

Aviation Quality Systems in the Context of EASA Aircraft Maintenance Organisations AMO's

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Let's start this process by making a number of Statements - Each of these statements "are" valid in the context of EASA and "maybe" valid in other environments (but this is by no means a given)

1/ The Accountable Manager is ultimately responsible for the entire Quality System

2/ All responsible persons including the Post Holders (Nominated Persons) and Quality Manager MUST report ultimately to the Accountable Manager

3/ The Term Quality System is all encompassing and includes QA, QC & QI

For example Quality Assurance (the independent oversight & gap analysis delivered by the Quality Assurance department. As well as Quality Inspection (for example activities associated with Stores Inspection) and finally Quality Control which in the EASA system is the responsibility of every individual working within the organisation.

4/ The Quality Assurance System must be independent!

145.A.65 Safety and quality policy, maintenance procedures and quality system

(c) The organisation shall establish a quality system that includes the following:

1. Independent audits in order to monitor compliance with required aircraft/aircraft component standards and adequacy of the procedures to ensure that such procedures invoke good maintenance practices and airworthy aircraft/aircraft components.

5/ Business Area owners (ultimately the Post Holders) are responsible for their teams to follow all regulatory and organisation requirements.

Note 1. that it if there is a QA finding it potentially is doubled! Why? because it means someone has come into your business area and identified that you are doing something which is not compliant. The next question is why you did not know? and why it took someone else to identify what you should have been doing in the first place

Note 2. this leads in the direction of Root Cause analysis and helps us get to the core of the issue and to develop fundamental understandings which help us both address the issue and improve the effectiveness of the organisational system.

6/ In the EASA System Business Area owners are responsible for Quality Control

Consider one definition for Quality Control " A system for verifying and maintaining a desired level of quality in an existing product or service by careful planning, use of proper equipment, continued inspection, and corrective action as required"

Consider the following as an example AMC 145.A.30(b) states the following

- 3. The base maintenance manager is responsible for ensuring that all maintenance required to be carried out in the hangar, plus any defect rectification carried out during base maintenance, is carried out to the design and quality standards specified in 145.A.65(b).

Please consider 145.A.65(b) The organisation shall establish procedures agreed by the competent authority taking into account human factors and human performance to ensure good maintenance practices and compliance with this Part which shall include a clear work order or contract such that aircraft and components may be released to service in accordance with point 145.A.50.

145.A.65(b) 1. The maintenance procedures under this point apply to points 145.A.25 to 145.A.95.
2. The maintenance procedures established or to be established by the organisation under this point shall cover all aspects of carrying out the maintenance activity, including the provision and control of specialised services and lay down the standards to which the organisation intends to work.

It is clearly evident that the BMM is responsible to deliver the product (which in our case is a completed maintenance check released to service) and as such he is also responsible for all the “elements” which go together to make this happen.

Manpower / Training / Documentation / Competence / Equipment / Facilities

Means we need a rules “procedures” which need to be followed, People need to be trained (competence) and that all of this happens correctly is a function of Quality Control

Consider that the BMM MUST control the product he is responsible for

7/ It is possible to have separate Quality Control Department within an EASA 145 Organisation

Off course it is possible (even it is beneficial if done in an organisationally optimising way)

Note QC activity should report directly to the BMM ! - Why ?Because it is part of his core obligations to manage his business area.

Note that QC activities are a continuous process where as QA activities are an independent sample to ensure compliance with the Regulatory and Company Procedures.

8/ QC departments should never report to the Functioning Head of Quality Assurance

QA should sit independently and should serve to identify deficiencies any other variation on the above may be acceptable to the regulatory authority however note the following

a) QA should never tell people what to do rather they should tell people what is wrong and off course to lend assistance to rectify, If QA tries to tell people what to do it undermines the authority of the business area owner.

b) In some organisations a Role is created at board level for example Director of Quality – who has the functioning heads of both QA and QC reporting to him.

Whilst this will be acceptable to the regulatory authority rather than being a positive for the organisation it serves to undermine the roles, responsibilities and obligations of the business area owners.

For example Please Note the following AMC 145.A.30(b) 3 - The base maintenance manager is also responsible for any corrective action resulting from the quality compliance monitoring of 145.A.65(c).

9/ Miss Focused QC undermines the authority of the EASA Business Area Responsible Person (The Post Holder)

To put it simply “as the business area owner I wish to make sure that we manage our processes in the most effective way. QC is a tool which allows me to achieve this, whether QC is evident on an individual basis or on a department basis is not important – however what is important is that as the responsible person I should not have Quality Assurance findings of any note during the audit.

A strong and independent Quality Assurance Department empowers the business area owner as it promotes an understanding of weakness and exposure within the system.

A strong QC which is independent from the business area owner serves to undermine his authority as it detracts from the obligation to be responsible to fully manage a regulatory and organisational compliant business area

The State of Play

In part due to the way EASA communicates with Industry there is a significant misunderstanding regarding both Quality Terminology and roles and responsibilities related to Quality within the EASA environment.

Consider that some Quality Professionals actually have the mistaken belief that there is no QC in EASA 145 !

As the author of this document I hold EASA responsible for this level of misunderstanding where clearly they have failed to share the fundamental fact that QC is intrinsically woven through the entire fabric of the regulations and it is incumbent on the business area owner to ensure correct delivery.

ISO is not EASA !

In a very few words ISO is focused on the whole story including design / production / delivery and customer satisfaction. With ever greater focus on integration there is no room for independence in the ISO QMS

EASA on the other hand focuses totally on QMS “compliance” (treating SMS as a separate topic) and leaving aside many of the ISO required elements

A major addition to the ISO 9001:2015 revision is the incorporation of risk based thinking within the management structure of the organization. This promotes the incorporation of risk awareness and identification throughout the organisational system as a whole.

ISO 9001-2015 also promotes greater emphasis on Leadership and Management Commitment – The new standard is intended to promote integration and alignment with business processes and strategies. With this integration, top management now have more responsibility in taking on a proactive role in the health and promotion of the quality management system.



By combining the quite separate activities of Compliance Auditing (predominantly reactive) together with the SMS organisational obligations (predominantly proactive) ISO 9001: 2015 creates many “holes” for an organisation who’s approval is dependent on demonstrating full compliance with EASA

In conclusion EASA are currently reformulating EASA Part 145 in order to incorporate the concept of Management System, Safety Management System to comply with ICAO annex 19 and to take account of Fatigue Risk Management Obligations so we wait to see if they will also take the opportunity to clarify Roles and Responsibilities associated with QA & QC.