



Jeff Bonner
Research & Development Inc.

Supplier Quality Manual

Administrative Office:
10525 Mopac Drive
San Antonio, Texas 78217
(210) 590-3155 FAX
(210) 590-3133

Jeff Bonner R&D, Inc. Approval by:		
<i>Signed copy retained in office of Director of Quality Assurance</i>		<i>11/08/2011</i>
Frank V. Gonzales	Director, Quality Assurance	Date

Revision History

<i>Page</i>	<i>Description of Change(s)</i>	<i>Revision Level</i>	<i>Date</i>
All	Initial Release of JB R&D Supplier Manual	IR	7/13/2007
9	Section 2.5, Changed wording from 20% of shelf life used, to 50% or more remaining shelf life	A	10/21/2008
All	Delete section 2.2.2.1, Section 2.2.3: replace "timely" with actual time requirement, Section 2.3: Replace "FAA" to include other regulatory. Disposition authority of non-conforming product belongs to JBRND only. Added section 2.15, Evaluation of Suppliers.	B	11/08/2011
TBD		C	TBD
		C	
		C	
		C	

Index

<u>Section</u>	<u>Title</u>	<u>Page</u>
	Cover Page	1
	Revision History	2
	Index	3
1.0	<u>Document Overview</u>	4
2.0	<u>General Requirements</u>	4
2.1	<u>Quality System Requirements</u>	4
2.2	<u>Nonconforming Material Control</u>	5
2.3	<u>Product Release</u>	6
2.4	<u>Quality Record Retention</u>	7
2.5	<u>Shipping Documentation Requirements</u>	7
2.6	<u>Nondestructive Test (NDT) Submittal Requirements</u>	10
2.7	<u>Corrective and Preventive Action</u>	11
2.8	<u>Control and Use of Digital Datasets</u>	11
2.9	<u>Foreign Object Debris/Damage (FOD)</u>	11
2.10	<u>Supplier Sub-tier Control</u>	11
2.11	<u>Part Marking Requirements</u>	11
2.12	<u>Commercial Product Requirements</u>	12
2.13	<u>Best Commercial Practices</u>	12
2.14	<u>Calibration Requirements</u>	12
2.15	<u>Evaluation of Suppliers</u>	12

1.0 Document Overview

The Jeff Bonner R&D Supplier Manual is the Suppliers' guide to understanding JB R&D's quality requirements and expectations. The Jeff Bonner R&D Supplier Manual:

- Forms a part of the JB R&D purchase order, unless otherwise specified herein;
- Identifies specific quality requirements of the Parts and Assemblies Manufacturing, Certified Repair Station Operations, and Customer Service business units;
- Provides helpful general information to the supplier.

This document is applicable to all JB R&D purchase orders for supplies, parts, assemblies, and service of contract deliverables including tooling, templates, and repair station support. The requirements in Section 2.0 apply to all procurements. To be an approved JB R&D supplier, the supplier shall fulfill the requirements of this Manual.

2.0 General Requirements

2.1 Quality System Requirements

The supplier shall maintain a Quality System that is compliant to ISO 9001-2000, AS 9100, 14 CFR Part 21 Production Approval, 14 CFR Part 145 Repair Station Certification, MIL-I-45208, or an equivalent industry-recognized quality system or standard. JB R&D recognizes third-party certifications issued by an accredited Certification Registration Body (CRB). Accredited CRB's can be found on the SAE web page: www.sae.org/oasis. The scope of third-party certification must be appropriate for the type of product or service provided to JB R&D.

Note: Suppliers providing calibration services are subject to specific requirements as stated in section 2.14 of this document, in addition to the remainder of this section (2.1).

Initial and subsequent periodic review of supplier's quality system may be performed at the option of JB R&D. Objective evidence of supplier compliance, either by submittal of requested evidence or evidence of a third party accreditation, may be acceptable for the purpose of re-survey, but will not preclude the use of on-site evaluations or other review methods.

JB R&D may, at its own discretion, honor qualified second and third party audits provided that the scope of the audit performed by the alternate party correlates with the type of product or service provided to JB R&D. We reserve the right to perform additional assessments if deemed necessary. Suppliers shall forward a copy of their certifications to us. Any changes to the certification such as a change of the CRB, update, withdrawal or disapproval must also be forwarded to us immediately.

A change in supplier name, ownership, facility location and process changes will subject the supplier's quality system to reevaluation by JB R&D. The supplier shall notify their buyer of any of

these aforementioned changes in writing. The buyer will instruct the supplier on formal notification actions and specific forms to submit, if necessary.

2.2 Non-Conforming Product (NCP) Control

Non-Conforming Product must be identified, documented, evaluated, segregated (where practical), and dispositioned to prevent its unintended release or use.

2.2.1 Disposition Authority

The supplier's disposition authority of NCP is limited to:

Rework to Specification: Restore material to specification compliance in accordance with required process and addressed by governing process specification. Parts subject to subsequent processing not authorized by specification shall be submitted to the Material Review Coordinator (MRC) for disposition. Specific rework instructions shall be provided with rework dispositions.

Return to Supplier: Return of subcontractor product found to be discrepant for subsequent rework or replacement.

Scrap: Permanent removal from production and destruction of product found to be unfit for use. Scrapped product shall be controlled (i.e. quarantined) until destroyed.

All other dispositions: material shall be submitted to JB R&D MRC.

2.2.2 Material Review (MR) Dispositions

2.2.2.1 JB R&D Proprietary and Customer Designed Product

Suppliers do not have Material Review authority for items designed by JB R&D, or any of its customers. The supplier MR Board shall not perform any disposition on any nonconformance to customer requirements that affect form, fit, function, weight, interchangeability, maintainability, reliability, safety, or any key characteristic. Product nonconformance affecting these parameters shall be submitted to the JB R&D MR Coordinator.

2.2.3 Notification/ Disclosures

The suppliers system shall provide reporting of nonconformities that may affect already delivered product within 2 business days. Notification to the buyer shall include a clear description of the discrepancy, which includes as necessary; parts affected, customer and/or supplier part numbers, quantities, and date(s) delivered.

2.2.4 Exception to Rejections

In the event a supplier does not accept the responsibility for a discrepant condition, the supplier shall initiate a letter of exception to the JB R&D buyer. The letter shall make full reference to applicable documents, and be specific and clear in defining the area of exception.

2.2.5 Nonconforming Material Control

Supplier manufactured product rejected by JB R&D shall require a response from the supplier documenting actions taken to correct the product (if applicable) and actions taken to prevent recurrence of the nonconformance. JB R&D may issue a formal Supplier Corrective Action Request (SCAR) containing a timeframe for supplier response and completion (see 2.7).

2.3 Product Release

JB R&D, its customer and/or their authorized Inspection Agency, and the Federal Aviation Administration shall have the right to send representatives to the supplier's and/or supplier subcontractor's facility to determine contract compliance by either monitoring, witnessing, and/or performing such activities as inspections (see 2.3.4), witness of testing or other system, process and/or product evaluations, and verifications as necessary to determine product acceptability to contractual requirements. The type, necessity, and degree of demonstration of conformance will be at the sole discretion of JB R&D or any regulatory agency, taking into consideration factors such as product complexity, environment where the product is used, ability to determine product quality after receipt, and past supplier performance.

Inspection Types for Supplier-Provided Product

2.3.1 Receiving Inspection at Buyer Plant

Deliverable product is subject to JB R&D inspection upon receipt at our facility. JB R&D also retains right and can periodically inspect supplier-provided product on their site. Our QA Department takes the initiative to conduct these inspections when the identification of supplier product indicates a repeating trend of non-conforming product, as measured by conformance to JB R&D-provided product specifications.

2.3.2 JB R&D Source Inspection

Deliverable product is subject to source inspection by JB R&D or its customer. JB R&D conveys its requirement for source inspection to the supplier via the Purchase Order. Supplier shall notify JB R&D buyer in writing at least seven (7) days in advance of the proposed schedule for "in process" or "final" source inspection, unless prior written agreement for a shorter period of notice has been made. Supplier shall prepare all production, process, and shipping documentation, including a First Article Report if requested, for presentation to JB R&D source inspector prior to the inspector's arrival.

The QA department of JB R&D retains the right to inspect product at its supplier sight, prior to that product being shipped to the Company. The Quality Assurance Department performs periodic inspections on supplier-provided product at supplier site on an as needed basis. The receipt of nonconforming product on a frequency-basis determines the need for on-site inspections by QA.

JB R&D does not use a supplier's verification of a product as evidence of the effective control of quality of that product by that supplier. JB R&D retains the responsibility of determining the acceptability of a supplier product through its Inspection Process, QOP-82-04. JB R&D allows for our customers to reject product that our supplier has already approved. JB R&D by this Supplier Manual procedure that the FAA and our customers retain the right to inspect our suppliers' product for conformity and also the validation of their production processes on our suppliers site. There are no exceptions.

2.3.3 No Customer Inspection Required of Supplier-Provided Product

The supplier's quality system of the customer certifies product conformity to the requirements of deliverable products in a given Purchase Order. No JB R&D inspection is required. JB R&D periodically conducts tests of supplier-furnished product to customer as part of the Company Inspection Process. See Section 8 of Area II of Quality Operational Procedure QOP-82-04, Inspection Process, for details. This Supplier Manual applies to all Company suppliers, and serves as delegation of responsibilities to our registered and periodically evaluated suppliers. JB R&D's approval of suppliers involves the testing, certification, and/or other proof that suppliers can perform up to the level at which they have been certified.

Form-74-02-1, Approved Supplier List, and Form-74-02-2, Approved Supplier Certificate, serve as the documentation and tracking records used by the Company to certify its suppliers and ensure their performance. The Quality Assurance Department is responsible for maintaining the currency and accuracy of this Manual and also for monitoring delegated activities to the Company's approved suppliers.

2.4 Quality Record Retention

The supplier maintains Quality records in accordance with the applicable Quality System standard (i.e. ISO9001, AS9100, CFRs). The records shall be retained for a period of not less than seven (7) years from completion of Purchase Order. Should a supplier cease doing business, regardless of the reason, all records affecting JB R&D delivered product shall be transferred to JB R&D forthwith.

Records can include, but not be limited to:

- Evidence of inspection to assure conformance to current drawings and specifications
- First Article Inspection report – see section 2.5.4
- Test Reports: e.g. metallic physical & chemical, acceptance test, functional test, etc.
- Periodic inspection and control of inspection media
- Records to indicate control of Special Tooling and Special Test Equipment
- Data records of all Qualification and Acceptance/Function tests performed
- Certification of personnel as required by specification and/or contract
- Standard or Special Process certifications, including those from subcontractors
- Material Review Board reports

2.5 Shipping Documentation Requirements

2.5.1 Packing Slips

Supplier shall provide a packing sheet for each shipment with the following requirements:

- Supplier's company name and address
- Purchase order number, line item(s) and part numbers.
- JB R&D dispositioned Non-Conforming Product (NCP) number(s), as applicable.
- Required parts traceability forms.
- Evidence of JB R&D source acceptance if purchase order required JB R&D source surveillance.

2.5.2 First Article Inspection (FAI) Records

A FAI Report from the supplier is required when the article produced is a new part. This includes all details and sub-assemblies that constitute the end item ordered. The FAI shall not be considered complete until all non-conformities are resolved.

FAI records shall include all dimensions or forms specified on the purchase order, on printed drawings, and in digitally represented models, referenced by the purchase order. Each report includes the following, as applicable:

- Part Number and Description
- Purchase Order Number
- 100% of Engineering specified dimensions, and the actual measurements obtained
- Special process certifications, including those from subcontractors
- Test data; including requirements, performance ranges, and results
- Raw material certifications
- Specification or drawing numbers and the revision level during manufacturing and inspection
- Location of manufacturer and date of inspection
- Signature of authorized agent of the manufacturer and position held
- Identification of the report as First Article
- Certification of Conformance (see below)

2.5.3 Certificate of Conformance

Suppliers shall provide a Certificate of Conformance with every shipment.

The Certificate must include the following, as applicable:

- Part number and description
- Lot or serial number (as applicable)
- Purchase Order number and PO line item
- Quantity
- Statement of conformance to applicable drawings, specifications or other technical data.
- Signature of authorized agent of the manufacturer or distributor and position held.
- Location of inspection records for review by JB R&D (or its customer), if requested.

2.5.4 Age-Sensitive Materials

JB R&D requires that age-dated materials be delivered with 50% or more remaining shelf life. Exceptions to this clause must be arranged with the JB R&D buyer, and accepted by JB R&D Quality Assurance, prior to shipment.

Provide original manufacturing/cure date, lot number(s), expiration date or length of shelf life (if indefinite, so state). Shelf life expiration ends on the last day of the month the product expires. In addition, forward any special storage/handling instructions. Supplier is responsible to determine if acceptance test report submittal is required in accordance with applicable material specification.

The supplier shall physically identify the shelf life expiration date on the deliverable product or the unit packaging according to the applicable standard. Elastomeric material with “No Shelf Life” requirement or “Unlimited Shelf Life” shall be marked as such.

2.5.5 Overhauled/Repaired/Modified Items – FAA Certified Repair Stations (CRS)

Supplier provides a serviceable tag with Maintenance Release Statement, FAA Form/Tag 8130-3 in accordance with 14 CFR Part 43. Any Airworthiness Directives (AD) or Service Bulletins (SB’s) required by contract or the FAA shall be documented on the 8130-3, including level of compliance.

When applicable, the supplier shall provide FAA Form 337, “Major Repairs and Alteration Statement”, and or FAA Form 8110-3, “Statement of Compliance with Federal Aviation regulations, and Alternate Method of Compliance”. A CRS must perform the work (CRS status may be authenticated by JB R&D utilizing the FAA website or other appropriate source). Supplier shall provide a completed copy of the final inspection work order, which details the entire scope of work performed, upon request.

2.5.6 14 CFR Part 21 (Certification Procedure for Products and Parts)

Suppliers of new FAA-approved parts shall provide documented evidence of traceability to Part 21 Quality System Requirements with each shipment. Suppliers of approved serviceable replacement parts shall provide, with each shipment, documented objective evidence of traceability to Part 21 as outlined by FAA Advisory Circular No. 20-62, latest revision. Supplied parts shall be airworthy and acceptable for aircraft/aeronautical installations to all specifications called out contractually.

2.5.7 Tooling – Suppliers of Special Tooling or Special Test Equipment

In addition to sections 2.2.1 and 2.2.3 above; record the tool number, tool symbol, and tool serial number (including the ‘multiple’ number, as applicable).

2.5.8 Reworked/Repaired/Replaced/Modified Items

Supplier’s Certification of Conformance and/or packing sheet document shall reflect the following requirements for rework, replacement, repair or modification items returned to supplier or including work performed by supplier at the JB R&D facility.

- The item(s) have been reworked, repaired, replaced, or modified (as applicable), in accordance with respective nonconformance documents or Purchase Order.
- The item(s) meet the requirements of the engineering document(s).
- The original configuration and qualification status of the item(s) remains in effect (as applicable).
- All applicable nonconformance document numbers or other references to ensure traceability.

Note: Discrepant material shall not be shipped to JB R&D without prior approval from JB R&D Materiel Review Coordinator.

2.5.9 Raw Material

Metallic raw materials shall be identified in accordance with Federal Standard 184, or ASTM B666, as applicable. Sheet materials shall have identification markings placed on the “non-preferred” side of sheet. Supplier maintains a copy of all supplier-procured raw material certifications, which must be

readily retrievable and shall include material specification, description, alloy and condition. The supplier shall maintain the mill certification for procured metallic material that shall include physical properties, chemical analysis, and heat-lot number. Distributors of metallic raw material shall include a copy of the original mill certification with the shipment of deliverable material. Non-metallic raw materials shall also include material specifications, and certificates of conformance.

2.5.10 Preference for Domestic Specialty Metals

Reference the Defense Federal Acquisition Regulations (DFAR) Sect. 252.225-7014, and the Federal Acquisition Regulations (FAR) Part 25. Unless otherwise specified on JB R&D purchase order, shipments of metallic raw material meeting the Specialty Metals definition in DFAR 252.225-7014 are subject to the Qualifying Country Source restrictions, found in DFAR Supplemental Clause 225.872.

2.5.11 Standard Process Specification (SPS) Certifications

Supplier shall maintain copies of all subcontracted special processes. Supplier shall also obtain and maintain sub-tier supplier process certifications. No submittal is required unless specifically required per purchase order or other requirement herein. Supplier's special process and sub-tier processor certifications and test results shall be made available upon request.

2.6 Nondestructive Test (NDT) Submittal Requirements

Supplier shall review the purchase order and associated drawings/drawing notes and related documents to determine if NDT is required. Submittal of NDT general procedures and part-specific techniques to JB R&D is required prior to production testing. Guidelines for the minimum content of general procedures are provided in the respective NDT process specification. After initial approval, any changes to subject documents must be re-submitted to JB R&D for approval. An EO change to a specification does not require re-submittal. A specification revision change does require submittal of a revised procedure or letter of compliance.

Suppliers using outside sources for NDT ensure that the selected NDT sub-tier has JB R&D approval for the NDT procedure used. An Approved Nondestructive Testing Procedure list is available from the JB R&D buyer. NDT procedure shall be submitted in accordance with applicable specifications.

2.7 Corrective Action

The supplier shall respond to all buyer requests for corrective action on or before the requested response due date. Supplier maintains a documented system for determining root causes of defects and obtaining corrective action both internally and from its suppliers. The supplier is accountable for effectiveness of corrective actions taken. Buyer requests for corrective action will be issued to the supplier's representative in the form of a Supplier Corrective Action Request (SCAR) as required by engineering specification. JB R&D retains the right to conduct corrective action verification at the primary supplier or sub-tier supplier facility to assess effectiveness of implemented corrective action.

2.8 Control and Use of Digital Datasets

When digital datasets are required to manufacture product, the supplier shall comply with all requirements of JB R&D and its customers.

2.9 Foreign Object Debris/Damage (FOD)

Supplier shall maintain good housekeeping and where applicable a Foreign Object Debris/Damage (FOD) prevention program, to preclude introduction of foreign objects into any deliverable item. Supplier shall employ appropriate housekeeping practices to assure timely removal of residue/debris generated during manufacturing operations or tasks. Supplier shall determine if sensitive areas that have a high probability for introduction of foreign objects should have special emphasis controls in place for the manufacturing environment.

2.10 Supplier Sub-tier and Recall Control

Supplier is responsible for ensuring all items procured from its subcontractors conform to all requirements of the JB R&D purchase order and JB R&D's customer's requirements. Supplier shall ensure all applicable provisions of this document are flowed down to its subcontractors. Sub-tier supplier quality system shall be compliant to the primary supplier quality system minimums found in Section 2.1 of this document.

2.11 Part Marking Requirements

Supplier shall mark all deliverable products as required by the PO, engineering drawing and manufacturing planning. Supplier shall apply the date of manufacture, date code or other control identifier number (see examples below) to all deliverable hardware. Information must be applied adjacent to the hardware's identification markings and be traceable to supplier's job traveler. Hardware produced in lots shall have traceable control information. When size of hardware, or supplier's automated stamping process, does not permit data application to individual hardware (such as standard parts), the information shall be similarly placed on tags or labels as applicable.

Build-To-Print (BTP) parts for JB R&D shall be identified with the following information:

- JB R&D Part Number (if applicable).
- Drawing Revision at time of Manufacture.
- Date of Manufacture.
- Purchase Order.
- Indication of acceptance by the supplier's inspection stamp.
- Serial Number (if applicable).
- Lot Number (if applicable).
- Heat Lot Number (if applicable).
- Final Inspection Date (if applicable).
- Batch Number (if applicable).

2.12 Commercial Product Requirements

Supplier shall comply with quality requirements noted in the Contract Terms & Conditions of the PO.

2.13 Best Commercial Practices

JB R&D reserves the right to visit the supplier's facilities to determine purchase order compliance. JB R&D reserves the right to reject non-conforming product. The type, necessity and degree of demonstration of conformance will be based on the confidence in the supplier's quality system, or other factors such as:

- Product complexity
- Environment where the product is used
- Ability to determine product quality after receipt
- Past supplier performance

2.14 Calibration Requirements

This section applies only to suppliers that provide calibration services for JB R&D owned tools and equipment. Calibration suppliers shall maintain a quality system that is compliant to ISO17025 or ANSI Z540-1. Specific instruments may have additional requirements as follows in the table below. Calibration certificates shall include a reference to all applicable standards for calibration, including:

Type of Instruments	Additional Requirements
Heat Treat/Pyrometry Instruments	AMS 2750
Rockwell Hardness Testing Instruments	ASTM E-18
Conductivity Testing Instruments	ASTM E1004 or Mil-Std 1537
Salt Spray Testing Equipment	ASTM B-117
Fluorescent Penetrant Instrumentation	ASTM E 1417
Magnetic Particle Instrumentation	ASTM E 1444

Additional requirements or records on calibrated instruments may be negotiated between JB R&D and its calibration suppliers. This will only be done on a contract-by-contract basis where special product requirements are identified.

2.15 Evaluation of Suppliers

Jeff Bonner R&D Inc. will evaluate the Supplier at the initial approval stage and then re-evaluated them on a quarterly basis. Suppliers that have been utilized within a 12 month period will be evaluated. They must meet a rating of 70% or above to remain on Approved status. Failure of the Supplier to meet these requirements will cause the supplier to be place on Conditional status for a period of 3 months. Failure to remain at the approved level the 3 month period may cause the supplier to be disqualified and removed from our approved supplier list. The Jeff Bonner R&D Inc. Quality Director will make that determination.

No additional sections follow.