QRS-107 Management of Non-Conforming Articles

LEONARDO
HELICOPTERS

QRS-107

Management of Non-Conforming Articles

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CHANGES LOG

Issue	Approval Date	Main changes	Interested Paragraphs
00	April 2015	First Issue – Supersedes IQ S007	All
01	June 2018	Document completely rewritten and reformatted Added form for Quality Alerts	All
02	June 2019	Requirements Notification of Quality Alerts Added form F04 (Inspection Report)	5 5.3 5.4, 6

APPLICABLE DOCUMENTS

This document *shall* be applied together with the main document (QRS-01 Quality Requirements for Suppliers) and with the other applicable modules

CONTENTS

1 Purpose

LH *does not* accept non-conforming articles except in exceptional circumstances. In this case the requirements of this procedure apply.

The primary purpose of this procedure is to describe the methods that *shall* be used by LH Suppliers for the notification of “Non-Conformances” related to articles, material or assemblies destined or delivered to Leonardo Helicopters Plants.

2 Applicability

This procedure is applicable to all Leonardo Helicopters (LH) Suppliers as identified in Table 1 of QRS-01. The supplier *shall* flow down the requirements of this procedure to its suppliers or processor involved in the manufacturing process.

It *shall* be used as a base reference also for specific helicopter/aircraft programs; in this case, the management of non-conformances *shall* be integrated by the specific program procedures that, in case of conflicts, prevail.

3 Effective date

Issue date

4 Acronyms, definitions and abbreviations

4.1 Acronyms, and abbreviations

ATE	Authorized Technical Expert
CPE	Chief Project Engineer
DP	Deviation Permit
ETSO	European Technical Standard Order
HDO	Head of Design Organisation
LH	Leonardo Helicopters
MOAH	MOA Holder
NC	Non Conformity
NOE	Notification of Escape
P/N	Part Number
POAH	POA Holder
QA	Quality Alert
QN	Quality Notification
QRS	Quality Requirements for Suppliers
S/N	Serial Number
STC	Supplemental Type Certificates
TC	Type Certificate
TSD	Technical Specification for Delivery

4.2 Definitions

Applicable Design Data: Applicable Design Data is defined as all necessary drawings, specifications and other technical information provided by the applicant for, or holder of a design organisation approval, TC, STC, approval of repair or minor change design, or ETSO authorisation and released in a controlled manner to a production organisation approval holder. This *should* be sufficient for the development of production data to enable repeatable manufacture to take place in conformity with design data.

Concession: Permission to use or release a part that does not conform to applicable or approved design data.

Deviation Permit: Permission to deviate from the originally specified requirements of an article required before the realization of the related working phase and granted prior to the product's acceptance.

Interchangeability: Situation where two or more items are so similar in functional and physical characteristics that they are considered equivalent in performance and durability. Each is capable of replacing the other(s) without causing a need for alteration or adjustment to fulfil the same requirement

Known Repair: Repair whose criteria:

- Are contained in technical specification applicable to the product line involved, that has been approved by LH HDO or by the competent CPE, or
- Have already been applied at least once to the P/N involved (a previous concession exists with specific repair approved by the competent CPE, in which the repair criteria have been described or a repair drawing in accordance with applicable procedure, has been quoted).

Life or Duration: Characteristic of a part that affects the life/duration of the part, reducing it below the period envisaged as a design/specification requirement.

Maintainability: Characteristic of the part that has an impact on the maintenance activity envisaged by the scheduled inspection manual

Performance: Characteristic of a part which impacts the operation of the aircraft

Reliability: Characteristic of the part that affects the product reliability requirements with a consequent increase in the frequency of the scheduled inspection and/or removal intervals, compared with what is contained in the technical publication

Specific Repair: Repair not covered by the known repair definition

Strength: Characteristic of a part that affects the structural safety margins and limits the use of the part in the framework of its operation.

Sub-tiers: For the purpose of this procedure, Sub-tiers are considered the suppliers of LH Suppliers.

Testability: Characteristic of the part that has an impact on the ability of the part to reveal and isolate a fault and/or characteristic of the parameters detected on the basis of the test procedures envisaged by the applicable technical publications

5 Requirements

All Suppliers *shall* submit to LH any non-conformance related to LH design data set for approval/disposition in accordance with what described in the following paragraphs, per applicable case:

- **Deviation Permits**: deviations to the approved design data prior to start the manufacturing process - refer to paragraph 5.1,
- **Concessions:** non-conformances detected during the manufacturing process or at the end of the manufacturing process but prior to deliver the article - refer to paragraph 5.2,
- For Supplier **Escapes** refer to paragraph 5.3 (including also Quality Alerts, Service Bulletins)

LH will issue a **Quality Notification** to the Supplier for any Non-conformance detected but not identified by Supplier (refer to paragraph 5.4)

For the activities and the requirements specified in this procedure, the Supplier *shall* formally document:

- A process for identifying, analysing and initiating appropriate corrective action for products or articles that have been released from the quality system and that do not conform to the LH applicable design data.
- A process for the internal approval of non-conformances on manufactured articles and its submittal to LH
- A process for classifying the severity of the non-conformances and the control to prevent the use of non-conforming articles for finished parts.
- A process to manage the possible escapes on delivered articles with reference to continued airworthiness
- A process for the management of Sub-tiers non-conformities

Non-conforming articles, with their identification (e.g. labels), *shall* be held in a secure quarantine area until an approved, written disposition is given. A split batch *may* be used to allow acceptable articles to continue the manufacturing process.

If an article has to be scrapped, a record of the scrapped S/N / Batch Number *shall* be maintained and the part *shall* be physically damaged in order to make it unserviceable. Refer to paragraph 5.5 for Management of Scrap Parts.

The supplier *shall* have defined a procedure for the training of people in charge to evaluate and dispose non-conforming articles.

Unless otherwise formally agreed, non-conforming articles *shall* not be delivered until the notification of non-conformance is accepted and disposition issued by LH. In case

LH authorizes the Supplier to deliver a non-conforming article with an open non-conformity, this status has to be recorded on the accompanying documentation.

If a non-conforming article is provided by a stockist/distributor, or detected by a stockist/distributor, it shall return to the original manufacturer for the management of the non-conformity in accordance with this procedure.

The Supplier *shall* maintain a record of all the internal, LH and sub-tier related non-conformances and has to perform a periodical review to ensure repetitive defects do not occur. In case of recurrence of the same defect, the supplier *shall* perform an investigation in order to generate a request for modification to the design or to modify the manufacturing process to avoid the non-conformance recurrence.

The Supplier *shall* establish a system showing the quality level and the defect level with the purpose to demonstrate the progress obtained in the Quality Improvement.

5.1 Deviation Permits

The management of Deviation Permits refers to requests for deviation (for a limited number of parts or for a limited period of time) from the requirements specified in the applicable design data.

The supplier *shall* raise a request for deviation permit reporting all the available information, such as:

- The description of the requested DP
- An explanation of why it is not possible or is not cost effective to maintain compliance with the technical requirements defined in the applicable design data.
- An explanation of why a DP is requested rather than a permanent change in the applicable design data.

Once a DP is raised (using form QRS.107.F02), the Supplier *shall* send it to the Quality Control of reference. Once the DP is evaluated, the Supplier *will* receive it back by the Quality Control in charge of it with all the relevant dispositions.

5.2 Concessions

Concessions have to be prepared using form QRS.107.F01 and submitted to the relevant Quality Control. Once the Concession is evaluated, the Supplier *will* receive it back by the Relevant Quality Control.

The Supplier *shall* implement the authorized repair/rework and *shall* give evidence of that work done to the LH Quality Control.

If the usage decision is “scrap”, the Supplier *shall* scrap the part and record such activity (see paragraph 5.5).

A concession *may* refer to more S/N for the same defect in order to allow a faster management of the articles.

A concession *shall* not contain more defects and/or descriptions. In the presence of more defects or more descriptions for the same defect, more concessions *shall* be issued since different decisions to use for each defect cannot be managed within the same concession.

In case an article is manufactured under an authorized Deviation Permit, and a request for a concession is needed, a copy of the approved Deviation Permit has to be attached to the request for concession.

In case the concession number has to be marked, it has to be done before to deliver the parts. The marking method shall be the same indicated in the drawing/specification otherwise indicated on the concession itself.

5.3 Notification of Escape/Quality Alerts, Service Bulletins

A supplier *shall* send a **Quality Alert** (written on their company headed paper and on its own format) to notify LH any circumstances that might affect integrity of the articles already delivered or any error to maintenance activity that might affect the use and/or maintenance of the article.

Such information *shall* be sent to the contacts below:

- LH Chief Project of reference
- LH Quality Control of reference
- LH SQA: AWSupplierQualityAssurance.AW@leonardocompany.com
- Any other contacts required by contract, purchase order or program.
  In particular – LH UK only:
  AWL_Product_Qualityalert.mbx.aw@leonardocompany.com

The Supplier *shall* ask and receive an acknowledgement of such communication.

The Quality Alert *shall* contain: all the information needed to identify and manage the issue, such as:

- a clear description of the non-conformance and cause
- the P/N and S/Ns involved and the description of the Article
- drawing
- aircraft type
- the affected batches and quantity
- analysis performed to determine the affected quantities/batches that ensure all the defective quantities are captured
- the delivery date
- the reference to the Certificate of Conformance/EASA FORM 1 or equivalent, where possible

- possible limitation to use and any other relevant information
- Photos, test results etc.
- the actions to be taken to prevent any other potential failures from being used and suggested schedule
- Detailed root cause analysis and corrective actions implemented to prevent failure reoccurrence
- any other information required to fully understand the problem

Use the Form QRS-107_F03 or equivalent.

The Supplier *must* communicate to **LH** any QA or NOE respecting the following time limits:

- Maximum 24 hours for non-POAH (or MOAH) or POAH (MOAH) not working under the privileges or Part 21/Part 145, in case of defects that may have impact on airworthiness or safety
- Maximum 72 hours for POAH (or MOAH), in case of defects that may have impact on airworthiness or safety
- Maximum 1 calendar week in case of defect impacting the qualification or the characteristics of the articles
- Maximum 1 calendar month for the other cases.

Supplier **Service Bulletins** *shall* be submitted to LH relevant Chief Project as a draft for approval, through Engineering Coordination Memo, before its official release.

Any Mandatory Occurrence Report sent to the relevant Authority *shall* be immediately communicated to **LH**.

Remark: the Supplier *shall* manage any outcomes from field operation of the component, informing **LH** about involved supplied parts, supporting LH on investigations and containment/corrective actions and granting support and information towards Airworthiness Authorities, if a potential unsafe condition is identified.

The Supplier *shall* clearly flow down to his Sub-tiers all the above requirements to ensure that he is promptly notified of any Sub-tier Escapes

5.4 Leonardo Helicopters Quality Notification (QN)

Leonardo Helicopters *will* raise a Quality Notification to the Supplier for any non-conformance detected but not identified by the Supplier.

The Supplier *shall* notify LH the root causes, the containment action and corrective action (such as stock verification, work in progress parts already delivered, etc.) and that amendments to the process have been/*will* be put in place to prevent the occurrence.

All the Quality Notifications *shall* be considered as Customer Complaints, and LH expects immediate attention by the Supplier.

The Supplier shall answer the compliant request in accordance with the due date schedule, completing either general actions or defect Report as requested.

The form QRS-107_F04 (Inspection Report) *shall* be completed by the Supplier, where requested by Purchase Order, and submitted in advance to LH Quality Control

If a corrective action is requested and not taken within the date requested by LH (30 days if not differently specified), an escalation process can be initiated.

If the agreed days' timescale cannot be met, the Supplier *shall* inform LH (within 10 days if not differently specified) explaining the reasons for the delay.

Below the type of Quality Notification the Supplier can receive from LH:

Type of QN	Phase in which the non-conformity was detected
QP	During the inspections done by LH for the final acceptance of a part manufactured by the Supplier with a work order whose closure is LH responsibility
QK	Once the manufacturing process has been completed, if the non-conformity was detected on an assembly built by a supplier based on a TSD issued.
	Once the manufacturing process has been completed (bill of receipt closed), if the non-conformity was detected on articles built by a Supplier but the final acceptance (closure of work order) was issued by LH.
QF	During receiving inspections (bill of receipt open)
QJ	Once the receiving inspections have been completed (bill of receipt closed), if the non-conformity was detected on a supplied article.
	If the non-conformity was detected on an assembly built by a supplier based on a TSD issued.

5.5 Management of Scrap Parts

The Supplier *shall* identify a person in charge of handling the scrap parts and materials, including keeping the keys of the segregation area.

If the usage decision (internal or indicated by LH) requires the relevant nonconforming parts to be scrapped, the person in charge of handling scrap parts and materials *shall* ensure that:

- The parts are provided with an appropriate status tag in accordance with the defined Supplier procedure and that they are segregated in a closed and properly identified area suitable for quarantine. This area *shall* be separate from any other room containing suspended non-conforming parts without Usage Decision or with Usage Decision other than "Scrap".
- The scrap parts and materials *shall* not be used for aeronautical purposes.

The most effective method for preventing scrap parts from being used for aeronautical purposes is to mutilate them; this mutilation *shall* be done in such a way

as to guarantee that the parts can no longer be used for the purpose for which they were originally manufactured. For this, an effective combination of the following actions *shall* be utilised:

- the permanent deformation of the part;
- the cutting of the part into small pieces;
- the cutting of the part in a significant manner;
- the impairment of the part's primary Functions;
- the burning of the part;
- the heating of the part to its melting point;
- the removal and/or destruction of the manufacturer's identification markings (e.g. P/N, S/N, Batch Number).

Scrap parts *shall* never be sold to third parties before being rendered unusable; the return of any scrap parts to their manufacturer shall be agreed upon in advance with the manufacturer.

The Supplier functions that require parts for uses other than aeronautical purposes can check whether any suitable scrap parts are available by consulting the list of the scrapped parts.

If they *should* want to use a scrap part that's available in the segregation area, the managers of the aforementioned Supplier functions *shall* submit a formal request to the person in charge of handling scrap parts and materials.

If the person in charge deems the request to be acceptable, the mutilation of the scrap part as described above is not appropriate; the performance of one or more of the following actions upon the part *will* be deemed sufficient in order to prevent it from being used for aeronautical purposes

- the impairment of the part's primary Functions;
- the marking of the part with the wording “NOT FOR FLIGHT” in a clear and permanent manner, if permitted by the part's size;
- the removal of the manufacturer's data plates and identification elements

The person in charge of handling the scrap parts and materials *shall* ensure that the aforementioned operations are done on the part before it is collected by/delivered to the Function that has requested it.

Any parts that have been downgraded for uses other than aeronautical purposes *shall* always be accompanied by the applicable status tag, in accordance with the Supplier procedures, which *shall* indicate the part's new intended use (e.g. “teaching use”, “testing use”, “static display use”, etc.).

The Supplier *shall* record the effective destruction of the scrap parts or their destination for uses other than aeronautical purposes.

In the case of transfers for uses other than aeronautical purposes, the text of the action *shall* indicate the reason for the transfer (e.g. “teaching use”, “testing use”, “static display use”, etc.).

The closure of these actions constitutes the proof that the scrap Usage Decision has been implemented (destruction of the scrap part or uses other than aeronautical purposes).

The Supplier shall ensure full traceability of scrapped parts, from manufacturing to disposal.

IAQG guidelines are recommended

6 Appendices, Annexes and Forms

- QRS-107_F01: Concessions form with instructions
- QRS-107_F02: Deviation Permits form with instructions
- QRS-107_F03: Quality Alert form
- QRS-107_F04: Inspection Report form