a>
	B. <a href="#"><u>TOOLS</u></a>
III.	<a href="#"><u>GUIDELINES FOR SUPPLIER ND WRITE-UPS</u></a>
IV.	<a href="#"><u>RTV</u></a>
V.	<a href="#"><u>NONCONFORMANCE DOCUMENT REVISION</u></a>
VI.	<a href="#"><u>BSTL AUTHORIZED DISPOSITION</u></a>
VII.	<a href="#"><u>PART PREPARATION</u></a>
VIII.	<a href="#"><u>SUPPLIER NONCONFORMANCE DOCUMENT PROCESS FLOW</u></a>
IX.	<a href="#"><u>SUPPLIER CORRECTIVE ACTION</u></a>

### [Definitions](#)

[Appendix A](#) Sample Forms and NCR documents

[Appendix B](#) Defect Description: Detailed information required per defect type

## I. NONCONFORMANCE DOCUMENT INITIATION AND SUBMITTAL

### Nonconformance Documentation and Product Control Requirements

1. The following instructions are intended to enable the timely preparation of an ND.
2. **Nonconforming product shall be reported to Boeing immediately upon discovery of the noncompliant condition.**
3. **Work at risk** – The supplier may choose to continue with scheduled work on a part/assembly/tool which contains a nonconforming condition that has been submitted to the BSTL MRB, however, the part/assembly/tool shall be clearly identified as nonconforming **AND the defect condition shall not be altered, become inaccessible, or be incorporated into the next assembly by the continued work.** For defects such as gaps and mismatches, the continued work at risk shall not permanently install the contributing parts thereby preventing root cause investigation or influencing repair options due to potential adverse affect on other areas of the assembly.

**Note: the decision to continue scheduled work on the nonconforming product shall be at the supplier's risk. Should Boeing determine the product is not salvageable, Boeing will not be liable for the costs associated with the continued work.**

**Note: chemical cleaning of a defective part alters the dimensions of a part and is considered unauthorized work.**

4. **Nonconforming Product or Tools shall NOT be SHIPPED** to Boeing St. Louis, until a disposition is received from BSTL MRB and complied with, or until a written Authority To Ship (ATS) on an open NCR is received from the BSTL MRB.
5. No BSTL NCR is required for Supplier parts if the Supplier can Rework the conditions to fully conform to PO or B/P specifications (which includes P.S. requirements), or Scrap of Supplier owned material that is obviously unfit for use and/or not economically repairable.

**Note: A BSTL NCR is required for all nonconformances (not caused by the Supplier, i.e., present on delivery) on Boeing furnished materials or products**

6. Nonconformance Documents shall not be used to document such things as errors in blueprints or certifications, missing kit parts, part shortage, incomplete parts (only if on delivered Boeing furnished product), material substitution, already delivered product or incomplete testing. Engineering Malfunction Reports (EMR) shall not be processed per IR 0451. The EMR shall be processed as required by applicable "Sellers Data List" (SDL) or MDC Report A4150. Contact Boeing Purchase Agent for instructions for appropriate submittal of these issues.

**Initiating Nonconformance Documents (ND), Notice Of Revisions (NOR), and Corrective Action:**

- 1. The MAC861MRB (Supplier Nonconformance Data) Adobe submittal form, is used to report materials exhibiting departures from product definition (SPECO, drawings, models, process specifications, SMI, etc.). The form shall be obtained from the Boeing web site at [http://www.boeing.com/supplier\\_portal/bdsSiteReqs.html](http://www.boeing.com/supplier_portal/bdsSiteReqs.html).

Suppliers can submit their MAC861 to the MRB crib via 1 of 2 options

- a. Encrypted E-mail
- b. Message Courier

As an alternative to using a MAC861MRB; (SUPLNCN), go to the SUPLNCN interface in the Supplier Portal to provide the required nonconformance information. Suppliers that have been approved for usage are:

Best Code	Supplier
BE10050431	ALSALAM AIRCRAFT CO (AAC)
BE10034295	AAR AEROSTRUCTURES & INTERIORS
BE10360829	CPI AEROSTRUCTURES
BE10030715	DUCOMMUN AEROSTRUCTURES INC
BE10054024	EATON CORP LA
BE10033363	GKN AEROSPACE NORTH AMERICA INC
BE10031977	INDUSTRIAL TUBE CO LLC
BE10070738	KOREA AEROSPACE INDUSTRIES (KAI)
BE10066826	KAMAN AEROSPACE CORP
BE10044333	PARKER HANNIFIN CORP - IRVINE

Note: a training package is provided in the Supplier Portal that describes how to use the SUPLNCN interface

- 2. Suppliers receiving a request from the BSTL MRB for additional or clarifying information regarding the defect description shall have **FIVE (5) working days** to respond to BSTL MRB. Failure to do so may result in voiding of the ND/NOR.
- 3. Suppliers receiving a partial disposition from the BSTL MRB requiring additional actions and reporting results, shall have **THIRTY (30) working days** to respond to BSTL MRB. Failure to do so may result in voiding of the ND/NOR.
- 4. Suppliers must not submit the same MAC861MRB by more than one method/or one time. E-mail the completed MAC861MRB form (**only one MAC861MRB form and associated graphics per email**) as directed by the Purchase Order. The Supplier shall cc the Boeing Procurement Agent (Buyer) on e-mail submittal of an MAC861MRB form to alert the Buyer of the nonconformance.

**Review the following list of programs to determine where the completed MAC861MRB form shall be submitted via an encrypted e-mail:**

- **All Aircraft Production Programs:** E-MAIL to [mrb101@mw.boeing.com](mailto:mrb101@mw.boeing.com)

- **Training Systems and Government Services (TSGS):** E-MAIL to [288-mrb@boeing.com](mailto:288-mrb@boeing.com)
- **GFE/GOM:** E-MAIL to [mrb101@mw.boeing.com](mailto:mrb101@mw.boeing.com)
- **Tooling:** E-MAIL to [mrtool@exchange.boeing.com](mailto:mrtool@exchange.boeing.com)
- **Phantom Works Programs**  
***Procurement Agent (Buyer) must be contacted for tag submittal instructions.***
- **Weapons Programs:**  

Direct Attack programs (such as JDAM, SDB, and B61) shall have tags submitted directly to the Boeing Procurement Agent and/or Supplier Manager.

Harpoon and other Weapon programs: (314) 777-0660, E-mail - [mrb-harpoonslam-er@mw.boeing.com](mailto:mrb-harpoonslam-er@mw.boeing.com) (contact procurement agent with questions)"
- **Post Production Programs: (Spares, Retrofit, ROR, MODS, Repairs, FIRST, Virtual Warehouse, IWA's, etc.):** E-MAIL to [mrb101@mw.boeing.com](mailto:mrb101@mw.boeing.com)

**If additional help is required with any of these guidelines, the supplier may contact BSTL MRB personnel at (314) 777-2135**

5. Suppliers may use an electronic system to relay MRB information when authorized. BSTL may authorize supplier access to an electronic system to fill out and submit NDs electronically. In these cases, detailed procedures for entering the nonconformance information will be provided and will be used in place of the guidelines that follow for completing the ND. Other guidelines found in this document are still applicable.
6. NDs initiated by the supplier will not affect the Supplier's Quality Rating in the Supplier Performance Measurement System (SPMS). However, repetitive conditions or excessive requests may be subject to formal corrective action requests from BSTL.

## II. NONCONFORMANCE DOCUMENT COMPLETION GUIDELINES

The following section provides information for filling out the Boeing form MAC861MRB

### Decision Gateway to the MAC861MRB form

Select the appropriate box, Yes or No, whether the product has already been delivered to Boeing.

- a. If “Yes”, the process stops at this point and the Supplier is advised on next required actions as the issue is beyond material review. The MAC861MRB form entry will be locked.

The screenshot shows the Boeing logo in the top left and the text 'SUPPLIER NON-CONFORMANCE DATA Material Review - BDS St. Louis' in the top right. The main title is 'SUPPLIER NONCONFORMANCE DATA DOCUMENT 861MRB Boeing Defense & Security St. Louis'. Below this is the question: 'Has the non conforming product been delivered to Boeing (or other Boeing designated location) per Purchase Contract?'. There are two radio buttons: 'Yes' (checked) and 'No' (unchecked). A text box below the buttons contains the instruction: 'Supplier Disclosures or Notices Of Escapement for already delivered goods are not to be submitted via the MAC861MRB form. Refer to the Purchase Contract for the appropriate process or contact the Boeing Purchase Agent.' At the bottom, it says 'Select One of the Following:'.

- b. If “No”, proceed to the next step, select the appropriate rejection type

The screenshot shows the Boeing logo in the top left and the text 'SUPPLIER NON-CONFORMANCE DATA Material Review - BDS St. Louis' in the top right. The main title is 'SUPPLIER NONCONFORMANCE DATA DOCUMENT 861MRB Boeing Defense & Security St. Louis'. Below this is the question: 'Has the non conforming product been delivered to Boeing (or other Boeing designated location) per Purchase Contract?'. There are two radio buttons: 'Yes' (unchecked) and 'No' (checked). Below the buttons is a text input field. At the bottom, it says 'Select One of the Following:' followed by two options: 'Part/Assembly Rejection' and 'Tool Rejection', both with unchecked radio buttons.

**Form Selection**

There are two format options for the MAC861MRB form, one format for submitting nonconformance issues on a part or assembly and one format for submitting nonconformance/rejection issues on tooling. Select the appropriate product type to initiate the proper form:

- **Part/Assembly Rejection**  
*Select "Part Tag" from menu bar*
- **Tooling Rejection**  
*Select "Tool Tag" from menu bar*

Select One To Activate Form

Part/Assembly Rejection

Tool Rejection

**Tag Type**

Select the applicable information box across the top of the form. Only one box shall be selected. **For b thru d, the Boeing NCR number provided by BSTL must be referenced on the resubmitted MAC861MRB form:**

- a. **New Tag** – First time submittal of nonconformance.
- b. **Partial Disposition Results** – Return of information required per the partial disposition.
- c. **Revision to Current Tag** – Used to revise original nonconformance. Enter NCR number of the tag requiring the revision.
- d. **Additional Information** - For the submittal of pertinent / additional information regarding the nonconformance after the original submittal.

**Part Nonconformance**     New Tag     Partial Results     Revision To Current Tag     Additional Info.

Boeing NCR No.



There are four sections, A – D, to the MAC861MRB form and every block in the form requires an entry, unless identified as “optional”. This form is routed electronically to the e-mail noted in Section I.

**Part/Assembly Rejection**

**Form Completion:**

**Section A Supplier Data:**

1. Supplier Information: Submitting supplier shall enter their supplier name, contact name, phone / fax numbers and e-mail address. (Note: if the nonconformance is for a 3<sup>rd</sup> tier supplier, include in the name and contact information for the 3<sup>rd</sup> tier supplier in the Other Chargeable Supplier field in section B.)
2. The “Supplier Sequence or Rejection Document No.” block shall be used to record Supplier’s **mandatory** “Internal Nonconformance Document Number;” i.e., the Supplier rejection document on which the nonconformance was initially documented.

A. Supplier (or Initiator as applicable) Data			
Supplier Name <b>Required</b>		Contact Name <b>Required</b>	
Fax No. <b>Required</b>	Phone No. <b>Required</b>	Email <b>Required</b>	Supplier Sequence or Rejection Document No. <b>Required</b>

**Section B Charge Data:**

1. Identify whom BSTL should charge for the rejection, select
  - a. “Above Named Supplier” (your company) if your company is responsible for the nonconformance.
  - b. “Other” if someone other than your company is responsible for the nonconformance and is to be charged for the rejection, provide information requested in “Other Chargeable Supplier Information” section of the form.
  - c. If Boeing is to be charged please state “Boeing” and the appropriate Boeing location, i.e., Boeing - St. Louis. **Note: A BSTL NCR is required for all nonconformances (not caused by the Supplier, i.e., present on delivery) on Boeing supplied materials or products.**
  - d. Add this note into the discrepancy detail text for Boeing furnished parts received direct from another Boeing supplier, include that po/li that the Boeing supplied part was received on in the note:

“Note: This submission is for a part already delivered on foreign receiver to Boeing on the listed PO and LI, and has been received by “Supplier Name”, requesting engineering disposition on this Boeing-furnished part/assy.”

2. Check the appropriate box to denote the location of the nonconforming product.
3. Provide the requested information on the physical location of the part.
4. **Purchase Order or Contract Number and line item number.** Enter the appropriate data for the product that is nonconforming. This is key information BSTL personnel loads into system and therefore must be correct. Failure to provide this information may delay the creation of the Supplier’s nonconformance document. If the PO number is not known or available, the contract number shall be used. When PO or Contract is unknown, contact the Boeing Purchase Agent (Buyer) for information to enter in the “PO Number or Contract Number” and “PO Line Number” fields. **Note: Only 1 Purchase Order (PO) and Line item can be submitted per document.**
5. Enter “Contract Delivery Date” (if known).
6. Ship No. Enter Boeing assigned ship or A/C number if known.

B. Charge Data			
Who should be charged for this rejection?			
<input type="checkbox"/> Above Named Supplier <input type="checkbox"/> Other (please explain below)			
Other Chargeable Supplier Information (Include vendor name, contact, phone, and explanation)			
Where is the current location of the part?			
<input type="checkbox"/> Above Named Supplier <input type="checkbox"/> Other (please explain below)			
Other Location of Part and Reason			
Purchase Order Number or Contract No.	Purchase Order Line No.	Contract Delivery Date	Ship No.

**Section C Nonconforming Part Information:**

1. **“Failed Part Number”** -
  - a. When a critical part (FCT, FC, MC, DC, DCT, I&R, FC 1A, FC 1B, SoF, CAI, CSI) is involved (as part of the discrepancy), the critical part number is always entered in the failed part number field. If more than one critical part is affected, enter all affected part numbers and critical classification with the S/N for traceable parts. Example: 74AXXXXXX-5XXX (FCT, S/N XY-####), 74AXXXXXY-5XXY (I&R, S/N AB-####) and 74AXXXXXY-5XXY (FC). Part numbers and criticality levels must be identified for all discrepant critical parts. When critically classified parts also have interchangeable and/or replaceable (I&R) requirements, I&R requirements shall be identified at the beginning of the defect description text field.
  - b. For TCA (traceable critical assembly), the assembly number shall be entered as the failed part number, the serial number of the assembly shall be documented in the S/N field. Part numbers, criticality levels and S/N for traceable details must be identified for all discrepant critical parts.
  - c. For all assembly defects, if critical parts are not affected, when more than one part is discrepant, the first part affected shall be entered, so consistent

- rejection data can be maintained, e.g., for a hole drilled through more than one part, the first part drilled into is entered as the failed part number. (Note: for assembly defects, do not enter the panstock part numbers as the failed part number, i.e., fasteners, gang channels, platenuts, etc.)
- d. For an assembly with multiple defects involving multiple parts enter “See Entries” in the failed part number field and in each entry document the failed part number for that entry. Identify the failed part number in accordance with this section. Begin entry text with failed part number, followed by the should be and actual conditions.
  - e. When the supplier has assigned their own part number identification to a part, it is the Boeing part number that shall be entered in the failed part number field
  - f. Enter information about the specific part or detail that actually failed. The most obvious detail part number or software identification number of the item having the nonconformance shall be entered in the failed part number field. If the detail part number cannot be readily determined, the assembly part number shall be entered. In all areas, the planning detail part or assembly dash number shall be entered when available, e.g., 74AXXXXXX-5XXX for F-18, DAXXXXXXXX-4X for T-45. The Boeing detail part number is preferred when known, however, notation of the Engineering dash number is required in the text. *[Do not use any Supplier assigned dash numbers on Boeing MAC861MRB form.]*
2. **“Failed Part Name”** - Failed part name entered shall be as defined in the product definition, reference the ADPL for the proper part names.
  3. **“Model No.”** - Enter the Model number as referenced on the purchase contract. To see examples, click the field title “Model No.”.
  4. **“Charge No.”** - Enter Charge number, when known.
  5. **“Failed Part Serial No.”** - Enter all serial numbers affected. Add specific serial numbers in each entry on the “Quantity of parts...” line (i.e., 1 pc for line item 045 for S/N BAD001). If no serial number then check N/A
  6. **“Total Quantity Discrepant”** - Enter the total quantity of units rejected (i.e., if there are 10 pieces on one line item then input 10; if there are two line items with five each, enter 10. Raw material should be documented per bulk unit, such as a roll.
  7. **“Assembly Part Number”** - If the failed part is a detail of an assembly, enter the Assembly Part number, if the failed part is a detail of a “Service Bulletin Kit”, enter the “Service Bulletin Kit Number” in this box, otherwise enter N/A.
  8. **Assembly Serial No.** – Provide the assembly serial number if applicable
  9. **“Revision (NOR) requested (as needed) Revision number #”** - If the “Revision to Current Tag” block at the top of the form is checked, enter the number 1 here, if this is a revision to a revision then enter the number of the revision being revised. Examples, if last revision was #2, then enter #3 as the requested revision number.

C. Non-conforming Part Information			
Failed Part Number		Failed Part Name	
Model No.	Charge No. (When Known)	Failed Part Serial No.	<input type="checkbox"/> N/A
Total Qty. Discrepant	Assembly Part No.	Assembly Serial No.	Revision No.

**Section D: Reported Nonconformance**

1. **“Discrepancy No. of No.”** - Add the entry number and total of all discrepancies (i.e., 2 of 4). Click the green “+” for discrepancy no. for the number of discrepancies you are adding then the green “+” for the should be/ actual condition for the same number of discrepancies. All of the discrepancy no. information is required for each entry.

D. Reported Nonconformance							
Please indicate additional information on applicable on each applicable discrepancy number.							
	Discrepancy No.			Qty of Parts this Entry	Attached Graphic Sketch	Proposed Disposition Attached	Blueprint (B/P) Drawing No. Sheet No. and Zone
-	1	of	1		▼	▼	
+	Should Be/Actual Condition						
-	1	of	1				

2. **“Qty of Parts This Entry”** - Enter the number of parts rejected for this entry number only.
3. **“Attached Graphic”** Check this box “YES” if graphics or attached files are associated with this entry or “NO” if there are no attachments/graphics provided.
  - Graphics associated with discrepancies submitted for review (i.e. digital photos, sketches, etc.) may be any of these electronic formats: .PDF, .TXT, .DOC, .PPT, .XLS, .TIF, .JPG, or .GIF. The archiving program WINZIP should be used to bundle and compress those files and attachments that exceed 10Mb in total size.
  - The following naming convention for attachments will be used to identify the attachment file(s). On the MAC861MRB form, the discrepancy or disposition text shall include references to the attachments by file name. For attachments that address multiple discrepancies, reference the attachment in each entry.
    - Name each attachment with a consistent numbering or naming system (Example, NDXXXXXEYA.doc, ND004563E3B.doc), Where:

- **NDXXXXX** – **ND** (Nonconformance document) followed by the Supplier nonconformance record numeric digits **XXXXX**
  - **EY – E** (Entry) followed by the discrepancy number **Y**, attachments for multiple entries shall be numbered for the first entry, the defect description shall include reference to the attachment
  - **A** – Continuation alpha for entries that require more than one attachment (A, B, C...)
- Graphics shall be clear and legible.
  - Attachment pages shall include a header with the file name, date of creation and name of person providing the information within the attachment to allow for the information to be available when printed. Repair graphics shall be clearly titled as such on the face of the document.

ND004563E3A.doc  
10 October 2009  
Bob James, NDT Insp.

**NDT Inspection**

ND004563E3B.doc  
10 October 2009  
Sam Holmes, MRB Engr.

**Entry 3 REPAIR**

4. **“Blue Print (B/P) Drawing No., Sheet No., and Zone No.”** - Document blueprint or model definition information needed to accurately locate defect on the part. Note the specific B/P sheet number and B/P zone. If not working to a B/P, Supplier must provide a sketch or photograph showing the defect location with measurements from known features. Photographs may require multiple frames to show the specific location of the defect.
5. **“Should Be Condition”** - Document the B/P “Should Be” condition citing the b/p dimensions and tolerances, Boeing P.S., PO requirements, etc. that is not compliant. Example: *“Part should be without gouge or crack per P.S. 23041.”* See additional guidelines in Section III on pages 21, 22, and 23.
6. **“Actual Condition”** - Document the actual (nonconforming) condition of the part or assembly in a clear manner to provide a complete understanding of the situation. See Section III for additional guidance.
  - a. If the cause of the defect is known or suspected, document the information to assist those evaluating the defect.
    - Example: *“Part checks with damage, one gouge 1.4” x 1.95” in size located in the .250 +/- .015” thick web 12” from aft EOP, and 24” from outboard EOP, gouge is .500” deep with irregular surface and also checks with a visible crack thru part at bottom of gouge in a forward to aft direction. Minimum thickness adjacent to damage is .259”. Note:*

*part was damaged when the spindle dropped during a power outage.”*  
 Note that this is one entry since all defects are contained in the same area and caused by the same damage. A dent and a crack in two different areas would be submitted as two entries.

Other Examples:

- 20 holes of the same B/P requirements and in the same area of a skin would be considered one entry.
- Two sets of holes in different areas of the skin would require two separate entries.
- A lug on a machined part that was “false cut” would be one entry even though multiple B/P dimensions are affected.

**Note: See Appendix B for defect description details required for specific defect types, documenting this information will facilitate a faster evaluation of the nonconformance.**

- b. Previous NDs of similar conditions may be referenced in the Reported Nonconformance following the Actual Condition to aid in evaluation, but the ND MUST NOT depend upon another document to explain the discrepancy.
- c. Should be / actual condition field may be duplicated (cut & paste) for multiple entries.
- d. Each defect type must be documented as a separate entry.
- e. Entry with multiple units/parts, document the actual defect for each unit/part (not a range for entire group.) For units/parts without serialization requirements, assign a temporary reference serial label for each unit/part, (examples, A, B, C... or 1, 2, 3...) to clearly define the condition of each unit/part.

7. Check the green “+” to add discrepancies.

D. Reported Nonconformance					
Please indicate partial results or changes or additional information on each applicable discrepancy number.					
	Discrepancy No.	City of Parts this Entry	Attached Graphic Sketch	Proposed Disposition Attached	Blueprint (B/P) Drawing No. Sheet No. and Zone
-	1	of 2		▼	
-	2	of 2		▼	
+	Should Be/Actual Condition				
-	1	of 2			
-	2	of 2			

8. Supplier may include a proposed disposition in Section D. Include the name and contact information of person providing the proposed disposition. (Optional, but may be required for Supplier with delegated Material Review Authority)

9. Selected suppliers that are supported by BSTL authorized Quality/Engineering MRB representatives at their facility, are authorized to disposition and close NCR conditions on-site. However, the following exceptions require submittal of the dispositioned NCR to the BSTL MRB for final processing:
- a. Scrapping of BSTL supplied material. Nonconformances (not caused by the Supplier, i.e., present on delivery) on Boeing supplied materials or products  
NOTE: A copy of the dispositioned NCR processed by the Material Review Board may be forwarded to the appropriate procurement agent to obtain replacement material.
  - b. Returning discrepant BSTL supplied material.
  - c. Performing orange, black striping or on assembly rework / repair (OARR) or shipping open NCR conditions for further work to be performed at BSTL.
  - d. Partial dispositions requiring further investigations/actions by BSTL MRB.

Save a copy of the completed MAC861MRB form. Email the completed MAC861MRB form and all associated graphics/ data files to the proper MRB group email noted on page 5 and include your Boeing Buyer as a Cc on the email.

**Processing Request** - Upon receipt of the MAC861MRB form at Boeing, MRB QA personnel will either approve or reject the request. If approved, the Supplier will be notified by e-mail of the Boeing assigned nonconformance number. If rejected, the Supplier will be notified with reasons for the rejection. The Supplier shall make all corrections and resubmit to Boeing.

# Tooling Rejection

## Form Completion:

### Section A Supplier Data:

1. Supplier Information: Enter Supplier name, contact name, phone / fax numbers and e-mail address.
2. The “Supplier Sequence or Rejection Document No.” block shall be used to record Supplier’s **mandatory** “Internal Nonconformance Document Number;” i.e., the Supplier rejection document on which the nonconformance was initially documented.

A. Supplier (or Initiator as applicable) Data			
Supplier Name <b>Required</b>		Contact Name <b>Required</b>	
Fax No. <b>Required</b>	Phone No. <b>Required</b>	Email <b>Required</b>	Supplier Sequence or Rejection Document No. <b>Required</b>

### Section B Charge Data:

1. Identify whom BSTL should charge for the rejection, select
  - a. “Above Named Supplier” (your company) if your company is responsible for the nonconformance.
  - b. “Other” if someone other than your company is responsible for the nonconformance and is to be charged for the rejection, provide information requested in “Other Chargeable Supplier Information” section of the form.
  - c. If Boeing is to be charged please state “Boeing” and the appropriate Boeing location, i.e., Boeing - St. Louis. **Note: A BSTL NCR is required for all nonconformances (not caused by the Supplier, i.e., present on delivery) on Boeing supplied materials or products.**
2. Check the appropriate box to denote the location of the nonconforming tools.
3. Provide the requested information on the physical location of the tooling.
4. **Purchase Order or Contract Number and line item number.** Enter the appropriate data for the tooling that is nonconforming. This is key information BSTL personnel loads into system and therefore must be correct. Failure to provide this information may delay the creation of the Supplier’s nonconformance document. If the PO number is not known or available, the contract number shall be used. When PO or Contract is unknown, “N/A” shall be entered in both “PO Number or Contract Number” and “PO Line Number” fields. **Note: Only 1 Purchase Order (PO) and Line item can be submitted per document.**
5. Enter “Contract Delivery Date” (if known).



B. Charge Data			
Who should be charged for this rejection?			
<input type="checkbox"/> Above Named Supplier <input type="checkbox"/> Other (please explain below)			
Other Chargeable Supplier Information (include vendor name, contact, phone, and explanation)			
Where is the current location of the part? <input type="checkbox"/> Above Named Supplier <input type="checkbox"/> Other (please explain below)			
Please Explain Other Location and Reason			
Purchase Order Number or Contract No.	Purchase Order Line No.	Contract Delivery Date	Ship Number

**Section C Rejected Tool Information**

1. **“Tool Code”** – Two to four characters at beginning of tool ID (AJ, AFT, CKF, BJ, DRP, etc.)
2. **“Basic Tool Number”** – Main tool number. (i.e. DRP **68AXXXXXX**-YYYY)
3. **“First Dash Number”** – Designator for left-hand/right-hand (i.e. **YYYY** from section C item 2)
4. **“Second Dash Number”** – if applicable
5. **“Design/Non-Design”** – “TD” at the end of the Tool ID indicates a Design tool. All others are Non-Design.
6. **“Unit”** – Numeric only. An original tool will be entered as Unit/Dup “0”.
7. **“Series”** – If applicable (Series follows immediately after Tool code, i.e. AJ2)
8. **“Model”** – Required field: enter the Model number as referenced on the purchase contract. To see examples, click the field title “Model No.”.
9. **“Complete Tool Number”** – Auto-populated based on entries 1 – 7.
10. **“Barcode”** – Found on tool. Important in identifying the tool correctly. (e.g. 3MXXXXX or 3VXXXXX)
11. **“Charge Number”** – Enter if known
12. **“Cage Code”** – Supplier Cage Code or Supplier Code
13. **“Detail Numbers”** – Enter all discrepant detail numbers

C. Rejected Tool Information							
Tool Code	Basic Tool No.	First Dash No.	Second Dash No.	Design/Non-Design	Unit	Series	Model <b>Required</b>
Complete Tool No.			Bar code (Part Name in MES)		Charge No.	Cage Code	
Detail Numbers							

**Section D Reported Nonconformance:**

1. **“Discrepancy No. or No.”** - Add the entry number and total of all discrepancies (i.e., 2 of 4). See instructions for adding additional discrepancies for section D on pg.12
2. **“Qty of Parts This Entry”** - Enter the number of parts rejected for this entry number only.
3. **“Attached Graphic”** Check this box if graphics or attached files are associated with this entry. To attach the graphics, click “Attach Files” at top of sheet.

- Graphics associated with discrepancies submitted for review (i.e. digital photos, sketches, etc.) may be any of these electronic formats: .PDF, .TXT, .DOC, .PPT, .XLS, .TIF, .JPG, or .GIF. The archiving program WINZIP should be used to bundle and compress those files and attachments that exceed 10Mb in total size.
- The following naming convention for attachments will be used to identify the attachment file(s). On the MAC861MRB form, the discrepancy or disposition text shall include references to the attachments by file name. For attachments that address multiple discrepancies, reference the attachment in each entry.
  - Name each attachment with a consistent numbering or naming system (Example, NDXXXXXEYA.doc, ND004563E3B.doc), Where:
    - **NDXXXXX** – **ND** (Nonconformance document) followed by the Supplier nonconformance record numeric digits **XXXXX**
    - **EY** – **E** (Entry) followed by the discrepancy number **Y**, attachments for multiple entries shall be numbered for the first entry, the defect description shall include reference to the attachment
    - **A** – Continuation alpha for entries that require more than one attachment (A, B, C...)

ND004563E3A.doc  
10 October 2009  
Bob James, NDT Insp.  
**NDT Inspection**

ND004563E3B.doc  
10 October 2009  
Sam Holmes, MRB Engr.  
**Entry 3 REPAIR**

- Graphics shall be clear and legible.
- Attachment pages shall include a header with the file name, date of creation and name of person providing the information within the attachment to allow

for the information to be available when printed. Repair graphics shall be clearly titled as such on the face of the document.

4. **“Blue Print (B/P) Drawing No., Sheet No., and Zone No.”** - Document blueprint or model definition information needed to accurately locate defect on the part. Note the specific B/P sheet number and B/P zone. Enter the tool detail number(s) for this discrepancy. If not working to a B/P, Supplier must provide a sketch or photograph showing the defect location with measurements from known features. Photographs may require multiple frames to show the specific location of the defect.
5. **“Should Be Condition”** - Document the B/P “Should Be” condition citing the b/p dimensions and tolerances, Boeing P.S., PO requirements, etc. that is not compliant.
6. **“Actual Condition”** - Document the actual (nonconforming) condition of the part or assembly in a clear manner to provide a complete understanding of the situation. See Section III for additional guidance.

Examples:

- Details 1, 2, 3, 4, and 5: S/B 1 of each detail. Actual: Missing Detail 5.
- Detail 1: S/B R/H configuration. Actual: Detail made to L/H configuration.
- Detail 1: Out of tolerance condition. S/B 20.000 +/-0.010 per AJ74XXXXXX Sheet 2B7. Actual: 20.030.

**Note: See Appendix B for defect description details required for specific defect types, documenting this information will facilitate a faster evaluation of the nonconformance.**

7. Supplier may include a proposed disposition in Section D. Include the name and contact information of person providing the proposed disposition. (Optional, may be required for Supplier with delegated Material Review Authority)
8. Fields may be duplicated (cut & paste) for multiple entries.
9. Contact MRB Inspection (ref Section I) for any additional information requests.

D. Reported Nonconformance					
Please indicate partial results or changes or additional information on each applicable discrepancy number.					
+	Discrepancy No.	Qty of Parts this Entry	Attached Graphic Sketch	Proposed Disposition Attached	Blueprint (B/P) Drawing No. Sheet No. and Zone
-	1 of 2				
-	2 of 2				
+	Should Be/Actual Condition				
-	1 of 2				
-	2 of 2				

**Send to Boeing** - After all data fields are complete and graphics attached, Save a copy of the MAC861MRB filled out form and all associated graphics and data files and attach to an email send to the proper MRB group email noted on page 5 and include your Boeing Buyer as a Cc on the email.

**Processing Request** - Upon receipt of the MAC861MRB form at Boeing, MRB QA personnel will either approve or reject the request..  
If approved, the Supplier will be notified by e-mail of the Boeing assigned nonconformance number  
If rejected, the Supplier will be notified with reasons for the rejection. The Supplier shall make all corrections and resubmit to Boeing.

### III. GUIDELINES FOR SUPPLIER ND WRITE-UPS

#### General Information:

Product definition and the defect description of the condition submitted on the MAC861MRB form shall be all that is needed to enable the BSTL MRB to understand the discrepancy and provide the permanent record of the nonconformance. The closed NCR is a record of the delivered product configuration. For this reason, it is important that nonconformances are clearly and accurately written, and contain enough information to allow the BSTL MRB to efficiently evaluate and disposition the NCR. In addition to the items noted below,

Reported nonconformance shall contain in the text of the defect description:

- “SHOULD BE” requirements & “ACTUAL” conditions
- Provide defect description detail requirements based on the defect type per Appendix B
- Enter the percentage of completion of failed part/assembly/tools, e.g. 25%, 90%, or 100% complete
- Indicate inspections completed to date
- Indicate if processing operations (e.g. anodize, prime, plating, etc.) have been performed
- Indicate remaining days of fabrication/processing to PO requirements (less MRB activity) to ship the part/tool

#### Communication Information:

If BSTL Quality/Engineering personnel were contacted prior to the MAC861MRB submittal, please include names and telephone numbers in Section C of the form and reference any BSTL Requirements Change Proposal (RCP) or Configuration Change Proposal (CCP) related to the condition documented on the form.

#### Material Rejections:

When parts/tools do not pass required conductivity or hardness test, The Supplier shall list conductivity/hardness test requirements values and the results for any/all specimens tested and indicate whether these values were accepted or rejected.

When test specimens (tensile, fracture toughness, etc.) are rejected, The Supplier shall list the test requirements and the values for rejected specimens along with values for any/all specimens that were accepted. Abnormalities with the test specimens or test procedure shall also be documented. Any excess specimens/stock that may exist for retest purposes shall be noted on the tag submittal.

Nonconforming raw materials shall not be incorporated into a part without an authorizing Boeing MRB document. Nonconforming Boeing furnished detail parts shall not be incorporated into an assembly without an authorizing Boeing MRB document.

**Additional Guidelines for Documentation:**

1. When a part/tool is rejected to a Supplier generated Drawing, The Supplier shall provide a copy of the Supplier generated Engineering Drawing, and a photo of the affected area, in addition to the MAC861MRB.
2. The correct product definition names shall be used in the defect description, i.e., longeron, stiffener, aileron, etc. – reference the product definition part list.
3. A sketch showing the nonconforming condition, plus its dimensions and location on the part/tool with orientation markings is recommended when text cannot adequately describe the condition.
4. In addition to a sketch, the use of a digital photographic (good quality) reproduction of the nonconforming condition and surrounding area is recommended. Photographs shall provide orientation markings, scale indicators, and multiple photographs may be required to orient the viewer to the defect location on the part/assembly/tool. A close-up photograph may also be helpful to adequately define the details of the defect.
5. Sketches and photographs shall include: file name, date, name of originator, document number, defect entry number, and orientation markings. Data must be typed or if handwritten must be legibly printed in upper-case letters using black ink with letters at least 1/8" in height. SIGNATURES may be written in cursive; however, they must be legible, and a printed name shall be placed under the written signature for clarification.
6. Engineering Drawing (blueprint) zones shall be noted for all discrepant dimensions. For model based defined parts, measurements from key features may be used to identify the location of the defect.
7. If parts are serialized, serial numbers shall be correlated to discrepant conditions. Nonconforming or discrepant conditions must be individually listed (Entry 1, 2, 3). When a number of parts have multiple discrepancies, a summary or table to relate parts to entries shall be used. Similar discrepancies on different parts should have the same numbers for entries. (Example; Entry 1 affects S/N parts A, C and D, Entry 2 affects S/N parts C and E, Entry 3 affects S/N parts A and B)
8. Undercuts and undersized conditions shall be reported as separate conditions. An undercut has visible edges and is usually caused by a cutter overrun. An undersized condition generally affects an entire surface, has little or no distinct edge, and is usually caused by tooling setup mislocation. Providing a thickness grid of the affected area will expedite the review of the ND.
9. Defects created by impact damage shall be reported using the appropriate damage code. The results of any inspection performed to identify extent of damage shall be documented on the ND. The cause of the damage shall be noted when known.
10. Provide specific information for each part. Reporting a range of thickness values for multiple discrepant conditions or parts is not acceptable. For example, if twenty parts should have a thickness of 0.150"  $\pm$ .010" and are checking between .100" and .139"

thick, the parts must be serialized and the minimum thickness of each part must be reported. The extent and orientation of the thickness changes must be recorded, such as, flange checks tapered with the minimum .100" thickness at free edge of the part tapering to .139" at fillet radius tangent for a length of 10" from rib at F.S. YYY to rib F.S. ZZZ.

11. For undersized conditions that are difficult to define (non-linear taper, for example), a grid showing the remaining thickness of material in and around the discrepant area must be reported. The grid size and spacing should be as required to define the condition's shape and tapers.
12. If the same undercut exists on two or more parts, the sketches noted on the attachments may be used with letters in place of firm dimensions. A table must then be added to the ND, relating the dimensions for each serial number to the part.

#### **IV. Return to Vendor Nonconformance Documents (RTV)**

If an NCR has been submitted to the Supplier for a discrepancy identified at Boeing, the Supplier shall comply with the disposition or if the defect/deficiency cannot be duplicated or verified, a request for "Revision to Current Tag" utilizing the MAC861MRB form must be initiated first and sent to Boeing MRB for further disposition. E-mail to: [mrb101@mw.boeing.com](mailto:mrb101@mw.boeing.com) (see Section I.)

**Note: Do not ship (parts) without prior written authority from Boeing MRB.**

#### **V. NONCONFORMANCE DOCUMENT REVISION**

A Supplier shall submit an MAC861MRB for a "Revision to Current Tag" for any of the following situations:

- a. Cannot comply with the NCR disposition
- b. Need to make corrections to a previously submitted MAC861MRB
- c. There has been a change to a prior condition (provide reason for change)
- d. Cannot duplicate the BSTL rejection of a part
- e. Additional defect discovered on part/assembly/tool
- f. Defect created while performing disposition

##### **1. Initiating A Revision Request**

To initiate a revision request, submit a new MAC861MRB form checking the appropriate reason for submittal box at the top of the form. Enter the appropriate

revision number and information in section C, and when available, note the NCR number for which the revision is requested.

**Note:** Guidelines for Supplier defect documentation is provided in Section III of this document.

## **2. Supplier Cannot Comply With The NCR Disposition Or When Revisions To The NCR Are Required.**

Submit a new MAC861MRB form checking the “Revision to Current Tag” block and enter appropriate revision number and information in Section C. Identify the applicable BSTL ND. Document why the disposition cannot be performed as defined.

**Note:** Guidelines for Supplier defect documentation is provided in Section III of this document.

## **3. Supplier Cannot Duplicate Rejection Of A BSTL Initiated NCR**

When the Supplier cannot duplicate or verify a BSTL initiated ND, the Supplier shall e-mail an MAC861MRB form marked “Revision to Current Tag” to the BSTL Material Review Supervisor, (reference Section I).

The Supplier shall **retain control of the part/tool** until further notification from the BSTL MRB. The Supplier shall document on the MAC861MRB form the test performed; furnish test results, plus any additional data that will facilitate the evaluation process at BSTL. Note: the revised MAC861MRB form will not be accepted without this additional data. Parts/tools shipped to BSTL without authorization may be returned to the supplier for further evaluation.

The receipt of a BSTL ND by the Supplier with a disposition of “no defect” (NDT) is authorization to return the part to BSTL per original the PO requirements.

## **4. Initiating A Change Of Charge**

Note: Supplier shall not request a CoC when submitting a Cannot Duplicate Notice of Revision

There are two ways a Supplier can initiate a change of charge (CoC):

1. External requests - for NCR tags that have been issued through ISIS or reported in BEST

External requests for CoC must be initiated through the BEST or ISIS system. The Supplier contests the nonconformance by pressing the Blue Diamond in BEST or the change of charge hyperlink within ISIS. Supplier must include



rationale for the CoC in clear concise language, including all pertinent details necessary to evaluate the validity of the request.

2. Internal requests - for NCR tags that have NOT hit BEST or ISIS yet

Internal requests for CoC are initiated by the supplier or Boeing personnel through the CoC input screen located on the St. Louis SQ home page; <http://sqdstl.ids.web.boeing.com/>. The initiator must include rationale for the CoC request in clear concise language, including all pertinent details necessary to evaluate the validity of the request.

## **5. Part/Tool Received At Incorrect Supplier**

All parts/tools that are received at an incorrect Supplier shall be placed in a designated bond area at that Supplier upon arrival. The Supplier shall review the enclosed Shipper to determine the Buyers name and telephone number and contact that Buyer for instructions.

- Parts/tools shall not be shipped without BSTL MRB authorization.
- The Buyer shall request the MRB crib to supersede the original NCR for update to a corrected shipper.
- If the part/tool is to be sent to an alternate Supplier the Buyer will negotiate shipping costs and MRB will send the updated instructions to the Supplier via Email.
- If the Buyer determines that the part/tool is to be returned to Boeing prior to shipment to the correct Supplier, a Partial disposition will be sent to the Supplier with instructions on shipment.

## **VI. BSTL Authorized Disposition**

The MAC861MRB document submitted by suppliers will be processed by the BSTL MRB in the BSTL nonconformance reporting system. BSTL MRB will notify the supplier of the resulting BSTL document number assigned to the submitted MAC861MRB form. Following review of the defect, the supplier will receive an authorized disposition in response to the nonconformance on a printout similar to the examples contained in Appendix A. A printout will also be enclosed with nonconforming parts/tools returned to the supplier for rework or repair.

This printout has several "Banners" which will show Discrepancy, Disposition, Supplier Code, Responsibility, QTY, and TAG Number.

In correspondence or telephone conversations, the supplier should refer to the BSTL document (tag) number referenced on the BSTL authorized disposition document.

## VII. PART PREPARATION

### 1. General Information:

In order for BSTL to properly control and process material reviewed parts, the parts must be identified as defined herein plus any instructions provided in the MRB disposition. For additional identification information and/or requirements, reference P.S. 16001 and MIL-STD-130.

### 2. Dispositioned Parts:

**Repair at the Supplier** - Rubber ink stamp each part per P.S. 16001 with the BSTL NCR number, serial number (if applicable), and acceptance stamp. Where practical, place the stamp in the area of the nonconformance.

**Use As Is** – Rubber ink stamp each part per P.S. 16001 with the BSTL NCR number, serial number (if any), and acceptance stamp. Where practical, place the stamp in the area of the nonconformance.

**No Defect** – No stamping of BSTL NCR number is required.

**Scrap** - No stamping is required. The part is to be rendered unusable at the Supplier for its intended purpose. Part(s) with a “Scrap” disposition shall not be reworked, or repaired for resubmittal to BSTL. Salvaging of usable details from scrapped assemblies must be defined by an authorized NCR disposition at the time the assembly is dispositioned as scrap. For BSTL supplied materials, BSTL will provide instructions for disposing of the scrapped material.

**Partial Dispositions** – Partial “Ship to Boeing” Rubber ink stamp NCR# in area of Part Number and Tag each part with the Partial Disposition tag(s) provided by BSTL and comply with the partial disposition and instructions in the NCR. Partial request for information or results document any requested rework or retest results on an MAC861MRB form marked “Partial Results” Note the NCR# in provided block and send to BSTL. If the partial disposition requests shipment to BSTL be sure to mark the shipping container and packing list with the NCR number, and “Attn: Supervisor, Material Review”. Material review parts/assemblies shall not be sent to BSTL in the same container as “good” parts.

**Orange or Black Stripe Parts (OARR)** - Rubber ink stamp each part per P.S. 16001 with the BSTL nonconformance document number, serial number (if any), and acceptance stamp. Where practical, place the stamp in the area of the nonconformance. Comply with the NCR disposition/Supplier guidelines and apply orange or black stripe label to part(s), and orange or black stripe label to shipping container.

Note: The BSTL provided cloth label MAC861DP, and container label MAC861DC must be used. If the supplier does not have these labels, contact your BSTL procurement agent.

## **Special Handling Requirements**

### **Parts:**

For the following dispositions: Partial, Orange Stripe, or Black Stripe (OARR), and/or when additional repair or action is to be accomplished at BSTL, the Supplier must include:

1. The NCR number shall appear on the shipment packing list. (For closed NDs, the NCR number shall NOT appear on the packing list.)
2. A copy of the dispositioned NCR (OPEN NDs ONLY).
3. Two NCR copies with the shipment of orange stripe parts.

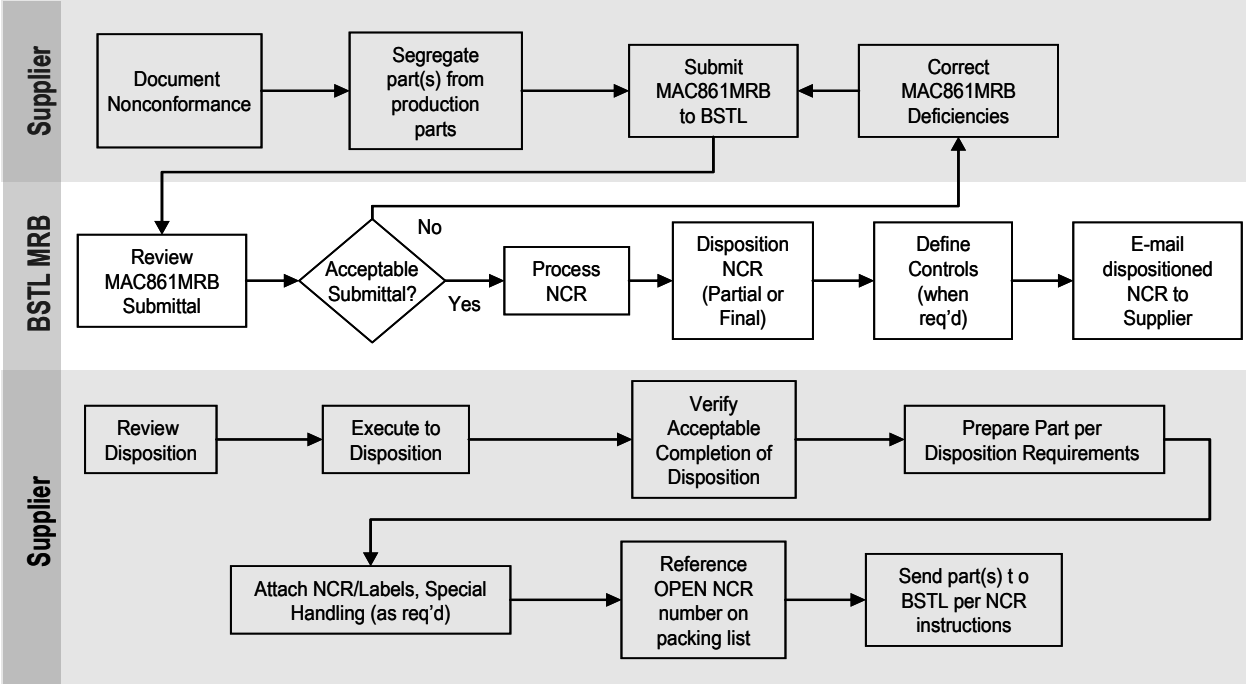
### **Tools:**

For temporary dispositions and/or when additional repair is to be accomplished at BSTL, the supplier must include the following:

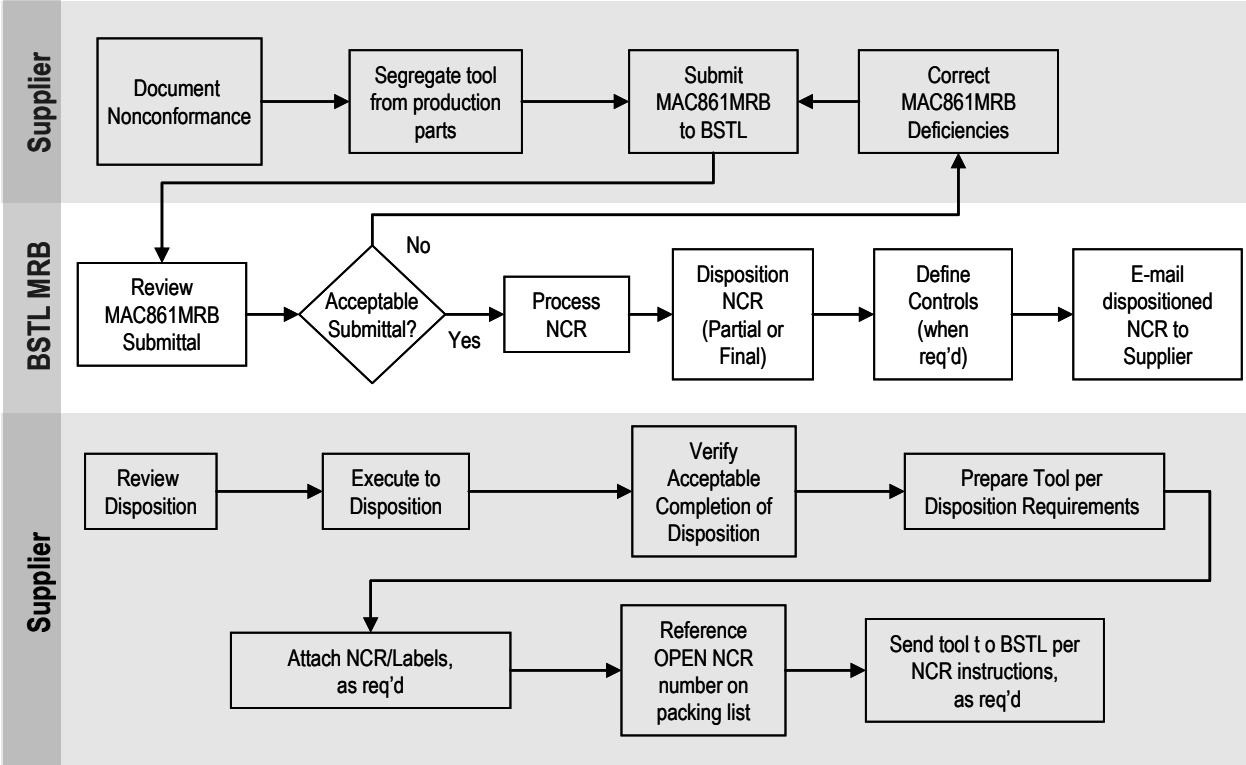
1. The NCR number shall appear on the shipment packing list. (For closed NDs, the NCR number shall NOT appear on the packing list.)
2. A copy of the dispositioned NCR (OPEN NDs ONLY).

## **VIII. SUPPLIER NONCONFORMANCE DOCUMENT PROCESS FLOW**

### **Process Flow for Parts/Assemblies**



**Process Flow Tools**



**IX. SUPPLIER CORRECTIVE ACTION**

Corrective action is the responsibility of the Supplier. The Supplier's corrective action process is subject to BSTL assessment. Repetitive nonconforming conditions, or isolated nonconforming conditions that are serious, may be subject to requests for Corrective Action. Suppliers shall comply with BSTL requests for Corrective Action.

For conditions that the Supplier believes are BSTL responsibility, the Supplier may request corrective action by BSTL via written request to their procurement agent.

**The forms and examples used in these guidelines will not be kept updated, see the Boeing Web site for the current revision.**

## **DEFINITIONS**

Within this document, the following acronyms / definitions apply:

BSTL - Boeing St. Louis

B/P - Blueprint or other product definition format

CAI – Critical Application Item

CSI - Critical Safety Item

DC - Durability Critical

DCT – Durability Critical Traceable

FC - Fracture Critical

FCT - Fracture Critical Traceable

FPR – Field Problem Report

I&R – Interchangeable and Replaceable

MC - Maintenance Critical

MRB - Material Review Board

NCR – BSTL nonconformance record created from the MAC861MRB form

ND – Nonconformance document

NOE – Notice of Escapement

MAC861MRB Form - form used to submit nonconformance information for creation of a Boeing St. Louis nonconformance document

Post Production – Term used for post-delivery of new production products, such as, Retro-fit activities, Modifications, Repair of Repairables activities

Product – Generic term representing any item related to the manufacture, modification or repair of a Boeing contracted product; such as, raw material, detail parts, sub-assembly, assembly, tool, tooling details, etc.

QDR – Quality Deficiency Report

ROD – Report of Discrepancy

RTV – Return to Vendor

SDR – Service Deviation Report

SQ - BSTL Supplier Quality

Supplier - Any supplier of products / services to BSTL, and/or initiator of an MAC861MRB to BSTL not directly fabricating or assembling product, i.e., Retrofit Mod Teams.

## **Appendix A**

### **Sample Forms and NCR Documents**

- 1) MAC 861MRB – Supplier Nonconformance Data Submittal Form  
Parts:
  - a) Initial Entry Page
  - b) Part Tag Form
  - c) Tool Form
  - d) Boeing Material Review Board Response Form
  
- 2) NCR - BSTL Nonconformance Document

MAC861MRB Form: a) Initial Entry Page



SUPPLIER NON-CONFORMANCE DATA  
Material Review - BDS St. Louis

SUPPLIER NONCONFORMANCE DATA  
DOCUMENT 861MRB  
Boeing Defense & Security St. Louis

Has the non conforming product been delivered to Boeing (or other Boeing designated location) per Purchase Contract?

- Yes       No

Select One of the Following:

- Part/Assembly Rejection  
 Tool Rejection



**MAC861MRB Form: b) Part Tag – for Rejections related to Detail Parts or Assemblies**



**SUPPLIER NON-CONFORMANCE DATA  
Material Review - BDS St. Louis**

Part Nonconformance  New Tag  Partial Results  Revision To Current Tag  Additional Info.

Boeing NCR No.

**A. Supplier (or Initiator as applicable) Data**

Supplier Name		Contact Name	
Fax No.	Phone No.	Email	Supplier Sequence or Rejection Doc. No.

**B. Charge Data**

Who should be charged for this rejection?  
 Above Named Supplier  Other (please explain below)

Other Chargeable Supplier Information (include vendor name, contact, phone, and explanation)

Where is the current location of the part?  Above Named Supplier  Other (please explain below)

Other Location of Part and Reason

Purchase Order Number or Contract No.	Purchase Order Line No.	Contract Delivery Date	Ship No.
---------------------------------------	-------------------------	------------------------	----------

**C. Non-conforming Part Information**

Failed Part Number		Failed Part Name	
Model No.	Charge No. (When Known)	Failed Part Serial No.	<input type="checkbox"/> N/A
Total Qty. Discrepant	Assembly Part No.	Assembly Serial No.	Revision No.

**D. Reported Nonconformance**

Please indicate additional information on applicable on each applicable discrepancy number.

	Discrepancy No.		Qty of Parts this Entry	Attached Graphic Sketch	Proposed Disposition Attached	Blueprint (B/P) Drawing No. Sheet No. and Zone
-	1	of	1	▼	▼	
+	Should Be/Actual Condition					
-	1	of	1			

**MAC861MRB Form:            Tool Form**



**SUPPLIER NON-CONFORMANCE DATA  
Material Review - BDS St. Louis**

Tool Nonconformance     New Tag     Partial Results     Revision To Current Tag     Additional Info.

Boeing NCR No.

**A. Supplier (or Initiator as applicable) Data**

Supplier Name		Contact Name	
Fax No.	Phone No.	Email	Supplier Sequence or Rejection Doc. No.

**B. Charge Data**

Who should be charged for this rejection?  
 Above Named Supplier     Other (please explain below)

Other Chargeable Supplier Information (include vendor name, contact, phone, and explanation)

Where is the current location of the part?     Above Named Supplier     Other (please explain below)

Please Explain Other Location and Reason

Purchase Order Number or Contract No.	Purchase Order Line No.	Contract Delivery Date	Ship Number
---------------------------------------	-------------------------	------------------------	-------------

**C. Rejected Tool Information**

Tool Code	Basic Tool No.	First Dash No.	Second Dash No.	Design/Non-Design <input type="checkbox"/>	Unit	Series	Model <b>Required</b>
Complete Tool No.			Bar code (Part Name in MES)		Charge No.	Cage Code	
Detail Numbers <input style="width: 100%; height: 20px;" type="text"/>							

**D. Reported Nonconformance**

Please indicate partial results or changes or additional information on each applicable discrepancy number.

+	Discrepancy No.	Qty of Parts this Entry	Attached Graphic Sketch	Proposed Disposition Attached	Blueprint (B/P) Drawing No. Sheet No. and Zone
-	1 of 1		<input type="checkbox"/>	<input type="checkbox"/>	
+	Should Be/Actual Condition				
-	1 of 1				

MAC861MRB Form: e) Boeing Material Review Board Response Form



SUPPLIER NON-CONFORMANCE DATA  
Material Review - BDS St. Louis

E. Boeing Disposition - MRB Request: <input type="radio"/> Approved <input type="radio"/> Rejected			
Please indicate Approved or Rejected.			
BEMSID	Name	Date	Comments

1) ND – Example BSTL Nonconformance document

October 18, 2007 8:40 AM

**Boeing - St. Louis  
Rejection Report (RR)**

---

NCR Number: RR6124323

---

Date Initiated: 02-OCT-2007	Status: CLOSED
Order Qty: 1	Find Department: 000PA
Part Number: GV372A1212-37	
Part Name: MAIN LDG GEAR W/UID	
Job Nbr:	
Job Name:	
End Item (Model):	Work Order Nbr:
Unit:	Reject Qty: 5
Work Center: MISC	Operation:
Work Area: B101MRB	Job Item Cost : 713ABC
Work Location:	PO Nbr/Item: S50512 /0010
Supplier Contract:	Supplier Code: 00307822
Property Number:	Supplier Name: PREMIER LANDING GEAR LTD.
External Doc: NCRGLO142385 HOTBD	
Hdr Part Serial Nbr(s):	Receiver Nbr:

---

Physical Disposition Summary

<u>Failed Part Number</u>	<u>Serial Number</u>	<u>Disp Code</u>	<u>Qty</u>
GV372A1212-37		RPR	5

October 18, 2007 8:40 AM

**Boeing - St. Louis  
Rejection Report (RR)**

---

NCR Number: RR6124323

---



---

Discrepancy Number: 1 Of 1

---

Responsibility: SUPPLIER  
Nbr Of Defects: 5  
Defect Qty: 5  
Feature Code: H09  
Zone:  
Door:  
X/BL Coord:  
Y/FS Coord:  
ZWL Coord:

Disc Graphics Exist:  
Supercedes NCR:  
Superceded By NCR:  
Preceding NCR:  
Followon NCR:  
Model/Dwg: N/A  
Dwg Sht/Zone:  
Ir Part:

Disc:  
Disc:  
Disc:  
Disc:

Ir Affected:

Tracking Requirements:

Failed/Reference Part Information

<u>Fail/Ref</u>	<u>Part Number</u>	<u>Serial Number</u>	<u>Part Name</u>	<u>Property Number</u>
F	GV372A1212-37	20675RD-564 DU	PISTON	

Discrepancy Text:

October 18, 2007 8:40 AM

**Boeing - St. Louis  
Rejection Report (RR)**

**NCR Number: RR6124323**

\*\*\*\*\* SUPPLIER CONTACT INFORMATION \*\*\*\*\*

SUPPLIER NAME: SUPPLIER ABC  
SUPPLIER DOC NUMBER: NCRGLO142385  
POINT OF CONTACT: John Q. Quality  
PHONE NUMBER: 1-631-231-1111  
FAX NUMBER: 1-631-231-2222  
E-MAIL: BILLSGEAR@PLGLTD.com

\*\*\*\*\* DISCREPANCY TRANSCRIBED FROM 861MRB FORM \*\*\*\*\*

Attached graphic/photo sketch (Y,N): N  
Blueprint (B/P) Drawing No., Sheet No., and Zone No.: GV372A1212-37. SHEET 2, C-20

Should be condition: 92.975/92.950 mm dia.

Actual condition: S/Nos. 20675RD-564 DU, 20675RD-566 DU, 20675RD-568 DU, 20675RD-569 DU & 20675RD-570 DU.

The diameter has been produced oversize and oval at 93.053/92.913 mm dia.

\*\*\*\*\* MRI REVIEW COMPLETE \*\*\*\*\*

REQUEST ENGINEERING REVIEW AND DISPOSITION

\*\*\*\*\*  
\*\*\*\*\* HOT BOARD REQUESTED L \*\*\*\*\*  
\*\*\*\*\* ( ) \*\*\*\*\*  
\*\*\*\*\*

Discrepancy / Disposition Signoffs:

<u>Group</u>	<u>User Id</u>	<u>Name</u>	<u>Signoff Date</u>
LE SUP MIS	1234567	Joe Engineer	10-OCT-2007
MRB101INT	1234579	Quincy Quality	02-OCT-2007

Disposition Number: 1

Disposition Type: FINAL	Functional Test Req: 0
Disposition Status: CLOSED	Waiver Deviation Nbr:
Disposition Code: RPR	Disp Graphics Exist: 1
Disposition Qty: 5	
Rework Order Id: Q0035606	

Disposition Text:  
Engineering Disposition:

For all S/N's:  
1) Machine pistons per PS 20710 to reduce "oval / oversized" condition to obtain a 92.975 mm / 92.913 mm diameter condition.

October 18, 2007 8:40 AM

**Boeing - St. Louis  
Rejection Report (RR)**

---

**NCR Number: RR6124323**

---

- 2) Temper etch inspect and penetrant inspect reworked areas per B/P requirements.
- 3) Re-shot peen reworked areas per B/P requirements.

Repaired pistons have no degradation of strength, life, fit, or function.

Coordinated with IPT strength engineer Sam Stress, 314-234-0101

Reference T45 FFCB log entry # PIS89 attached in graphics.

Joe Engineer, 314-234-0111  
External MRB Support

\*\*\*\*\* MRI CONCUR \*\*\*\*\*  
REQUEST DCMC REVIEW.

\*\*\*\*\* Disposition Complete \*\*\*\*\*  
Copy emailed to MD

\*\*\*\*\* WARNING: EXPORT CONTROLLED \*\*\*\*\*  
This document contains technical data whose export is restricted by the Arms Export Control Act ( Title 22, U.S.C. Sec 2751 et seq.) or Export Administration Act of 1979, as amended (Title 50, U.S.C.; App.2401, et seq.). Violations of these export laws are subject to severe criminal penalties. (DOD Directive 5230.25)

## Appendix B

### Defect Description: Detailed information required per defect type

In order to provide an efficient review cycle and create a stand alone nonconformance document, the information defined below must be provided in the defect description *in addition to* the standard information "Should Be" and "Actual" described in the Section III of this report IR 0451. Submittal of a complete defect description will allow engineering to quickly evaluate and develop a disposition. The following matrix was created by engineering to define the information they need to perform the analytical evaluation task.

How to use the Defect Matrix:

1. Find the "Defect Code" "Defect Name" or "Defect Definition" that best describes the condition to be submitted.
2. Find the minimum additional required data needed to describe the condition in "Data Needed to Define Condition".
3. Examples of discrepancy text are shown following the defect codes. These example formats may be populated with the nonconformance information and copied into page 2 of the MAC861MRB form to aid in writing the discrepancy. Note: Most entries in the discrepancy examples have "(PART NO., PART NO.)" text included. Please update this text to include the actual part number (with b/p dash number) of the discrepant part. When a condition affects multiple parts (such as a hole passing through two or more parts), include the part/dash number of each part affected.
4. Provide data listed in "Data Needed to Define Condition" in the nonconformance description submitted MAC 861MRB form.

Include any other information that will better describe the condition under the "ADDITIONAL INFORMATION" banner. For example, when multiple parts are affected, assign a serial number to each part and document the actual data for each serial numbered part.

When know, enter the causal information, as this may impact evaluation requirements.



Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
A00	<b>ASSEMBLY DEFECTS</b>		
A01	EXCESS GAP:	Excess or insufficient space between mating and/or butting surfaces or parts. Note: to be used only when A28 Structure Gap, A29 Panel Gap, A30 Butt Gap do not apply.	List all parts involved. Maximum width of gap. B/P gap allowable. Length of defect. Location of defect. Orientation of defect.
A05	OVERLAP:	Parts that extend over another.	List all parts involved. Amount of overlap. B/P overlap allowable (typical. s/b zero) Length of overlap. Location of Defect. Orientation of Defect Direction of defect w/respect to airstream and water flow
A11	DISTORTION:	Ply filament crooked pulled, wavy, separated, etc. to filament weave direction exceeding requirements. (Do not use for transparencies-see P02.)	List all parts involved. B/P part thickness in this area. Actual part thickness in this area. Area (length x width) with condition. NDT performed. Location on assy If Composite materials: multiple plies or surface ply only?
A14	ALIGNMENT/MISMATCH:	Parts not aligning or matching with mating surfaces and/or offset between butt welded surfaces. (Do not use for machining mismatch-see N27)	List all parts involved. How far from B/P alignment. B/P allowable alignment/spline deviation. Length and Direction of Misalignment. Location of Defect. Direction of defect w/respect to airstream and water flow
A15	CLEARANCE:	Improper distance between movable or stationary parts creating riding and/or chafing conditions. Having less than min b/p clearance requirements. (do not use for electrical or tubing clearance-see E15 or T03.)	List all parts involved. B/P clearance tolerance. Riding by how much. Length of riding cond. Direction of riding condition. Location on assy. Direction of defect w/respect to airstream and water flow
A17	PRELOAD:	Excess force required to align or spline parts.	List all parts involved. B/P force allowed. (Typical. Ref. PS19000) Actual force required to align/spline part. Location where force is applied.
A20	OIL CAN:	Wavy or buckled surface which when finger pressure is applied will move distorted area away from original location but will pop or spring back when finger pressure is released.	List all parts involved. Location of Defect.
A22	MAGNETISM:	Excess residual magnetism in part(s)	List all parts involved. B/P magnetic reading. Actual reading. Location on assy.

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
A24	MISSING:	Part or component was not installed in assembly.	List all parts involved. B/P location with missing part.
A25	MISLOCATION:	Mislocated part(s).	List all parts involved. How far from B/P location. Direction of mislocation.
A26	AXIAL OR RADIAL MOVEMENT:	Excess movement (includes bearings).	List all parts involved. B/P allowable movement Actual movement. Location on assy.
A27	PROOF LOAD:	failed proof load (includes bearings).	List all parts involved. B/P proof load s/b. Actual load reading.
A28	STRUCTURE GAP:	Structure to structure gaps.	List all parts involved. B/P allowable gap. Max/min width of gap. Length of gap. Specific location on assy Denote if b/p allows a shim has the allowable been tried
A29	PANEL GAP:	Panel/skin/door(s) to structure gaps.	List all parts involved. B/P allowable gap. Max/min width of gap. Length of gap. Location on assy. Denote if b/p allows a shim has the allowable been tried
A30	BUTT GAP:	Butt gaps between panels/skins/doors.	List all parts involved. Maximum width of gap. B/P gap allowable. Length of defect. Location of defect.
<b>B00</b>	<b>BONDING / COMPOSITE DEFECTS</b>		
B01	UNBOND	Lack of adhesion to a bonding surface.	Part numbers for all bonded details Location of unbond. Size of unbond. Total thickness of parts at unbond. Depth of unbond
B04	CORE	Core damage such as: blown, condensed, crushed, cut, distorted, etc.	Size of defect(length x width) Specific location of defect. Depth of defect. Type of defect (i.e. blown,, crushed, cut, distorted, contaminated, etc.)
B33	VOIDS	Area of Assembly lacking material. See B20	Specific location on part. Size of void (length x width). Depth of void. Total thickness of parts at void
B48	THICKNESS VARIATION	Improper Modification or Alteration of thickness.	B/P thickness Actual thickness Size of area that is outside b/p thickness. Cause of defect (i.e. missing plies, plies sanded through, etc.)

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
B50	TIME TO TEMP	Material not meeting ambient or cured requirements.	Cure temp. Actual temp. How long into cure cycle did temp deviate from required temp How long was temp above or below required temp. Include results of any process control specimen testing that is representative of defective part
C00	<b>CONTAMINATION DEFECTS</b>		
C03	DIRT, GREASE, OR CHIPS IN SEALER	Dust, mud, soil, metal chips in sealer, etc. found on material and/or parts.	Number of parts affected (mating parts) List part numbers of affected parts. Location on parts. Describe contaminating material
C05	FUEL	Water, Freon, etc. exceeding maximum limits per PPM	Number of parts affected (mating parts) Tank or fuel line contamination found. Location on parts. Describe contaminating material Input B/P and actual PPM readings.
C06	HYDRAULIC	Water, Freon, metal chips etc. exceeding maximum limits per PPM	Number of parts affected (mating parts) Hydraulic line/reservoir contamination found. Location on parts. Describe contaminating material Input B/P and actual PPM readings.
C07	OXYGEN	Foreign material found in oxygen lines and/or systems	Number of parts affected (mating parts) Line or system contamination found. Location on parts. Describe contaminating material
D00	<b>DAMAGE DEFECTS</b>		
D01	BENT	Curve, crooked, angular shape or form exceeding blueprint requirements	Nature of the bend (smooth radius, creased, etc.) Does the bent area cut across or pass through other features of the part (joggles, beads, etc.). How wide is the bent area. How far is the material bent (inches or degrees) Will the condition affect operations such as pressure check or trial fit. Has NDT been performed? Probable cause of damage Denote fasteners in area of damage
D02	BROKEN	Fractured into two (2) or more pieces, shattered.	Type of defect causing break: (crack, tear, abrasion, other) Feature affected: (flange, web, stiffener, radius) Location and size of defect on part. Probable cause of damage

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
D08	DENT	Depression in part and/or material.	Nature of the dent (sharp edges, creased, etc.). Surface condition of dent (is it galled, checked, or dimpled). Will the condition affect operations such as pressure check or trial fit? Does the dented area cut across or pass through other features of the part (joggles, beads, etc.) Probable cause of damage
D13	SCRATCH, NICK, OR CHIP  CORROSION & GOUGES	Shallow cut, mark, notch or indentation on a surface (incl. tool marks in part). Do not use for transparencies - See Cat. P  Corrosion and gouges due to service usage damage	Type of defect: (Scratch, nick, chip, other) Feature affected: (flange, web, stiffener, radius) Location and size of defect on part, minimum thickness in the defect area and the surrounding b/p area Is the defect through the anodize, coating, or cladding? Actual thickness measurements adjacent to damaged area, Pictures or sketches of damage
E00	<b>ELECTRICAL DEFECTS</b>		
E08	Circuit Conductors	Scratches, ruptures, Gouges, burns	Describe damage. Length and Width. Ref: Boeing SRP1751-R1, Supplier is to recommend a repair procedure: "Repair per IPC7721A Para 3.5.2" or specify other.
E08	Circuit Conductors	Defective plated thru hole	Describe damage Ref: Boeing SRP1752-R1, Supplier is to recommend a repair procedure: "Repair per IPC7721A Para 3.3.1" or specify other.
E08	Circuit Conductors	Missing or Severely Damaged Plated through holes.	Describe as missing or extent of damage. Ref: Boeing SRP1752-R2, Supplier is to recommend a repair procedure: "Repair per IPC7721A Para 3.3.2" or specify other.
E08	Circuit Conductors	Eyelet Defect	Describe damage Ref: Boeing SRP1752-R3 Supplier is to recommend a repair procedure: "Repair per IPC 7721A Para 5.1, 5.2, 5.3" or specify other.
E08	Circuit Conductors	Lifted Pad/Damaged Pad <i>Note: IPC 7721A refers to a pad as a land</i>	Describe damage. Ref: Boeing SRP1753-R1 Supplier is to recommend a repair procedure Repair per IPC 7721A Para 4.4.1 or 4.4.2 or specify other.
E08	Circuit Conductors	Lifted Circuit	Length of lifted portion. Ref: Boeing SRP1753-R2 Supplier is to recommend a repair procedure Repair per IPC 7721A Para 4.1.1 or 4.1.2 or specify other.
E08	Circuit Conductors	Minor scratches and nicks	Describe damage. Recommend a repair procedure same as or similar to Boeing SRP1754-R2.
E08	Circuit Conductors	Circuit Pad Missing or Badly Damaged <i>Note: IPC 7721A refers to a pad as a land</i>	Describe damage Ref: Boeing SRP1754-R3 Supplier is to recommend a repair procedure: "Repair per IPC 7721A Para 4.5.1 or 4.5.2" or specify other.

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
E08	Circuit Conductors	Conductor missing a section or is Badly Damaged Between circuit pads. <i>Note: IPC 7721A refers to a pad as a land.</i>	Describe Length of damage. Ref: Boeing SRP1754-R4 Supplier is to recommend a repair procedure: "Repair per IPC 7721A Para 4.2.1 or 4.2.2" or specify other.
E08	Circuit Conductors	Open Circuit path	Describe length of damage Ref: Boeing SRP1754-R5 Supplier is to recommend a repair procedure: "Repair per IPC 7721A Para 4.2.4 or 4.2.5" or specify other. Supplier is to specify endpoints for circuit attachment.
E08	Circuit Conductors	Edge Damage	Describe damage with dimensions Ref: Boeing SRP1751-R3 Supplier is to recommend a repair procedure: "Repair per IPC 7721A Para 3.5.3".
E08	Circuit Conductors	Cracks or Separations in Conductor	Describe Length of damage. Ref: Boeing SRP1754-R1 Supplier is to recommend a repair procedure Repair per IPC 7721A Para 4.2.3 or specify other
E08	Circuit Conductors	Lifted surface mount pad	Give dimensions of lift. Ref: SRP1753-R3 Supplier is to recommend a repair procedure: "Repair per IPC 7721A Para 4.7.1, 4.7.2" or specify other
F00	<b>FASTENER DEFECTS</b>		
F02	COTTER PINS/SAFETY WIRE MISSING	Missing cotter pin(s) or safety wire	B/P type cotter pin /safety wire. Number pins missing.
F03	COTTER PINS/SAFETY WIRE INSTL. IMPROPER	Improper installation of Cotter Pin or Safety Wire.	Describe installation relative to PS.
F07	MISSING FASTENER	Absence of fastener	No. of fasteners missing. Locations on assembly. Type of fastener. Size of fastener b/p countersink depth, if applicable
F16	BLIND BOLT; CRACKED / DAMAGED	Blind Bolt CRACKED / DAMAGED during Installation	No. of Fasteners with Condition. Location of Crack/Damage on Fastener. Size of Fastener
F17	BLIND RIVET; CRACKED / DAMAGED	Blind rivet CRACKED / DAMAGED during installation.	No. of Fasteners with Condition. Location of Crack/Damage on Fastener. Size of Fastener
F18	BOLT/SCREW; CRACKED / DAMAGED	Bolt/Screw CRACKED / DAMAGED during installation.	No. of Fasteners with Condition. Location of Crack/Damage on Fastener. Size of Fastener
F19	HI-LOK; CRACKED / DAMAGED	Hi-Lok CRACKED / DAMAGED during Installation	No. of Fasteners with Condition. Location of Crack/Damage on Fastener. Size of Fastener

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
F20	LOCKBOLT; CRACKED / DAMAGED	Lockbolt CRACKED / DAMAGED during Installation	No. of Fasteners with Condition. Location of Crack/Damage on Fastener. Size of Fastener
F21	MILSON; CRACKED / DAMAGED	Milson CRACKED / DAMAGED during Installation	No. of Fasteners with Condition. Location of Crack/Damage on Fastener. Size of Fastener
F22	PLATENUT; CRACKED / DAMAGED	Platenut CRACKED / DAMAGED during Installation	No. of Platenuts with Condition. Location of Crack/Damage on Platenuts. Size of Platenuts
F24	SOLID RIVET; CRACKED / DAMAGED	Solid Rivet CRACKED / DAMAGED during Installation (set mark on head, etc.)	No. of Fasteners with Condition. Location of Crack/Damage on Fastener. Size of Fastener
F25	TAPER LOCK; CRACKED / DAMAGED	Taper Lock CRACKED / DAMAGED during Installation	No. of Fasteners with Condition. Location of Crack/Damage on Fastener. Size of Fastener
F26	BLIND BOLT; DEFECTIVE	Blind bolt itself is defective, not the installation of the blind bolt.	No. of Fasteners with condition. Nature of Defect. Size of Fastener
F27	BLIND RIVET; DAMAGED	Blind rivet itself is defective, not the installation of the blind rivet.	No. of Fasteners with condition. Nature of Defect. Size of Fastener
F28	BOLT/SCREW; DEFECTIVE	Bolt/Screw itself is defective, not the installation of the blind rivet.	No. of Fasteners with condition. Nature of Defect. Size of Fastener
F29	HI-LOK; DEFECTIVE	Hi-Lok itself is defective, not the installation.	No. of Fasteners with condition. Nature of Defect. Size of Fastener
F30	LOCKBOLT; DEFECTIVE	Lockbolt itself is defective, not the installation.	No. of Fasteners with condition. Nature of Defect. Size of Fastener
F31	MILSON; DEFECTIVE	Milson itself is defective, not the installation.	No. of Fasteners with condition. Nature of Defect. Size of Fastener
F32	PLATENUT; DEFECTIVE	Platenut itself is defective, not the installation.	No. of Platenuts with condition. Nature of Defect. Size of Platenuts
F34	SOLID RIVET; DEFECTIVE	Solid Rivet itself is defective, not the installation.	No. of Fasteners with condition. Nature of Defect. Size of Fastener
F35	TAPER LOCK; DEFECTIVE	Taper Lock itself is defective, not the installation.	No. of Fasteners with condition. Nature of Defect. Size of Fastener
F36	BLIND BOLT; FLUSHNESS	Flushness Condition (subflush or high fastener) on a blind bolt.	No. of fasteners with Condition. Location of subflush fasteners on part. Amount of Deviation from Flush. Is fastener high or low to moldline? Record Should Be flush within ____ (max allowable per b/p).

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
F38	BOLT/SCREW; FLUSHNESS	Flushness Condition (subflush or high fastener) on a Bolt/Screw.	No. of fasteners with Condition. Location of subflush fasteners on part. Amount of Deviation from Flush. Is fastener high or low to moldline? Record Should Be flush within_____ (max allowable per b/p).
F39	HI-LOK; FLUSHNESS	Flushness Condition (subflush or high fastener) on a Hi-Lok.	No. of fasteners with Condition. Location of subflush fasteners on part. Amount of Deviation from Flush. Is fastener high or low to moldline? Record Should Be flush within_____ (max allowable per b/p).
F40	LOCKBOLT; FLUSHNESS	Flushness Condition (subflush or high fastener) on a Lockbolt.	No. of fasteners with Condition. Location of subflush fasteners on part. Amount of Deviation from Flush. Is fastener high or low to moldline? Record Should Be flush within_____ (max allowable per b/p).
F41	MILSON; FLUSHNESS	Flushness Condition (subflush or high fastener) on a Milson.	No. of fasteners with Condition. Location of subflush fasteners on part. Amount of Deviation from Flush. Is fastener high or low to moldline? Record Should Be flush within_____ (max allowable per b/p).
F43	SOLID RIVET; FLUSHNESS	Flushness Condition (subflush or high fastener) on a Solid Rivet.	No. of fasteners with Condition. Location of subflush fasteners on part. Amount of Deviation from Flush. Is fastener high or low to moldline? Record Should Be flush within_____ (max allowable per b/p).
F44	TAPER LOCK; FLUSHNESS	Flushness Condition (subflush or high fastener) on a Taper Lock.	No. of fasteners with Condition. Location of subflush fasteners on part. Amount of Deviation from Flush. Is fastener high or low to moldline? Record Should Be flush within_____ (max allowable per b/p).
F45	BLIND BOLT; HEAD GAP	Head gap condition on a blind bolt	No. of Fasteners with Condition. Location of fasteners with Head/Collar/Washer gap on part(s). Size of Fastener. Condition of hole. Record Max gap allowable as "Should Be" condition.
F46	BLIND RIVET; HEAD GAP	Head gap condition on a blind rivet.	No. of Fasteners with Condition. Location of fasteners with Head/Collar/Washer gap on part(s). Size of Fastener. Condition of hole. Record Max gap allowable as "Should Be" condition.
F47	BOLT/SCREW; HEAD GAP	Head gap condition on a Bolt/Screw.	No. of Fasteners with Condition. Location of fasteners with Head/Collar/Washer gap on part(s). Size of Fastener. Condition of hole. Record Max gap allowable as "Should Be" condition.
F48	HI-LOK; HEAD/COLLAR/WASHER GAP	Head/Collar/washer gap condition on a Hi-Lok.	No. of Fasteners with Condition. Location of fasteners with Head/Collar/Washer gap on part(s). Size of Fastener. Condition of hole. Record Max gap allowable as "Should Be" condition.

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
F49	LOCKBOLT; HEAD/COLLAR GAP	Head/Collar gap condition on a Lockbolt.	No. of Fasteners with Condition. Location of fasteners with Head/Collar/Washer gap on part(s). Size of Fastener. Condition of hole. Condition of hole. Record Max gap allowable as "Should Be" condition.
F51	SOLID RIVET; HEAD GAP	Head gap condition on a Solid Rivet.	No. of Fasteners with Condition. Location of fasteners with Head/Collar/Washer gap on part(s). Size of Fastener. Condition of hole. Record Max gap allowable as "Should Be" condition.
F52	TAPER LOCK; HEAD GAP	Head gap condition on a Taper Lock.	No. of Fasteners with Condition. Location of fasteners with Head/Collar/Washer gap on part(s). Size of Fastener. Condition of hole. Record Max gap allowable as "Should Be" condition.
F53	SIZE OF FASTENER	Fastener is the wrong size or grip length	No. of fasteners wrong size or grip. Locations on assembly. Type of fastener. B/P size of fastener
F54	HI-LOK; WRONG COLLAR	Hi-Lok installed with wrong collar.	No. of Fasteners with condition. Collar type installed. Size of Fastener
F55	LOCKBOLT; WRONG COLLAR	Lockbolt installed with wrong collar.	No. of Fasteners with condition. Collar type installed. Size of Fastener
F56	WRONG FASTENER	wrong fastener installed or provided	No. of fasteners wrong. Locations on assembly. Type and size of fastener provided/installed. B/P size and type of fastener
F57	BLIND BOLT; INSTL. DEFECTIVE	Installation of a blind bolt is defective (short/long stem)	No. of Fasteners with condition. Nature of installation defect. Size of Fastener
F58	BLIND BOLT; INSTL. INCOMPLETE	Incomplete installation of a blind bolt (corrosion protection missing, etc.)	No. of Fasteners with condition. Step/process not performed during installation. Size of Fastener
F59	BLIND RIVET; INSTL. DEFECTIVE	Installation of a blind rivet is defective (short/long stem)	No. of Fasteners with condition. Nature of installation defect. Size of Fastener
F60	BOLT/SCREW; INSTL. DEFECTIVE	Installation of a Bolt/Screw is defective (short/long stem)	No. of Fasteners with condition. Nature of installation defect. Size of Fastener
F61	BOLT/SCREW; INSTL. INCOMPLETE	Incomplete installation of a Bolt/Screw (corrosion protection missing, etc.)	No. of Fasteners with condition. Step/process not performed during installation. Size of Fastener
F62	HI-LOK; INSTL DEFECTIVE	Installation of a Hi-Lok is defective (short/long pin, thread protrusion)	No. of Fasteners with condition. Nature of installation defect. Size of Fastener
F63	HI-LOK; INSTL INCOMPLETE	Incomplete installation of a Hi-Lok (wrong no. of washers, not torqued, etc.)	No. of Fasteners with condition. Step/process not performed during installation. Size of Fastener
F64	LOCKBOLT; INSTL DEFECTIVE	Installation of a Lockbolt is defective (short/long pin, thread protrusion)	No. of Fasteners with condition. Nature of installation defect. Size of Fastener



Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
F65	PLATENUT; INSTL. DEFECTIVE	Installation of platenut is defective (clocked wrong, etc.)	No. of Platenuts with condition. Nature of installation defect. Size of Platenuts
F66	SOLID RIVET; INSTL DEFECTIVE	Installation of a Solid Rivet is defective (under/over driven, rivet head: high, flat, bent, etc.)	No. of Fasteners with condition. Nature of installation defect. Size of Fastener
F67	TAPER LOCK; INSTL DEFECTIVE	Installation of a Taper Lock is defective (thread protrusion, etc.)	No. of Fasteners with condition. Nature of installation defect. Size of Fastener
F68	FASTENER INACCESSIBILITY	Unable to install fastener due to inaccessibility	No. of fasteners inaccessible. Locations on assembly. Type of fastener. Size of fastener
F69	INSTALLATION REVERSED	fastener installed on wrong side of assembly	No. of Fasteners with condition. Correct orientation. Size of Fastener
F71	EDDIE-BOLT 2; CRACKED/DAMAGE	Eddie-bolt CRACKED / DAMAGED during installation.	No. of Fasteners with Condition. Location of Crack/Damage on Fastener. Size of Fastener
F72	EDDIE-BOLT 2; DEFECTIVE	Eddie-bolt itself is defective, not the installation of the blind rivet.	No. of Fasteners with condition. Nature of Defect. Size of Fastener
F73	EDDIE-BOLT 2; FLUSHNESS	Flushness Condition (subflush or high fastener) on a Eddie-bolt.	No. of fasteners with Condition. Location of subflush fasteners on part. Amount of Deviation from Flush. Is fastener high or low to moldline? Record Should Be flush within_____ (max allowable per b/p).
F74	EDDIE-BOLT 2; HEAD/COLLAR GAP	Head/collar gap condition on a Eddie-bolt.	No. of Fasteners with Condition. Location of fasteners with Head/Collar/Washer gap on part(s). Size of Fastener. Condition of hole. Record Max gap allowable as "Should Be" condition.
F75	EDDIE-BOLT 2; INSTL. DEFECTIVE	Installation of a Eddie-bolt is defective (short/long stem)	No. of Fasteners with condition. Nature of installation defect. Size of Fastener
F76	EDDIE-BOLT 2; INSTL. INCOMPLETE	Incomplete installation of a Eddie-bolt (corrosion protection missing, collar lobes not fully swaged, etc.)	No. of Fasteners with condition. Step/process not performed during installation. Size of Fastener
F77	EDDIE-BOLT 2; WRONG COLLAR	Eddie-bolt installed with wrong collar.	No. of Fasteners with condition. Collar type installed. Size of Fastener
F78	HI-SET; INSTL DEFECTIVE	Defective installation (improper upset dia or height, clinched, etc.)	No. of Fasteners with condition. Nature of installation defect. Size of Fastener
F79	HI-SET; CRACKED / DAMAGED	Hi-set CRACKED / DAMAGED during Installation	No. of Fasteners with Condition. Location of Crack/Damage on Fastener. Size of Fastener
F80	HI-SET; DEFECTIVE	Hi-set itself is defective, not the installation.	No. of Fasteners with condition. Nature of Defect. Size of Fastener

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
F81	HI-SET; FLUSHNESS	Flushness Condition (subflush or high fastener) on a Hi-set.	No. of fasteners with Condition. Location of subflush fasteners on part. Amount of Deviation from Flush. Is fastener high or low to moldline? Record Should Be flush within _____ (max allowable per b/p).
F82	HI-SET; HEAD GAP	Head gap condition on a Hi-set.	No. of Fasteners with Condition. Location of fasteners with Head/Collar/Washer gap on part(s). Size of Fastener. Condition of hole. Record Max gap allowable as "Should Be" condition.
G00	<b>GD&amp;T DEFECTS</b>		
G01 thru G19	GD&T defects	Defect and/or out of tolerance conditions on B/P GD&T items.	Number of parts affected (mating parts) List affected parts. Location on parts. GD&T Item failed. B/P GD&T tolerance Actual GD&T reading Size of area out of tolerance Feature of part discrepant (i.e. flange, we, etc.) Measurements of material modifiers (MMC or LMC) related features
H00	<b>HOLE DEFECTS</b>		
H01	CLOGGED HOLES	Hole obstruction due to foreign material.	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx) Material clogging hole (if known). B/P fastener type
H02	DEPTH OF HOLE	Defects pertaining to the depth of a hole	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx Dia x xxx deep) Present actual hole size (xxx dia x xxx deep) Installed fastener type (if known)
H03	EDGE DISTANCE	Insufficient distance from the CENTER of a hole to the edge of a part. Not to be used for GD&T issues.	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx Dia) B/P Edge Distance (xxx +/- .xxx) Actual Edge Distance (xxx +/- .xxx) Installed fastener type (if known) Thickness of part
H04	ELONGATED HOLE	Egg-shaped or out of round hole. Not to be used for GD&T issues.	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx Dia) Present actual hole size (xxx Major dia x xxx Minor dia)(note: Orientation of elongation. (i.e. along length of part, across flange, etc.) Installed fastener type (if known) Thickness of part

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
H05	LOCATION OF HOLE	Hole not placed in B/P or proper location. Use for location of any hole type incl. GD&T.	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx Dia) Actual hole size (xxx) Edge Distance for misplaced hole(s) (xxx ) Center to center spacing to nearest B/P hole (xxx) Installed fastener type (if known)
H06	MISSING HOLE	Hole is missing from B/P location of pattern.	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx) B/P hole location B/P fastener type
H09	OVERSIZED HOLE	Hole is too large. Not for GD&T circularity	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx) Actual hole size (xxx +/- .xxx) B/P fastener type Part thickness
H15	COUNTERSINK	Countersink of holes are too deep (knife edge), too shallow, elongated, or has damage (chatter, nicks, etc.) that prevents fasteners to lie flush.	Number of csk's affected Number of parts affected (mating parts) List part numbers of affected parts. B/P csk size (xxx +/- .xxx Dia x xxx deep) Present actual csk size Damage present (chatter, nicks, etc.) Location of CSK on part(s) Thickness of part
H16	DOUBLE DRILLED HOLE	Hole or holes contacting or intersecting each other.	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx Dia) Present actual hole size (xxx Major dia x xxx Minor dia)(note: Tear out between holes (if any) Orientation of double drill (i.e. along length of part, across flange, etc.) Installed fastener type (if known) Location of hole on part(s) Part thickness
H17	ALIGNMENT OF HOLES	Holes through multi-layers of materials not aligning (incl. misalignment of holes in mating parts)	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx) Amount of misalignment B/P fastener type
H20	INSIDE OF HOLE DAMAGE	Spiral cuts (rifling) and/or galled condition on edges of inside of holes, wedge like damage.  CORROSION AND/OR GOUGES FROM SERVICE USAGE.	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx Dia) Depth of damage (xxx ) Nature of damage Installed fastener type (if known)

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
H21	TAPERED HOLE	Hole(s) taper from larger to smaller circumference throughout length.	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx Dia) Actual Large Dia. Actual small Dia. Side of part with large dia. Installed fastener type (if known)
H22	EXTRA HOLE	Hole(s) incorporated not defined by Engineering requirements	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. Extra hole size (xxx +/- .xxx Dia) Edge Distance for Extra hole(s) (xxx ) Center to center spacing to nearest hole (xxx) Installed fastener type (if known)
H23	HOLE SPACING	Incorrect hole spacing in a pattern.	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx Dia) B/P hole location B/P center to center spacing (xxx) Actual center to center spacing to nearest B/P hole (xxx) Installed fastener type (if known)
H24	COUNTERBORE/SPOTFACE	Diameter or depth of c'bore/spotface exceeds allowable tolerance.	Number of c'bore/spotface affected Number of parts affected (mating parts) List part numbers of affected parts. B/P c'bore/spotface size (xxx +/- .xxx Dia x xxx deep) Present actual c'bore/spotface size Damage present (chatter, nicks, etc.) Part thickness
H25	COLDWORKING	Cold work process not performed correctly or completed.	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx) Present actual hole size B/P fastener type Cold work steps completed.
H26	DEEP DEBURR	Holes were deburred too deep.	Number of holes affected Number of parts affected (mating parts) List part numbers of affected parts. B/P hole size (xxx +/- .xxx Dia) Present actual deburr size (xxx dia X xxx deep) Actual part thickness in area of deep deburrs.
M00	<b>MATERIAL DEFECTS</b>		
M01	OVER AGED	PART(S) AND/OR MATERIAL EXCEEDING SHELF-LIFE REQUIREMENTS. UNITS UNUSABLE (CANS, PARTS, ETC.)	Provide details on material in question, certification, test specimen results Note any coordination with Boeing engineers (names, phone)
M07	MATERIAL TYPE	INCORRECT MATERIAL WAS USED, SUPPLIED, OR RECEIVED.	Provide details on material in question, certification, test specimen results, heat treat data Note any coordination with Boeing engineers (names, phone)

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
M09	PART OR ASSEMBLY PACKAGING	COMPLETED PART(S) AND/OR ASSEMBLY IMPROPERLY PROTECTED AND/OR PACKAGED. DO NOT USE FOR ESD, CONNECTORS, OR PERISHABLE RAW MATERIALS - SEE E46, E72, OR M31.	Note the condition of the parts
M14	TEST FAILURE	TEST RESULTS (WITH OR WITHOUT QALTR) DO NOT MEET REQUIREMENTS. DO NOT USE FOR STRENGTH, ELONGATION, OR TENSILE FAILURES, FUEL, OXYGEN, OR HYDRAULIC CONTAMINATION, OR FUNCTIONAL TEST FAILURES - SEE M28, C05, C07, C06, OR O48. TEST FAILURE	Note any conditions of test specimens that may have contributed to failure Note any fabrication issues that may have contributed to failure (such as improper cleaning of part)
M19	HEAT TREAT	DEFECTS PERTAINING TO THE HEAT TREATING PROCESS (EMBRITTLEMENT, STRESS RELIEVED, SOLUTION HEAT TREAT, AGED, ETC.) RQMT. FAILURE	Note hardness and conductivity measurements for the material Note any processing performed to restore the material to conforming condition Note any coordination with Boeing engineers (names, phone)
M23	CHEM MILL THICKNESS	CHEM MILL THICKNESS DIMENSIONS NOT WITHIN BLUEPRINT REQUIREMENTS.	Note b/p and actual chem mill steps to adjacent surfaces from defective chem mill area
M26	MAG PARTICLE OR PENETRANT INDICATIONS	FLAWS, WHICH CANNOT BE INTERPRETED, AS CRACKS, LAPS, ETC. AFTER NONDESTRUCTIVE INSPECTION (NDI).	Note location, length and orientation of indications Note any additional NDI performed and results of inspection
M28	ELONGATION OR STRENGTH OR TENSILE	MATERIAL NOT MEETING PHYSICAL TEST REQUIREMENTS.	Note hardness and conductivity measurements for the material Note any processing nonconformance Note any test specimen deviation Note availability of additional specimens or material to fabricate specimens
M29	DRY	DRY COMPOSITES PRE-PREG MATERIAL.	
M32	SHELF LIFE	PART(S) AND/OR MATERIAL EXCEEDING SHELF LIFE REQUIREMENTS AND NOT LOCATED ON THE AIRCRAFT.	Provide details on material in question, certification, test specimen results Note any coordination with Boeing engineers (names, phone)
M33	FUEL DEFECTIVE	SWIRL CHECK, WATER CONTENT, API GRAVITY, CONDUCTIVITY TEST, SEDIMENT, DE-ICER AND FLASH POINT.	

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
N00	<b>MACHINING DEFECTS</b>		
N01	CUSP	CUTTER MISMATCH RESULTING IN A PEAK OR RIDGE.	Height of cusp. B/P and actual thicknesses of adjacent surfaces forming the cusp
N02	FLANGE OR RIB HEIGHT	FLANGE OR RIB HEIGHT DOES NOT MEET REQUIREMENTS.	Notation if flange or rib height defect is localized or entire surface. If local, detail length/location/condition (smooth transition, jagged, stepped, etc.). Note the b/p and actual thickness of flange or rib. Notation if holes have been drilled in defective flange or rib.
N03	FLANGE THICKNESS OVERSIZED	THICKNESS OF FLANGE EXCEEDS REQUIREMENTS.	If identifiable, note which side has excess material. Notation if excess thickness is localized or entire surface. If local, detail condition (smooth transition, jagged, stepped, etc.). If condition is tapered, note the direction of the taper. Notation if holes have been drilled in defective flange or rib.
N05	LOCATION DIMENSION	DIMENSION LOCATING A FEATURE EXCEEDS THE BLUEPRINT TOLERANCE. DO NOT USE FOR GD&T-RELATED NONCONFORMANCES - SEE CATEGORY G.	Detailed description of +/- from b/p location requirements. Define direction of mislocation. Note any other nonconformance resulting from the mislocation of the b/p dimension.
N08	RADII	DEFECTS PERTAINING TO INSIDE OR OUTSIDE BEND OR FILLET RADIUS.	Note the radii Note the b/p and actual thicknesses of the features forming the radii at the radius transition
N09	RIB THICKNESS OVERSIZED	THICKNESS OF RIB EXCEEDS REQUIREMENTS.	If identifiable, note which side has excess material. Notation if excess thickness is localized or entire surface. If local, detail condition (smooth transition, jagged, stepped, etc.) If condition is tapered, note the direction of the taper. Provide grid of defect. Size of grid relative to area and transition of defect. Notation if holes have been drilled in defective rib
N10	WEB THICKNESS OVERSIZED	THICKNESS OF WEB EXCEEDS REQUIREMENTS.	If identifiable, note which side has excess material. Notation if excess thickness is localized or entire surface. If local, detail condition (smooth transition, jagged, stepped, etc.) If condition is tapered, note the direction of the taper. If defect on mating surface side, provide grid of defect. Size of grid relative to area and transition of defect. Notation if holes have been drilled in defective web
N17	WEIGHT	UNDER OR OVER REQUIREMENTS. TEST FAILURE	Note b/p and actual weight requirements. Note the tag numbers for any nonconforming conditions
N18	BLATS FORMED	CONTOUR DOES NOT MEET REQUIREMENTS.	Detailed description of +/- from b/p contour requirements Define direction of misforming. Plot of contour deviation.

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
N20	FLANGE THICKNESS UNDERSIZED	INSUFFICIENT FLANGE THICKNESS NOT MEETING REQUIREMENTS.	If identifiable, note which side has undersize material. Notation if undersize thickness is localized or entire surface. If local, detail condition (smooth transition, jagged, stepped, etc.). If condition is tapered, note the direction of the taper. Notation if holes have been drilled in defective flange or rib.
N21	FORMING	DISPLACEMENT OF MATERIAL NOT MEETING CONTOUR REQUIREMENTS. DO NOT USE FOR GD&T-RELATED NONCONFORMANCES - SEE CATEGORY G. PART	Detailed description of +/- from b/p contour requirements. Define direction of misforming. Plot of contour deviation. Notation if holes have been drilled in defective part
N22	OUTSIDE DIAMETER	DEFECTS PERTAINING TO THE OUTSIDE DIAMETER OF ROUND FEATURES (SHAFTS, BOSSES, ETC), SUCH AS OVERSIZED, UNDERSIZED, ETC. DO NOT USE FOR HOLES OR GD&T RELATED NONCONFORMANCES - SEE CATEGORY G OR H. FEATURE MEASURED	Denote if the outside diameter defect is localized, such as at the edge of the feature (from over blending), tapers Denote information relative to other b/p requirements for features, ex. Meets b/p position requirements, concentric requirements, etc.
N23	RIB THICKNESS UNDERSIZED	INSUFFICIENT RIB THICKNESS NOT MEETING REQUIREMENTS.	If identifiable, note which side has undersize material. Notation if undersize thickness is localized or entire surface. If local, detail condition (smooth transition, jagged, stepped, etc.) If condition is tapered, note the direction of the taper. Provide grid of defect. Size of grid relative to area and transition of defect. Notation if holes have been drilled in defective rib
N24	THREADS	DEFECTS PERTAINING TO THREADS (STRIPPED, CROSS THREADED, ETC.)	Note condition of threads, length and location of defective area of threads if not 100%
N25	WEB THICKNESS UNDERSIZED	INSUFFICIENT WEB THICKNESS NOT MEETING REQUIREMENTS.	If identifiable, note which side has undersize material. Notation if undersize thickness is localized or entire surface. If local, detail condition (smooth transition, jagged, stepped, etc.) If condition is tapered, note the direction of the taper. Provide grid of defect. Size of grid relative to area and transition of defect. Notation if holes have been drilled in defective web
N26	CHAMFER	ANGLE CUT NOT WITHIN BLUEPRINT TOLERANCE, THUS INCREASING OR DECREASING WIDTH.	B/P chamfer definition. Depth/width/length dimensions of actual chamfer. Specific location of beginning and end of defective detail.
N27	MISMATCH	A STEP BETWEEN ADJACENT FLAT OR SLIGHTLY CURVED SURFACES. DO NOT USE FOR ASSEMBLY MISMATCH	B/P allowable mismatch. Actual mismatch. Area with mismatch. Feature of part with mismatch. Location on part.
N30	SLOT UNDERSIZED	SLOT WIDTH LESS THAN BLUEPRINT REQUIREMENTS. SLOT	Note slot dimensions, denote relative position to b/p requirements to identify location of undersize area of slot

Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
N31	UNDERCUT	LOCALIZED AREA MACHINED BELOW TANGENT POINT OF ADJACENT OR INTERSECTING SURFACES. DO NOT USE FOR WELD UNDERCUTS - SEE W10.	Note the minimum remaining thickness in the undercut area. Note which surface has undercut defect. Provide pictures or sketches. Provide profile of undercut. Note the b/p and actual thicknesses of the surfaces adjacent to the undercut. Note detail condition (smooth transition, jagged, stepped, etc.) Note cause of undercut, ex. Cutter broke Note if NDI was performed on undercut, if so provide results Notation if holes have been drilled in defective area
N32	BEND ANGLE	UNDERSIZE OR OVERSIZE BEND ANGLE	Note the angle Note the b/p and actual thicknesses of the features forming the angle at the radius transition Notation if holes have been drilled in part
Y00	<b>GENERIC DEFECTS</b>		
Y01	ALPHA CASE	Oxidation of part surface on titanium	Number of parts affected (mating parts) List affected parts. Location on parts. Area with alpha case. Processing remaining and completed.
Y03	BOWED	Ben, formed or distorted into a partial curve. Do not use for GD&T straightness or flatness	Number of parts affected Feature of part bowed Amount bowed. Location on part
Y04	BURR OR SHARP EDGE	Rough, thin, or keen edge or point remaining on material and/or part capable of cutting.	Number of parts affected Feature of part with burr (flange. Rib, web, etc.) Size of burr. Location on part
Y07	CRACKED OR CRAZED	Break, partial or light split or pattern of fine cracks including adhesive cracking, resin crazing, etc.	Number of parts affected Feature of part with cracks/crazing (flange. Rib, web, etc.) Size of defective area Number of laminations containing condition. Location on part
Y08	DELAMINATIONS	Splitting or separation of material into layers. Do not use for unbond.	Number of parts affected Feature of part with delamination (flange. Rib, web, etc.) Size of defective area. Depth of delamination Number of laminations containing condition. Location on part
Y09	DIMENSIONS	Over or undersized material and/or parts due to manufacturing processes. Do not use of GD&T issues.	Number of parts affected Feature of part with condition (flange. Rib, web, etc.) Size of defective area. B/P Dimension Actual Dimension checks Location on part
Y12	INCLUSIONS	Metallic or non-metallic foreign substance entrapped or embedded in composite material.	Number of parts affected Feature of part with inclusions (flange. Rib, web, etc.) Size of inclusions. Number of inclusions Depth of inclusions Location on part



Defect Code	Defect Name	Defect Definition	Data Needed to Define Condition
Y22	TRIM	Excessive deviation from requirements. Do not use for raw bonding material or uncured composites.	Number of parts affected Feature of part with condition (flange. Rib, web, etc.) Size of defective area. B/P trim Actual trim checks Location on part
Y24	WARPAGE.WAVY, OR WRINKLED	Distorted material forming crease, curve, ridge, etc.	Number of parts affected Feature of part with wavy/wrinkled cond. (flange. Rib, web, etc.) Size of area. Actual waviness/wrinkle dim. B/P waviness/wrinkle allowable Cause of defect. Location on part
Y45	BUSHING CRACKED / DAMAGED	Bushing cracked or damaged during installation	Number of holes affected Number of parts affected (mating parts) List bushing callouts. B/P hole size (xxx +/- .xxx) Actual hole size (xxx +/- .xxx) Type of damage
Y46	BUSHING DEFECTIVE	Bushing itself is defective (oversize, undersize, etc.) Not for installation defects.	Number of holes affected Number of parts affected (mating parts) List bushing callouts. B/P hole size (xxx +/- .xxx) Actual hole size (xxx +/- .xxx) Type of defect
Y48	BUSING INSTL. DEFECTIVE	Installation of bushing defective	Number of holes affected Number of parts affected (mating parts) List bushing callouts. B/P hole size (xxx +/- .xxx) Actual hole size (xxx +/- .xxx) Type of defect Processing complete during installation

<b>Tooling Defects</b>			
<b>Defect Code</b>	<b>Defect Name</b>	<b>Defect Definition</b>	<b>Data Needed to Define Condition</b>
X01	Identification	Identification	Accurate Tool ID including Unit/Dup and Barcode if available
X10	Material Properties	Heat Treat	Material "SHOULD BE" and "IS" conditions
X11	Material Properties	Wrong Material	Material "SHOULD BE" and "IS" conditions
X20	Detail Fabrication	Burrs/Sharp Edges	Detail number(s) and quantities
X21	Detail Fabrication	Flat/Parallel	Detail number(s) "SHOULD BE" and "IS" conditions
X22	Detail Fabrication	Surface Finish	Detail number(s) "SHOULD BE" and "IS" conditions
X23	Detail Fabrication	Dimensional	Detail number(s) "SHOULD BE" and "IS" conditions
X24	Detail Fabrication	Contour	Detail number(s) "SHOULD BE" and "IS" conditions
X25	Detail Fabrication	Angularity	Detail number(s) "SHOULD BE" and "IS" conditions
X30	Setting Details	Detail Mislocated	Detail number(s) "SHOULD BE" and "IS" conditions
X31	Setting Details	Detail Missing	Detail number(s) and quantities
X40	Trimming Tools	Trim	Detail number(s) "SHOULD BE" and "IS" conditions
X60	Holes	Holes	Detail number(s) "SHOULD BE" and "IS" conditions
X80	Other	Calibration/Periodic Inspection	Document actual expiration date and Tool Type (i.e. MOI, recycle, Hoist Tool, etc.)
X84	Other	Storage Box	Detail number "SHOULD BE" and "IS" conditions
X85	Other	Shop Worn	Detail number "SHOULD BE" and "IS" conditions
X86	Other	Damaged	Detail number "SHOULD BE" and "IS" conditions; location and magnitude of damage
X87	Other	Unauthorized Repair	Detail number "SHOULD BE" and "IS" conditions
X88	Other	Proof Load	Document actual proof load and required proof load
X90	TFIM/TPIM	Paint	Detail number(s) "SHOULD BE" and "IS" conditions

**Example Discrepancy Text**

\*\*\* DISC. CODE – A01, ASSEMBLY, EXCESS GAP DEFECT\*\*\*  
A QUANTITY OF \_\_\_\_ PARTS (PART NO., PART NO, ETC) EXHIBIT EXCESSIVE GAP OVER B/P ALLOWABLE BETWEEN MATING OR BUTTING SURFACES OF THE DETAILS.  
MAXIMUM B/P ALLOWED GAP SHOULD BE: \_\_\_\_\_ PER (Requirements Reference).  
CURRENT GAP EXCEEDS B/P MAXIMUM BY: \_\_\_\_\_ OVER A \_\_\_\_ LENGTH LOCATED \_\_\_\_\_  
THE GAP RUNS IN THE \_\_\_\_\_ DIRECTION.  
\*\*\* ADDITIONAL INFORMATION \*\*\*  
XXXXXX

\*\*\* DISC. CODE – A05, ASSEMBLY, OVERLAP DEFECT\*\*\*  
A QUANTITY OF \_\_\_\_ PARTS (PART NO., PART NO, ETC) OVERLAP EACH OTHER WHEN ASSEMBLED.  
MAXIMUM B/P ALLOWED OVERLAP SHOULD BE: \_\_\_\_\_.  
CURRENT OVERLAP CONDITION: \_\_\_\_\_  
THE OVERLAP CONDITION RUNS FOR \_\_\_\_\_ ALONG EDGE OF PART.  
\*\*\*\* ADDITIONAL INFORMATION \*\*\*  
XXXX

\*\*\* DISC. CODE – A14, ASSEMBLY, ALIGNMENT/MISMATCH DEFECT\*\*\*\*  
A QUANTITY OF \_\_\_\_ PARTS (PART NO., PART NO, ETC) DO NOT ALIGN, MATE OR MATCH SURFACES OF MATING DETAILS PARTS DURING ASSEMBLY.  
MAXIMUM B/P ALLOWED ALIGNMENT / MISMATCH DEVIATION SHOULD BE: \_\_\_\_\_.  
CURRENT ALIGNMENT / MISMATCH EXCEEDS B/P MAXIMUM BY: \_\_\_\_\_  
THE DETAILS MISALIGN / MISMATCH IN THE \_\_\_\_\_ DIRECTION.  
\*\*\*\* ADDITIONAL INFORMATION \*\*\*\*  
XXXXXXXXXX

\*\*\*\* DISC. CODE – A15, ASSEMBLY, CLEARANCE DEFECT\*\*\*\*  
A QUANTITY OF \_\_\_\_ PARTS (PART NO., PART NO, ETC) DO NOT MEET B/P REQUIREMENTS FOR CLEARANCES BETWEEN THE PARTS.  
B/P ALLOWED CLEARANCE SHOULD BE: \_\_\_\_\_.  
CURRENT CLEARANCE READING EXCEEDS B/P ALLOWABLE BY: \_\_\_\_\_ OVER A \_\_\_\_ LENGTH.  
THE CLEARANCE RUNS IN THE \_\_\_\_\_ DIRECTION.  
\*\*\*\* ADDITIONAL INFORMATION \*\*\*\*  
XXXXXXXXXXXXXXXXXX

\*\*\* DISC. CODE – A17, ASSEMBLY, PRELOADED PARTS DEFECT\*\*\*  
A QUANTITY OF \_\_\_\_ PARTS (PART NO., PART NO, ETC) WILL NOT ALIGN/SPLINE WITH TOOLING AND/OR MATING DETAILS WITH B/P ALLOWED APPLIED FORCE OF \_\_\_\_\_ LBS.  
PARTS WILL SPLINE WITH A LOAD OF \_\_\_\_\_ LBS APPLIED.  
\*\*\*\* ADDITIONAL INFORMATION \*\*\*\*  
XXXXXX

\*\*\*\* DISC. CODE – A20, ASSEMBLY, OIL CAN DEFECT\*\*\*  
A QUANTITY OF \_\_\_\_ PARTS (PART NO., PART NO, ETC) EXHIBIT AN OIL CANNING, WAVY, OR BUCKLED CONDITION WHEN PRESSURE IS APPLIED.  
\*\*\*\* ADDITIONAL INFORMATION \*\*\*\*\*  
XXXXXX

<p>**** DISC. CODE – A25, ASSEMBLY, MISLOCATION DEFECT*** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) HAVE BEEN MISLOCATED FROM B/P POSITION. THE PARTS ARE MISLOCATED BY: ____ MAX FROM B/P POSITION. THE MISLOCATED PART(S) ARE SHIFTED FROM B/P IN THE ____ DIRECTION. **** ADDITIONAL INFORMATION **** XXXXXXXXXX</p>
<p>*** DISC. CODE – A28, ASSEMBLY, STRUCTURAL GAP DEFECT*** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) EXHIBIT A STRUCTURAL GAP IN EXCESS OF B/P ALLOWABLE BETWEEN MATING SURFACES OF THE DETAILS. MAXIMUM B/P ALLOWED GAP SHOULD BE: ____. CURRENT GAP EXCEEDS B/P MAXIMUM BY: ____ OVER A ____ LENGTH. *** ADDITIONAL INFORMATION **** XXXXXXXXXX</p>
<p>*** DISC. CODE – A29, ASSEMBLY, PANEL GAPS DEFECT*** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) EXHIBIT GAPS IN EXCESS OF B/P ALLOWABLE BETWEEN MATING SURFACES OF THE DETAILS. MAXIMUM B/P ALLOWED GAP SHOULD BE: ____. CURRENT GAP EXCEEDS B/P MAXIMUM BY: ____ OVER A ____ LENGTH. *** ADDITIONAL INFORMATION *** XXXXXX</p>
<p>*** DISC. CODE – A30, ASSEMBLY, BUTT GAP DEFECT*** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) EXHIBIT BUTT GAPS IN EXCESS OF B/P ALLOWABLE BETWEEN MATING EDGES OF THE DETAILS. MAXIMUM B/P ALLOWED BUTT GAP SHOULD BE: ____. CURRENT BUTT GAP EXCEEDS B/P MAXIMUM BY: ____ OVER A ____ LENGTH. *** ADDITIONAL INFORMATION ***** XXXXX</p>
<p>*** DISC. CODE – B01, BONDING, UNBOND DEFECT*** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) EXHIBIT A LACK OF ADHESION (UNBOND) TO A BONDING SURFACE. SHOULD BE BONDED IN THIS AREA. UNBOND IS ____ IN LENGTH X ____ WIDTH AND ____ DEEP. THICKNESS OF PART AT UNBOND AREA IS: ____. LOCATION OF UNBOND ON PART IS: ____. *** ADDITIONAL INFORMATION *** XXXXXX</p>
<p>**** DISC. CODE – B04, BONDING, CORE DAMAGE DEFECT**** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) EXHIBIT THE FOLLOWING DAMAGE: ____ OVER A ____ LENGTH X ____ WIDTH X ____ DEEP AREA LOCATION OF DEFECT ON PART IS: ____ SHOULD BE NO DAMAGE IN THIS AREA. CORE IS CONTAMINATED WITH _____. (if known) *** ADDITIONAL INFORMATION **** XXXXXXXXXXXX</p>
<p>**** DISC. CODE – B33, BONDING, UNBOND DEFECT**** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) EXHIBIT A VOID OR MISSING MATERIAL BETWEEN LAMINATIONS SHOULD BE NO VOIDS / MISSING MATERIAL IN THIS AREA. VOID / MISSING MATERIAL IS ____ IN LENGTH X ____ WIDTH AND ____ DEEP. THICKNESS OF PART AT VOID / MISSING MATERIAL AREA IS: ____. LOCATION OF AREA ON PART IS: ____ TEST METHOD USED TO DETECT CONDITION: ____ *** ADDITIONAL INFORMATION **** XXXXXXXXXXXXXXXXXXXX</p>
<p>*** DISC. CODE – B48, BONDING, THICKNESS VARIATION DEFECT**** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) HAVE THICKNESS VARIATIONS IN EXCESS OF B/P ALLOWABLE. B/P THICKNESS SHOULD BE: ____ ACTUAL THICKNESS IS: ____ OVER A ____ LENGTH X ____ WIDTH. THICKNESS VARIATION IS LOCATED AT ____ ON THE PART(S). CAUSE OF THE CONDITION IS: ____ **** ADDITIONAL INFORMATION **** XXXXXXXXXXXX</p>

<p>**** DISC. CODE – B50, BONDING, TIME TO TEMP DEFECT**** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) DO NOT MEET THE B/P CURING REQUIREMENTS. SHOULD BE CURE AT _____ TEMP. PARTS WERE CURED AT _____ MAX TEMP. TIME IN CYCLE TO TEMPERATURE DEVIATION WAS: _____, TIME DURING TEMPERATURE DEVIATION WAS: _____. PROCESS CONTROL COUPON TESTING RESULTS WERE: _____ *** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>*** DISC. CODE – C(XX), CONTAMINATION DEFECTS*** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) ARE CONTAMINATED BY A FOREIGN MATERIAL. SHOULD BE NO CONTAMINATION. CONTAMINATION IS IN _____ ON THE PART. PART OR MATERIAL IS CONTAMINATED BY _____ *** ADDITIONAL INFORMATION *** XXXXXX</p>
<p>*** DISC. CODE – C(XX), CONTAMINATION DEFECTS*** FUEL WITHIN ____ (INSERT TANK NO., FUEL LINE P/N, ETC.) IS CONTAMINATED BY A FOREIGN MATERIAL. SHOULD BE NO CONTAMINATION. FUEL IS CONTAMINATED BY _____. CONTAMINATION EXCEEDS _____ (INSERT B/P PPM LIMIT) PPM, CHECKS AT _____ PPM. **** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>***** DISC. CODE – C(XX), CONTAMINATION DEFECTS***** HYDRAULIC FLUID WITHIN ____ (INSERT RESERVOIR NO., HYD. LINE P/N, ETC.) IS CONTAMINATED BY A FOREIGN MATERIAL. SHOULD BE NO CONTAMINATION. FLUID IS CONTAMINATED BY _____. CONTAMINATION EXCEEDS _____ (INSERT B/P PPM LIMIT) PPM, CHECKS AT _____ PPM. **** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>*** DISC. CODE – C(XX), CONTAMINATION DEFECTS**** A QUANTITY OF ____ OXYGEN LINES (PART NO.) ARE CONTAMINATED BY A FOREIGN MATERIAL. SHOULD BE NO CONTAMINATION. CONTAMINATION IS LOCATED _____ IN/ON THE PART. PART IS CONTAMINATED BY _____. *** ADDITIONAL INFORMATION *** XXXXXX</p>
<p>*** DISC. CODE – D01, DAMAGE, BENT PART DEFECT***** A QUANTITY OF ____ PARTS, _____ (INSERT PART NO) ARE BENT AND DO NOT CONFORM TO B/P CONTOUR OR PROFILE. SHOULD BE CONFORMING TO B/P. BENT AREA EXHIBITS: _____ (INSERT NATURE OF BEND, I.E. SHARP CREASE, SMOOTH RADIUS, ETC) BEND IS _____ X _____ IN AREA AND IS BENT _____ (DEG/IN). LOCATION OF AREA ON PART IS: _____ BEND WILL AFFECT THESE OPERATIONS: _____ REQUIRED NDT OPERATIONS ARE /AREN'T COMPLETE. *** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>*** DISC. CODE – D02, DAMAGE, BROKEN PART DEFECT*** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) ARE BROKEN. SHOULD BE CONFORMING TO B/P. PART IS BROKEN BY A : _____ BEND IS _____ X _____ IN AREA AND AFFECTS A _____ OF THE PART. LOCATION OF AREA ON PART IS: _____ **** ADDITIONAL INFORMATION **** XXXXXX</p>

<p>**** DISC. CODE – D06, DAMAGE, CUT OR TEAR DEFECT*** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) ARE CUT OR TORN. SHOULD BE CONFORMING TO B/P. PART IS CUT OR TORN BY A : _____ CUT OR TEAR IS _____ X _____ IN AREA AND AFFECTS A ____ FEATURE OF THE PART. LOCATION OF AREA ON PART IS: _____ CUT OR TEAR IS (ACROSS / WITH) THE MATERIAL GRAIN. **** ADDITIONAL INFORMATION ***** XXXXXXXXXXXX</p>
<p>*** DISC. CODE – D08, DAMAGE, DENT DEFECT**** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) HAVE A DENT. SHOULD BE CONFORMING TO B/P. DENT HAS OR IS: _____ DENT IS _____ X _____ IN AREA X ____ DEEP AND AFFECTS A _____ ON THE PART. LOCATION OF AREA ON PART IS: _____. **** ADDITIONAL INFORMATION ***** XXXXXXXXXXXXXXXX</p>
<p>*** DISC. CODE – D13, DAMAGE, SCRATCH, NICK, OR CHIP DEFECT*** A QUANTITY OF ____ PARTS (PART NO., PART NO, ETC) HAVE _____ (SCRATCH, ETC.). SHOULD BE CONFORMING TO B/P. CONDITION IS _____ X _____ IN AREA X _____ DEEP AND AFFECTS A _____ ON THE PART. LOCATION OF CONDITION ON PART IS: _____ CONDITION IS / ISN'T THROUGH THE SURFACE TREATMENT ON THE PART. *** ADDITIONAL INFORMATION *** XXXXXX</p>
<p>*** DISC. CODE – H01, HOLES, CLOGGED **** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) ARE CLOGGED WITH FOREIGN MATERIAL. B/P HOLES SIZE IS ____ + ____ - ____. HOLES ARE CLOGGED WITH ____. FASTENERS INSTALLED IN HOLE(S) IS _____ **** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>*** DISC. CODE – H02, HOLES, DEPTH DEFECT*** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) EXCEED ALLOWABLE TOLERANCES FOR DEPTH. FINAL B/P HOLE SIZE SHOULD BE: ____ + ____ - ____ X _____ DEEP. PRESENT DEPTH IS: _____ DEEP. FASTENER TYPE INSTALLED IN HOLE IS: _____ **** ADDITIONAL INFORMATION *** XXXXXX</p>
<p>*** DISC. CODE – H03, HOLES, EDGE DISTANCE DEFECT**** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) DO NOT HAVE B/P EDGE DISTANCE . FINAL B/P HOLE SIZE SHOULD BE: ____ + ____ - ____ FINAL B/P EDGE DISTANCE SHOULD BE: _____ + ____ - ____. ACTUAL EDGE DISTANCE PRESENT IS: _____ FASTENER TYPE INSTALLED IN HOLE IS: _____ **** ADDITIONAL INFORMATION ***** XXXXX</p>
<p>*** DISC. CODE – H04, HOLES, ELONGATED DEFECT*** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) ARE ELONGATED. FINAL B/P HOLE SIZE SHOULD BE: ____ + ____ - ____ ACTUAL HOLE SIZE PRESENT IS: _____ MAJOR DIA X _____ MINOR DIA. FASTENER TYPE INSTALLED IN HOLE IS: _____ *** ADDITIONAL INFORMATION *** XXXXXX</p>

<p>*** DISC. CODE – H05, HOLES, LOCATION DEFECT*** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) WERE NOT LOCATED CORRECTLY. B/P HOLE SIZE IS: _____ + _____ - _____ B/P HOLE LOCATION SHOULD BE: _____ ACTUAL LOCATION IS: _____ EDGE DISTANCE FOR MISLOCATED HOLE IS: _____ C/C SPACING TO NEAREST B/P LOCATED HOLE IS: _____ INSTALLED FASTENER TYPE IS: _____ *** ADDITIONAL INFORMATION *** XXXXXXXX</p>
<p>*** DISC. CODE – H06, HOLES, MISSING DEFECT*** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) ARE MISSING FROM THE B/P HOLE PATTERN. B/P HOLE SIZE SHOULD BE: _____ + _____ - _____ B/P HOLE LOCATION SHOULD BE: _____ ACTUAL LOCATION IS: _____ INSTALLED FASTENER TYPE IS: _____ *** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>*** DISC. CODE – H09, HOLES, OVERSIZED DEFECT**** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) ARE OVERSIZED. B/P HOLE SIZE SHOULD BE: _____ + _____ - _____ ACTUAL HOLE SIZE IS: _____ INSTALLED FASTENER TYPE IS: _____ **** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>**** DISC. CODE – H15, HOLES, COUNTERSINK DEFECT*** A QUANTITY OF ____ COUNTERSUNK HOLES IN ____ PARTS (PART NO., PART NO, ETC) EXCEED ALLOWABLE TOLERANCES. FINAL B/P COUNTERSINK SIZE SHOULD BE: ____ + ____ - ____ DIA. X ____ DEEP. PRESENT COUNTERSINK SIZE IS: ____ DIA. X ____ DEEP. LOCATION OF CSK ON PART IS: _____ DAMAGE PRESENT IN CSK: _____ **** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>*** DISC. CODE – H16, HOLES, DOUBLE DRILLED DEFECT**** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) ARE DOUBLE DRILLED. FINAL B/P HOLE SIZE SHOULD BE: ____ + ____ - ____ X ____ DEEP. PRESENT HOLE SIZE IS: ____ MAJOR DIA X ____ MINOR DIA. FASTENER TYPE INSTALLED IN HOLE IS: _____ LOCATION OF DOUBLE DRILLED HOLE ON PART IS: _____ DOUBLE DRILLED HOLE IS ORIENTED ____ WITH RESPECT TO ____ (PART FEATURE). *** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>**** DISC. CODE – H17, HOLES, ALIGNMENT **** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) ARE MISALIGNING. B/P HOLES SIZE IS ____ + ____ - ____. HOLES ARE MISALIGNED BY ____. FASTENERS INSTALLED IN HOLE(S) IS _____ *** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>*** DISC. CODE – H20, HOLES, INSIDE DAMAGE DEFECT*** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) EXHIBIT DAMAGE TO INSIDE SURFACES OF HOLES. B/P HOLE SIZE IS: _____ + _____ - _____ DEPTH OF DAMAGE IS: _____ NATURE OF DAMAGE IS: _____ INSTALLED FASTENER TYPE IS: _____ **** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>*** DISC. CODE – H21, HOLES, TAPERED DEFECT**** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) ARE TAPERED OVER THE LENGTH OF HOLE. B/P HOLE SIZE SHOULD BE: _____ + _____ - _____ ACTUAL LARGE DIA. IS: _____ ACTUAL SMALL DIA. IS: _____ INSTALLED FASTENER TYPE IS: _____ **** ADDITIONAL INFORMATION **** XXXXXX</p>

<p>*** DISC. CODE – H22, HOLES, EXTRA DEFECT*** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) ARE EXTRA TO THE B/P HOLE PATTERN. ACTUAL EXTRA HOLE SIZE IS: _____ C/C SPACING TO NEAREST B/P HOLE IS: _____ EDGE DISTANCE FOR EXTRA HOLE IS: _____ *** ADDITIONAL INFORMATION *** XXXXXX</p>
<p>*** DISC. CODE – H23, HOLES, SPACING DEFECT*** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) HAVE INCORRECT CENTER TO CENTER HOLE SPACINGS. B/P HOLE SIZE SHOULD BE: _____ + _____ - _____. B/P HOLE LOCATION SHOULD BE: _____ B/P C/C SPACING SHOULD BE: _____ ACTUAL C/C SPACING IS: _____ INSTALLED FASTENER TYPE IS: _____ **** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>*** DISC. CODE – H24, HOLES, COUNTERBORE/SPOTFACE DEFECT*** A QUANTITY OF ____ COUNTERBORE/SPOTFACE IN ____ PARTS (PART NO., PART NO, ETC) EXCEED ALLOWABLE TOLERANCES. FINAL B/P COUNTERBORE/SPOTFACE SIZE SHOULD BE: ____ + ____ - ____ X ____ DEEP. PRESENT COUNTERBORE/SPOTFACE SIZE IS: _____ X _____ DEEP. COUNTERBORE/SPOTFACE CONTAINS _____ DAMAGE. *** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>**** DISC. CODE – H25, HOLES, COLD WORKING DEFECT *** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) WERE NOT PROPERLY COLDWORKED. FINAL B/P HOLES SIZE SHOULD BE: ____ + ____ - ____. PRESENT HOLE SIZE IS: _____ COLDWORK PROCESS STEPS COMPLETED ARE: _____ FASTENERS INSTALLED IN HOLE(S) IS _____ *** ADDITIONAL INFORMATION **** XXXXXX</p>
<p>**** DISC. CODE – H26, HOLES, DEBURR TOO DEEP DEFECT**** A QUANTITY OF ____ HOLES IN ____ PARTS (PART NO., PART NO, ETC) HAVE BEEN EXCESSIVELY DEBURRED. RESULTING DEBURR SIZE IS: _____ DIA. X _____ DEEP. PART THICKNESS IN AREA OF EXCESSIVE DEBURRS IS: _____ *** ADDITIONAL INFORMATION **** XXXXXX</p>