WHAT EVERY EMPLOYEE NEEDS TO KNOW ABOUT AS9100C

A Pocket Guide to the Basics

Second Edition

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THE AS9100C STANDARD

WHAT EXACTLY IS AS9100C?

AS9100C is the 2009 revision of the Aerospace Standard ("AS") containing requirements for establishing and maintaining a **quality management system (QMS).** AS9001C includes the requirements of ISO 9001:2008 plus additional requirements for the aviation, space, and defense industries.

To assure high levels of customer satisfaction, these types of organizations need to produce, and continually improve, safe and reliable products that meet or exceed the requirements of customers and applicable statutory and regulatory requirements. A quality management system is set up by an organization to achieve high levels of customer satisfaction and continual improvement, focusing on common requirements and the reduction of variation and waste in the supply chain. This is done by

- establishing a quality policy and quality objectives, and
- establishing the means to achieve those objectives.

Rather than specify requirements for your final product – *what* you produce – AS9100C focuses further "upstream" on the processes – or *how* you produce. AS9100C requires documented systems for controlling the processes you use to develop and produce your products. This standard is based on the idea that there are certain elements every quality management system must have in place in order to ensure that safe, quality products are consistently provided to the customer on time.

PROCESS

"A SET OF INTERRELATED OR INTERACTING ACTIVITIES WHICH TRANSFORMS INPUTS INTO OUTPUTS."

THE QUALITY MANAGEMENT PRINCIPLES

AS9100C is based on eight principles that are key to the success of your quality management system. The principles in this section are quoted from **ISO 9000 Quality Management Systems – Fundamentals and Vocabulary.**

Principle 1 – Customer Focus: *Organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and should strive to exceed customer expectations.*

Your company should understand what the customer expects from your products and services, including price, delivery, warranty, etc. Management should focus on managing customer relationships by measuring customer satisfaction and taking action on the results.

Principle 2 – Leadership: *Leaders establish unity of purpose and direction of the organization. They should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.*

Your company's management and leaders should:

- Establish a quality policy and quality objectives;
- Provide the human resources, infrastructure, and work environment to make a safe and quality product;
- Demonstrate a commitment to education and training;
- Provide a stimulating work environment by establishing goals and targets and recognizing individual and organizational accomplishments.

WHAT DOES BEING "REGISTERED" MEAN?

Companies may be "registered" (or "receive certification") to AS9100C by applying to a *registrar* and paying a registration fee. A registrar is a company that will audit your company's quality management system to see if it is meeting all the necessary requirements.

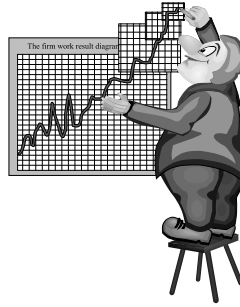
If your company doesn't develop its own product designs, your company would *exclude* those requirements from the scope of its registration.

WHY WOULD MY COMPANY WANT TO BE REGISTERED?

A major reason that most companies want to become registered is that their customers are demanding it. Registration to AS9100C assures your customers that you have a quality management system with the ability to produce, and continually improve, safe, reliable products on time. Some of the other benefits a company might expect to see include:

- Competitive advantages in marketing an improved "quality" image
- Better performance of internal operations (less scrap / rework)
- Better quality
- Fewer customer audits
- A stronger focus on customer satisfaction and continual improvement
- Better company-wide communication
- Decreased costs and higher profitability
- Better documentation (see "What's the value of all this documentation?")

And all of the above changes can lead to higher levels of financial security for the company and its employees.



THE DOCUMENTATION SYSTEM

WHAT ARE THE DIFFERENT TYPES OF DOCUMENTATION?

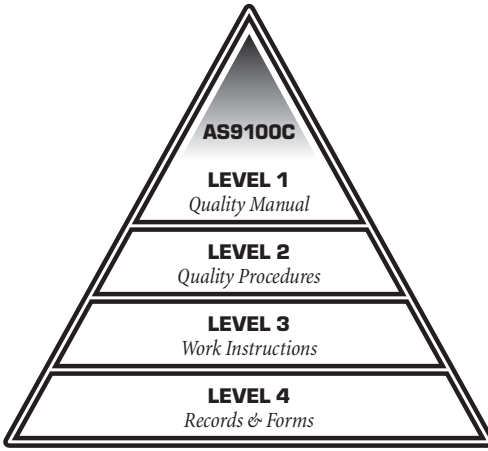
It is likely that one of the major changes your company will go through is to expand or improve its documentation system. AS9100C requires that companies have a quality manual, quality procedures, work instructions, and records. Each type of document serves a different purpose.

1. Quality Manual

The quality manual describes your company's structure, the scope and processes of the quality management system, its approach to meeting customer's needs, its documentation structure, and the policy and responsibilities for meeting the requirements of the various AS9100C clauses. The quality manual is typically 40 to 60 pages long. It is usually written with the direct involvement of top management and input from all levels of the organization.

HOW IS THE DOCUMENTATION SYSTEM STRUCTURED?

You can visualize the structure of quality management system documentation as a pyramid with four levels:



The pyramid gives you an idea of how much documentation there is at each level. Your company will probably have one quality manual (the narrowest part of the pyramid), about 10 to 40 quality procedures, and many more work instructions, forms and records.

- Identify ways to improve the AS9100C quality management system (see the next section).
- Participate in internal audits of the quality management system – as an auditee, an observer, or even an internal auditor.

Ultimately, the changes to your company's quality management system should make your job easier…especially if you are helpful in finding and fixing the weak points during internal quality audits. The AS9100C documentation will **not** limit you in finding better ways to do your job, or reduce your value to the company as an employee.

WHAT'S MY ROLE IN IMPROVING THE DOCUMENTATION SYSTEM?

It is every employee's responsibility to ensure that the documentation in his or her area is complete, correct, and effective.

Before an audit is a good time to look over the documentation for the activities that you are responsible for. You may find that some of the information in the documentation is no longer appropriate, in which case you'll want to let your supervisor (or the appropriate person) know so that the documentation can be changed.

Remember that documentation is not set in stone; it will need to be changed over time and you can help to ensure that it's up to date and easy to use! Don't forget that it is your documentation…If it has mistakes, or not enough information, or even too much detail, it only makes your job harder to do! Don't miss a chance to make your job easier!

THE REQUIREMENTS OF AS9100C

WHAT DOES EACH CLAUSE MEAN?

The following are short descriptions of each of the major "sub-clauses" of the AS9100C Standard. Each section below contains an explanation of the "essence of the clause" (or what it really means) and a list of the departments that are most affected by the clause, followed by some of the more important details of what's required by each clause.

Remember that the requirements in Clause 7.3 may not apply to your company if your company is not involved in the design and development of the products manufactured.

Note: The clause numbers start with "4" because the requirement clauses begin in the fourth section of the AS9100C Standard. The first three sections cover the standard's scope, references, definitions, etc.

CLAUSE

8

MEASUREMENT, ANALYSIS & IMPROVEMENT

CLAUSE 8.4 ANALYSIS OF DATA

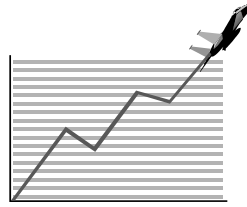
Essence of the clause: Not only must your company have a system for collecting the data required in clauses 8.1 and 8.2, but it must also regularly analyze the data and develop plans to continually improve.

Who's most involved: All departments (The Quality Department is often responsible for coordinating these activities.)

This clause requires your company to analyze the data it collects to compare how it's doing compared to the quality objectives and plans. This process should provide information on:

- Customer satisfaction;
- Conformance to product requirements;
- Characteristics and trends of the quality of products, and trends in operational performance compared progress toward objectives; and
- Suppliers

This information is collected, analyzed, and used to identify needs and opportunities to drive improvement (Clause 8.5).



THE AUDIT PROCESS

WHAT'S THE PURPOSE OF QUALITY MANAGEMENT SYSTEM AUDITS?

Registration to AS9100C requires that your company periodically go through two types of audits:

- Third-party audits (audits by your registrar), and
- Internal audits (self-audits by your company).

The general purpose of both types of audits is to determine whether your company has developed and implemented a quality management system that:

- Meets the requirements of AS9100C and any other quality management system requirements, and
- Is effective in providing quality products and services.

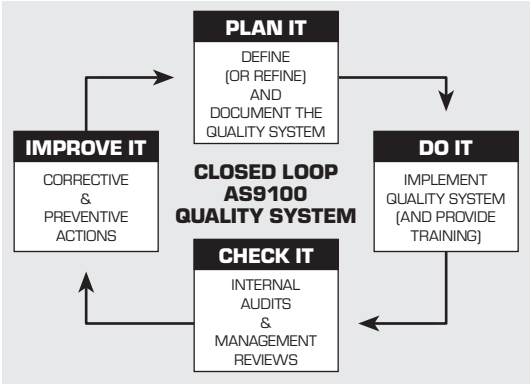
There are some key differences between the two types of audits:

- The **third-party audit** has a pass/fail result – the registrar's auditors are there to determine whether your company should become (or stay) registered to AS9100C. These auditors will tell you what's wrong with the system, but they are not there as consultants. They will not really tell you "how" to fix the problems.

- The **internal audit** looks for ways to make the quality management system work better for everyone, and tries to catch problems before your customer or registrar does. In the internal audit situation, employees should feel free to ask the auditors for help and to point out areas that may have problems.

ment system per audit. Typically, every three years, the registrar will perform a full audit of the system in order to determine whether the registration should be renewed. These audits are very much like the original registration audit and have similar outcomes to those listed in the "What if we don't pass the registration audit?" section.

You'll find that auditing continues to be an important way of life for the company, essentially "closing the loop" of the quality management system and providing a means for continual improvement.



WORK INSTRUCTIONS THAT APPLY TO MY JOB

RECORDS AND FORMS THAT APPLY TO MY JOB