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THE STANDARDS WE LIVE BY

M.C. Gill Corporation Successfully Completes AS9100 Rev C Audit

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When M.C. Gill Corporation was founded, standards for quality and customer service usually came from the man who was in charge. “Industry-wide” quality standards did not exist and there was no one organization that monitored performance. There were no set guidelines establishing manufacturing standards of conduct, production and safety. The president of the company was responsible for established policies and procedures to control the manufacturing process and ensure that the products being produced were something to be proud of and consistently manufactured to the highest quality. He led by example, insisting his customers were treated with respect and consideration, because they were the foundation of the business. Today, more than 65 years later, M.C. Gill Corporation is still upholding the standards that propelled the company from a mom and pop operation to a global corporation and now has the backing of the Aerospace Basic Quality Standard as proof.

Understanding the evolution of quality standards involves a bit of a history lesson. With the advent of the industrial revolution, countless “handmade” products were thrust into a machine-driven world. While machinery produced more products at a faster rate, the work force was relatively untrained in the monitoring, maintenance and processes associated with much of the machinery. It became clear that standards would be necessary to ensure product consistency.

In England, the British formed the Engineering Standards Committee. The committee received a royal charter in 1931 to operate as the British Standards Institution (BSI). The BSI was the world’s first national standards body to monitor the manufacturing industry and it pioneered the development of management system standards (BS 5750).

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During World War II, the United States military regularly wrestled with issues like inconsistency in dimensional tolerance between American and British screws, bolts, ammunition, tools and assorted parts. When World War II ended, the United States Department of Defense published defense standards (MIL-STD) and Defense specifications (MIL-SPEC) to achieve standardization objectives. The U.S. Governmental Accountability Office (GAO) states: "military specifications describe the physical and or operational characteristics of a product, while military standards detail the processes and materials to be used to make the product."[1] Citing both these standards, the International Organization for Standardization (ISO) was born to create a universally accepted family of standards.

1 Wikipedia.com, United States Military Standard.

June 1942, employee working on an airplane motor at North American Aviation, Inc. plant in California.

ISO 9000

ISO 9000 standards related to quality management systems that would ensure an organization consistently met their customer's expectations. Originally based on the early BSI standards, ISO 9000 was first published in 1987. It dealt with the fundamentals of quality management systems and included eight critical management principles:

1. Create a more efficient, effective operation
2. Increase customer satisfaction and retention
3. Reduce audits
4. Enhance marketing
5. Improve employee motivation, awareness, and morale
6. Promote international trade
7. Increase profit
8. Reduce waste and increase productivity[2]

Publication of ISO 9000 offered manufacturers a general set of standards to live by. ISO 9000 relates to quality management systems that address systemic changes. Key stakeholders in the aerospace industry at that time (Allied-Signal, Allison Engine, Boeing, General Electric Aircraft, Lockheed Martin, McDonnell Douglas, Northrop Grumman, Pratt and Whitney, Rockwell Collins, Sikorsky and Hamilton Sundstrand) then refined those standards with 27 additional requirements that were unique to the aerospace industry and developed the Aerospace Basic Quality System Standard (AS9000).

ISO Central Secretariat
Headquarter in Geneva

AS9000

The goal of AS9000 was to standardize and streamline aerospace quality management standards under the auspices of the Society of Automotive Engineers. Prior to the release of AS9000, corporations typically used the ISO 9000 standard or their own internal system to ensure quality. The AS9000 offered a single unified quality standard.

SAE International™

ASD AeroSpace and Defence Industries Association of Europe

AS9000 was implemented and applied while a rewrite of the original ISO 9000 was underway. The AS group (the Society of Engineers and the European Association of Aerospace Industries) continued to work closely with ISO to ensure that AS9000 was a continually evolving standard.

The next generation AS standard (AS9100), would include all the critical components found in AS9000, reflect major organizational and philosophical changes suggested by ISO, plus add requirements related to quality and safety. It was released in October 1999 and had an immediate impact. By 2000, major aerospace manufacturers and suppliers worldwide were requiring compliance and/or registration to AS9100 as a condition of doing business with them.[3] Subsequently, new stakeholders have joined the process and a volatile world economy has significantly reshaped the AS standard.

AS9100 REV C

Released in January 2009, AS9100, Revision C, is the most current quality management system (QMS) standard for the aviation, space and defense industries. AS9100 Revision C (sometimes called AS9100:2009) incorporates the elements of ISO 9001:2008 with additional requirements in virtually every section of the existing AS9100 standards, including the significant addition of risk management, project management, configuration management, and enhanced focus on customer satisfaction. The intent of Revision C is to create a proactive quality management system that addresses the elements of risk management and reduces the likelihood of undesirable situations in the manufacturing environment.

M.C. Gill Corporation is currently qualified to ISO 9001:2000 and AS9100: 2004-01. Earning certification to the Revision C standard became a top priority for Director of Quality Robert Hawrylo after he joined the organization in September 2011. The AS9100C manual begins:

THE AS9100C MANUAL

"To assure customer satisfaction, aviation, space and defense organizations must produce, and continually improve, safe, reliable products that meet or exceed customer and applicable statutory and regulatory requirements. The globalization of the industry and the resulting diversity of regional and national requirements and expectations have complicated this objective. Organizations have the challenge of purchasing products from suppliers throughout the world and at all levels of the supply chain. Suppliers have the challenge of delivering products to multiple customers having varying quality requirements and expectations.

"Industry has established the International Aerospace Quality Group (IAQG), with representatives from companies in the Americas, Asia/Pacific and Europe, to implement initiatives that make significant improvements in quality and reductions in cost throughout the value stream. This standard has been prepared by the IAQG. It standardizes quality management system requirements to the greatest extent possible and can be used at all levels of the supply chain by organizations around the world. Its use should result in improved quality, schedule and cost performance by the reduction or elimination of organization-unique requirements and wider application of good practice. This standard has been revised to incorporate the requirements of ISO 9001:2008. In addition, industry requirements, definitions and notes have been revised and additional requirements have been included in response to stake-holder needs."[4]

2 ISO 9000, www.wikipedia.com
3 ISO9100, www.wikipedia.com
4 ASE Aerospace Standard Manual, Issued 1999-11/Revised 2009-01

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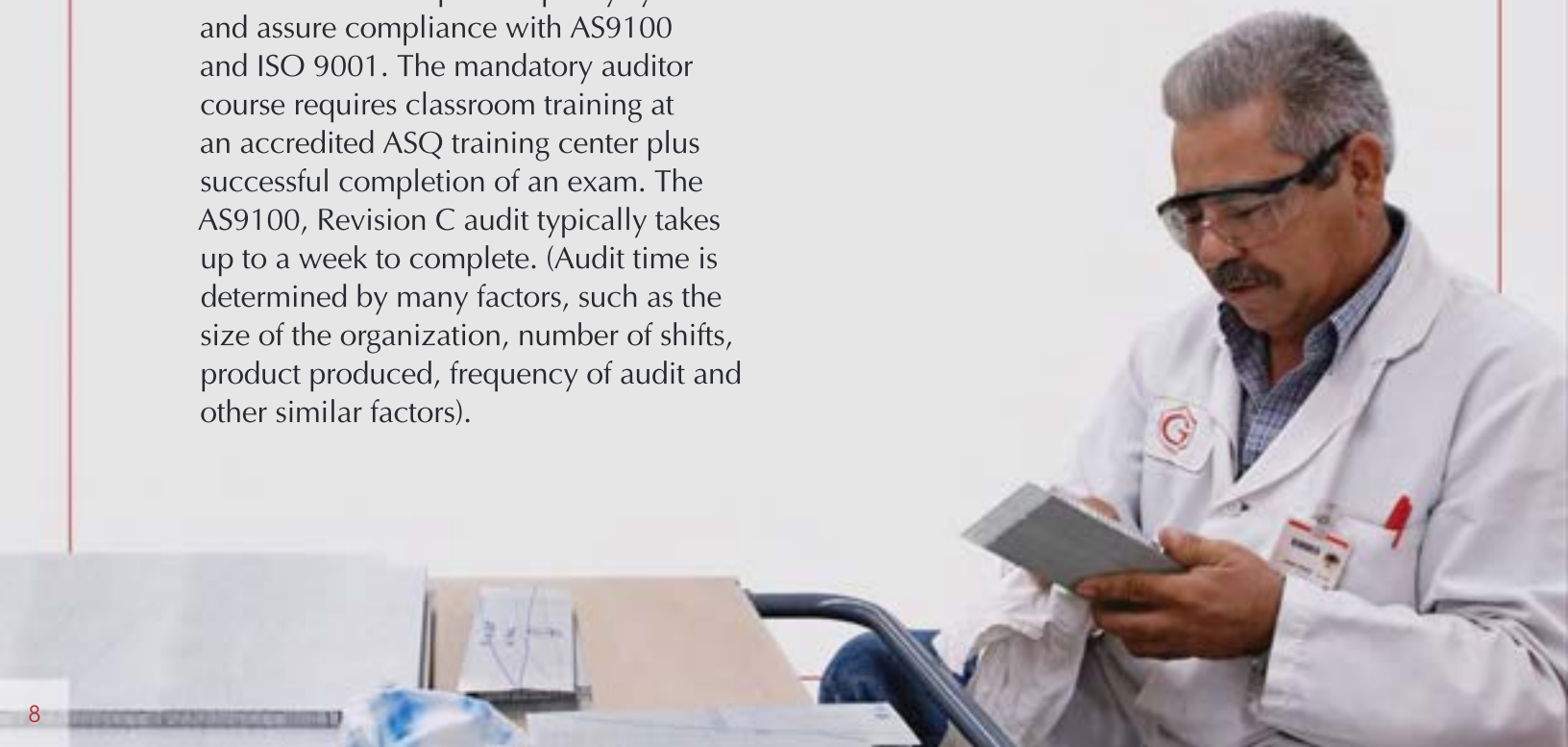
Besides the new focus on risk management, the audit process itself has changed dramatically. In the past, the audit conducted to verify certification, was a "clause-based" audit. In clause-based auditing, an organization or a segment of an organization is audited to verify it complies with a particular clause of the AS9100 QMS requirements. The AS9100, Revision C audit is now conducted by a "process audit." With process auditing, a particular process or group of processes is audited to ensure that it complies with any part or clause of the standard that applies to it. In addition, the independent auditing team who conducts the audit must be specially trained to ensure they understand the elements that comprise a quality system and assure compliance with AS9100 and ISO 9001. The mandatory auditor course requires classroom training at an accredited ASQ training center plus successful completion of an exam. The AS9100, Revision C audit typically takes up to a week to complete. (Audit time is determined by many factors, such as the size of the organization, number of shifts, product produced, frequency of audit and other similar factors).

Director of Quality Robert Hawrylo oversaw the audit process which was conducted during late November. "On behalf of the organization, I am pleased to report we successfully completed the audit to achieve certification for AS9100, Revision C. This represents a major commitment from the organization and requires proof of a solid knowledge of the intent and specifics of the standards as well as the best methods to implement, document, and perform risk management activities."

M.C. Gill Corporation responded to the non-conformances cited during the audit and the documents requesting formal certification to AS9100, Revision C have been submitted and approved.

M.C. Gill Corporation's AS9100, Revision C audit results are clear proof that the shareholders continue to sustain a quality culture where continuous process improvement and dedication to customer satisfaction reign.

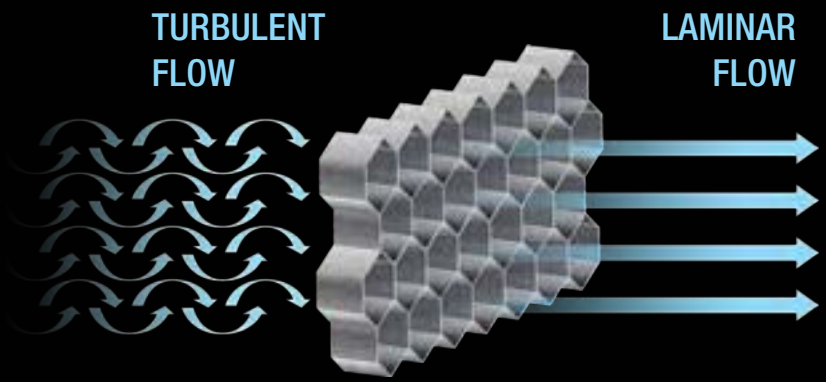


Alcore Brigantine Has a Keen Eye for Unique Opportunities

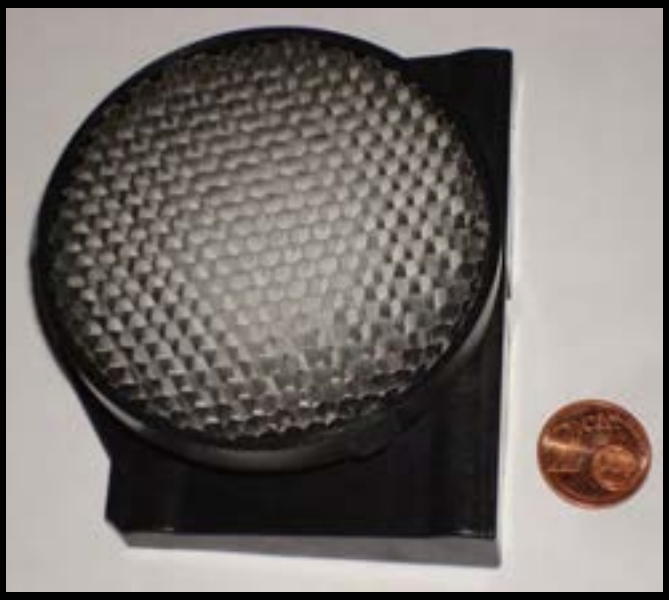
We've all heard the cliché about being ready when opportunity comes knocking. The team at Alcore Brigantine threw their doors open wide when a French automotive parts manufacturer knocked at their door. The customer specialized in injected plastic parts and needed support on an air intake assembly for a specific model automobile that was projected for large-scale serial production in France. The manufacturer discovered a problem with their air intake system and needed answers fast. Their problem involved the flow meter incorporated in the air intake system.

The air intake system.

The flow meter gives a signal to the air intake system that provides automatic control of the mixture in the carburetor. The air flow in the duct is turbulent, creating an unreliable measurement and disturbing the mixture regulation loop. If the turbulence in the duct was "calmed," the problem would be solved.



Alcore Brigantine's sales and engineering team analyzed the issue and determined that the introduction of structure in the duct could lessen the turbulence. They suggested that aluminum honeycomb would help the flow lamination for gas and liquid and result in no static pressure drop. The pressure drop is dependent on the honeycomb cell diameter and length and must be optimized according to the dynamic parameters of the flow. Inserting a disk of aluminum honeycomb at a strategic location where the air flow is laminated (before the flow meter) delivered an accurate and reliable measure and signal. The honeycomb disk is made of Duracore 5052 (4.5-1/8, 9 mm thick). Post insertion testing showed the mixture control loop was now robust.



The second part of this challenge involved operating in a JIT (just in time) manufacturing environment, meeting the Automotive Quality Standard for 100,000 parts per year and all at a competitive industry cost rate. Alcore Brigantine met that challenge by developing a semi-automatic punching line with customized die tools to meet demand, quality requirements and costing constraints. To date, the plant is able to produce 1,000 parts per day, per shift, while meeting the various quality and costing requirements. A recent customer change (related to industry regulations) was implemented without interruption to production.

"This is an example of how we approach and exceed our customer's requirements. I am very proud of the work we perform and the niche we fill within our industry," says President and Development Manager Frederic Caramanos.

Alcore Brigantine is a subsidiary of M.C. Gill Corporation and is located in Anglet, France. For more information about the many capabilities of Alcore Brigantine, you can email them at sales@alcorebrigantine.fr or log on to the corporate website at www.mcgillcorp.com.

Semi-automatic punching line and circular die.

= 1,000 parts/day

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Alcore does not sell sandwich panels. Contact M.C. Gill for these products.

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THE FUNNY SIDE

An accountant is having a hard time sleeping and goes to see his doctor.

"Doctor, I just can't get to sleep at night."

"Have you tried counting sheep?"

"That's the problem. I make a mistake, then spend three hours trying to find it!"

Late one night in Washington, D.C., a mugger wearing a ski mask jumped into the path of a well-dressed man and stuck a gun in his ribs.

"Give me your money!" he demanded.

Indignant, the well-dressed man bellowed, "Hrmm! Do you realize that you are attempting to rob a United States Congressman?"

"In that case," replied the mugger, "Give me *my* money."

Four engineers were traveling by car to a seminar when, unfortunately, the vehicle broke down.

The chemical engineer said, "Obviously, some constituent of the fuel has caused a failure to occur."

The mechanical engineer said, "I disagree. I would surmise that an engine component has suffered a catastrophic structural failure."

The electrical engineer also had a theory: "I believe an electrical component has ceased to function, thereby causing an ignition malfunction."

The software engineer thought for some time and said, "Maybe we should all get out and then get back in again?"

Real Engineers

Real engineers consider themselves well-dressed if their socks match.

Real engineers know the second law of thermodynamics but not their shirt size.

Real engineers repair their own cameras, telephones, televisions, watches and toasters.

Real engineers know the ABCs of infrared from A to B.

Real engineers rotate their tires for fun.

Real engineers make four sets of drawings (with seven revisions) before making a bird bath.

Real engineers say, "It's 77 degrees Fahrenheit, 25 degrees Celsius and 298 Kelvin." You say, "It's a nice day."