

Supplier Quality Assurance Requirements (SQAR)

This document contains the specific Supplier Quality Assurance Requirements of Triumph Aerostructures, LLC and Triumph Aerostructures-Tulsa, LLC. They are complementary to the requirements of Triumph Group Inc. Supplier Quality Assurance Manual (SQAM001), which is hereby invoked by reference.

The Triumph Group Supplier Quality Manual (SQAM001) details the general Supplier Quality requirements for Triumph Group suppliers. SQAM001 is available on the Triumph Group Supplier Portal under Quality Requirements / Supplier Quality Manuals.

triumphsupplysource.com

This Supplier Quality Assurance Requirements (SQAR) document is the Suppliers' guide to understanding the specific Quality Requirements and expectations of Triumph Aerostructures, LLC and Triumph Aerostructures-Tulsa, LLC and, unless otherwise specified herein, forms a part of and contains specific standard quality requirements of Triumph Aerostructures, LLC and Triumph Aerostructures-Tulsa, LLC's purchase orders. This document and applicable Supplier Quality Requirements (SQR) documents apply to suppliers and all members of their supply chain who furnish product, material, processes, and services.

Effective Date: 25 May 2018

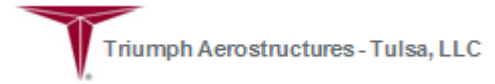
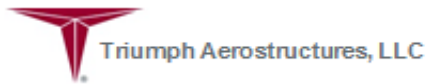
Approved



**Mitch Kline, Manager
Supply Chain Quality**

SQAR is available on the Triumph Group Supplier Portal under Quality Requirements/ Company Quality Requirements

To obtain a hard, copy contact Triumph Aerostructures, LLC or Triumph Aerostructures –Tulsa, LLC Procurement Representative



REVISION RECORD

The latest issue of this manual may be confirmed by viewing the “*Suppliers*” web site (address shown on the cover), or by contacting Triumph Supplier Relations @ (817) 804-9400x2499.

Revision	Date	Revision	Date	Revision	Date
N/C	05 Aug 1997	Rev Q	13 Jan 2009	Rev AG	23 Jan 2015
Rev A	13 Feb 1998	Rev R	24 Apr 2009	Rev AH	5 May 2015
Rev B	24 Aug 1998	Rev S	27 Jul 2010	Rev AI	1 Sep 2015
Rev C	11 Jun 1999	Rev T	25 Aug 2010	Rev AJ	10 Feb 2016
Rev D	25 Jul 1999	Rev U	30 Mar 2011	Rev AK	21 Apr 2016
Rev E	07 Apr 2000	Rev V	25 Jul 2011	Rev AL	04 May 2016
Rev F	21 Feb 2001	Rev W	26 Oct 2011	Rev AM	17 May 2016
Rev G	25 Oct 2001	Rev X	24 Feb 2012	Rev AN	09 Jun 2016
Rev H	09 Nov 2001	Rev Y	23 May 2012	Rev AO	16 Jul 2016
Rev I	18 Dec 2002	Rev Z	09 Oct 2012	Rev AP	31 Aug 2016
Rev J	07 Oct 2003	Rev AA	18 Oct 2013	Rev AQ	03 Apr 2017
Rev K	26 Jan 2005	Rev AB	19 Dec 2013	Rev AR	03 May 2017
Rev L	12 Dec 2005	Rev AC	21 Mar 2014	Rev AS	07 Jun 2017
Rev M	28 Aug 2006	Rev AD	27 Jun 2014	Rev AT	09 Oct 2017
Rev N	18 Sep 2007	Rev AE	11 Jul 2014	Rev AU	06 Dec 2017
Rev O	12 Oct 2007	Rev AF	30 Sep 2014	Rev AV	25 May 2018
Rev P	06 Mar 2008	Rev AG	23 Jan 2015		

The following is for Triumph Aerostructures, LLC and Triumph Aerostructures – Tulsa, LLC internal use

The information contained in SQAR is controlled by the owner listed in the signature sign-off block and is linked to applicable command media. The owner is responsible for the integrity and maintenance of the SQAR.

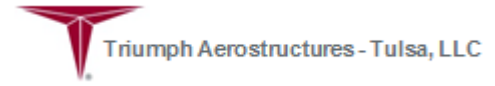
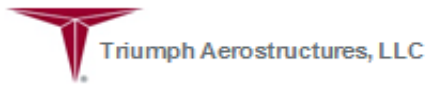
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Revision AV, Summary of Current Changes:

- Updated link to retrieve the most current SQAM001
- Add document owner and signature
- Section 2.9 First Article Inspection (FAI) and Design Process Change Validations
 - Updated Note: Parts being shipped to Triumph Aerostructures, LLC. And Triumph Aerostructures – Tulsa, LLC., facilities require the representative FAIs for those parts to be “Approved” by Triumph through Net-Inspect prior to being delivered.



Document Overview

This Document is effective for the following Triumph Aerostructures Companies:

1. Triumph Aerostructures. LLC and
2. Triumph Aerostructures-Tulsa, LLC

In this document, both of the Triumph Aerostructures, LLC and Triumph Aerostructures – Tulsa, LLC shall be referred to as “Triumph” unless otherwise noted.

SQAR is broken into 3 major sections as described below:

- Section 1** This section identifies key information, shown on all Triumph purchase orders (PO) or will be used by the Supplier to determine which requirements in Section 2 of this manual apply to deliverable product.
- Section 2** This section includes the quality requirements required for all deliverable “flyaway” products, and associated ground support/tooling, procured by Triumph.
- Section 3** This section provides useful general information associated with Triumph’s PO and related quality subjects.

Questions regarding this document should be directed to Supply Chain Quality, through the supplier’s purchasing representative (Buyer).

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1.0 OVERVIEW

This document is applicable to all Triumph purchase orders (PO's) for all contract deliverable production, overhaul, and modification programs including; tooling, ground support equipment and repair stations. Section 2 provides quality requirements with which the Supplier must comply during the life of procurement. The purchasing document (see example in **Figure 1**) specifies the applicable inspection requirement (**See Section 2.5**), and Program (see PO **Figure 1b**). This information is a road map to the requirements for production and delivery of product. Suppliers who receive electronic POs may see a different format than that shown. Please consult your Triumph Purchasing Representative if you have difficulty in locating this key information.

In addition to the requirements contained in this document, the Supplier shall comply with the quality requirements noted in the Contract Terms & Conditions (T&C) section of Triumph's PO. Contact your buyer in the event requirements conflict.

Triumph, its customers or Government Regulatory Agencies have the right of entry into the supplier's facility. The supplier shall include right of entry provisions in any subcontract. These provisions shall allow the supplier, Triumph and Triumph customers or Government Regulatory Agencies, to examine and verify the quality of work, records, processes and material at any place, including the plant of the subcontractor.

Any correspondence or data submitted to Triumph in support of the requirements contained herein are to be in English. All process procedures and build package data shall be maintained and provided in English upon request. All First Article Inspections (FAIs) shall be submitted in English. Documented measurements will be derived using equipment that measures in the original native engineering unit of measure (i.e. engineering dimensions in English must be measured with equipment capable of measuring in inches. Mathematical conversions are not allowed). Requests for deviations to this requirement must be submitted via Supplier Information Request (SIR). Requests will contain a Measurement Plan detailing the documented process(es) that will identify the affected characteristics, ensure calculations are accurate, no rounding is utilized that could compromise engineering tolerances and individuals are adequately trained.





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<p>The terms and conditions applicable to this PURCHASE ORDER are Buyer's Standard Purchase Order Terms and Conditions in effect as of the date hereof, which are incorporated herein by reference. The Standard Purchase Order Terms and Conditions may be accessed at Buyer's Supplier Website: https://www.triumphsupplysource.com/suppliers/ under [Supplier Provisions], [Triumph Company Terms and Conditions], then select the appropriate Triumph company as identified above. This PURCHASE ORDER is issued in support of a COMMERCIAL procurement, for the Program(s) designated below.</p>																
<div style="border: 1px solid blue; padding: 10px; display: inline-block;"> <p>SQAR is invoked in the T&C's under "Clause 2- Seller's Obligations"</p> </div> 																
<p>IN NO EVENT SHALL BUYER BE LIABLE FOR ANY COSTS OR EXPENSES INCURRED IN CONNECTION WITH OR AS A RESULT OF: (1) PROCUREMENT OF MATERIALS IN ADVANCE OF STANDARD INDUSTRY LEAD TIMES IN EFFECT AT THE TIME OF SUCH MATERIAL PROCUREMENT; AND/OR (2) COMMENCEMENT OF PRODUCTION IN ADVANCE OF SELLER'S STANDARD LEAD TIME FOR THE PRODUCT.</p>		<p>TRIUMPH AEROSTRUCTURES, LLC Signature: <u>Audrey Reep</u> (COMPUTER GENERATED SIGNATURE) Buyer's Authorized Purchasing Representative</p>														
Page 1 of 3																


Figure 1a

ITEM #	MATERIAL ID / DESCRIPTION	QUANTITY	UOM	DELIVERY DATE	UNIT PRICE	ITEM TOTAL
00010	1159P52132-005 TUBE ASSY					
	DPAS RATING: NONE PROGRAM: WA-GV WING PRIME CONTRACT: INSPECTION CODE: Preferred Performer ERS: Yes. Seller does not submit invoices.					
00020	1159P52103-003 TUBE ASSY					
	DPAS RATING: NONE PROGRAM: WA-GV WING PRIME CONTRACT: INSPECTION CODE: Preferred Performer ERS: Yes. Seller does not submit invoices.					
00030	1159W57301-006 WINGLET TIP CAP					
	DPAS RATING: NONE PROGRAM: WA-GV WING PRIME CONTRACT: INSPECTION CODE: Preferred Performer ERS: Yes. Seller does not submit invoices.					

PO Line Item No.

Part Number Nomenclature

PURCHASE ORDER #	4500108531
ORDER DATE	04/19/2017



Triumph

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Figure 1b


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<p>Buyer: Audrey Reep Email: asreep@triumphgroup.com Fax: 972-935-5166</p>					
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0000388900	<div style="border: 1px solid black; background-color: #d9e1f2; padding: 5px; display: inline-block;">Supplier Code</div>				
<p style="text-align: center;">Acknowledgment</p> <p>Seller shall sign this Acknowledgment and return it to Buyer promptly, but, in any event, no later than: (i) ten (10) working days after receipt, if this Order is DX rated, or (ii) fifteen (15) working days after receipt, if this Order is DO rated.</p> <p>By signing and returning this Acknowledgment, Seller hereby (i) agrees to comply with all terms and conditions referenced in this Order; and (ii) reaffirms its certifications that: (1) Seller and/or any of its principals are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal Government agency; and (2) to the best of Seller's knowledge and belief, no Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress, on Seller's behalf in connection with the awarding of this Order.</p> <p>Please sign and return this Acknowledgment to Buyer's email/fax indicated at the top of this page. Failure to return the signed Acknowledgment may result in your shipments being rejected or your payments being delayed.</p> <p>Signature: _____ Printed Name: _____ Title: _____ Date: _____</p>					
Page 3 of 3					

Figure 1c

PROGRAMS / IDENTIFIERS

Program / Identifiers are used to identify which program a specific PO supports. Identification of the program is critical in understanding the approval authority for approved processors (**Table 1**) and identifying Program Specific Requirements.

Program Identification is located in the PO (see Figure 1b).

2.0 GENERAL AND PROJECT SPECIFIC REQUIREMENTS

2.1 Quality Program Plan (QPP)

For new suppliers to Triumph, the supplier shall develop a QPP that will form a cross-reference between the line items of this document (SQAR), and the supplier's procedures. The QPP shall be available upon Triumph request.

If a given line item is not applicable for the products intended to be supplied, then it shall be so stated in the matrix. All line items of SQAR must be addressed.

For existing suppliers to Triumph, the supplier should update the QPP at every SQAR revision if it affects their statement of work. Triumph may request a new QPP at any time at their discretion.

NOTE: Should conflicts arise between this document and the applicable governing specification, the specification shall take precedence.

2.2 Additional Quality System Requirements

In addition to the Quality System requirements identified in the SQAM001 Table 1, unless otherwise specified, the following additional documents and appendices are imposed on all PO's. These documents can be found under the Triumph Group Supplier Web Page/Quality Requirements/Company Quality Requirements at: triumphsupplysource.com ► [Quality Requirements](#) ► [Company Quality Requirements](#), and select Triumph Aerostructures, LLC (Vought).

1. **AS9103**– Quality Management Systems - Variation Management of Key Characteristics is applicable when “Key Characteristics” (KCs) have been identified on the engineering drawing, specification or as part of the configuration requirements on the purchase order.
2. **SQR-003** – Nonconformance Reference Handbook for Suppliers; Applicable to all purchase orders.
3. **SCMP 3.7(a)** – Supplier Quality Requirements for Control and Use of Digital Product Definition /Model Base Definition; SCMP 3.7(a) is applicable if part design and/or configuration is defined via a released digital dataset (e.g., CATIA, UNIGRAPHICS, MEDs, IGES, etc.). Approval to SCMP 3.7(a) is required before a supplier can receive Digital Data from Triumph. This does not apply during the Request for Proposal/Quote phase; **however approval must be obtained prior to acceptance of formal purchase order and release of engineering.**
4. **SQR-009** – Quality Assurance Acceptance Sampling Requirements for Suppliers; Applicable to all purchase orders where the supplier performs sampling inspection unless a sampling plan is already defined in the governing specifications.

5. **SQR-010** – Hardness and Conductivity Requirements.; Applicable to all purchase orders for metallic parts (i.e., sheet metal and machined) in the final heat treat condition. (Not applicable for annealed material).

Note: For Global Hawk program, all aluminum fabricated parts require 100% conductivity inspection after fabrication. Conductivity ranges shall be per AMS 2658.

6. **SQR-011** - Supplier Quality Requirements for First Article Inspection (FAI) outlines the FAI requirements to ensure that all design features of a deliverable product are captured and that its sub components meet all applicable levels of design drawing, material and process specifications requirements. This document is a supplement to Triumph’s Supplier Quality Assurance Requirements (SQAR) and intended to provide a consistent documentation requirement on FAI’s submitted from Triumph suppliers.

2.3 First Part Qualification

Where specifications associated with product being procured by Triumph require qualification or other types of approvals prior to production, Seller shall submit all required materials and/or documentation to Triumph via SIR. Regardless of the customer specification verbiage, seller shall not contact Triumph’s customer regarding specification requirements associated with qualification data without prior written approval from Triumph. Examples of pre-production qualifications include, but are not limited to First Part Qualifications (FPQs), Thermal Profile Plans (TPPs) or Thermal Profile Reports (TPRs) and Preproduction Verification (PPV) Plans.

2.4 Special Process Requirements

When special processes listed in Triumph “Approved Special Processors List” (ASPL) are required by drawing, specification, PO, or other media, the Supplier shall ensure that the processing source for these requirements, including those performed by the supplier, are listed on the Triumph ASPL (see Table 1) prior to any processing of hardware.

As a prerequisite for Triumph ASPL approval, Special Processors require Nadcap/Nucap accreditation. Triumph subscribes to Nadcap for the following process categories:

1. Nondestructive Testing
2. Heat Treating
3. Material Testing Laboratories
4. Chemical Processes
5. Coatings
6. Welding
7. Non-Conventional Machining & Surface Enhancement – Shot Peening
8. Composites

Triumph reserves the right to validate Nadcap compliance to any processes that are unique to Triumph or outside the scope of normal industry practice and/or Nadcap general audit practice. This requirement also applies to the first-tier suppliers with internal process capabilities. In addition, if the supplier utilizes any external special process sources, this requirement must be

flowed down to the processing sources. All costs associated with Nadcap/Nucap accreditation are to be borne by the processor.

The Performance Review Institute (PRI), a nonprofit affiliate of the Society of Automotive Engineers (SAE), must perform Nadcap/Nucap accreditation audits. Detailed information regarding the Nadcap/Nucap accreditation process, including the audit schedule can be obtained from PRI at (724) 772-1616 or request by email at: pri@sae.org

When processes listed in Triumph's Customer Approved Processor List, (i.e., Boeing D1-4426, Lockheed Martin QCS-001, Airbus Digest, Bombardier, Embraer, etc.), are required by drawing, specification, or PO, the supplier shall ensure that the processing source for these processes, including those performed by the supplier, are approved by Triumph or the Triumph customer prior to any processing of hardware.

Processor POs to Triumph "Approved Sources" should contain the following statement: "Work to be accomplished in performance of this PO is directly related to a Triumph PO". The project name for the end item to be delivered should also be flowed down to the processor (e.g. F/A-18, 747, E2C etc.) The supplier and their sub tiers shall use the appropriate Triumph or Customer ASPL per Table 1, for all Triumph procurements.

Approved processor listings can be accessed at the following link:
triumphsupplysource.com ▶ [Approved Processors](#) ▶ [Triumph Group Approved Processors](#)
Then select Triumph Aerostructures, LLC (Vought)

Supplier shall use the current specification revision in effect on the date of the PO. Requests to utilize a later revision of a process specification may be submitted via SIR provided the following requirements are met:

1. There is no Triumph initiated Engineering Orders (EOs) associated with the process specification that the author of the specification has not incorporated in the later revision.
2. There is no cost or schedule impact to deliverable hardware under contract; if an impact does exist as a result of using a later process specification revision than that shown on Triumph's website, Supplier shall contact Triumph for disposition instructions.

Note: Suppliers with Design authority may approve their own sub tier process source(s). However, they are encouraged to subscribe to Nadcap and require Nadcap accreditation by their processors. Subcontracted processes of components of Supplier design must be performed by supplier-approved facilities whose capabilities and performance are supported by objective evidence of control such as: surveys and/or test results. A listing of all facilities being used must be available for review by Triumph which reserves the right of disapproval of those facilities not considered satisfactory. Suppliers shall not substitute their own process specification for the Triumph or customer process specifications without prior written approval from Triumph Engineering.

Listing in the ASPL does not assure or imply that the work performed by the ASPL processor is acceptable, nor does it compel the listed processor to accept the work. When processes are procured, it is the responsibility of the supplier to verify all processes are performed in accordance with the specification requirements.

Additionally, the processor shall review, perform, inspect and certify to the process specification as required by the PO order. Any departure from specification requirement requires the prior written approval of the Triumph engineering group responsible for the specification.

The ASPL processor (at all tiers) shall also comply with the Triumph Program unique requirements such as submission of test coupon(s), written approval of the processor's detail procedure, use of specific chemicals and/or concentration, and witnessing of first part processing and etc., when required by the process specification.

Product Associated with Secured Programs Only

For Security Access Restriction "SAR" Items, Supplier must contact Triumph for process approval status.

Table 1
ASPL Cross Reference

PROGRAM	APPROVED PROCESSOR LIST
G-5	Triumph ASPL
G450 Wing	Gulfstream ASL
G450 Nacelles	Triumph ASPL
G280	IAI Approved Supplier For Special Processes
G500	Gulfstream ASL
G600	Gulfstream ASL
G650	Gulfstream Approved Process Sources
A340	Airbus QSPL
F100/G4	Triumph ASPL
CF6	Triumph ASPL
C-5	Triumph ASPL
525	Bell QPS-101
737	Boeing D1-4426
747	Boeing D1-4426
767	Boeing D1-4426
777	Boeing D1-4426
787	Boeing D1-4426 & Triumph ASPL
C-17	Boeing D1-4426
Global Hawk / Triton	Northrop Grumman ASPL
E2-D	Northrop Grumman ASPL
F-135	Pratt & Whitney
Airbus UK	Airbus QSPL
Hawker Beechcraft	Hawker Beechcraft Approved Special Processors
V-22	Boeing D1-4426
CH-60	Sikorsky ASPL
Bombardier	Approved Supplier Listing
Embraer	Embraer ASL, and Triumph Embraer ASPL

2.5 Control of Nonconformances

Nonconforming material must be identified, documented, evaluated, segregated (where practical), and dispositioned.

Disposition Authority

The supplier's disposition authority of nonconformances is limited to Rework, Return to Vendor (RTV) and Scrap; unless the supplier has been granted MRB authority. These terms are defined as follows:

Rework - A process applied to a nonconformance, entirely within the confines of the drawing specifications that will completely eliminate it and result in a characteristic that conforms completely to the drawings, specifications, and contract requirements."

Under the provisions of this definition, rework is authorized if the governing specifications referenced within the bounds of the associated drawing provide the necessary rework instructions. Suppliers must document the nonconformance(s) and provide detail rework instructions as part of their manufacturing planning process. This is considered a part of the supplier's approved QMS relative to the control, documentation, and disposition of nonconforming material. Any rework that will alter the chemical or mechanical properties of the affected part final engineering configuration must be submitted to Triumph MRB for disposition.

Those Nonconformances that fall outside the original rework provisions and the supplier feels that a rework or repair can be applied, shall be submitted to Triumph MRB in accordance with SQR-003 for subsequent disposition.

Return To Vendor - Return of subcontractor product found to be discrepant for subsequent rework or replacement.

Scrap - Permanent removal from production and timely destruction of product found to be unfit for use. Scrapped product shall be conspicuously and permanently marked until destroyed.

All other dispositions of nonconforming material shall be submitted to Triumph MRB in accordance with SQR-003. The quantity of parts submitted to MRB shall be limited to the minimum quantity to support line item quantity/schedule.

MRB Dispositions for Supplier Designed Hardware

Suppliers of product that retain Design Authority to a Source/Specification Control Drawing (SCD) may use dispositions of use-as-is or repair as long as the nonconformity does not result in a departure from the requirements of the SCD/Customer Specification. This includes suppliers that produce products of proprietary design, and products to military and industry standards.

The supplier MRB shall not perform any disposition on any nonconformance to customer requirements that affect form, fit, function, weight, interchangeability, reliability or safety. These nonconformances shall be submitted to Triumph MRB through the electronic SMRR (Supplier Material Review Record) process accessed via the Triumph Supplier Portal as defined in SQR-003.

Supplier-Responsible Nonconformance Cost Recovery

At the discretion of Triumph, suppliers may be subject to charges for recovery of costs associated with any/ all supplier responsible nonconforming parts/ materials. Such charges will include :

Category	Description	Value
V1	SMRR-PRA Minor issue	\$400.00
V2	SMRR-MRB Minor issue	\$800.00
V3	Triumph generated PRA	\$600.00
V4	Triumph generated MRB	\$1,000.00
V5	Triumph generated MRB/DTA	\$1,500.00
V6	Triumph generated Major issue	Actuals

The Categories are defined in greater detail in SQR003. Cost recovery does not include non-conformances caused by engineering, build package or customer issues.

2.6 Product Release

Product(s) associated with this PO are subject to Triumph's inspection. Triumph's inspection requirement is stated in the body of the PO for each respective line item (Figure 1b). Triumph's inspection options and descriptions are shown below:

1. Inspection Code: Purchase Representative Plant / Triumph Site.

Triumph shall inspect deliverable product(s) upon receipt at Triumph's facility

2. Inspection Code: Supplier Pay for Source - Unless Delegated

Supplier required to contract with a Triumph approved service provider. The list of approved service providers can be found on the Triumph Group Supplier Portal Link / Approved Suppliers / Authorized Service Providers at:

triumphsupplysource.com ▶ [Approved Processors](#) ▶ [Authorized Service Providers](#)

Note: Not applicable if the supplier has Delegation granted by Triumph Group Company.

3. Inspection Code: Triumph Source.

Deliverable product(s) are subject to Triumph Source Inspection. Unless otherwise specified by the Triumph Buyer, Triumph source inspection shall be performed by Triumph's Approved Service Providers as identified on the Triumph Group Supplier Portal Link / Approved Suppliers / Authorized Service Providers at:

triumphsupplysource.com ▶ [Approved Processors](#) ▶ [Authorized Service Providers](#)

4. Inspection Code: Triumph and Government Source.

Deliverable product(s) are subject to Triumph and U.S. Government's source inspection or surveillance in accordance with the provisions stated above for each respectively.

5. Inspection Code: See Remarks / Inspect per PO Remarks by sampling/ Inspect per Special Instructions.

Triumph's inspection requirement is noted in the "remarks" section of the purchase order. Supplier shall refer to this section for Triumph inspection instructions.

6. Inspection Code: None / No Receiving Inspection.

No Triumph inspection is required for deliverable items in this purchase order.

NOTE: Exceptions will be source inspection items noted in Item 7 below.

7. Inspection Code: Preferred Performer Program (P Cubed. P³).

Triumph P³ suppliers are authorized to perform inspection functions and acceptance of product and associated paperwork on behalf of Triumph. Triumph Supplier's P³ authority is defined in the PO agreement, at the P.O. line item level (see Figure 1b).

NOTE: P³ suppliers shall perform inspection and acceptance of product in accordance with the SQAM001 Section 9.0

2.7 Part Marking Requirement

Supplier shall mark all deliverable products and documents in accordance with the PO, manufacturing planning, or engineering drawing in that order of precedence.

1. Initial PO Part Number may contain a –FP” suffix utilized internally at Triumph to control work orders issued during the “Make To Buy” transition. The related bought planning instructions will direct the supplier to disregard the “-FP” suffix when identifying the part or assembly.

Example:

PO Part Number: 65B03500-5-FP

Planning ID Operation Text:

Supplier shall omit the –FP suffix when performing part marking activity.

For example: 65B03500-5-FP shall be part marked as 65B03500-5

In addition, supplier shall apply the actual date of manufacture, date code(s) or other control identifier number (see examples below) to all deliverable hardware. Information must be applied adjacent to the hardware's identification markings and **must be traceable to supplier's build documentation**. Hardware produced in lots, batches, groups, etc., shall have traceable control information applied. 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 bags, tags, or labels as applicable examples of traceable information may include, but are not limited to:

- a) Date of Manufacture
- b) Serial Number
- c) Lot Number
- d) Control Number
- e) Final Inspection Sequence Date
- f) Batch Number
- g) Casting Number
- h) Work Order Number
- i) Part Number as defined on purchase order and/or Triumph Supplier Specifications Planning (TSSP)
- j) Triumph assigned supplier code number
- k) Verification of stamp
- l) Country of Origin

The supplier shall also identify all parts with the Triumph assigned supplier code as noted on the PO (Fig 1a) (i.e., the supplier that is on contract with Triumph directly).

Note: Not required for the following:

- 1) Metallic raw materials (Excluding Castings & Forgings)
- 2) Non-metallic raw materials
- 3) Mechanical standard parts/hardware
- 4) Electrical components/hardware
- 5) Paints, sealants, and chemicals

2.8 Shipping and Documentation Requirements

Suppliers shall not return Triumph furnished material without written direction of Triumph buyer. Material returned to Triumph must include copies of Triumph shipping documents.

Shipping documentation other than the packing slip and CD-4020b (if applicable) may be transmitted electronically in lieu of paper copies, when coordinated with Triumph delivery site.

Supplier shall provide a packing sheet for each separate shipment. Packing sheets or attachments shall include the following information:

1. Minimum Requirements (All Suppliers and Distributors; All Products)

- a) Supplier's company name and address
- b) Triumph's PO number, change order number and applicable PO line item(s) and part numbers.
- c) Denote applicable design drawing revision and applicable engineering changes (ADCN, EO, etc.), as stated in Triumph's PO, or later revision.
- d) A "Certificate of Conformance" (C of C) document that provides written assurance that all work performed in connection with Triumph's PO conforms to PO requirements. This can be a separate document from the packing sheet, or included on the packing sheet. If submitting Form CD-4020 a separate C o C is not required.

The original signature and/or stamp of supplier's authorized Quality representative is required and must be dated. Secured computer-generated signatures are acceptable.

Additionally, the certification statement must state the suppliers Quality Assurance department has inspected the parts and they adhere to all contract requirements, applicable drawings and/or specifications

- e) Form CD-4020, Supplier Certificate of Compliance

Note: When special processing is performed, suppliers manufacturing detail end item parts, shall list on Triumph form CD-4020 the order in which special processing was performed, the supplier that performed the process, the processor's special process approval number and the C o C number from the special processor. Form CD-4020 can be obtained on the Triumph Group Supplier Portal Link / Resource Documents / Company Quality Forms / Triumph Aerostructures, LLC (Vought) link:

[Supplier Certificate of Compliance \(CD-4020\)](#)

Suppliers approved for Triumph's "Preferred Performer Program (P³)" do not require submission of the CD-4020 form unless the product is listed as an exception to the P3 program (which requires source inspection to be performed). However, a C o C must still accompany all shipments.

- f) Triumph dispositioned nonconformance document number(s), as applicable shall be noted on the packing slip and CD-4020 as applicable.

- g) For Boeing Commercial Programs the supplier must provide a statement on the packing sheet “Certifying that the Quality Assurance Department has inspected the parts and they adhere to all requirements, applicable drawings and/ or specifications.

For CD-4020b, Supplier Certificate of Compliance (as required), this form is required by all suppliers including suppliers listed in the Preferred Performed Program (P3), when shipment has been authorized and the deliverable contains an open rejection tag (i.e., work or further evaluation is required at Triumph). Form CD-4020b form must be downloaded from the below mentioned website. This form can be obtained on the on the Triumph Group Supplier Portal Link / Resource Documents / Company Quality Forms / Triumph Aerostructures – LLC at the following link:

[Supplier Certificate of Compliance-Open Tag \(CD-4020b\)](#)

2. Deliverable Documents.

Supplier shall apply the actual date of manufacture, date code(s) or control number(s) to the shipping document and/or C o C, signed by the Supplier’s designated Quality representative.

Note: Supplier must clarify the type of information being provided by typing the words “Date Code,” “Control Number,” etc. next to the information provided. When the shipment of deliverable items includes multiple date codes, control numbers, etc., each must be listed on the C o C document. Additionally, C o C documents for metallic product shall contain hardness (when applicable) and conductivity values. If metallic product is in the annealed condition, no hardness and/or conductivity are required. If metallic product does not go through any heat treatment, follow requirements in accordance with SQAR Section 2.16 and SQR-010 requirements.

Note: For Boeing Commercial “Designated Parts”, each shipment certification shall include the Boeing approval memo number and the date and/or the revision level of the designated manufacturing plan used to produce the Designated Parts.

3. Sub-tier Supplier/Processor Certifications.

If Supplier is not the original fabricator, processor or assembly source of the product(s) which make up the deliverable end item(s), supplier shall obtain and retain on file Sub-tier Supplier/ Processor certifications and test results. Supplier’s Sub-tier Supplier/Processor certifications and test results shall be made available to Triumph upon request.

4. Additional Requirements as applicable:

- a) Serial Number
- b) Interchangeable and Replaceable (I&R) designated control numbers.
- c) Required traceability forms associated with Section 2.10, 2.12, and 2.26.
- d) Traceable Records. Supplier shall maintain parts traceability records as required per applicable drawing requirements. Supplier’s C o C package shall include parts traceability data.
- e) **Global Hawk:** For Fracture Critical items, supplier certification must include the date and/or revision level of the manufacturing plan used and the Northrop Grumman PO-005 survey/RCI number approving the plan.

NOTE: For Global Hawk, all material and process certification for all Fracture Critical 1, Fracture Critical 2 and durability parts must be sent in with every shipment. All manufacturing plans and NDT/NDA techniques must be submitted for approval by the

- customer via the SIR system.
- f) **Global Hawk and F-5 Programs Only**, standard and purchase part Distributors shall comply with the requirements of Northrop-Grumman's Quality Assurance Test Procedure (QATP). Copies of this document are available via the Northrop-Grumman website at: <https://oasis.northgrum.com/contract/contract.htm>
 - g) **CH-60 Program Only**, Sikorsky standard parts index shall apply

2.9 First Article Inspection (FAI) and Design Process Change Validations

The purpose of Supplier's FAI is to ensure that all design features of a deliverable product and its sub components meet all applicable levels of design drawing, material and process specification requirements. In order to ensure clear definition, Triumph's FAI requirements are delineated in SQR-011 Supplier Quality Requirements for First Article Inspection. All Triumph suppliers will be assessed to SQR-011.

Note: Parts being shipped to **Triumph Aerostructures, LLC. And Triumph Aerostructures – Tulsa, LLC.**, facilities require the representative FAIs for those parts to be "Approved" by Triumph through Net-Inspect prior to being delivered.

2.10 Manufacturing Plan Submittals for Critical Parts

Note: "Critical Parts" are parts identified on the engineering drawing as Fracture, Durability, Fatigue, Special Controlled Parts (SCP), Maintenance, as well as Designated Parts, Flight Safety Critical, and Identifiable parts.

Manufacturing plans requiring Triumph and/or Triumph's Customer approval per specification/PO requirements shall be submitted to Triumph at least 30 days prior to start of production, or as required by applicable specification. Manufacturing plans shall be submitted to Triumph for review and approval through the SIR Process.

The manufacturing plan shall contain fabrication, processing, processor name, and inspection steps in the sequential order required by the applicable process specification(s) and/or engineering drawing(s). This shall also include all sub-tier associated manufacturing and/or process plans.

Upon approval of supplier's manufacturing plan, supplier shall control all manufacturing, processing, testing and inspections as stated in the approved plan. No deviations', including supplier's sub-tier suppliers/processors, are permitted without Triumph's written authorization. Delivery of product is not permitted until supplier has received Triumph approvals.

Supplier shall ensure compliance with the following additional requirements:

1. **Alpha Prefix/Suffix Codes.** With regard to "Fracture Critical," "Fracture Critical Traceable," and "Durability Critical" parts, designated alpha prefix/suffix codes (for traceability purposes) may be provided to supplier by Triumph. If not provided within the PO, Supplier shall contact Triumph immediately to determine the applicability of prefix/suffix codes.

2.11 Tooling Requirements

The Triumph “Supplier Tooling Manual” (STM) delineates requirements for suppliers who have POs that require manufacture or rework of Special Tooling (ST) or Special Test Equipment (STE). These requirements are applicable to all procurements unless specifically stated otherwise in the PO. Suppliers will flow requirements identified in the STM to their sub-tier suppliers that fabricate, rework or design tooling on their behalf. The STM can be accessed via the Triumph Group website under Supplier Provisions/ Tool Requirements / Triumph Aerostructures, LLC (Vought), select the link: [Supplier Tooling Manual \(STM\)](#). Copies of materials referenced in STM can be obtained by contacting a Triumph procurement representative.

Triumph Furnished Tools

Tooling furnished by Triumph or Triumph’s Customer does not relieve the supplier of responsibility of proving the adequacy of all tooling. Any anomalies found in such tooling must be immediately reported to Triumph Procurement. If Triumph furnishes tooling to supplier requiring a Tool Prove, Triumph’s acceptance will be based on verification of supplier’s FAI part and/or assembly documentation.

The supplier is responsible for periodic calibration of all Triumph furnished Precision Measuring Equipment (PME), if PME is contained within the Triumph PO or its affiliated documents (TSSP, CAPP, etc.), unless otherwise negotiated with the responsible Triumph Procurement Representative. The supplier shall induct all Triumph furnished PME into their calibration system and control it in accordance with their written calibration procedures. PME is defined as any device used to measure, gage, and test, inspect or otherwise determine compliance with prescribed technical/engineering requirements. PME includes, but is not limited to, calipers, micrometers, linear scales, pin gages, thread gages, spline gages, custom gages, and optical comparators; coordinate measuring machines, hardness & conductivity testing equipment, optical flats, roughness testers, torque wrenches, tensiometers, protractors, sine bars and angle blocks.

2.12 Contract Configuration

Unless otherwise specified in the contract agreement, manufacturing and inspection shall be performed to the latest Triumph released planning/engineering.

Supplier is authorized to work to the drawing revision level noted on Triumph supplied planning (where applicable) or to a more current revision of released engineering supplied by Triumph. If a drawing change notice or drawing revision changes the configuration of the part and is not called out on the PO or planning control sheet, the Triumph buyer should be notified immediately for written authorization.

The Vendor shall meet the requirements for Configuration Management and control as stated in AS9100. The Vendor is responsible for maintaining Configuration control of their Sub tiers. At a minimum, the Vendor’s Configuration Management disciplines will be applied to:

- 1) Identify and document a product's characteristics
- 2) Control , record and report changes to a product's documentation
- 3) Conduct and document configuration audits
- 4) Manage, control and retrieve contract data

Configuration Control is managed at the PO part number level. The purpose of the Triumph Supplier Specification Planning (TSSP) is to define the configuration requirements for the purchased detail, assembly or installation. The engineering and documents referenced within the TSSP provide the geometry and/or processes associated with the defined configurations requirements listed within the planning (TSSP).

Only documents specified on the TSSP will automatically be packaged with the PO and sent to supplier via the Supplier Portal. The supplier shall request any clarifications or revisions to the TSSP that are required to produce the detail, assembly, or installation through the SIR process. Once the SIR request is approved and the TSSP is revised, it shall automatically be added to the “Keep Up To Date” (KUTD) process for all future revisions.

2.13 Specific Requirements - E2D Program

In addition to the QMS requirements identified in Table 1, the following additional Northrop Grumman documents and appendices apply to all POs (See Figure 1b for program descriptions).

1. QOS-0033 – Inspection Guidelines
2. QOS-0021A – Seller Requirements for Temper Inspection by Electrical
3. QOS-0040 – Prime Mission Equipment
4. QOS-0042 – Inspection Guidelines for Composite Parts & Assemblies

2.14 Specific Requirements – C-17 Program

The following requirements are unique to the C17 Program and the supplier should pay particular attention to these areas to ensure compliance:

1. Fracture Critical parts and the requirement for traceability are controlled by Boeing book form drawings 17P9M2004 and 17P9M2005.
2. Assignment of serial numbers is handled by Triumph for Category A parts – there are no exceptions.
3. Where a Government or Industry Standard is shown on an engineering drawing in addition to the Boeing DPS/DMS standards, the use of the Boeing standards is mandatory for suppliers fabricating or assembling parts per Boeing design requirements.
4. When DPS 4.747 is invoked per the drawing, NDI procedures must be submitted and approved by Triumph NDI Level 3 in the applicable method prior to performing NDI.

2.15 Specific Requirements - Airbus Programs

The seller shall assure that all goods supplied are supplied in conformance with the quality requirements of Airbus. Airbus work associated with Triumph POs is in furtherance of Airbus Projects.

Sellers approved for the Airbus program must also comply with relevant Airbus requirements as distributed by Airbus.

Seller shall only utilize Airbus approved sources for externally procured material or processes, as defined in the QSPL.

Certificate of Conformance

All deliveries must be accompanied by a legible Certificate of Conformity, which states the

seller's Airbus approval number and a statement of conformance such as:

1. Manufacturers - "(Seller) certifies that the whole of the supplies detailed hereon have been manufactured, inspected, tested and unless otherwise stated above conform in all respects to specification(s), drawing(s), and contract/order relative thereto and the requirements of Airbus"
2. Distributors - "(Seller) certifies that the whole of the materials and/or parts covered by this certificate have been received under cover of the release certificates quoted hereon, are in the same condition as when received and are re-issued in accordance with Airbus requirements." A copy of the manufacturers original release documentation should be included with the delivery when seller is a distributor. The original manufacturers approval number is not required on their release documents, unless the manufacturer's product is produced to a specific Airbus specification.

Special Processing

When an Airbus approved technique sheet is required for processing of a part, the technique sheet must be submitted to Triumph for review and approval prior to submittal to Airbus. Triumph will advise the supplier of approval and authorize submittal to Airbus. Upon receipt of Airbus approval, Supplier must submit a copy of their approval to Triumph for our records. Any changes to the technique sheet must be submitted to Triumph prior to submittal to Airbus for approval.

"As Planned" Part Numbers

In the case that the part number on the PO differs from that shown on the engineering (Aside from part issue suffix), the change in identification indicates an "As Planned" or "Condition of Supply Information" applies. The condition of supply information will be noted in the PO text or in Triumph provided planning (referenced in the PO).

Measurement and Inspection

Airbus articles procured under Triumph POs shall be inspected utilizing inspection equipment manufactured and designed to measure in the same measurement system defined by the engineering drawing. The use of conversion factors cannot be used as an alternative.

2.16 Specific Requirements - CH-60 Program (Sikorsky)

The requirements of Sikorsky Aircraft document ASQR-01 is applicable in its entirety. The latest revision posted by Sikorsky at the time of PO acceptance will apply. The supplier may request a copy of the ASQR through the SIR process. The document is available at the following URL:

<http://www.sikorsky.com/Pages/Home.aspx>

2.17 Specific Requirements - Bombardier – BA Global Wing

General

Bombardier requires that suppliers, including sub-tier suppliers, utilize Bombardier defined approved sources when performing to controlled specifications referenced on engineering documents. See BAEPM-001 for list of the control specifications. Within these controlled specifications are processes deemed critical or special and defined as follows:

Controlled Critical Processes are Non-Destructive Testing (NDT) processes and processes that change the metallurgical properties for metallic parts are deemed Controlled Critical Processes. For metal bonded parts and composite parts, surface preparation and curing (time, temperature, and pressure) are deemed Critical Processes.

Examples of controlled critical processes are: Magnetic Particle Inspection, Fluorescent Penetrant Inspection, Welding (Fusion welding and spot and seam welding), Heat Treatment of Ferrous and Non-Ferrous Alloys.

Controlled Special Processes are processes that involve but not limited to surface modification, surface treatment, and part condition relief or treatment for metallic parts are deemed Controlled Special Processes. Application of nonmetallic materials for corrosion protection, bonding, or sealing is deemed Controlled Special Processes. Assembly and installation processes which may affect the operation and/or the reliability of an aircraft system or structure are also controlled special processes.

Examples of controlled special processes are: stress relief of metals, electrical bonding of aircraft, application of primer and topcoats.

It is the expectation that all controlled specifications will be flowed down to supplier with the PO but a complete listing of “**Bombardier Controlled Specifications**” can be accessed at:

<http://www.bombardier.com/content/dam/Websites/bombardiercom/supporting-documents/BA/Bombardier-aerospace-Specifications-requiring-approval-en.pdf>

Hardware and Catalog Items:

In addition to parts built to controlled specification and processes, Bombardier also requires that hardware and catalog items be purchased only from manufacturers listed in the Bombardier Approved Supplier Listing. Supplier’s distributors, if any, do not require Bombardier approval providing they purchased from a Bombardier approved supplier. When QPL qualification is required, hardware and catalog items shall only be purchased from a QPL manufacturer. When specified by the QPL, an authorized distributor shall be used.

Examples of hardware items: Nut, screw, bolt, electrical connector, fitting, standard bushing, etc. They are also known as standard parts and are controlled by specifications.

Examples of catalog items: Hardware purchased according to the manufacturer’s part number.

Raw Materials

Raw materials shall also be purchased only from manufacturers listed in the Bombardier Engineering Material Control Manual (**EMCM-001**), various LES or an equivalent Bombardier document as applicable and listed in the Bombardier Approved Supplier Listing.

Contact your Buyer for information regarding manufacturers listed in the EMCM-001.

When QPL qualification is required, raw materials shall only be purchased from a QPL manufacturer. Supplier’s distributors, if any, do not require Bombardier approval providing they purchased from a Bombardier approved supplier.

Procurement Control Drawing (PCD) parts shall be purchased only from equipment suppliers listed in the Bombardier Approved Supplier Listing.

The Bombardier list of approved suppliers can be accessed at:

<http://www.bombardier.com/content/dam/Websites/bombardiercom/supporting-documents/BA/Bombardier-aerospace-Suppliers-Listing-By-Name.pdf>

Where specifications associated with product being procured by Triumph require qualification or other types of approvals prior to production, Seller shall submit all required materials and/or

documentation to Triumph via SIR.

Regardless of the customer specification verbiage, seller shall not contact Triumph's customer regarding specification requirements associated with qualification data without prior written approval from Triumph.

Control of Part Criticality Classification Number (PCCN) Class 1 Parts

Supplier shall provide the following information to Triumph for each PCCN Class 1 part (including sub-tier supplier parts), prior to release, for Triumph concurrence:

1. Manufacturing process sheet, including any technique sheets
2. List of special processes applicable
3. List of sub-tier suppliers used for special processes (if applicable)
4. List of sub-tier suppliers used to manufacture the part (if applicable)
5. List of inspection techniques to be used to ensure the specific manufacturing, test, process, inspection requirements and/or failure criteria identified on the drawing have been complied with
6. List of material, tooling, and any special equipment

Supplier shall ensure that the work instructions (including sub-tier supplier work instructions) are identified as "PCCN Class 1 Part" once Triumph has agreed to PCCN Class 1 Part classification.

Supplier shall ensure that the work instructions (including sub-tier supplier work instructions) for PCCN Class 1 parts are identified as "FROZEN NO CHANGE PERMITTED" after First Article Inspection acceptance by Triumph.

Supplier shall submit any proposed changes (including sub-tier supplier proposed changes) to PCCN Class 1 Part manufacturing process sheets to Triumph for concurrence prior to incorporation of the change.

Control of Part Criticality Classification Number (PCCN) Class 2 Parts

Supplier shall submit a list in electronic format, by part number, of all released manufacturing process sheets for PCCN Class 2 parts (including sub-tier supplier parts) to Triumph for review and concurrence.

Supplier shall submit a revised PCCN Class 2 parts listing to Triumph for review and concurrence when changes are made to any of the applicable manufacturing process sheets (including sub-tier suppliers').

Control of Records

The supplier shall maintain Quality Records including but not limited to Quality and Engineering records/data. The records shall be retained for a period of not less than (10) years from completion of purchase order. The supplier must impose this requirement on their sub tiers. Quality and Engineering records/data shall be available to Bombardier and regulatory authorities upon request. For this reason Quality and Engineering records/data shall be maintained in the English language or an accurate translation made from original records created in the supplier's native language.

Disclosure

In the event of a supplier disclosure related to the use of unapproved sources, the supplier will be responsible for product replacement and all costs incurred with the replacement activity.

Key Characteristics (KC's)

In support of AS9103 the Supplier shall prepare a KC & Process Capability Report in accordance per the requirements of engineering and specification for each Product shipped.

The report shall contain:

1. Report header
2. KC Number
3. KC Name
4. Actual Measurement as defined on engineering

Supplier shall include a copy of the KC & Process Capability Report in the Delivery Documents.

Note: Suppliers' that accept purchase orders with "KC" must be AS9103 approved.

First Article Inspection

Bombardier requires all FAI's to be loaded into Net Inspect. This includes all details that feed into a Subassembly. In addition, the FAIR number must be recorded into Block 18 of Form 1.

Forging For Aircraft Application

Prior to production, supplier shall qualify the process for each separate part per engineering and BAERD GEN-008 specification requirements.

Failure Mode Effect Analysis (FMEA)

In support of the Bombardier requirement for 0 defects, there shall be System FMEA (SFMEA), Design FMEA (DFMEA) and/or Process FMEA's (PFMEA) executed for critical part features, processes and designs.

FMEA documentation will be submitted to Triumph for approval via the SIR process.

In addition to current AS9100 requirements for risk management, additional FMEA guidance can be found in Automotive Industry Standard J1739.

FMEA documentation shall be retained in accordance with Record Retention Requirements and be provided upon request.

2.18 Specific Requirements - F-135 Program – Pratt and Whitney

The requirements of United Technologies document ASQR-01 is applicable in its entirety with the following exceptions:

1. All of Section 2. Normative References. Configuration of all documents in support of Triumph product/deliveries will be defined by Triumph.
2. All elements of ASQR-01, Section 7.2. All communications/requests for information associated with the F-135 program shall be to Triumph via SIR.
3. ASQR-01, Section 8.2.4 (2). Requests for approval/use of an Operator Certification Program shall be submitted to Triumph via SIR.

The latest revision of ASQR-01 is available from Triumph and may be obtained by request via the Portal. Copies of Approved Processor Listings shall also be provided via the Triumph Supplier Portal.

F-135 Suppliers are required to provide an updated QPP in accordance with Appendix 1 for each new revision of the SQAR document to demonstrate compliance with this section.

Note: "All hardware must be LCS certified to MCL F-17 in accordance with PWA 300."

2.19 Specific Requirements - Boeing Commercial / Military Programs

First Article Inspection (FAI) :

The Triumph commercial contract flow down from Boeing requires all AS9102 compliant First articles be loaded into Net Inspect. The Supplier is responsible to load all new baseline FAI's into Net Inspect as of October 1, 2014. The original baseline FAI's prior to October 1, 2014 need to be available, but are not required as an attachment. A baseline FAI refers to the last "Full Approved

FAI” for that part number. The Supplier is responsible for all FAI’s to be loaded into Net Inspect. This includes all PO line items and the details that feed into them.

Note 1: If Triumph is purchasing a small sub-assembly/ kit at the PO line item level, then the subassembly/ kit FAI and all of the associated detail FAI’s that make the subassembly / kit shall be loaded into Net Inspect. The detail FAI’s shall be linked to the PO Line Item in Net Inspect. Net Inspect is available for training if required.

Note 2: All requirements for FAI approval prior to Shipment shall remain in effect at the PO line Item level per the site level requirements defined in the FAI Section of this document. This does not include prior approval in Net Inspect of the detail FAI’s that feed the Sub assembly. All FAI’s must be identified and linked within Net Inspect.

It is mandatory that Form 1 be completed within Net Inspect. Triumph’s FAI requirements are delineated in SQR-011 Supplier Quality Requirements for First Article Inspection. All Triumph suppliers will be assessed to SQR-011.

Validation of Raw Material Test Reports:

When the seller utilizes test reports to accept seller purchased raw material, the following requirements apply:

1. Test reports shall be checked 100% against seller’s requirements and applicable Specifications.

Validation test requirement:

2. Seller shall periodically validate test reports for raw material accepted on the basis of test reports. That validation shall be accomplished by seller or other independent party through periodic, scheduled tests of raw material samples. Schedules for frequency of tests will be established by seller based on historical performance of the raw material supplier.
3. Seller shall retain test reports provided by the raw material supplier, as well as seller’s validation test results as quality records traceable to the conformance of goods, as specified elsewhere in this contract. Seller shall have implemented process and procedures for “Validation of Raw Material Test Reports”.
4. Seller shall implement process and procedures for “Validation of Raw Material Test Reports”.

FOD Risk Assessment

The supplier shall perform a documented risk assessment for the impact of FOD to product(s) that they provide to Triumph and The Boeing Companies, per D6-85622.

Note: See Supply Chain Management Handbook (SCMH) FOD Program Robustness Assessment Tool for future guidance.

The risk assessment shall have documented results that at a minimum include the following:

- Product/ process family characteristics.
- Product/ process family sensitivity to FOD.
- Foreign object (FO) detectability.

The supplier shall implement, manage, and execute an effective FOD prevention program based on the results of the risk assessment. Program requirements shall be progressively more stringent based on the risk level defined.

Procurement

This procurement is under Boeing’s Federal Aviation Administration (FAA) issued Production Certificate 700 quality system supplier control program. Unless explicit contractual direction is

given to the contrary, no articles (or constituent parts thereof) ordered by Boeing Commercial Airplanes shall contain any Federal Aviation Administration- Parts Manufacturer Approval (FAA-PMA) markings and the accompanying paperwork (e.g., packages, shippers, etc.) shall not contain any FAA-PMA markings.

The seller will place the following statement on the shipping documentation of all shipments to Triumph for Boeing programs:

"Seller hereby acknowledges that the parts and/or materials being shipped under this order is 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."

2.20 Specific Requirements - Embraer Program

In addition to the Quality System requirements identified in Table 1, the following Embraer documents and appendices shall apply to all Purchase Orders.

1. Embraer Quality Requirements for Suppliers (EQRS)
2. Embraer Production Part Approval Process (EPPAP)

These documents can be found at: <http://www.embraer.com/EQRS/index.html>

Special Processing for the Embraer program shall be performed by processors approved listed on Embraer ASL, and Triumph Embraer ASPL - Embraer Qualify Supplier.

Supplier shall ensure process controls are established and required process control tests are accomplished at required intervals to ensure continued compliance to process specifications. Records for all process control tests, e.g. monthly or lot and inspection of special processed items shall be maintained. Records for special controlled parts, software and serialized parts shall be maintained for at least fifty (50) years. Records for all other parts shall be maintained for ten (10) years.

Note: If the requirements in this SQAR and the requirements in the documents referenced in the paragraphs above conflict, the requirements in the referenced documents take precedence.

First Article Inspection (FAI): The Supplier is responsible for all FAI's to be loaded into Net Inspect. This includes all PO line items and the details that feed into them.

Note 1: If Triumph is purchasing a small sub-assembly/ kit at the PO line item level, then the subassembly/ kit FAI and all of the associated detail FAI's that make the subassembly / kit shall be loaded into Net Inspect. The detail FAI's shall be linked to the PO Line Item in Net Inspect. Net Inspect is available for training if required.

Note 2: All requirements for FAI approval prior to Shipment shall remain in effect at the PO line Item level per the site level requirements defined in the FAI Section of this document. This does not include prior approval in Net Inspect of the detail FAI's that feed the Sub assembly. All FAI's must be identified and linked within Net Inspect.

It is mandatory that Form 1 be completed within Net Inspect. Triumph's FAI requirements are delineated in SQR-011 Supplier Quality Requirements for First Article Inspection. All Triumph suppliers will be assessed to SQR-011.

2.21 Specific Requirements – G280 Program

In addition to the Quality System requirements identified in Table 1, the following requirements and appendices shall apply to all PO's for the G280 Program.

- Each packing sheet accompanying a shipment against this purchase order must contain the following statement: **“THIS MATERIAL IS PROVIDED FOR USE ON THE G280 PROGRAM.”**

Required Specification and Approved Source Listings. When specifications and/or processes are listed within the detail design, specification control or envelope drawing, incorporated by this Purchase Order that are copy controlled by organizations other than the Product Design Authority (e.g. AS, AMS, ASME, NASM, etc.), Seller shall be responsible for obtaining these documents from the issuing organization or appropriate distribution source. Seller must adhere to the latest revision of Triumph Tulsa or Triumph Tulsa's customer specification and/or process, unless otherwise specified within the Purchase Order.

Tooling. All jigs and tools provided to Seller and those manufactured by Seller in support of work carried out shall be inspected by Seller prior to use for completeness, freedom from damage and evidence of inspection. All tooling is to be manufactured per Gulfstream Aerospace Corporation (GAC) Tooling Design Manual, Tooling and Planning Manual for Subcontractors and Detail Tool SD020 Tooling Manual Standards, as applicable. Seller is responsible for establishing cyclic inspection (where applicable) and verification procedures (with GAC approval) of all tooling. To avoid damage and degradation, tools shall be safely stored and shall not be exposed to external environment. Tools shall only be used to fulfill contractual obligations to Triumph Tulsa and shall not be sold, leased or disposed of without written approval from Triumph Tulsa.

Israel Aerospace Industries Commercial Aircraft Group (IAI/CAG) Certification for Special Processes. All Special Processes performed by Seller or Seller's Sub-tier suppliers shall be certified by IAI/CAG or GAC as applicable, prior to starting the implementation of any Special Process. For Special Processes not currently certified by IAI/CAG, an audit must be conducted by IAI/CAG or GAC at the performing sites. Upon successful completion of all audit tasks, certification may be given to the Seller and Seller's Sub-tier suppliers for the applicable Special Processes.

Process Control. Seller and its Sub-tier suppliers shall ensure that all appropriate personnel are familiar with IAI/CAG and/or GAC engineering's drawing and Process Specification (PS) for the Program and that controlled copies of the engineering are made available at the place of operation. Upon receipt of Purchase Orders and prior to planning the work, Seller shall verify that all processes are within the approved scope of work. Seller shall incorporate the engineering within its route cards, travelers or job instructions and only qualified equipment and/or operators shall perform the process.

Seller's Inspection and Test. Seller shall prepare an appropriate Inspection Plan in order to ensure all its production processes, parts and assemblies comply with the drawings/engineering data. Seller, which performs acceptance sampling in lieu of one hundred percent (100%) inspection, shall develop such Inspection Plan from recognized industry standards (SAE ARP9103) with C = 0.

Triumph Tulsa reserves the right to review and approve Seller's acceptance/ verification test plans, software and procedures. Revisions to approved software/documents must be coordinated with Triumph Tulsa prior to use.

When statistical process control is used as an option for either in-process or final inspection, Seller must satisfy the provisions for Variation Management.

In all cases, inspection and test requirements identified by engineering drawing/ model or specification take precedence over the inspection options described herein. Triumph Tulsa reserves the right to require 100% inspection for selected characteristics.

Or,

For a period no less than the duration the Seller is listed in the Qualifying entities approval documents, (Qualified Products List, Approved Processors List, etc.), as being qualified / approved for such items / processes.

The prevailing retention period shall be the greater of the two listed conditions.

Identification Marking and Traceability of Parts and Assemblies. Identification marking for non-critical metallic and non-metallic parts shall be compliant with **PS500100 IDENTIFICATION OF AIRCRAFT PARTS.**

Non-Critical Part traceability does not require serialization; however, traceability to original raw material Batch/Lot numbers, special processing, and inspection/test shall be documented and maintained.

Traceability is required on all Critical Parts. Critical Parts shall be identified on the drawings by means of a flag note linked to the Critical Part and recorded in the drawing parts list. The flag note to be used must be the unchanged standard note MA03 which reads as follows: **MA03: CRITICAL PART – PROCESSING, HANDLING AND INSPECTION PER IAI PS 901500.**

Critical Part traceability shall be compliant with **IAI procedure PS901501**

Identification, Marking, Handling, Processing and Inspection of Critical Parts shall be compliant with **IAI procedure PS901500.**

The preferred format for serialization is two (2) alpha characters followed by four (4) numeric characters (i.e. XX0001) the first two (2) characters being the alpha code utilized for identifying the part fabricator. All serial number numeric values shall be issued in ascending order and shall be non-repetitive.

Alternatively, Seller may use its system for part identification (serial number equivalent) provided that definite traceability can be determined from raw stock to finished item. **The alternate system shall be approved by Triumph Tulsa Aero Systems prior to manufacture.**

Once a serial number is assigned it shall never be changed or reused for that part number. If a part is rejected and scrapped or it is lost, the serial number shall go out of existence with the part. The replacement part shall be assigned a new serial number. All serial numbers delivered and scrapped shall be accounted for in Seller's Quality Records.

Prior to fabrication, raw material batch number shall be documented on router/ traveler to ensure documented traceability of raw material batch number to fabricated part serial number.

Given any conflict or question exist, regarding identification, consult the engineering.

Regrading Material. The disposition "regrade" shall not be used on products of Triumph Tulsa and Triumph Tulsa customer's proprietary design.

Procurement of Raw Materials and Hardware. Seller or its Sub-tier supplier shall provide objective evidence of the conformance of all procured supplies and services. The objective evidence shall be maintained on file by Seller and/or Seller's Sub-tier suppliers and made available for review to Triumph Tulsa, its customers or involved authorities (CAAI and FAA).

a) Raw material and hardware shall be procured from any Seller approved source. If IAI sources,

approved to an IAI 1E category, are used; conducting periodic independent lab verification inspections is not required. A list of IAI/CAG approved 1E suppliers can be provided upon request.

- b) Raw material and hardware provided against this purchase order shall be physically identified with the following: "G280 PROGRAM." It is acceptable for this marking to be applied to the hardware packaging.
- c) For raw materials that have an associated heat or lot number, each piece shall also be identified with heat and /or lot number.
- d) Raw material and fastener chemical/physical test reports shall be verified by a third party laboratory a minimum of once every twelve (12) months for each manufacturer.
- e) In case procurement is not made from an IAI frame work agreement supplier (1E), the frequency and sampling plan of incoming laboratory testing will be per PS850110 for Fasteners and PS850100 for Raw Material.
- f) Laboratory tests shall be performed by A2LA accredited laboratories. A2LA accredited laboratories can be viewed at www.A2LA.org.
- g) Triumph Tulsa approved substitute hardware is identified in the latest version of P30 Alternative Fasteners 30P045-060926.

Control and Storage of Inventory. Seller shall strictly control all inventory of Triumph Tulsa and Triumph Tulsa's customer's proprietary Product that is in excess of Purchase Order quantity in order to prevent Product from being sold or provided to any third party without prior written authorization from Triumph Tulsa. Seller shall physically separate and clearly identify raw materials, hardware and parts stored for Triumph Tulsa Programs. Products shall be shipped according to Purchase Order requirements.

Notification shall include above information at a minimum. Seller shall notify the Triumph Tulsa Procurement Agent who manages the Purchase Order and the Triumph Tulsa Quality Assurance organization. Nonconforming structures or systems, which require disassembly to support a failure or cause analysis investigation, will require a documented report. Documented reports will be made available for Triumph Tulsa and/or IAI-CAG review upon request.

Supplier Quality Performance. Seller shall be responsible for achieving and maintaining a minimum quality performance level of either:

- A Triumph Tulsa Supplier Quality Acceptance Rating of 99.8% as calculated by taking the ratio of acceptable units delivered for the prior twelve (12) month period. This calculation may be based on a composite performance score from all Purchase Orders between Seller and the Triumph Tulsa contracting site, or specific by Program to which the Master Order Agreement applies; **or**

If Seller fails to achieve and maintain the acceptable performance criteria above, Seller shall be responsible for one or more of the following as directed by Triumph Tulsa at no additional costs to Triumph Tulsa:

- a) At its own expense, Seller shall obtain source inspection from a Triumph Tulsa qualified contractor.
- b) Seller shall reimburse Triumph Tulsa contracting site(s) for reasonable Triumph Tulsa costs incurred at the point of manufacture. Such costs shall include travel, lodging and Triumph Tulsa labor costs.

Flow Down to Sub-tier Suppliers. For articles, processes and raw materials purchased from Sub-tier suppliers in support of this Purchase Order, Seller shall ensure that all Purchasing Documents

include all Quality and Technical Requirements required, including key characteristics as applicable.

NOTE: Per CAG9000 Section 14.3-2, the supplier shall indicate on his purchase order to sub-contractors a statement “The goods are designated for IAI-CAG”

The following quality requirements are applicable only to those purchase orders with sellers that are classified by IAI as a Framework Agreement Supplier (1E):

- 1) The goods in this P.O. are designated for IAI products.
- 2) The Quality Assurance Plan between IAI and the seller applies to this P.O.
- 3) The goods in this P.O. shall be inspected and tested by the seller in accordance with the Quality Assurance Plan.
- 4) Each shipment must be accompanied with a shipper and a Certificate of Conformance (COC) stating that goods are in compliance to the approved Quality Assurance Plan.
- 5) The A/M certificate (COC) shall be signed by the seller’s inspector and the IAI delegate inspector at the seller’s site.

2.22 Specific Requirements – G650 Program

In addition to the Quality System requirements identified in Table 1, the following requirements and appendices shall apply to all PO’s for the G650 Program.

Required Specification and Approved Source Listings. All applicable process specifications, tooling specifications and Approved Source Listings shall be provided by Triumph Tulsa to the responsible supplier. When specifications and/or processes are listed within the detail design, specification control or envelope drawing, incorporated by this Purchase Order that are copy controlled by organizations other than the Product Design Authority (e.g. AS, AMS, ASME, NASM, etc.), Seller shall be responsible for obtaining these documents from the issuing organization or appropriate distribution source. Seller must adhere to the latest revision of Triumph Tulsa or Triumph Tulsa’s customer specification and/or process, unless otherwise specified within the Purchase Order.

Tooling. All jigs and tools provided to Seller and those manufactured by Seller in support of work carried out shall be inspected by Seller prior to use for completeness, freedom from damage and evidence of tooling acceptance. All tooling is to be manufactured, maintained and validated per Triumph Tulsa Tooling Procedure STM (mentioned in this document Section 2.12 Tooling Requirements) as applicable with the following exception, the tooling must be properly identified in accordance with Gulfstream Tooling and Planning Manual for Subcontractors, revision B, dated May 7, 2003 to indicate its ownership by Gulfstream.

OmniPart KnowledgeBase Environment External Supplier Revision Management Application Set. Supplier shall maintain CATIA and Adobe Acrobat revision in accordance with GER 7818.

Gulfstream Aerospace Corporation (GAC) Special Process Sources. All Special Processes performed by Seller or Seller’s Sub-tier suppliers shall be approved by GAC as applicable, prior to performing any Special Process. Reference document: GAC Approved Process Sources.

For those shipments including parts which have undergone a First Article Inspection, a statement that the FAI has been accomplished, including the FAI number must be included in the COC.

Process Control. Seller and its Sub-tier suppliers shall ensure that all appropriate personnel are familiar with engineering drawings and Gulfstream Manufacturing Standards (GMS) for the

Program and that controlled copies of engineering and GMS are made available at the place of operation. Upon receipt of Purchase Orders and prior to planning the work, Seller shall verify that all processes are within the approved scope of work. Seller shall incorporate the engineering within its route cards, travelers or job instructions and only qualified equipment and/or operators shall perform the process.

Seller's Inspection and Test. Seller shall prepare an appropriate Inspection Plan in order to ensure all its production processes, parts and assemblies comply with the drawings/engineering data. Seller which performs acceptance sampling in lieu of one hundred percent (100%) inspection shall develop such Inspection Plan from recognized industry standards with C = 0.

Triumph Tulsa reserves the right to review and approve Seller's acceptance /verification test plans, software and procedures. Revisions to approved software/documents must be coordinated with Triumph Tulsa prior to use.

When statistical process control is used as an option for either in-process or final inspection, Seller must satisfy the provisions for Variation Management as defined in this Flysheet. In all cases, inspection and test requirements identified by engineering drawing/model or specification take precedence over the inspection options described herein. Triumph Tulsa reserves the right to require 100% inspection for selected characteristics.

Identification Marking and Traceability of Parts and Assemblies. Traceability classification shall be defined by engineering. Traceability and serialization shall be compliant to GAC14D Control, Serialization, and Traceability Requirements for Parts.

1. Identification marking for non-critical metallic parts shall be compliant with GAMPS 1105 Identification Marking of Fabricated Metallic Part and Assemblies.
2. Identification marking for non-critical non-metallic parts shall be compliant with GAMPS 1106 Identification Marking of Fabricated Non-metallic Parts and Assemblies.

Once a serial number is assigned it shall never be changed or reused for that part number. If a part is rejected and scrapped or it is lost, the serial number shall go out of existence with the part. The replacement part shall be assigned a new serial number. All serial numbers delivered and scrapped shall be accounted for in Seller's Quality Records.

Prior to fabrication, raw material batch number shall be documented on router/traveler to ensure documented traceability of raw material batch number to fabricated part serial number. Given any conflict or question exist, regarding identification, consult the engineering.

Regrading Material. The disposition "regrade" shall not be used on products of Triumph Tulsa and Triumph Tulsa customer's proprietary design.

Procurement of Raw Materials and Hardware.

- 1) Seller or its Sub-tier supplier shall provide objective evidence of the conformance of all procured supplies and services. The objective evidence shall be maintained on file by Seller and/or Seller's Sub-tier suppliers and made available for review by Triumph Tulsa, its customers or involved authorities (FAA).
- 2) Raw material and fastener chemical/ physical test reports shall be verified by a third party laboratory a minimum of once every 12 months for each manufacturer.
- 3) For material substitution direction refer to the following Gulfstream standards: GAS30BF Material Substitution List, GAS30TV Material Thickness Substitution, and GAS30J Substitution of Fasteners and Related Hardware.
- 4) Ultrasonic inspection shall be performed in accordance with GAMPS 9101 (Aluminum), GAMPS 9102 (Steel), and GAMPS 9103 (Titanium).

- 5) Laboratory tests shall be performed by GAC approved or NADCAP accredited laboratories. NADCAP accredited laboratories can be viewed at:

www.sae.org/servlets/index?PORTAL_CODE=PRI

Control and Storage of Inventory. Seller shall strictly control all inventory of Triumph Tulsa and Triumph Tulsa's customer's proprietary Product that is in excess of Purchase Order quantity in order to prevent Product from being sold or provided to any third party without prior written authorization from Triumph Tulsa. Seller shall physically separate and clearly identify raw materials, hardware and parts stored for Triumph Tulsa Programs. Products will be shipped according to Purchase Order requirements.

Supplier Quality Performance. Seller shall be responsible for achieving and maintaining a minimum quality performance level of either:

- A Triumph Tulsa Supplier Quality Acceptance Rating of ninety-eight percent (99.8%) as calculated by taking the ratio of acceptable units delivered for the prior twelve (12) month period. This calculation may be based on a composite performance score from all Purchase Orders between Seller and the Triumph Tulsa contracting site, or specific by Program to which the Master Order Agreement applies.

If Seller fails to achieve and maintain the acceptable performance criteria above, Seller shall be responsible for one or more of the following as directed by Triumph Tulsa at no additional costs to Triumph Tulsa:

- a) Seller shall at its own expense obtain source inspection from a Triumph Tulsa qualified contractor.
- b) Seller shall reimburse Triumph Tulsa contracting site(s) for reasonable Triumph Tulsa costs incurred at the point of manufacture. Such costs shall include travel, lodging and Triumph Tulsa labor costs.

Flow Down to Sub-tier Suppliers. For articles, processes and raw materials purchased from Sub-tier suppliers in support of this Purchase Order, Seller shall ensure that all Purchasing Documents include all Quality and Technical Requirements required, including key characteristics as applicable.

3.0 GENERAL INFORMATION

3.1 Purchase Order Terms and Conditions

Triumph's "Contract Terms and Conditions" information which describe Triumph's PO "boilerplate" requirements are available on the Triumph Group website under Supplier Provisions: [Triumph Company Terms and Conditions](#) Terms and Conditions/Selet Triumph Aerostructures, LLC (Vought) or Triumph Aerostructures – Tulsa, LLC.

3.2 Internet Access

Triumph has established a supplier Web page on the Internet to provide suppliers a quick on-line link to this SQAR document. Triumph website can be accessed at:

[Supplier Quality Assurance Requirements \(SQAR\)](#)

Suppliers do not need a password to access the SQAR document; however, a password is required to access certain "Technical Data."

Note: Contact Triumph procurement for access.

In addition to SQAR, the supplier web page has links to other information resources. It provides quick access to PO Terms & Conditions, Standard Notes, PODS (PO Discreet Scheduling System), Min/Max, Process Specifications, and Approved Supplier Sources for Process Specifications (including those requiring Customer approval).

3.3 Foreign Object Damage Control Program

Foreign Object Damage (FOD) – Any damage attributed to a foreign object that can be expressed in physical or economic (monetary) terms which may or may not degrade the product's required safety and/or performance characteristics.

The supplier shall establish, document and maintain a program to control and eliminate FOD and/or contamination during the supplier's manufacturing, assembly, test, inspection, packaging and shipping operations. When applicable, the supplier's FOD control program shall include controls to preclude FOD or contamination at the supplier's sub-tier sources. The following basic elements shall be included in the supplier's FOD control program.

1. FOD prevention training
2. Manufacturing planning consideration for FOD prevention
 - a. Work sequencing
 - b. Cleanliness of work area
 - c. Control of tools, personal items, fasteners, scrap, etc.
3. Protection from FOD during handling, packaging and shipping
4. Periodic (at least annually) evaluation of the FOD control program for effectiveness

The supplier's FOD control program is subject to on-site review and approval by Triumph.

Appendix 1

Quality Program Plan Matrix

This matrix will form a cross-reference between the line items of SQAR, and the supplier's procedures. If a given line item is not applicable for the products intended to be supplied, then it shall be so stated in the matrix.

NOTE: Select the Attached file to print the word version of the QPP.