



SUPPLIER QUALITY ASSURANCE REQUIREMENTS (SQAR)

Revision Date: 31 AUG 2016

Approved Mark Nejtek, Manager

Supply Chain Quality

Suppliers may view this document via the Internet at

https://www.triumphsupplysource.com/suppliers/pageview.php?menuitemid=51

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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.

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Revision AP, Summary of Current Changes:

Table 2ASPL Cross Reference

Update: V-22 Program Approved Processor is managed by Boeing D1-4426

2.30 SPECIFIC REQUIREMENTS – G280 PROGRAM

Remove: All applicable process specifications, tooling specifications and Approved Source Listings shall be provided by Triumph Tulsa to the Seller by providing access to specifications and documents via Net Inspect (www.net-inspect.com), under **Required Specification and Approved Source Listings section.**

Remove: **Supplier Delegation section**. No supplier delegation authority is allowed for the G280 program until otherwise amended in the Purchase Order.

Remove "Flysheet" from Seller's Inspection and Test section.

Remove: Equivalent alternate Quality Performance Rating as defined by the site(s) when the standard Quality Acceptance Rating calculation does not accurately reflect Seller's Quality Performance from **Supplier Quality Performance section.**

2.31 SPECIFIC REQUIREMENTS – G650 PROGRAM

Remove: "Flysheet" from Seller's Inspection and Test section.

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

Remove Equivalent alternate Quality Performance Rating as defined by the site(s) when the standard Quality Acceptance Rating calculation does not accurately reflect Seller's Quality Performance from **Supplier Quality Performance section.**

Remove: Current GAMPS can be viewed via <u>http://www.net-inspect.com</u> from **Process Control section**.





DOCUMENT OVERVIEW

This Document is effective for the following Triumph Aerostructures Business Units: Triumph Aerostructures-Vought Aircraft Division and Triumph Aerostructures-Vought Aircraft Division-Tulsa from here on inclusively refer to as **Triumph**.

SQAR is the Suppliers' guide to understanding Triumph quality requirements and expectations. This document forms a part of Triumph's purchase order, unless otherwise specified herein. It contains Triumph's specific standard quality requirements and helpful general information. 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.

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 (POs) 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. Table 1 "Quality System Requirements" is the key to determining the applicability of Triumph's quality requirements to the individual procurement, and shall be used by the Supplier as part of the Supplier's quality planning function to ensure compliance with Triumph's requirements. 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 (Buyer), 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.

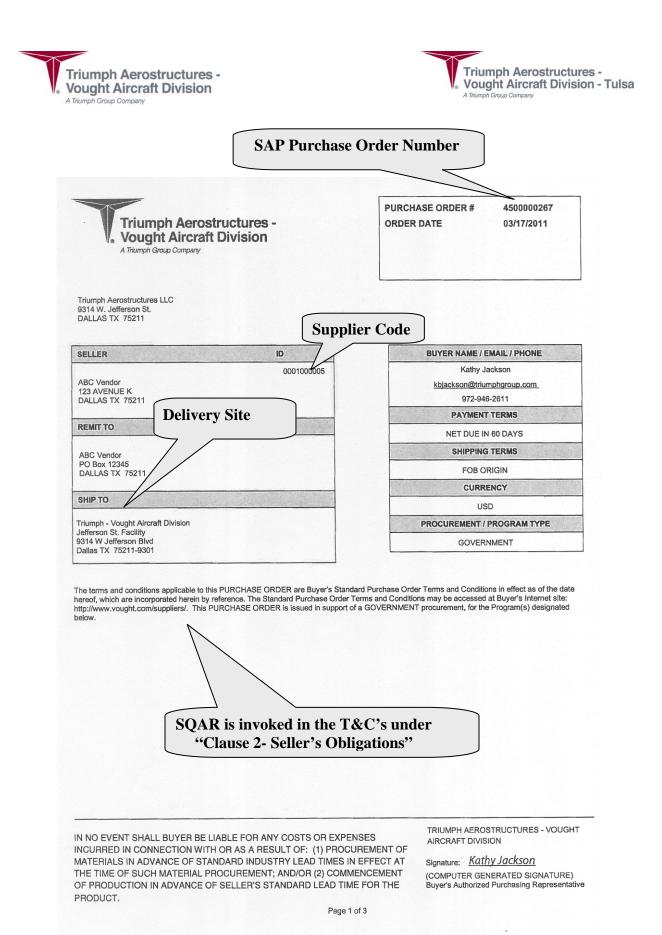
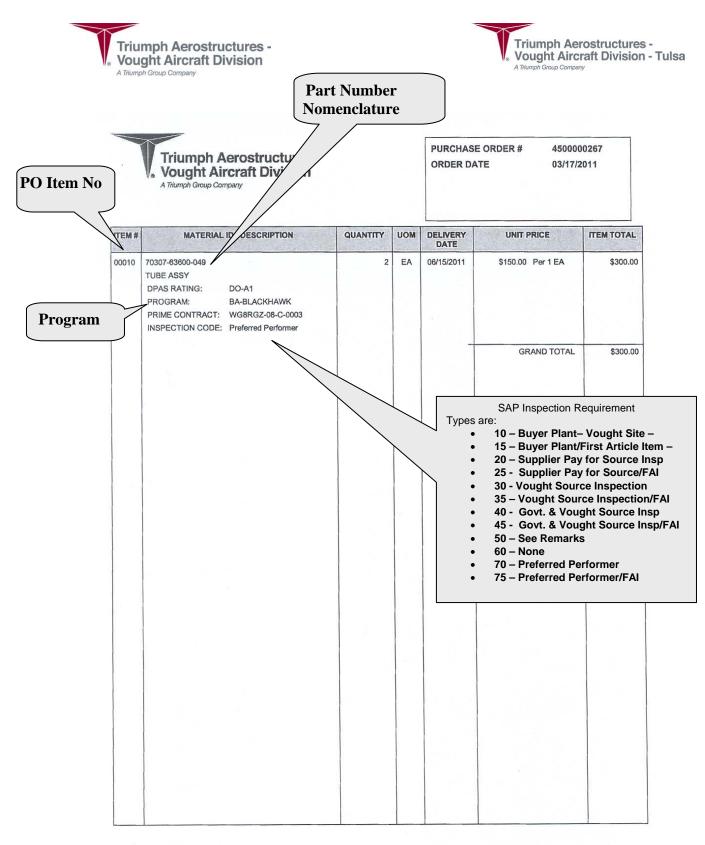


Figure 1a



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Figure 1b





Triumph Aerostructures -Vought Aircraft Division

PURCHASE ORDER # ORDER DATE 4500000267 03/17/2011

Buyer: Kathy Jackson Email: kbjackson@triumphgroup.com Fax: 972-946-4864

0001000005 ABC Vendor 123 AVENUE K DALLAS TX 75211

Acknowledgment

Seller, by signing and returning this Acknowledgment, hereby agrees to comply with all of the terms and conditions referenced herein. Acceptance by Seller is expressly limited to the terms and conditions referenced herein, and any additional or different terms are hereby objected to by Buyer and are not binding. Seller is requested to sign and return this Acknowledgment to Buyer within thirty (30) days from the date of receipt.

Please return the signed copy of this Acknowledgment to Buyer's email/fax indicated at top of this page.

Signature:	
Printed Name:	
Title:	
Date:	

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Figure 1c





	Qua System	•	Applicable Minimum Quality System Document	Supplier Description	
	Level 1(3)		AS9100, EN9100 or, JISQ9100	Manufacturer with design authority (Major Assemblies, Source/Spec. Control Product); Engineering Services with design/release authority	
Airborne	Level 2(3)		AS9100 ₍₁₎ , EN9100 _{(1),} JISQ9100 ₍₁₎ or, AS9003	Manufacturer (Build-to-Print) Value Added Distributor, JIT Suppliers, Inspection Services (e.g., CMM)	
Air	Level 3(4)		EN9120 AS9120 or, ASA100	Pass Through Distributor	
	(4) Level 4(2)		Nadcap AC7004, or AS9003	Processor	
rborne	Level 5		AS9100 ₍₃₎ , AS9003, or ISO9001 ₍₃₎	Tooling with design authority	
Non-Airborne	Level 6		AS9100 ₍₃₎ , AS9003, or ISO9001 ₍₃₎	Tooling (Build-to-Print)	
_	Level 7(5)		NONE	Commercial, Off-The-Shelf (COTS), Technical Service Providers, CFE/CFM/PMI(6)	
Special	Level 8		ISO 10012-1or, ISO 17025 or, ANSI Z540-3 or, A2LA, or NVLAP	Calibration/Laboratories	
	Level 9		FAA FAR Part 145/21	Repair Stations	
Note					
1 Less the "De		Less the "D	Design" requirements of the standard		
2 Require		Requireme	uirement is Nadcap/Nucap Process Approval		
3 "Other Part		"Other Part	rty" certification required		
	4 "Other Party" certification required, Approval to AS9100 will also satisfy this requirement			100 will also satisfy this requirement	
5 Service Pro		Service Pro	oviders may require other audits like SQR-004 if Triumph is to transmit Digital Data		
	6 CFE/CFM/PMI; Customer Furnished Equipment/Material; Partner Managed Inventory (787 Program			aterial; Partner Managed Inventory (787 Program)	

Table 1- Quality System Requirements





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 2) and identifying Program Specific Requirements.

Program Identification is located in the PO (see Figure 2b).

2.0 GENERAL AND PROJECT SPECIFIC REQUIREMENTS

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 submitted to Triumph in conjunction with Triumph's Form PO-F003. The submittal shall consist of:

- 1. The cross-reference matrix per Appendix 1.
- 2. An Organizational Chart that depicts the Quality Organization and its functional relationship to Inspection activities.

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. Items which are determined to be unacceptable to Triumph, will be resolved prior to the adding the supplier to the Triumph Approved Supplier Directory (ASD).

For existing suppliers to Triumph, the supplier shall submit a 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.

2.1 QUALITY SYSTEM REQUIREMENTS

Supplier shall implement and maintain a Quality Management System (QMS) in accordance with the respective Quality System Standard listed in Table 1 of this document, as appropriate for the type of product being delivered to Triumph.

To determine the applicable QMS requirements, the following questions apply;

a) Is the product being procured airborne, non-airborne or special?

Airborne – Airborne products are those procurements intended for contract deliverable flyaway aircraft and their associated sub-systems including non-metallic material applied to aircraft. Product that has contractual Engineering and/or Quality requirements that affect the end item deliverable product.

Non-airborne – Non-airborne products are those products procured for nonflight applications such as; production tooling, ground support equipment, test laboratories, etc.





Special – Special requirements include procurements for; repairs from FAA Repair Stations, Commercial Off the Shelf (COTS), purchases of labor from calibration laboratories, and technical service providers.

- b) Does supplier have design authority?
- c) Does supplier build or distribute product?

Cross-reference the information obtained in a, b, and c above in Table 1 to determine the appropriate QMS requirement.

Initial and subsequent periodic review of Supplier's QMS may be performed at the option of Triumph. Objective evidence of Supplier's compliance, either by submittal of requested evidence, or evidence of "other party" evaluation, may be acceptable for the purpose of re-survey to Triumph.

Supplier legal name changes, changes in ownership, facility changes or changes in senior Quality Management may subject Supplier's Quality System to reevaluation by Triumph. Supplier shall notify Triumph's Procurement Representative of any aforementioned changes in writing. Triumph will instruct the Supplier on formal notification actions and specific forms to submit, if necessary.

The QMS identified in Table 1, shall be the quality system standards used in determining eligibility for the Triumph Approved Suppliers Directory (ASD). An "other party" quality system certification is required for those standards noted in Table 1. Triumph will recognize all "other party" certifications issued by an accredited Certification/Registration Body (CRB). The accredited CRB's can be found on the SAE web page: <u>www.sae.org/oasis</u>.

Suppliers shall make available, a copy of their certifications to Triumph. Any changes to the certification such as a change of the CRB, update, withdrawal or disapproval must also be forwarded to Triumph immediately.

Note: "other party" - A registrar that has their accreditation body participate in the IAQG/AAQG quality system certification oversight process. An "other party" quality system certification would be one issued by an accredited registrar that participates in the aerospace industry's IAQG/AAQG oversight process. Triumph suppliers are authorized to share Triumph survey results with other aerospace companies.

ADDITIONAL QUALITY SYSTEM REQUIREMENTS

In addition to the Quality System requirements identified in Table 1, unless otherwise specified, the following additional documents and appendices are imposed on all POs. These documents can found under the Triumph Group Supplier Web Page/Quality Requirements/Business Unit Quality Requirements/Triumph at the following URL:

https://www.triumphsupplysource.com/suppliers/pageview.php





- SQR-002 Supplier Advanced Quality Requirements; SQR-002 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. <u>Approval to SQR-002 is required before a supplier can</u> receive a formal purchase order that involves Key Characteristics.
- **SQR-003** Nonconformance Reference Handbook for Suppliers; Applicable to all purchase orders
- SQR-004 Supplier Quality Requirements "Control and Use of Digital Product Definition"; SQR-004 is applicable if part design and/or configuration is defined via a released digital dataset (e.g., CATIA, UNIGRAPHICS, MEDs, IGES, etc.). Approval to SQR-004 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.
- 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..
- **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.

• **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.

2.2 PRE-PRODUCTION REVIEW / CONFORMITY ASSESSMENT/ FIRST PART QUALIFICATION

 Triumph reserves the right to perform with the Supplier a review of Triumph's PO and deliverable product(s) key/critical elements. Triumph will evaluate supplier quality processes and product compliance using the Triumph Conformity Assessment. The assessment will cover specific areas of the supplier's QA system; build package flow down, control of tooling, digital data and products that Triumph procures from the supplier. Subject review will be





performed to the extent necessary to verify mutual understanding of PO requirements, and ensure that Supplier's production planning activities address all applicable key/critical elements.

2. 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.

2.3 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 2) 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:

- Nondestructive Testing
- Heat Treating
- Material Testing Laboratories
- Chemical Processes
- Coatings
- Welding
- Non-Conventional Machining & Surface Enhancement Shot Peening
- 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 2, for all Triumph procurements.

Approved processor listings can be accessed via Triumph Group Supplier Portal Link / Approved Suppliers / Authorized Service Providers at:

https://www.triumphsupplysource.com/suppliers/pageview.php?menuitemid=58 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:

- 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.
- 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 it 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.

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Sikorsky document SS7777 M&P Process Specification Index must be adhered to as applicable. Special Processes are identified by a "Q" code in SS7777. The supplier shall also comply with the Sikorsky Aircraft raw material test plan requirements noted in the Approved Source List for Special Processes and Laboratories.





Table 2

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	
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	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	





2.4 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.

2.5 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) Buyer Plant / Triumph Site

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

2) Pay for Source

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:

https://www.triumphsupplysource.com/suppliers/pageview.php?menuitemid=58

This requirement is normally used for new suppliers; suppliers who have been removed from Triumph's delegation program based on quality performance issues, or can be applied at the PO line item level for individual part numbers that have had repetitive quality escapes.





3) 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:

https://www.triumphsupplysource.com/suppliers/pageview.php?menuitemid=58

4) 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) 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) 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) Preferred Performer Program (P Cubed. P³)

Triumph P^3 suppliers are authorized to perform inspection functions and acceptance of product and associated paperwork on behalf of Triumph. Triumph Supplier's P^3 authority is defined in the PO agreement, at the P.O. line item level (see Figure 1b).

 P^3 suppliers shall perform inspection and acceptance of product in accordance with the AS9015 Supplier Self Verification Process Delegation Programs and the Triumph document VWI 7.4.051 Preferred Performer Program - Supplier Instructions and Program Control Requirements. The VWI 7.4.051 is located on the Triumph Group Supplier Portal Link / Inspection Delegation / Triumph Aerostructures (P3) at:

https://www.triumphsupplysource.com/suppliers/pageview.php?menuitemid=191

 \mathbf{P}^3 Suppliers that lose their delegated source inspection status due to quality performance reasons shall contract and pay for source inspection through a Triumph approved service provider^{*}. The \mathbf{P}^3 supplier may regain their delegated status when all the following conditions are met:





- 1. Successful Corrective Action (CA) resolution of the issue/event causing removal of delegation.
- 2. Three (3) consecutive deliveries with no recurrence of the issue/event involved in the loss of delegation if the loss was based on a single issue/event.
- 3. Positive nonconformance improvement trend for the latest quarter quality performance metrics.
- A minimum of Ninety (90) days loss of delegation.
 * Triumph Approved Service providers can be located on the Triumph Group Supplier Portal Link / Approved Suppliers / Authorized Service Providers at: <u>https://www.triumphsupplysource.com/suppliers/pageview.php?menuitemid=58</u>

 P^3 supplier FAI requirements are as defined in this document (refer to Sections 2.8). Triumph retains the right to impose inspection requirements independent of the supplier's P^3 authority. Source inspection for accountable tooling shall be requested directly through the Triumph Buyer in lieu of the Triumph Approved Service providers.

Note: P3 delegation is not applicable to new commercial aircraft product lines that do not have a FAA issued Production Certification or equivalent. Any waiver to this requirement will be provided in the program specific requirements

2.6 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.

Notes:

- 1. In the event there is a conflict between the requirements defined below and the engineering drawing and/or specification, the drawing/specification takes precedence.
- 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 <u>actual</u> 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
- I) 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:

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

2.7 SHIPPING & 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. Electronic transmittal of shipping documentation may be submitted via the Aerospac Electronic Document system, to which Triumph subscribes and funds. There will not be any license cost or recurring fees to the supplier for access and use of the Aerospace process. Access the Aerospac website from the following URL:

http://www.aerospac.com/main/aerospac.html





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 / Business Unit Quality Forms / Triumph Aerostructures – Vought Aircraft Division at:

https://www.triumphsupplysource.com/suppliers/pageview.php

Suppliers approved for Triumph's "Preferred Performer Program (P^3) " 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 / Business Unit Quality Forms / Triumph Aerostructures - Vought Aircraft Division at: https://www.triumphsupplysource.com/suppliers/pageview.php

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.





5) Machined Part Suppliers, Sheet Metal Part Suppliers, Composite / Nonmetallic Part Suppliers, Casting & Forging Suppliers, and Raw Material Manufacturers.

Supplier shall provide the raw material certification, which was provided by the original mill. Mill certifications shall include conformance with the applicable material specification as noted on Triumph's PO, material description, alloy and condition, physical properties, chemical analysis, and heat lot number. If the raw material was purchased from a distributor, include the distributor's certificate of conformance along with the mill certification (Recertification by any means other than by the original mill is not authorized). Castings and forgings procured in support of Triumph/Customer qualification acceptance prior to production (See Section 2.17). All chemical analysis and physical test certifications shall also be provided for castings and forgings.

- **Note 1:** Suppliers using Triumph provided material may provide evidence of Triumph consignment in lieu of raw material certifications.
- **Note 2:** This category also applies to machined/sheet metal assemblies where the assembly consists of the machined/sheet metal part and standard hardware such as bearings, bushings, nutplates, and/ or sleeves.

6) Distributors of Standard Parts/Hardware/Raw Materials

- a) Triumph does not accept raw materials from pass through distributors (Level 3) that have not been procured directly from the manufacturer, unless certified copies from the original mill are available or without prior written approval from Triumph. A purchase of recertified raw material or raw material that has departed from direct control of the manufacturer is prohibited. Attempts to make such sales to Triumph shall be grounds for disqualification.
- b) Triumph approved distributors of raw material shall provide certified copies of manufacturer's test reports with each shipment.
- c) Triumph classifies a supplier as an approved distributor for a specific manufacturer when the distributor has written authorization from the manufacturer to procure and distribute specific products produced by manufacturer. It is the Distributor's responsibility to provide a copy of the manufacturer's authorization letter to Triumph upon request.
- d) Distributors shall ensure that standard parts/hardware/material is marked in accordance with specification requirements. Original mill marking shall be affixed and legible on raw materials and shall not show signs of tampering or altering.

Triumph does not accept standard hardware or other items from pass through distributors (Level 3 Quality System approval) unless they are procured directly from the manufacturer or a copy of the original manufacturer certification/test report is provided. In addition, hardware or other items that





have been altered by a pass through distributor will not be accepted without prior written permission by Triumph. Distributors wishing to provide "Value Added" services Shall be approved to Triumph's Supplier Quality System Survey Level 2 (AS9100 Less Design; See Table 1).

- e) (Global Hawk and F-5 Programs Only) Standard and Purchase parts 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
- f) CH-60 Program only: Sikorsky standard parts index shall apply.

Note: For elements 5 and 6 above Non USA suppliers of raw materials may not be used without written approval from Triumph Quality, unless the supplier is listed as an approved manufacturer in the respective procurement specification. Requests for consideration/ deviation can be submitted via the SIR process through the Triumph Supplier Portal.

7) Suppliers of Age-Sensitive Materials

Provide original manufacturing/cure date, lot number(s), expiration date or length of shelf life (if indefinite, so state), and any special storage/handling instructions. Note: For age-sensitive rubber products, Supplier's "expiration date" or "length of shelf life" data is not required if the cure date and applicable specification number are stamped on the deliverable hardware. Supplier is responsible to determine if acceptance test report submittal is required in accordance with applicable material specification.

8) Rework/Repair/Replacement/Modified Items

Supplier's C o C and/or packing sheet (if it contains the C of C statement) document shall reflect the following requirements for rework, replacement, repair or modification of items Returned to Vendor, including work performed by supplier at Triumph's facility.

- a) The item(s) have been reworked, repaired, replaced, or modified (as applicable), in accordance with respective nonconformance documents or PO.
- b) The item(s) meet the requirements of the Engineering Document(s).
- c) The original configuration and qualification status of the item(s) remains in effect (as applicable).
- d) All applicable nonconformance document numbers or other references to insure traceability.



9) FAA Repair Stations

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

When applicable, the supplier shall provide FAA Form 337, Major Repairs and Alteration Statement, and or FAA Form 8110-3, Statement of Compliance with Federal Aviation regulations, and Alternate Method of Compliance.

Work must be performed by a FAA FAR 145 approved repair station. When requested by Triumph, supplier shall provide a completed copy of the final inspection work order, which details the entire scope of work, performed.

B. Triumph is required to monitor supplier for compliance to the FAA Anti-Drug and Alcohol Misuse Prevention Program (AAMPP). When requested by Triumph, supplier agrees to provide objective evidence that employees are being tested as required by the AAMPP.

10) FAA FAR, Part 21 (Certification Procedure for Products and Parts)

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

11) Qualification Certification

When Triumph's drawing, procurement specification or PO requires deliverable items to be re-qualified; supplier shall ensure that deliverable item(s) have identical components to those parts originally qualified to the applicable specification/control drawing. In addition, Supplier shall ensure that materials, parts and/or assemblies were inspected and/or tested to Triumph designated specification control drawings (both Triumph and Supplier originated), and indicate revision level of engineering drawings, specifications, and applicable design/specification changes as stated in Triumph's PO. Triumph shall view supplier's (C of C) document and/or packing sheet (if contains C of C) as supplier's indication of compliance with this requirement. End items delivered prior to completion of qualification testing shall be allowed only by Triumph's written consent.





12) Kitted parts

All deliveries must be accompanied with a legible (C of C) or equivalent with each kit. The supplier must certify that all material /parts have been processed, inspected, and tested in accordance with the PO and engineering requirements. The supporting data is on file and will be made available for Triumph review upon request.

Any deviations/waivers associated with material/parts in the kit are to be listed on the packing slip/C of C along with the affected part number.

A FAI in accordance with SQR-011 is required against the kit part number as well as each individual part within the kit. First articles for individual parts do not require loading in Net-Inspect but must be available upon request.

Note: Any additional data package requirements will be itemized on the respective PO and/or planning configuration sheet (e.g., TSSP).

13) Assemblies/sub-assemblies

All deliveries must be accompanied with a legible C of C or equivalent with each kit. The supplier must certify that all material/parts have been processed, inspected, and tested in accordance with the PO and engineering requirements. The supporting data is on file and will be made available for Triumph review upon request.

Any deviations/waivers associated with material/parts in the assembly are to be listed on the packing slip/C of C along with the affected part number.

A FAI in accordance with SQR-011 is required against the assembly part number as well as each individual part within the assembly. Note: Only the assembly level FAI is required to be entered in Net-Inspect. Detail parts within the assemblies require FAI's in accordance with AS9102 however use of the Net-Inspect process is optional.

Note: Any additional data package requirements will be itemized on the respective PO and/or associated planning configuration sheet.

2.8 FIRST ARTICLE INSPECTION (FAI) & 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 Marshall Street, Hawthorne, Nashville, Red Oak, and Stuart facilities require the representative FAIs for those parts to be <u>"Approved</u>" by Triumph through Net-Inspect prior to being delivered.

Parts being shipped to Milledgeville and Tulsa facilities require the representative





FAI's to be uploaded into Net Inspect for review by Triumph prior to shipment. This does not relieve the Supplier from any risk for delivering nonconforming product.

2.9 INTERCHANGEABILITY AND REPLACEABILITY (I&R) REQUIREMENTS

Supplier shall review Triumph's PO and associated drawing(s) to determine if Interchangeability & Replaceability (I&R) features apply to supplier's deliverable hardware and/or statement of work.

I&R records shall be maintained by Supplier and made available for Triumph's review upon request. Supplier's packing sheets and/or attachments must include the Triumph designated I&R control numbers as specified in this POs configuration statement of work.

2.10 NON-DESTRUCTIVE TEST (NDT) SUBMITTAL REQUIREMENTS

1) Supplier Responsibilities

Supplier shall review this PO and associated drawings/drawing notes and related documents to determine if NDT is required. Submittal of NDT general procedures and part-specific techniques to Triumph/Dallas is required prior to production testing. NDT Procedures & Techniques shall be submitted to Triumph for review and approval through the Supplier Information Request (SIR) Process; exceptions are noted below. Guidelines for the minimum content of general procedures/techniques are provided in the respective NDT process specification. After initial approval, any changes to subject documents must be resubmitted to Triumph for approval.

2) NDT technique submittal is required for the following items only:

- a) Critical Parts
- b) Class 1 and 2 castings (in accordance with SAE-AMS-STD-2175)
- c) Pyrotechnics
- d) Composites
- e) Adhesive Bonded Assemblies
- f) When specifically designated in Triumph's PO, drawing, etc.

3) Suppliers Using Outside (Sub-tier) NDT Sources

Relative to (1) and (2) above, Suppliers employing outside sources for NDT shall ensure that the selected NDT sub-tier has Triumph's approval for the NDT procedure/technique used.

4) Suppliers Utilizing In-house or Outside (Sub-tier) Sources for Radiographic Inspection.

Radiographic Techniques on all programs shall be established to assure freedom from detrimental defects in the casting or finished part and approved by Triumph Radiographic Level 3 prior to delivering the hardware.





2.11 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.

2.12 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 – Vought Aircraft Division at:

https://www.triumphsupplysource.com/suppliers/index.php#

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.

2.13 GOVERNMENT QA REQUIREMENTS

NOTE: *Triumph source inspection shall precede government source inspection.*

UNCLASSIFIED PROGRAMS

Supplier shall determine applicability of this requirement via the "Government Source" requirement shown on the face of the PO (see Figure 1b); at the PO line item level, or within the PO "post notes" section. If applicable, supplier shall promptly notify the government representative normally servicing supplier's facility. Supplier shall furnish a copy of the PO to the respective government office. If the government representative/agency cannot be identified, notify Triumph procurement immediately.

CLASSIFIED PROGRAMS

Supplier shall determine applicability of this requirement via the "Government Source" requirement shown on the face of the PO (see Figure 1b), at the PO line item level, or within the PO "post notes' section. When applicable, **Supplier is specifically instructed not to contact the Government Representative** normally servicing Supplier's plant. Supplier shall contact Triumph procurement that will advise through Triumph security channels of the Government Representative accessed and designated for this contract.

DCMA ISSUED CORRECTIVE ACTION REQUEST

The supplier shall notify Triumph of any DCMA issued Corrective Action Request (CAR) to the supplier for material in support of a Triumph PO. Notification to the buyer shall be submitted on company letterhead and include, a copy of the initial CAR, identification of the material above in addition to any manufacturing, processing, testing, quality system or other deficiencies cited. All subsequent responses necessary to close the CAR shall be submitted to the buyer.





2.14 REQUESTS FOR CORRECTIVE ACTION AND NOTIFICATION OF ESCAPES

Corrective Action Requests

Responses for Corrective Action (CA) will be directed to the Supplier's Quality representative. Unless otherwise defined in other applicable flow-down documents, Suppliers are required to respond, within 30 calendar days, to all formal requests for cause and CA unless otherwise noted on individual requests for CA. Responses must be provided in accordance with SQR-003.

Note: CA extensions must be requested in writing prior to the due date.

Notification of Escaped Defects (NoE)

When the supplier identifies or becomes aware of a suspect product/service that has escaped from the supplier's facility to Triumph, the supplier shall notify Triumph within 48 hours. The Notification shall be in writing, addressed to Triumph, on the supplier's own letterhead.

Note: For escapes that affect "<u>Safety of Flight</u>" (i.e. controls) the suppliers shall submit all available information **IMMEDIATELY**.

Notifications of Escape (NoE) shall be sent via e-mail to the following address (Note: a courtesy copy shall also be forwarded to the cognizant, Triumph buyer): <u>mtosystemstech@triumphgroup.com</u>

The notification shall at a minimum contain the following information:

- (a) Supplier Name
- (b) Triumph Supplier Code number
- (c) Description of the defect
- (d) All affected part number(s)
- (e) PO number(s)
- (f) Quantities, Dates delivered and to which Triumph sites
- (g) Manufacturing date (M-Day)
- (h) Notification to Triumph source representative
- (i) Method of Discovery (discovered by supplier insp., Triumph Audit, etc.)
- (j) Traceability information(serial number, heat lot number, batch number, request for transfer number, etc....see Section 2.6)
- (k) Attachment of the last FAI performed for the Affected NoE Part (s). It is acceptable to list the First Article Inspection Report (FAIR) number in Net-Inspect
- (I) Attachment of all test/inspection data





- (m) Information regarding rejection and the impoundment of all work-in-process
- (n) Full Root Cause and CA, in accordance with SQR-003, or an Estimated Completion Date (ECD) not to exceed 30 days for submittal Triumph may require additional detail information to support internal investigations and/or customer requests.

2.15 KEY CHARACTERISTICS

When Triumph's drawing, specification, and/or PO, includes "Key Characteristic" (KC) requirements, supplier shall employ Variability Reduction/Statistical Process Control (VR/SPC) methods to ensure KC integrity. VR/SPC related records shall be retained at supplier's facility and provided to Triumph's representative, upon request, for compliance review.

The definition of KC shall be those KCs called out on engineering drawings <u>and/or</u> PO/manufacturing notes. Supplier shall establish control plans for applicable KCs and strive to achieve a Cpk of 1.33 or better. If not achievable, contact Triumph's Procurement Representative for direction.

Note: Suppliers' who accept POs with KCs must be SQR-002 approved.

2.16 RAW MATERIAL TYPE AND TEMPER

All metallic details, prior to the first fabrication operation, the supplier is required to verify the correct material type and temper to engineering. Evidence of verification shall be on the supplier's shop traveler, work order, planning paper or other inspection status documentation.

2.17 QUALIFIED DIE FOR CASTINGS & FORGINGS PROCURED TO AN ENGINEERING DRAWING (PART NUMBER)

Prior to initial production, the die or pattern must be qualified per the requirements of the blueprint specifications, the supplier of the castings or forgings shall perform FAI. Actual dimensions are to be recorded on the FAI SAE AS9102 Form. Supplier equivalent forms are acceptable providing they address all the elements of the AS9102 form. To clarify, when the forging or casting is to be procured to an engineering drawing, the FAI along with the qualification package (as defined by governing specifications) shall be submitted to Triumph for review and approval through the SIR Process.





2.18 SOFTWARE CONTROL (End-Item deliverable)

If the supplier is providing software supporting a procurement, the supplier shall establish and maintain a Software Quality Assurance (SQA) program in accordance with ISO 9001, utilizing ISO 9000-3 as a guideline for the development, supply and maintenance of software and any associated Data Item Description (DID) for writing an SQA plan.

2.19 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:

- Identify and document a product's characteristics
- Control, record and report changes to a product's documentation
- · Conduct and document configuration audits
- 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.

Unless otherwise specified in the contract agreement, suppliers are authorized to work to the latest engineering supplied by Triumph. If a received drawing revision changes the current configuration of the part or assembly without prior communication and coordination, the drawing revision must be coordinated with the Triumph Buyer for reconciliation.





2.20 QUALITY RECORDS

Records shall be readily available for review by Triumph, its customers, and Government regulatory agencies. An English version (copy of the record) shall be available for all quality data and / or approved design data. Prior to destruction of any quality records related to Triumph procurement, submit an SIR for disposition.

Records are those as defined in AS9100 or other governing QMS specifications and shall be retained in hard paper, film media, and/or electronic for a minimum of ten (10) years after purchase order completion. Triumph will be offered first right of refusal prior to record destruction.

2.21 USE OF NON-USA SUPPLIERS ON COMMERCIAL PROGRAMS

The use of suppliers or sub-tier suppliers in countries that maintain a bilateral agreement with the United States, as listed in FAA Advisory Circular AC 21-23, will require a routine validation of the product / service supplied upon receipt or at source. This may be in the form inspection or test as determined for the type of product and must be documented. The validation of the product or service may be accomplished by the Foreign Civil Aviation Authority, and evidenced by an Airworthiness Tag supplied by that agency accompanying the shipment.

The use of suppliers or sub-tier suppliers in countries that do not maintain a bilateral agreement with the United States must have a plan presented in advance for approval by Triumph Quality Assurance. The plan must delineate how the supplier will control the product or service to assure conformance with all the approved design data. Secondly, the plan must incorporate how the foreign supplier's Quality Assurance Organization will specifically control their operations and any foreign sub-tier suppliers to assure conformance of the product / service to the approved plan.

The use of a supplier in a country that does not have a bilateral agreement with the United States is also predicated upon both that country's government and the supplier's documented assurance that the FAA will not be inhibited, in any manner, from performing a physical evaluation of the supplier.

2.22 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).

- QOS-0033 Inspection Guidelines
- QOS-0021A Seller Requirements for Temper Inspection by Electrical
- QOS-0040 Prime Mission Equipment
- QOS-0042 Inspection Guidelines for Composite Parts & Assemblies





2.23 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:

- Fracture Critical parts and the requirement for traceability are controlled by Boeing book form drawings 17P9M2004 and 17P9M2005.
- Assignment of serial numbers is handled by Triumph for Category A parts there are no exceptions.
- 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.
- 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.

2.24 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:

- 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."
- 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 & 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.

2.25 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

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

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)

In support of SQR-002 Section 4.2, 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 SQR-002 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.

2.27 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."

2.28 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.

Note1: 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 Section 2.8. 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:

- Test reports shall be checked 100% against seller's requirements and applicable specifications.
- Validation test requirement:

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.

- 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".
- 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.

2.29 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.

- Embraer Quality Requirements for Suppliers (EQRS)
- 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.

2.30 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.

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

 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."

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.

<u>Seller's Inspection and Test.</u> 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.





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

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).

- 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.
- 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.
- For raw materials that have an associated heat or lot number, each piece shall also be identified with heat and /or lot number.
- 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.
- 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.
- Laboratory tests shall be performed by A2LA accredited laboratories. A2LA accredited laboratories can be viewed at <u>www.A2LA.org</u>.
- Triumph Tulsa approved substitute hardware is identified in the latest version of G280 Wing Alternative Fasteners MAA 7-70548-1.

<u>Control and Storage of Inventory</u>. 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.





<u>Supplier Quality Performance</u>. 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:

- At its own expense, Seller shall obtain source inspection from a Triumph Tulsa qualified contractor.
- 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.

<u>Flow Down to Sub-tier Suppliers</u>. 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):

- The goods in this P.O. are designated for IAI products.
- The Quality Assurance Plan between IAI and the seller applies to this P.O.
- The goods in this P.O. shall be inspected and tested by the seller in accordance with the Quality Assurance Plan.
- 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.
- The A/M certificate (COC) shall be signed by the seller's inspector and the IAI delegate inspector at the seller's site.

2.31 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.

<u>Gulfstream Aerospace Corporation (GAC) Special Process Sources.</u> 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.

<u>Seller's Inspection and Test.</u> 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.

<u>Regrading Material.</u> 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 by Triumph Tulsa, its customers or involved authorities (FAA).





- 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.
- 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.
- Ultrasonic inspection shall be performed in accordance with GAMPS 9101 (Aluminum), GAMPS 9102 (Steel), and GAMPS 9103 (Titanium).
- Laboratory tests shall be performed by GAC approved or NADCAP accredited laboratories. NADCAP accredited laboratories can be viewed at <u>www.sae.org/servlets/index?PORTAL_CODE=PRI</u>

<u>Control and Storage of Inventory</u>. 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:

- Seller shall at its own expense obtain source inspection from a Triumph Tulsa qualified contractor.
- 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.





<u>Flow Down to Sub-tier Suppliers.</u> 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/ Terms and Conditions/ Triumph Aerostructures - Vought Aircraft Division at:

https://www.triumphsupplysource.com/suppliers/pageview.php

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:

https://www.triumphsupplysource.com/suppliers/pageview.php?menuitemid=51

Suppliers do not need a password to access the SQAR document; however, a password <u>is</u> 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 PROCESS VARIABILITY REDUCTION

Triumph encourages suppliers to institute programs that will continuously improve processes and eliminate/minimize special causes of variation throughout their facility.

3.4 COUNTERFEIT PARTS

Triumph suppliers shall have in place a documented program to avoid, detect, mitigate and disposition counterfeit parts and materials.

Suppliers should utilize and reference AS6174 for guidance. Suppliers shall also flow down counterfeit parts programs requirements to their sub-tiers, especially but not limited to:





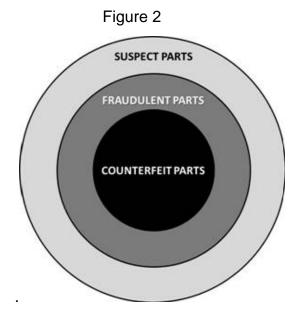
- a) Electronic parts suppliers
- b) Raw material suppliers
- c) Distributors

Terms and Definitions:

<u>SUSPECT MATERIEL</u>: Materiel, items, or products in which there is an indication by visual inspection, testing, or other information that it may meet the definition of fraudulent materiel or counterfeit materiel provided below.

<u>FRAUDULENT MATERIEL</u>: Suspect materiel misrepresented to the customer as meeting the customer's requirements.

<u>COUNTERFEIT MATERIEL</u>: Fraudulent materiel that has been confirmed to be a copy, imitation or substitute that has been represented, identified, or marked as genuine, and/or altered by a source without legal right with intent to mislead, deceive or defraud.



NOTE: Figure 2 depicts the above relationships between Suspect, Fraudulent and Counterfeit Materiel. Suspect Materiel can become Fraudulent or Counterfeit Materiel through further evaluation and testing. All counterfeit materiel is fraudulent, but not all fraudulent materiel is counterfeit.

3.5 FOREIGN OBJECT DAMAGE CONTROL PROGRAM

<u>Foreign Object Damage (FOD)</u> – 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.

A Word version of the QPP format is available at the Triumph Group Supplier Portal Link/Resource Documents/Business Unit Quality Forms/Triumph Aerostructures – Vought Aircraft Division: <u>https://www.triumphsupplysource.com/suppliers/pageview.php</u>

Supplier Name					
Street Address					
City	State	Zip Code			
Triumph Assigned Supplier Code Number					

SQAR Supplier's Procedure Number Revision Date

SQAR Paragraph #	Supplier's Procedure Number	Revision	Date
1.0			
2.0			
2.1			
2.2			
2.3			
2.4			
2.5			
2.5, 1)			
2.5, 2)			
2.5, 3)			
2.5, 4)			
2.5, 5)			
2.5, 6)			
2.5, 7)			
2.6			





SQAR Paragraph #	Supplier's Procedure Number	Revision	Date
2.7			
2.7, 1)			
2.7, 2)			
2.7, 3)			
2.7, 4)			
2.7, 5)			
2.7, 6)			
2.7, 7)			
2.7, 8)			
2.7, 9)			
2.7, 10)			
2.7, 11)			
2.7, 12)			
2.7, 13)			
2.8			
2.9			
2.10			
2.10, 1)			
2.10, 2)			
2.10, 3)			
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2.14			
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2.16			
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2.21			





SQAR Paragraph #	Supplier's Procedure Number	Revision	Date
2.22			
2.23			
2.24			
2.25			
2.26			
2.27			
2.28			
2.29			
2.30			
2.31			
3.0			
3.1			
3.2			
3.3			
3.4			
3.5			

QA Mgr. Name _____

Signature_____ Date _____