

## **Q01.01**

Unless otherwise stated, this purchase order is in accordance with a Defense Priorities and Allocations System (DPAS) DO-AI rating, and is subject to all applicable government regulations associated with this rating.

## **Q01.02**

The supplier is responsible to implement a process by which all requirements of the purchase order are reviewed and understood prior to its acceptance, as well as being responsible for providing the necessary resources to deliver the products that meet all the requirements of the purchase order.

## **Q01.03**

The supplier shall maintain certification obtained from an accredited certification body to AS/EN/JISQ 9100C or to the latest revision after September 15, 2018.

## **Q01.04**

The supplier is responsible to implement a process in his Quality Management System (QMS) by which all requirements of this purchase order are reviewed prior to its acceptance, and that all quality requirements are incorporated into the manufacturing planning, inspection and test instructions, as applicable, to assure P O compliance. The supplier shall retain evidence of such reviews. The supplier is reminded to be certain that the current revision of each requirement is referenced, unless otherwise specified by GKN.

## **Q01.05**

The supplier shall promptly notify GKN, in writing, of changes in the supplier's name, ownership, or management representative with assigned authority and responsibility for the supplier's quality system; of any change in the QMS which may affect the inspection, conformity, or airworthiness of the product; of any action taken against the seller by another of its customers, or by any government agency; or any change in the supplier's manufacturing facility location.

## **Q01.06**

The supplier shall maintain an English language translation of:

- (1) Its quality manual
- (2) Operating instructions that implement the quality manual requirements
- (3) Records, reports, specifications, drawings, inspections, test results, documentation, and an index of other supplier procedures that contain quality requirements.

GKN may require additional documentation to be translated, including, but not limited to stop purchase orders, technical specifications, certificates, reports & non-conformance documents.

## Q01.14

The supplier shall notify GKN, in writing, when any GKN -identified key characteristic, interchangeable-replaceable features, fracture critical features, durability critical features, maintenance critical features, safety critical features, critical safety hardware/features, mission abort critical features, or supplier changes affecting fit, form or function are to be subcontracted.

## Q01.15

The supplier shall implement and maintain a quality and inspection system acceptable to GKN, and to control product and process quality that meets the latest revision of GKN's Q-Notes as specified in the purchase order. The system shall include a company wide process that fosters continuous quality improvement in compliance with AS9100C or to the latest revision after September 15, 2018, and, as applicable, BCA D6-82479 of the latest revision at the date of the purchase order.

## Q01.16

Supplier is required to flow down any and all pertinent portions of any GKN contract to all sub-tier supplier performing to the requirements of any GKN contract.

With the exception of standard hardware, the use of customer approved processors and customer approved raw material, Supplier does not have approval to move or subcontract any portion of any GKN contract without the written consent and approval of GKN.

GKN will not permit the use of any supplier or supplier sub-tier that does not have an accredited certification by either AS9100 and/or NADCAP.

## Q01.17

Supplier shall inspect, or otherwise verify that all products, including those components purchased from or furnished by subcontractors, suppliers, or GKN, comply with the requirements of the purchase order prior to shipment to GKN. Supplier shall be responsible for all tests and inspections of the product during receiving, manufacturing, and final inspection. Supplier agrees to furnish copies of tests and/or control data upon request from GKN.

## Q01.19

The supplier shall use the LM QCS-001 Directory to identify both process sources and controlled processes that require LMA approval prior to use for delivered items to GKN.

[Lockheed Martin - QCS-001 – LM Approved Processors](#)

## Q01.20

Supplier shall notify GKN when:

- Supplier or supplier's sub-tiers are found to be non-compliant to GKN's specifications.
- Supplier's sub-tier is found to be disapproved by supplier.
- Supplier or supplier's sub-tiers are disapproved by a government agency
- Government/Industry Data Exchange Program (GIDEP) alert is required or received affecting buyer items.

## **Q01.21**

Selection, control and requirements are to flow down to every tier. See LMA QCS-001,

[http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality\\_controlspecs.html](http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality_controlspecs.html)

## **Q01.23**

When performing to QCS-001, the supplier shall accomplish its process requirements in accordance with the applicable process specifications and the current LMA App QJ, which is located at:

[http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality\\_qualityappendices.html](http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality_qualityappendices.html)

## **Q01.24**

Supplier shall notify GKN within 48 hrs of any changes in NADCAP accreditation, and/or NDT Level II or III personnel, and all other personnel changes within five normal work days of the happening.

## **Q01.26**

Supplier shall meet the requirements of the latest revision of Appendix QX and all applicable requirements therein in effect as of the date of this PO. Supplier shall ensure all applicable quality requirements are imposed upon sub-tier suppliers and manufacturing facilities. Supplier shall have and maintain Internet access with GKN for obtaining requirements of this PO.

Supplier shall ensure its quality system is third party registered by an International Aerospace Quality Group / Americas Aerospace Quality Group approved registrar no later than January 1, 2011. Supplier shall ensure its quality system is compliant with a currently maintained and published consensus industry standard quality system specification as appropriate to the supplier's activities.

## **Q01.27**

Work to be accomplished in performance of this purchase order is directly related to a LMA purchase order, and must be accomplished in accordance with the process specifications on this purchase order and, the applicable parts of the L M A App. QX revision in effect at the time of purchase order. The Appendix can be accessed on the LMA web-site at:

[http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality\\_qualityappendices.html](http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality_qualityappendices.html)

## **Q01.28**

The requirements of the NGC SQAR, revision in effect at the purchase order date, are applicable. SQAR is at:

<https://oasis.northgrum.com/contract/qualdocs.htm>

## **Q02.01**

This is a fracture/maintenance critical part. When nondestructive testing (NDT) is required, the source performing such inspection must have a written NDT procedure that has been approved by NGC. Certifications must indicate customer approval number.

## **Q02.02**

The supplier shall forward a copy of their Quality Management Systems certifications to GKN.

## **Q02.03**

When stated on the Purchase Order, a manufacturing plan must be submitted to GKN Aerospace for review prior to the completion of the FAI. The Manufacturing Plan shall address the sequence of manufacturing, processing and inspection operations that are required and shall include the identification of any sub-tier suppliers that will perform any manufacturing, controlled/special processing, or inspection.

## **Q02.04**

When Boeing document "D6-1276 - Control of Materials and Processes for Designated Parts and Components of Boeing Products" is required by engineering drawing for a part or forging, a manufacturing plan shall be written per the requirements of D6-1276 and shall be submitted to GKN for Boeing / Spirit Aerosystems approval prior to fabricating production parts or forgings. Certifications for first and subsequent lots of production parts or forgings shall indicate the Boeing or Spirit Approval Memo number for the particular part or forging produced.

## **Q02.05**

Parts designated as fracture critical, fracture critical traceable, fatigue critical, durability critical, maintenance critical, or safety critical require that a manufacturing plan be submitted to GKN for approval at least 45 days before the start of production, and before completion of the FAI.. The manufacturing plan shall address the sequence of manufacturing, processing, and inspection operations that are required, and shall include the identification of any sub-tier suppliers that will perform any manufacturing, controlled/special processing, or inspection.

## **Q02.06**

A quality plan must be submitted to GKN for approval prior to the completion of the FAI. The quality plan shall address all quality aspects related to this part that are not contained in the supplier's quality system.

## **Q02.07**

If an inspection plan is required, it must be submitted to GKN for approval prior to the commencement of production. The inspection plan shall address the inspection operations that are required to verify all product characteristics and shall include the identification of all inspection methodologies being proposed for use.

## Q02.08

The requirements of Vought SQAR, revision in effect as of date of PO, are applicable. The SQAR can be accessed on the Vought website at:

<http://www.voughtaircraft.com/suppliers/quality/qualitysqar.htm>

## Q02.09

The requirements of QA-111 (revision in effect at the time of Purchase Order) are applicable. The document can be accessed on the BF Goodrich web-site at: <http://materiel.goodrich.com/>

## Q02.10

All Joint Strike Fighter (JSF) suppliers must have a QMS in full compliance with AS9100C or to the latest revision after September 15, 2018. This requirement is applicable at **ALL** levels of your sub-tier suppliers who provide product or services ultimately used on the JSF Program.

Supplier shall maintain an ISO, AS or Military Standard equivalent quality system acceptable to GKN. Third party registration ISO/AS/EN QMS's from an ANSI-ASQ National Accreditation Board ([www.anab.org](http://www.anab.org)) approved registrar is preferred. Supplier, at a minimum, shall have and maintain a quality system that is compliant with a currently published and maintained consensus industry standard quality system specification as is appropriate to supplier's activities.

## Q02.11

When modifications, repairs, or replacements occur after supplier's final inspection or test, supplier shall perform a re-inspection and test of the affected characteristics prior to presentation for GKN 's acceptance.

## Q02.12

Supplier shall utilize written instructions for all manufacturing, processing, and inspection operations. Instructions shall be in the form of planning, manufacturing operation sheets, shop orders, travelers, or other identifying document. Such instructions shall identify, in sufficient detail, the controls and conditions of manufacturing particular to the item being manufactured, assembled, inspected and tested. Changes to planning instructions shall be traceable and approved prior to use.

LMA work: Supplier shall submit all above noted supplier processing instructions and/or planning for GKN items classified as "critical", i.e., "fatigue/fracture critical, fracture/durability critical, safety critical, etc" to GKN for LMA Aero Program Level III review, approval and signature.

## Q02.13

Items on this purchase order are for Boeing aircraft end use, and shall comply with all Boeing engineering, manufacturing & procurement requirements, including the D-590, [Form X31764](#) "Quality Purchasing Data Requirements (BCA) and [D1-4426](#) specifications at the time of manufacture/procurement.

## **Q02.14**

The requirements of IAI CAG 9000, revision in effect as of date of PO, are applicable. This document can be assessed on the IAI website at the IAI Supplier Net.

[http://www.iai.co.il/10143-en/Suppliers\\_Net.aspx](http://www.iai.co.il/10143-en/Suppliers_Net.aspx)

## **Q02.15**

When NDT is required, the source performing such an inspection must have a written NDT procedure that has been approved by Boeing, St Louis. This is applicable to F-15 parts, only.

## **Q02.16**

This is a critical part. When Nondestructive testing (NDT) is required, the source performing such inspection must have a written NDT procedure that has been approved by LMA. Certifications must indicate customer Approval Number.

## **Q03.01**

Purchase order for standard hardware, or assemblies that include standard hardware (i.e., BAC, AN, NAS, STM, MIL, etc.), are to be satisfied with material of the latest specification revision level in effect, shall be procured only from approved distributors IAW Boeing's D1-4426 and shall comply with all obsolescence / replacement criteria when applicable, IAW Boeing D-590.

## **Q03.02**

Items on this order are for Pratt & Whitney end use and are controlled per applicable Pratt & Whitney requirements as well as GKN Aerospace requirements.

## **Q03.03**

Suppliers shall purchase raw materials and standard hardware from prime customer-approved sources, e.g. [D1-4426](#), ASPL, or other approval listing, Material that will be produced / procured outside the USA will always require customer approved sources. Foreign supplied materials are prohibited on military aircraft.

## **Q03.04**

All special processes required by this purchase order shall be performed by sources that are approved by the prime customer.

These are the hyper-links to the respective BCA, LMA, NGC, GAC & BBD web sites to find their special process requirements.

Boeing (BCA): [Boeing - Approved Process Sources - D1-4426](#)

Lockheed Martin (LMA): [Lockheed Martin - QCS-001 – LM Approved Processors](#)

Northrop Grumman (NGC): [Northrop Grumman - OASIS ASPL](#)

Gulfstream (GAC): [Gulfstream - Approved Processors List](#)

Bombardier (BBD): [Bombardier - Approved Suppliers Listing](#)

## Q03.05

For the current revision of the specification applicable to this purchase order, see Master Specification Listing available at:

[Quality Information - GKN Aerospace](#) (New York) or [Quality Information - GKN Aerospace](#) (Wellington)

## Q03.06

Suppliers of special processes must be currently approved by NGC.

<https://oasis-aspl.myngc.com/>

## Q03.07

For NGC & LMA F-22 & F-35 programs, all material suppliers and or distributors must be listed on “EMAP” (Engineering Materials & Approved Products) located on the Lockheed Martin external web page:

<http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-engineering.html>  
under: “Engineering Materials Approved Products”.

For NGC & LMA F35 program, see the latest revision of the “Approved Manufacturer List for Standard Parts or 2GNA00001” for a list of all approved sources/manufacturers of standard parts.

Also applicable is the “Counterfeit Parts Prevention” requirement per Paragraph 1.4 of LMA App QX and NGC SQAR Paragraph 3.11.

Supplier shall establish and maintain controls, when certified materials are required, to prevent the use of non-certified materials.

## Q03.08

Supplier shall use QCS-001 to identify the process sources, processes, and specifications requiring GKN approval.

## Q03.09

Processing to be accomplished in performance of this purchase order is directly related to a Lockheed Martin Aeronautics Company purchase order and must be accomplished in accordance with process specification(s) on this purchase order and the revision in effect as of the date of this PO of Lockheed Martin Aeronautics Company Appendix QJ.

Appendix QJ is located at:

[http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality\\_qualityappendices.html](http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality_qualityappendices.html)

## **Q03.11**

A counterfeit parts prevention program shall be in place that is structured to ensure against the receipt of such parts into the supplier's inventory, against their use in manufacturing, and against their being sold to other suppliers. This program shall be similar to, and meet the intent of SAE AS5553.

## **Q03.12**

All parts, hardware and metals purchased for BAE must be purchased from "BAE AGREED" sources that must identify themselves on the packing/invoice slips. POs must state, "Supply in accordance with BAE/AG/QC/SC.1".

## **Q03.13**

Items on this Order are for Bombardier use and must comply with all Bombardier's engineering requirements ordered at the time of manufacture/procurement, including the use of [The Approved Supplier List](#), and to the latest revision including EMCM for the control of material.

## **Q03.14**

Items on this Order are for Raytheon's use and must comply with all Raytheon's engineering requirements ordered at the time of manufacture/procurement.

## **Q03.15**

Items on this Order are for Cessna's use and must comply with all Cessna's engineering requirements ordered at the time of manufacture/procurement.

## **Q03.16**

Items on this Order are for Gulfstream's use and must comply with all Gulfstream's engineering requirements ordered at the time of manufacture/procurement.

## **Q04.01**

For contract review and planning with LMA as customer, see [QCS-001](#).

## **Q05.01**

The supplier is responsible to maintain control of the latest revision of models, blueprints, parts lists, inspection media, operation sheets, specifications, and other such documents as specified in this purchase order.



## Q05.02

The supplier is responsible to destroy all obsolete blueprints, parts list, inspection media, specifications and other such proprietary documents. GKN supplied equipment shall not be destroyed without written approval from GKN.

## Q05.03

Control of digital data received from GKN that is used as authority for manufacture and/or inspection, shall comply with the requirements of BCA D6-51991, MAA1-10009-1, LMA App QX, or NGC SQAR as applicable.

Boeing (BCA): <http://www.boeing.com/quality.html#/hash4>

Lockheed Martin (LMA): [http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality\\_qualityappendices.html](http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality_qualityappendices.html)

Northrop Grumman (NGC): <https://oasis.northgrum.com/contract/qualdocs.htm>

Spirit Aerosystems: <http://www.gkngroup.com/aerospace/supplier-info/new-york/Pages/quality-information.aspx>

## Q05.06

Control of digital data received from GKN Aerospace that is used as authority for design, manufacture and/or inspection must comply with the requirements of Vought [SQR-004 Supplier Quality Requirements - Control and Use of Digital Datasets](#).

## Q05.07

Control of digital data received from GKN Aerospace that is used as authority for design, manufacture and/or inspection must comply with the requirements of IAI [DPD Procedure](#).

## Q05.08

Control of digital data received from GKN Aerospace that is used as authority for design, manufacture and/or inspection must comply with the requirements of MHI Canada Aerospace, Inc "MAC1000 Appendix 5".

## Q06.01

During the performance of this purchase order, GKN, its customer and/or regulatory agencies, have the right of entry to determine and verify product quality, records and material, including the right to audit the supplier's quality system at any location. The foregoing pertains equally to the supplier's sub-tiers.

[Supplier must coordinate any such entry with the GKN buyer](#)

Work under this PO is subject to GKN's periodic surveillance/audit of supplier's compliance with supplier's internal procedures and other documents applicable to this PO.

GKN's acceptance of such product does not absolve the supplier of the responsibility to provide acceptable product, nor does it preclude subsequent rejection by GKN, its customer or regulatory agencies.

## Q06.03

All suppliers of special processes must be currently approved to do so by the [BFG/AG Qualified Supplier Document \(QSD\)](#) or the BFG/AG customer approval document.

## Q06.04

At no additional cost to GKN, products may be subject to inspection, surveillance and test at reasonable times and places, including supplier's subcontractors' or suppliers' locations. GKN will perform inspections; surveillance and tests so as not to unduly delay the work. Supplier shall maintain an inspection system acceptable to GKN for the products purchased under any order.

If GKN performs an inspection or test on the premises of supplier, its subcontractors or supplier shall furnish and require its subcontractors or suppliers to furnish, without additional charge, reasonable facilities and assistance for the safe and convenient performance of these duties.

The supplier's documentation accompanying the shipment shall reflect evidence of these sections.

## Q06.15

GKN's rights to perform inspections, surveillance and tests, and to review procedures, practices, processes and related documents related to quality assurance, quality control, flight safety, and configuration control shall extend to the customers of GKN that are departments, agencies or instrumentalities of the United States Government and the FAA, and to any successor agency or instrumentality of the United States Government. GKN may also, at their option, by prior written notice from the GKN's procurement representative, extend such rights to other customers of GKN, and to agencies or instrumentalities of other agencies equivalent in purpose to the FAA. The supplier shall cooperate with any such United States Government or GKN directed inspection, surveillance, test or review without additional charge to GKN. Nothing in any purchase order shall be interpreted to limit United States Government access to the supplier's facilities pursuant to law or regulation.

When the supplier is located in, or subcontracts with a supplier located in a country which does not have a bilateral airworthiness agreement with the United States, the supplier shall obtain and maintain on file, and require its affected subcontractor(s) to obtain and maintain on file, a letter from the applicable government where the product or subcontracted element is to be manufactured, stating that GKN, and the FAA shall be granted access to perform inspections, surveillance and tests and to review procedures, practices, processes and related documents related to quality assurance, quality control, flight safety, and configuration control. This letter is subject to review by GKN,

## Q07.01

The supplier is responsible to maintain control of all GKN supplied material, gauges and tooling. Any such material that is lost, damaged or otherwise unsuitable for use shall be immediately reported to the GKN.

## Q07.02

The supplier shall comply with the requirements of BCA Suppliers' Tooling Document, D33200's current revision.

## Q07.03

Supplier shall include in its documented quality system written procedures for the control, maintenance, and calibration of special tooling, jigs, inspection and test equipment, and other devices used in manufacturing processes.

## Q07.04

Any parts supplied by GKN are solely for the purpose of being processed and remain the property of GKN

## Q08.01

All products shall be identified per model/blueprint/specification and operation sheet requirements prior to delivery.

### **For Boeing (BCA) Parts:**

The following information listed below must be included at the final part marking operation/step:

"Date of Manufacturing" in "MM/DD/YYYY" format. i.e. "01/01/2018".

"Work Order" or other item traceability number.

If applicable, "Serial Number".

### **For Spirit Aerosystems Parts:**

See "Section 7" of "[MAA1-10042-1 – Supplier Quality Assurance Manual](#)" for product identification, traceability and part marking requirements.

## Q08.02

When serialization and traceability are required, assigned serial numbers shall be maintained throughout all manufacturing cycles and shall be identified on both the parts and all documentation at time of shipment.

## Q08.03

Quality documentation shall be part number traceable from raw material through the planning, manufacturing, inspection, processing, testing, etc. to assure records have integrity. Supplier must be able to demonstrate that all records are complete and accurate.

## Q09.01

Copies of all material, processing, testing, chemical and physical analysis certifications, of the current revisions, shall accompany each shipment of parts as required by the blueprint or applicable specification. See [Quality Information - GKN Aerospace](#) (New York) or [Quality Information - GKN Aerospace](#) (Wellington).

## Q09.03

The supplier shall submit a Certificate of Compliance (C of C) asserting that the items contained within this shipment are in total compliance with the requirements of the purchase order, and summarizing all processes and tests performed to the applicable specification revisions, along with the name of each facility utilized. The supplier shall annotate in the delivery package any exceptions, e.g. variances. The supplier shall include a copy of the C of C with the supplier's product shipper.

In addition, for Boeing (BCA) designed product only:

I.A.W. BCA Purchase Order Quality Clause "Q31".

This procurement is under Boeing's Federal Aviation Administration (FAA) issued Production Certificate 700 quality system supplier control program.

THE SELLER WILL PLACE THE FOLLOWING STATEMENT WITH ALL SHIPMENTS ON THE SHIPPER AND OR C OF C:

***"Seller hereby acknowledges that the parts and/or materials being shipped under this order are intended for use under Boeing's Federal Aviation Administration (FAA) issued Production Certificate 700 and no articles (or constituent parts thereof) or the accompanying paperwork (e.g. packages, shippers, etc.) contain any Federal Aviation Administration- Parts Manufacturer Approval (FAA-PMA) markings"***

**Attention: Boeing requires that the provisions/requirements set forth above be included in Seller's direct supply contracts as well as the obligation that they be flowed to the applicable sub-tier supply chain.**

## Q09.04

Seller shall prepare a certificate of conformance ("CoC") asserting that the Items contained with the shipment are in total compliance with all applicable requirements of this PO. Seller shall annotate in the delivery package any exceptions, e.g variances, Supplier Quality Assurance Report ("SQAR"), Advanced Engineering Authorization ("AEA"), etc. Seller shall include a copy of the CoC inside the seller's shipping container.

## Q09.12

The supplier shall provide with all shipments the following evidence of acceptance by its quality assurance department: (a) Certified physical and metallurgical or mechanical test reports where required by controlling specifications, (b) A signed, dated statement on the packing sheet certifying that its quality assurance department has inspected the products and they adhere to all applicable drawings and/or specifications.

## Q09.13

Items on this order are for IAI-CAG end use. All manufacturing and/or procurement must comply with the requirements of the latest revision of [IAI-CAG9000](#) at the time of manufacture and/or procurement.

## Q10.04

The supplier may use sampling plans provided they are justified on the basis of recognized statistical principles, appropriate for use, and IAW existing industry, military or government standards. Such plans must have applicable customer approval as specified as follows. For all cases the supplier's proposed sampling plan must have the approval of GKN before implementation.

LMA work: Supplier shall have the right to use sampling plans, provided they are IAW existing industry, military or government standards, and have prior approval in writing from LMA.

BCA work: Supplier shall perform 100% inspection for in-process & final inspection, or conform to the requirements of D1-8007, "Approval Guide for Supplier Statistical Plans." The supplier must have BCA-approved procedures and/or plans, as required by this document, prior to the implementation of such methods. BCA reserves the right to conduct surveillance at the supplier's facility to access conformance to the requirements of this document.

NGC work: Supplier may use sampling plans, provided they are IAW military or government standards such as: ANSI Z1.4, MIL-STD-1916, or ARP9013.

## Q10.05

If source inspection is required it shall be coordinated with GKN prior to delivery. Authorization for shipment shall be provided by the GKN source Inspector's stamp on the supplier's packing list.

## Q10.08

The inspection status of all products shall be clearly identified throughout the manufacturing process and upon delivery to GKN.

## Q10.09

When SPC is used as an option for either in-process or final inspections, the supplier shall satisfy the requirements of [D6-84279](#).

## Q10.10

All parts painted with BMS10-1 1 Type I primer, Mil-PRF-23377 primer, and/or BMSIO-11 Type 11 enamel in accordance with BAC 5736, Application of Chemical and Solvent Resistant Finishes, should be tested to the requirements defined within that BCA and BSS 7225, Tape Test Adhesion, as referenced.

## Q10.11

THIS Q NOTE IS ONLY APPLICABLE TO BOMBARDIER / MHICA PARTS:

Adhesion of all cured coatings but not limited to Fluid Resistant Primers, Fluid Resistant Enamels / Top Coats and Integral Fuel Tank Coatings shall be determined on all parts and on BLS 9500 test panels chromic acid anodized per BAPS 160-010 prepared and processed with each lot of parts. As an alternative, BATS 9621 test panels treated per BAPS 160-020 prepared and processed with each lot of parts can be used in lieu of BLS 9500.

Adhesion shall be evaluated on all parts by dry tape testing per BATS 4860 Type I, Class 5. In addition, adhesion shall be evaluated on test panels prepared and processed with each lot of parts per BATS 4860 Type I, Class 2 (dry tape test) and by wet tape testing after immersion in water per BATS 4860 Type II, Grade 1, Class 2. The applicable coatings shall have a minimum adhesion level of 3B.

## Q10.12

Supplier must retain on file the results of the final inspection for all kitted parts or assemblies that will include a dimensional inspection, temper inspection per BAC 5946 for aluminum alloys, and hardness inspection per BAC5650/BSS7350 for steel and CRES alloys.

## Q10.13

Final Product Acceptance for all detail parts must include 100% inspection of temper (Conductivity 100%) and Rockwell Hardness (high and low conductivity readings) for aluminum alloys, and 100% Rockwell Hardness inspection for steel and CRES alloys. Inspection of temper must be accomplished after the final machining operation on fully tempered material and/or the final heat treatment operation, where applicable. The required range must be listed along with the range of measured values at the appropriate place on each work order and, where applicable, be transferred from process certifications. For clad materials, the type of instrument used to verify compliance must also be listed. Sampling of hardness inspections may be allowed for certain alloys or tensile ranges if permitted by the governing customer documents or the corresponding heat treatment specification.

## Q11.01

For all close tolerance characteristics ( $\leq .0015$ "), GO and NO GO gauging techniques are not acceptable.

## Q11.02

Inspection equipment utilized must have capability to attain a measurement of ten percent of the tolerance being inspected.

## Q11.05

The supplier shall maintain a documented calibration system for the calibration and maintenance of tools, jigs, inspection and test equipment, and that is compliant with ISO 17025, ISO10012-1, ANSI Z540 or MIL-STD-45662.

## Q11.06

The supplier shall use the mandatory/required tooling provided by GKN, and designated as production type tooling for manufacturer, as supplier's media of inspection for GKN source inspections of those features created by, or depicted by, such tooling, e.g., contours, hole locations, and profiles.

Supplier shall periodically evaluate supplier manufactured and/or owned tooling that is used as a media of acceptance to it control media.

## Q12.01

Supplier's quality system shall provide a means for maintaining accurate documentation of the inspection status at all times, for items to be delivered to, and during the shipment to GKN.

1. Supplier's inspection stamps shall be of a design distinctively different from those of GKN and GKN's customers.

2. Supplier's documented quality system shall provide a method for the control and issuance of inspection stamps, and for the prevention of unauthorized use of such stamps. If inspection status verification is done by using the signatures/initials of the verifier, the supplier shall have a documented procedure addressing how signatures/initials are distinguished and/or controlled. The use of signature/initials are prohibited for non-destructive testing verification. Upon request by GKN, supplier's procedure for accomplishing the above shall be available for review.

## Q13.01

The supplier shall implement and maintain a documented QMS that provides for the identification, documentation, and disposition of nonconforming material. The supplier shall ensure that effective corrective action is taken (including repetitive non-conformances dispositioned "Use-As-Is" or "Repair" by the buyer or the supplier's Material Review Board ["MRB"] actions) to prevent, minimize, or eliminate non-conformances. The supplier's QMS shall ensure that non-conforming material is not used for production purposes, or for unintended use.

The supplier shall maintain records of all nonconforming material, dispositions, assignable causes, corrective actions, and effectiveness of corrective actions for the period specified in the applicable Quality Notes.

The supplier shall respond to all GKN's requests for corrective action. When so requested, the supplier shall provide trend data and findings for GKN rejected Items. The supplier shall identify root cause findings and corrective actions required to preclude recurrence by utilizing tools such as cause mapping, cause and effect analysis, Five Why's etc.

The supplier shall assess all GKN-identified non-conformances, whether or not Item(s) was/were returned to the supplier, and take appropriate actions to ensure causes of nonconformance are corrected.

## Q13.02

The supplier shall report nonconforming material to GKN using a [VMRR form number WI-06-01-02](#). Nonconforming material shall not be shipped without GKN quality assurance approval. GKN reserves the right to disposition nonconforming material as scrap without submitting product for customer MRB. VMRR forms are available from the GKN.

Notwithstanding any other provisions herein, to the extent Supplier's performance is the direct cause of a financial impact to GKN's customer due to a Supplier nonconformance submittal and evaluation of such nonconformance(s) which has the potential to cause a disruption to aircraft production and delivery schedules as determined by GKN's customer, the costs of the financial impact the defective product(s) has caused will be flowed down to the Supplier and Supplier shall pay to GKN the amount equal to the charges received by GKN's customer.

## Q13.03

The supplier shall provide written notification to GKN within one business day after a nonconformance is determined, or suspected, to exist on product already delivered to GKN under any GKN PO, with the following information provided to GKN:

1. Affected process or part number and name
2. Description of the problem (i.e., what it is and what it should be)
3. Quantity and dates delivered
4. Suspect/affected serial number(s) or date codes, when applicable.

If the nonconformity has been identified by GKN and communicated to the supplier using a nonconformance record, or other equivalent means, requesting a corrective action response, the supplier shall notify GKN if additional product has been found to be so affected.

## Q13.04

The supplier shall implement a system of corrective action for discrepancies identified by the supplier, GKN, or GKN's customers. When GKN requests written corrective action, then the supplier shall document the cause of the discrepancy, the corrective action taken, the effective date of the corrective action, and submit this to GKN for review. GKN reserves the right to verify the effectiveness of the stated corrective action at the supplier's facility.

## Q14.01

A Foreign Object Debris/Damage (FOD) prevention program is required to be in place, as described in NAS412. For LMA work, the supplier shall maintain a FOD prevention program IAW LMA Quality Clause [Q4R](#), current revision.



## Q15.01

All materials, parts, and age control products must be protected against damage and corrosion during delivery using sound standard packaging practices. Special packaging instructions, when required, will be as specified on the purchase order.

## Q15.02

The supplier agrees to insure that materials utilized in the performance of this purchase order, whether furnished by GKN or by the supplier, shall be segregated and controlled to insure traceability and to prevent them from being intermingled with any other materials. In addition, the supplier shall strictly control all inventory of customer property that is in excess of the PO contract quantity, so as to prevent it from being sold or provided to any third party.

## Q15.03

The supplier shall strictly control all inventory of customer property that is in excess of contract quantity in purchase order to prevent product from being sold or provided to any third party without prior written permission from the customer.

## Q15.04

Any parts supplied by GKN are solely for the purpose of being processed and remain the property of GKN.

## Q15.05

Supplier shall maintain controls to ensure that time & temperature sensitive (TATS), and age controlled materials shall not have exceeded 25% of their shelf life upon date of receipt at the supplier's facility. For BCA work, they shall also meet the requirements of BSS7002. In addition, the supplier shall ensure that for age controlled materials, the shelf-life & environmental controls are properly identified.

## Q16.01

Quality documentation records and certifications must be maintained on file for a period of four years after final payment of this purchase order. After this period, Supplier shall not destroy such records without the written approval of GKN.

## Q16.02

Quality documentation records and certifications shall be maintained on file for a period of 1 Calendar Year + 10 Years from the date of shipment under each applicable order for all product/part numbers unless otherwise specified on the Purchase Order. After this period the supplier shall not destroy such records without the written approval of GKN.

## Q16.03

Quality documentation records and certifications must be maintained on file for a period of ten years after final payment of this purchase order. After this period, Supplier shall not destroy such records without the written approval of GKN

## Q16.04

Quality documentation records and certifications must be maintained on file for a period of thirteen years after final payment of this purchase order. After this period, Supplier shall not destroy such records without the written approval of GKN.

## Q16.05

Quality documentation records and certifications must be maintained on file for a period of forty years after final payment of this purchase order. After this period, Supplier shall not destroy such records without the written approval of GKN.

## Q16.06

Quality documentation records and certifications must be maintained on file for the service life of the aircraft. After this period, the supplier shall not destroy such records without the written approval of GKN.

## Q16.07

Quality documentation records and certifications must be maintained on file for an indefinite period. The supplier shall not destroy such records without the written approval of GKN.

## Q16.08

Supplier shall maintain complete records of all manufacturing, process capability (if applicable), inspection & test, including the certificate of compliance. Upon request, the supplier shall make records available to GKN for a minimum period of three years after completion of this PO, and for longer periods as may be specified elsewhere in this PO. Upon request, the supplier shall forward specific records to GKN at no additional cost, price, or fee to GKN. For at least seven years after the completion of this PO, supplier shall maintain and provide to GKN upon request, records of all QCS-001 process control tests performed by the supplier, including the inspection records of processed items.

Supplier shall maintain special processing activity data on each GKN-approved process performed for GKN, including those processes performed by the supplier on GKN items, or any QCS-001 source utilized. The supplier shall compile a quarterly usage report of this activity data and submit it to GKN. Supplier shall also include in the usage report all special processing activities accomplished which may have been authorized by the supplier's sub-tier manufacturing sources. Fax and e-mail submittals are prohibited. Supplier shall submit the quarterly usage report within 15 calendar days after the end of each calendar quarter, even if there were no QCS-001 sources utilized during the period. Usage reports shall not be input prior to the end of the quarter. The report shall consist of processing activity in the following categories:

- Supplier subcontracting special processing to QCS-001 or NADCAP approved sources.
- Supplier performing special processes on LMA items for other LMA suppliers.
- Supplier performing special processes on LMA items for the supplier manufacturers
- Supplier's sub-tier manufacturing source(s) who subcontract special processing activity to QCS-001 or NADCAP approved sources.

Note: Usage reporting is not required when supplier is performing QCS-001 processes for non-LMA work.

The usage report shall have the following data elements & information:

- QCS-001 source name
- GKN's assigned QCS-001 source number
- Identification number of special process(es) used
- Frequency of use, e.g., "Lots, "Batches"

After the period described above the supplier shall not destroy such records without the written approval of GKN.

## Q16.09

The supplier shall maintain on file at his facility, quality records traceable to the conformance of product/part numbers delivered to GKN. The supplier shall make such records available to regulatory authorities and to GKN's authorized representatives. The supplier shall retain such records for the period specified in the purchase order for all product/part numbers, including all records related to the current first article inspection, of the last product covered by the FAI.

At the expiration of such period GKN reserves the right to request delivery of such records. In the event GKN chooses to exercise this right, the supplier shall promptly deliver such records to GKN at no additional cost on media agreed to by both parties.

## Q16.10

Quality documentation records and certifications shall be maintained on file as applicable. Supplier shall not destroy such records without the written approval of GKN.

### Customer Record Retention Requirements

Customer	Retention period (years)	Comments
Alenia Aermacchi	10	MRR records - Life of product for MRR parts.
	Life of Product (MRR parts) 7 (FAI parts)	MRR records. Past final delivery of the last product covered by the FAI
Goodrich Aerostructures Group	7	Approval is required for destruction
Boeing Commercial (BCA)	1 + 10 (See Comments)	1 Calendar Year + 10 Years from the date of shipment under each applicable order for all product/part numbers unless otherwise specified on the order.
Boeing St. Louis (IDS)	4	
Spirit AeroSystems, Inc.	7	
Lockheed Martin	7	Non-traceable parts
Lockheed Martin (F35)	30 Minimum	Traceable parts only
Lockheed Martin (F22)	20 Minimum	Traceable parts only
Northrop Grumman	7	See exceptions for FC and FCT designated parts.
Northrop Grumman FC and FCT	Service life	First Article Inspection reports only
Airbus (DAN)	Indefinitely	
Kawasaki Heavy Industries	13	
Pratt & Whitney	40	Forward upon expiration of retention period
Saab Military	5	
Wyman Gordon	7	
Alcoa Titanium & Engineered Products (Formerly RTI Claro, Inc.) (BCA)	30	
Klune Industries, Inc. (BCA)	7	
TAI (F35)	7	
MHI Canada	Completion of production model.	The retention period of First Article Inspection (FAI) records shall be until completion of production for the model.
	Termination of service life.	The retention period of other quality records shall be until termination of service life for the model (disposing shall be notified to MHICA eight (8) months earlier).
IAI (BCA)	Indefinitely	
Fuji Heavy Industries (BCA)	10	
GKN-Aerospace Precision Machine, Inc. (BCA)	7	FAI reports are indefinitely retained per QSP-16 Para 6.2
Gulfstream	10	
Cessna	7	
Triumph / Vought GV	7	
GKN Filton	Life of Company	
Arconic – Cleveland Operations	80 Minimum	

## Q17.01

Annually, at a minimum, the supplier shall conduct a self-audit to verify the effectiveness of his quality system and processes.

## Q17.02

Annually and in accordance with the applicable customer DPD/MBD standard requirements, the supplier shall conduct a self-audit of its DPD/MBD process/procedure. A copy of the completed audit report shall be forwarded to GKN.

## Q18.01

The supplier shall be responsible to provide trained personnel for the manufacture and inspection of products used to satisfy the requirements of this purchase order.

## Q18.02

The supplier shall ensure that all personnel performing work to customer specifications which require certified persons, shall attain such certification prior to the performance of such work, (e.g., sealant installation per BAC 5000,)

## Q19.01

Applicable for the initial production part by the supplier, a first article inspection (FAI) report is required for each dash number. The inspection report shall indicate the actual measurement obtained for each feature listed on the model, blueprint, parts list, and GKN manufacturing instructions (when specified on the purchase order). When repetitive same value dimensions are inspected, (e.g., holes of the same size, web thickness of the same size, etc.) each individual found value is to be documented, including location. A first article is also required when a part has not been in production for a period of two years or longer. First article inspection shall be performed in accordance with AS9102, current *revision*.

Supplier may obtain copies of AS9102 at: [AS9102B: Aerospace First Article Inspection Requirement - SAE International](#)

## Q19.02

At GKN's discretion, a GKN source inspector will be present during the first article inspection. When source inspection is specified, the supplier shall provide GKN with a minimum of 48 hour notice of the date the article is to be available for performance of this FAI.

## Q19.03

An amended FAI report is required for configuration changes, but only for the materials, processes, and dimensions that are affected, by the change, and shall conform to AS9102, current revision.

## Q19.04

The requirements of Lockheed's Quality Clause Q2A, First Article Inspection requirements and AS9102 are applicable to this Purchase Order.

The requirements of Quality Clause Q2A and AS9102 are also applicable to all lower-level detail parts which comprise the part on this Purchase Order.

This includes parts manufactured, processed, assembled, tested or inspected at your sub-tier suppliers. QCS-001 Process houses are required to comply to Quality Clause Q2A and AS9102.

Seller shall notify their GKN buyer, in writing, a minimum of five (5) business days prior to Supplier procuring items or beginning any FAI Planning activity for the PO.

GKN Quality Assurance may elect to review or participate in Seller's FAI process at any time throughout the FAI process. Seller shall also notify GKN Buyer, in writing, a minimum of five (5) business days prior to creating or starting any changes identified in paragraph E, of Clause Q2A that affect items delivered under this Purchase Order.

Quality Clause Q2A can be located at:

[http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality\\_clauses.html](http://www.lockheedmartin.com/us/aeronautics/materialmanagement/scm-quality/scm-quality_clauses.html)

## Q20.01

If a key characteristic is required by engineering documents or the GKN Aerospace Vendor Operation sheet, the following requirements apply:

**All key characteristics shall be placed under statistical process control.**

If the supplier does not have the ability to perform as stated above, contact the GKN Aerospace buyer immediately prior to continuing with purchase order requirements.

At any time, the supplier may request assistance from GKN Aerospace when conducting S.P.C. and A.Q.S. (Advanced Quality System) activities. Contact the GKN Aerospace buyer.

**Documentation requirements per key characteristic:**

Documents required for each key characteristic shall be 1x-MR chart or X bar-R chart.

If 21 or more parts are listed on the control charts, then upper and lower control limits along with a CPK reading shall be indicated on the control chart.

All charts shall be identified with the date, part number, dash number, and the key characteristics.

The documentation above shall be in addition to all other documentation required by the purchase order and engineering requirements.

AS 9103, "Variation Management of Key Characteristics" may be used for guidance in the implementation of this quality note.

## Q20.04

When determinant assembly (DA) characteristics are identified, the supplier shall certify that all DA characteristics have been inspected, and verified as to their compliance with the drawing requirements. When specified on the purchase order, the supplier shall provide an inspection report that records variable data for these characteristics for the number of parts, lots etc. specified on the purchase order.

## Q22.01

GKN requires its parts to be etch cleaned only when it is required by the processing specification. GKN parts supplied to your facility for processing have surfaces that have been polished and/or blended, and where this is a concern, are considered by most processing specifications as surfaces that have “smeared metal.” If a process specification contains etch cleaning requirements on parts having such surfaces (see each individual specification for its definition of “smeared metal”), GKN requires such parts to be etch cleaned.

GKN process instructions assume parts will be etch cleaned, and will note on the process purchase order if holes or surfaces require masking prior to etch cleaning. The supplier is responsible for masking such features to totally prevent etching of their surfaces.

## Q22.02

Assemblies - APPLY ONE COAT OF BMS 10-11, TYPE I, YELLOW PRIMER TO THE FASTENER HEADS, COLLARS, RIVETS IF AGAINST ALUMINUM PER BAC 5736.

## Q23.01

For all parts included in the 787 Seat Track Program, see the GKN website page containing the link called “787 Seat Track Program.” (See Master Specification Listing.) This link shows each part and its drawing number. The drawing and revision that is expected to be used for processing location information is listed on these pages. This page shall be updated as part of the MSL update schedule. One way of discerning which parts belong to the Seat Track Program is to look at the first two numbers of the job number. If it begins with 41, 46 or 47, it is part of the Seat Track Program.

## Q24.01

This order contains parts and directs the use of documents and technical data subject to the U.S. Arms Export Control Act (AECA), and the International Traffic in Arms Regulations (ITAR), enacted pursuant to such act. Any of the parts, documents, or data mentioned in these quality notes may not be transferred to any foreign person or entity in the United States, or to any person or entity abroad, nor shall such persons or entities have access to such documents and technical data except as authorized by the U.S. Department of State or the International Traffic in Arms Regulations (ITAR).