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ISO 45001 Occupational health and safety management for the aerospace industry

What is ISO 45001?

ISO 45001 is the new, internationally recognized management system standard for Occupational Health and Safety (OH&S). It was created to address the need to provide a consistent global framework, focused on proactive prevention of injury and ill-health while providing an environment which is safe and healthy.

The wellbeing of the worker is the primary focus of ISO 45001. Viewed through the lens of risk management, the new standard takes into consideration social and psychological factors as well as human factors encompassing error prevention.

With the increased concentration on statutory and regulatory compliance, coupled with its alignment to the new ISO high level structure ISO 45001 is a perfect partner to quality and environmental management systems

Having complementary management systems allows organizations to anticipate, adapt and respond to the risks and opportunities created by a highly competitive, innovative industry like aerospace. This provides organizations, large and small, with the resiliency and agility needed to thrive in the global market.

The IAQG recognizes that human factors directly impact the quality of products and services. Human factors are referenced in the revised AS9100 standard in Section 7.1.4 Environment for the Operation of Processes as stated,

"A suitable environment can be a combination of human and physical factors, such as:

a. social (e.g., non-discriminatory, calm, non-confrontational);

b. psychological (e.g., stress-reducing, burnout prevention, emotionally protective);

c. physical (e.g., temperature, heat, humidity, light, airflow, hygiene, noise).[1]"

An effective occupational health and safety program is key to creating the policies that focus on the workers' environment. ISO 45001's strong focus on legal and other requirements further complement IAQG's intent. AS9100-series of standards and ISO 45001 also recognize the role human performance and error can have on the outcomes of the systems and products. Finally, the requirement in ISO 45001 to align OH&S to the strategic direction of the business, driven by top management, along with active participation of workers, accelerates continual improvement, and illustrates that the relationship between the AS9100-series and ISO 45001 can be found throughout each of the standards.

How can ISO 45001 benefit your organization?

The aerospace industry has long recognized the importance of creating a strong safety culture, and has been a leader in the manufacturing sector in demonstrating the importance of employee morale and safety to productivity and ultimately, revenue. In their recent sustainability report, entitled "The Science of Citizenship", Lockheed Martin calls out employee wellbeing as one of its five core areas to ensure growth, "Employee Wellbeing reflects our support for people throughout the employee journey and fosters a high-performance, inclusive workplace." [2]

With a heritage of using technology to improve productivity, quality, safety and health, the aerospace industry has revolutionized manufacturing, particularly with the use of robotics. From robot welding and paint spraying which keep workers away from the fumes and mist that can have devastating long term effects on health and quality of life, (while improving quality and efficiency of manufacturing); to the new breed of cobots (collaborative robots) and exoskeletons which are reducing muscular skeletal stress associated with heavy lifting, repetitive actions or sustained awkward postures. Musculoskeletal disorders (MSDs) are a major social and economic burden in the manufacturing industry. Interestingly, what a lot of people don't realize is that there is also a relationship between MSDs and stress. Stress can lead to MSDs and MSDs can lead to stress, so effectively managing both can have a significant positive impact.

In 2015 in the US, MSDs accounted for 31 percent (356,910 cases) of the total cases for all workers. Of the total MSD cases, 80 percent occurred to private industry workers.[3]

Cobots are being used for tasks such as intricate screw-driving on the assembly line, relieving workers from ergonomically unfavorable work.

Exoskeletons "take over" or support muscle function, so that the muscle does not have to work as hard, reducing muscle fatigue and potential injuries. These are being tested in many manufacturing environments and perhaps most well known in the aerospace industry, the FORTIS™ system trialed in partnership with Lockheed.[4]

AI continues to enhance manufacturing practices, creating a safer work environment. Boeing has deployed what it terms as "automated identification technology" (AIT) in at least 50 manufacturing sites. It's subsidiary, Tapestry Solutions, which developed the AIT system, claims it saved Boeing around $100 million in its first year, by decreasing assembly time, automating asset receipt and payment, enhancing inventory management and improving overall quality and safety[5]. This focus on technology to help drive continual improvement is also found in ISO 45001.

Added to that, organizations are now looking for ways to help them think beyond safety and accident prevention. Effective health management is a core part of ISO 45001, focusing on not just physical but also mental and cognitive health. ISO 45001 encourages a more holistic approach, recognizing that linking with broader wellbeing initiatives can bring even greater benefits.

Being an employer who cares about the wellbeing of their employees is something that is considered particularly important by millennials who have been brought up surrounded by messages on the importance of health and wellbeing and who expect similar support from their employer. In a competitive industry such as aerospace, where there are recognized skills shortages, attracting the best young talent is vital, and ISO 45001 offers a framework to enhance your recruitment and retention strategy.

Proactively managing occupational health and safety in this way will help you better protect your people, brand and business performance. It can also help you to meet OEM contract requirements.

1. SAE AS9100 Rev. D Standard, page 17. https://www.lockheedmartin.com/content/dam/lockheed-martin/eo/documents/sustainability/Lockheed_Martin_Sustainability_Report_Full_2017.pdf, page 12.

2. https://www.bls.gov/news.release/osh2.nr0.htm

3. 3. https://www.lockheedmartin.com/content/dam/lockheed-martin/eo/documents/sustainability/Lockheed_Martin_Sustainability_Report_Full_2017.pdf, page 8.

4. 4. https://enterpriseiotinsights.com/20180411/channels/news/bae-systems-automates-manufacturing-with-boeing-iot-platform-tag40

5. Preventative and protective measures used to prevent of mitigate risk

ISO 45001 benefits also include:

- A robust way to demonstrate your social responsibility by showing your commitment to a safe, healthy and sustainable work environment
- A better working environment for your people, improving quality and minimizing work-related injury and ill-health
- Improved recruitment and retention rates while reducing absence rates
- Increased organizational resilience through proactive risk prevention and continual improvement
- Strengthened legal and regulatory compliance
- A strong safety culture brought about by the need for leadership commitment and a workforce who are actively involved in OH&S
- With the new High Level Structure, ISO 45001 readily integrates with other ISO standards as well as any of those in the AS9100-series.

For organizations operating internationally

As many organizations in the aerospace supply chain operate or trade internationally, working to ISO 45001, (the single international standard on OH&S), will simplify trade across boundaries, whether geographic, political, economic, commercial or social. Simplification and standardization can give you that competitive edge in the market.

What steps do I need to take?

Given ISO's high level structure, the great news is that with the new AS9100-series you are well on your way, as the structure and therefore many of the requirements are aligned to ISO 45001. Furthermore, you'll be complying with local health and safety legislation so you'll already have many of the planning and operational elements in place (such as hazard identification, risk assessment, controls).

If you have OSHAS 18001 or an equivalent OH&S management system, you are closer still to achieving ISO 45001 certification.

Organizations wishing to upgrade to ISO 45001:2018 are recommended to take the following actions:

- Purchase a copy of the standard and the supporting guidance – BS 45002.0 from BSI

- Undertake suitable training to understand the requirements of the new standard (BSI offers everything from two hour executive briefings to our four day TPECS course or try a Connected Learning Live course)

- Identify organizational gaps which need to be addressed to meet the new requirements

- Develop an implementation plan

- Provide appropriate communication and awareness for interested parties as identified under the requirements of ISO 45001:2018

- Update existing OH&S management system to meet ISO 45001:2018 requirements and provide verification of effectiveness

- Liaise with your local BSI office for further help and support

About BSI

BSI equips businesses with the necessary solutions to turn standards of best practice into habits of excellence. From assessment, certification and training to software solutions, advisory services and supply chain intelligence, BSI provides the full solution to facilitate business improvement and help clients drive performance, manage risk and grow sustainably. Through the passion and expertise of our people, BSI embeds excellence in organizations across the globe to improve business performance and resilience. BSI's influence spans across multiple sectors with particular focus on Aerospace, Automotive, Built Environment, Food, Retail, Healthcare and IT

Find out more about ISO 45001, visit **bsigroup.com/en-AU**

Why BSI?

By Royal Charter

BSI has been at the forefront of the development of ISO 45001, from the start; BSI proposed its development and has run the international secretariat supporting the project committee which has developed the standard. Its origins are based on BS OHSAS 18001, the world renowned health & safety management system which was published by BSI in 1999.

The AS9100-series is based on ISO 9001, the world's most widely adopted quality management system, for which BSI has held the Secretariat of the International Committee since 1994.

That's why we're best placed to help you understand the AS9100-series and ISO 45001.