

Safety  Health

2021



Annual Report

Industrial Safety and Health Association of the R.O.C. (Taiwan)

CSR

Professional

Quality

Service

Innovation

President's Foreword

The COVID-19 pandemic, and its profound impacts on the world of work, underscore just how important Occupational Safety and Health (OSH) is to all of us. Workplaces can easily become contaminated with the novel coronavirus, exposing workers, their families and communities to the risk of infection.

ISHA committed all efforts to assist government and enterprises to continue strengthening occupational safety and health (OSH) promotion during the pandemic, to safeguard safety and health of workplaces.

In compliance with government policy to promote occupational safety and health, to improve working environment and to reduce occupational accidents, ISHA was established in 1960 as a first non-profit OSH organization. ISHA has long been the oldest and largest OSH organization in Taiwan. The services provided in the early stages included training of OSH personnel, compilation of training materials, education and training sessions, seminars and workshops. In compliance with government policy to strengthen OSH and in response to SMEs requesting ISHA to provide guidance on OSHMS establishment, and published more OSH teaching materials and strengthened internal IT management system and services. The OSH activities provided by ISHA are described as follows:

1. OSH education and training

OSH education and training courses offered by ISHA include training sessions for OSH management personnel, specific machinery and equipment operators, management personnel of hazardous materials, OSH training for managers of various industries, on-the-job OSH training for laborers in various industries, first-aid personnel training, training of zero accident campaigner and assorted OSH training for specific industries.

2. Virtual Reality OSH (Occupational Safety and Health) Training

It points to the possibility of using the applications and simulations of the workplaces and the processes for better understanding of potential danger and eventual prevention options. Such an application simulates the real workplace including the technological processes and provides the user with a motion in 3D environment of virtual scene observing and interacting in actual work zones.

3. Authorized inspection on specific equipment and machinery

ISHA is one of the three organizations in Taiwan authorized by government to provide inspections on specific and/or dangerous equipment and machinery. With inspection jurisdiction in southern Taiwan, ISHA provides inspection services on boilers, high pressure vessels, cranes, gondolas and elevators, etc.

4. Working environment management and improvement guidance

In accordance with the government OSH policies, ISHA accepts commissioned projects from businesses to conduct occupational health management on physical and chemical hazards, recommendations to improve poor working environments and implementation guidance on improvement measures.

5. Promotion of OSH management system

In light of the ILO-OSH 2001, the "Taiwan Occupational Safety and Health Management System (TOSHMS)" was promulgated in 2007. ISHA was since commissioned to assist industries with establishment and implementation of TOSHMS and ISO 45001.

6. Technical services on occupational safety and health

Commissioned by the government, ISHA provided selected SMEs with improved and customized OSH measures, voluntary management and improvement guidance on OSH issues; guidance on energy saving and carbon reduction programs to some businesses; improvement guidance on ergonomic factors and to physical laborers on health promotion and fitness; technical guidance to petrochemical industry. ISHA also helped government promote workplace health programs in Taiwan.

7. International cooperation

Besides participating in the annual APOSHO meetings as a full member, ISHA seeks opportunities to exchange views and techniques with international OSH counterparts e.g. Japan, Korea, U.S.A. etc. and maintain close relationship with OSH organizations in China, Hong Kong, and Macau.

8. Promotional campaign and related activities on OSH

ISHA frequently holds seminars on a variety of issues e.g. zero accident campaign, home safety, health promotion, safety culture, subcontractor management, ICAP risk assessment training courses, prevention of occupational diseases, etc; publishes an Industrial Safety and Health monthly journal; has published various titles of textbooks and regulations, handbooks, and other educational tools; strengthens OSH information and services, updates its website to provide latest OSH information.

Due to the concerted efforts among government agencies, academics, labor and employers, the per thousand fatality rate of occupational accidents in Taiwan had been declining during the last few years, i.e., death rate from 0.025 in 2017 dropped to 0.021 in 2021. However, the economic growth accelerated in the last decade, people became more concerned about the OSH issues generated directly from production-related matters. Both labor bureaus and OSH-related organizations in Taiwan are paying closer attention to issues, e.g. OSH management systems, OSH improvement for SMEs, preventive measures for high-risk chemical hazards, and health risks posed by new technologies etc. The Occupational Safety and Health Act is enacted for the purpose of preventing occupational accidents and protecting labor safety and health. New mechanisms as follows: 1. implement on source management of machineries, equipments and chemicals; 2. improvement for occupational disease prevention system; 3. strengthen the maternal protection of female workers; 4. strengthen supervisions and inspections of the high-risk workplaces. 5. Promote workplace health and safety culture and the development of related industries. The Act will enable Taiwan to build a complete occupational health and safety protection system so as to effectively protect the health and safety of all workers. All these will be the tasks that ISHA focuses on in the coming years to attain continual improvement in the fields of OSH.



Tang Da-Toung

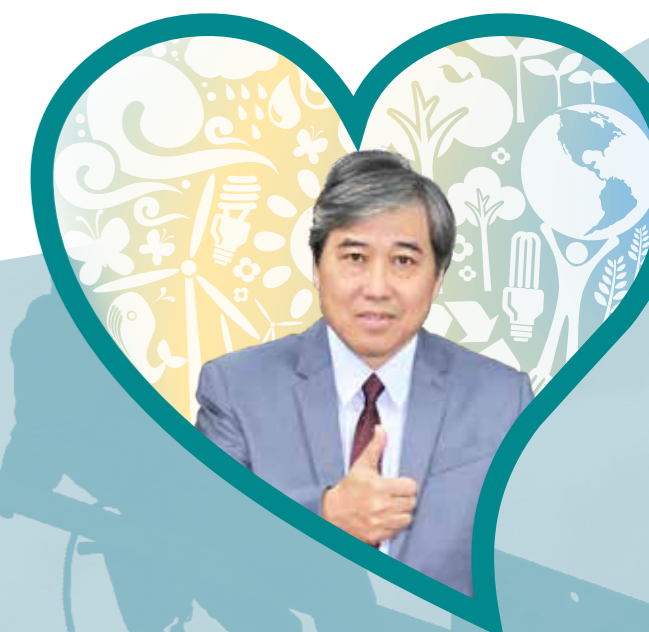
Tang Da-Toung
President of ISHA
August 2021

ISHA 2021 Annual Report

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Part 1 Introduction to ISHA



The Industrial Safety and Health Association (ISHA) of the R.O.C. (Taiwan) was established in 1960 to dedicate to promotion of the industrial safety and health activities. Collaborating with the Ministry of Labor of the Executive Yuan, ISHA has become one of the leading OSH advocacies in Taiwan by conducting various safety and health activities, providing numerous educational training sessions, offering assorted technical services, and auditing authorized inspections, etc.

Mission

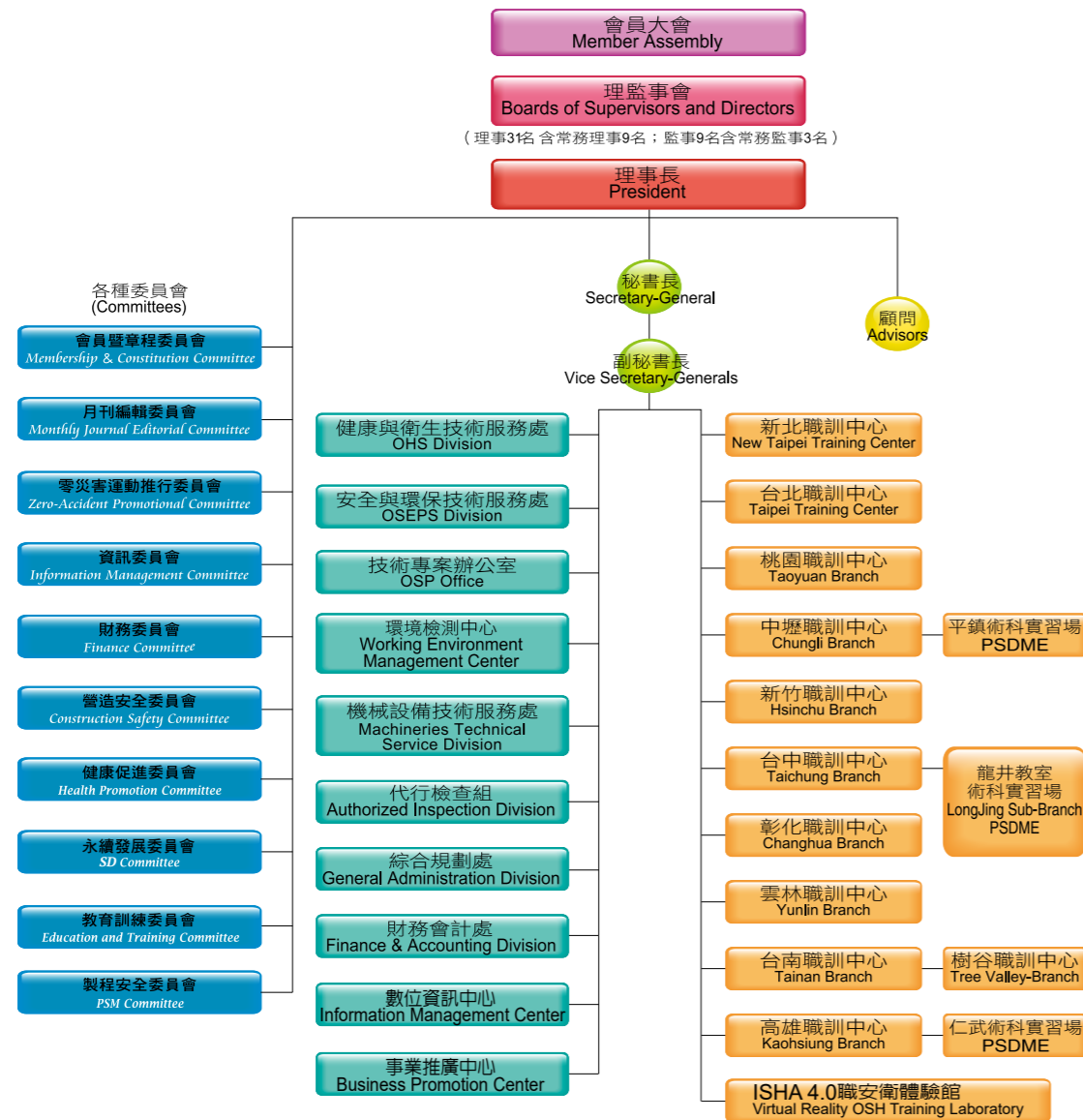
The mission of ISHA is to devote to research on industrial safety and health issues, to prevent industrial accidents, to comply with government policies, and to provide assistance to business entities to improve occupational safety and health.

Core Values

Our core values are Social Responsibility, Professional, Quality, Service and Innovation.

To accomplish these core values, the ISHA works in partnership with government, employers, employees, professionals and academics through a wide range of quality services.

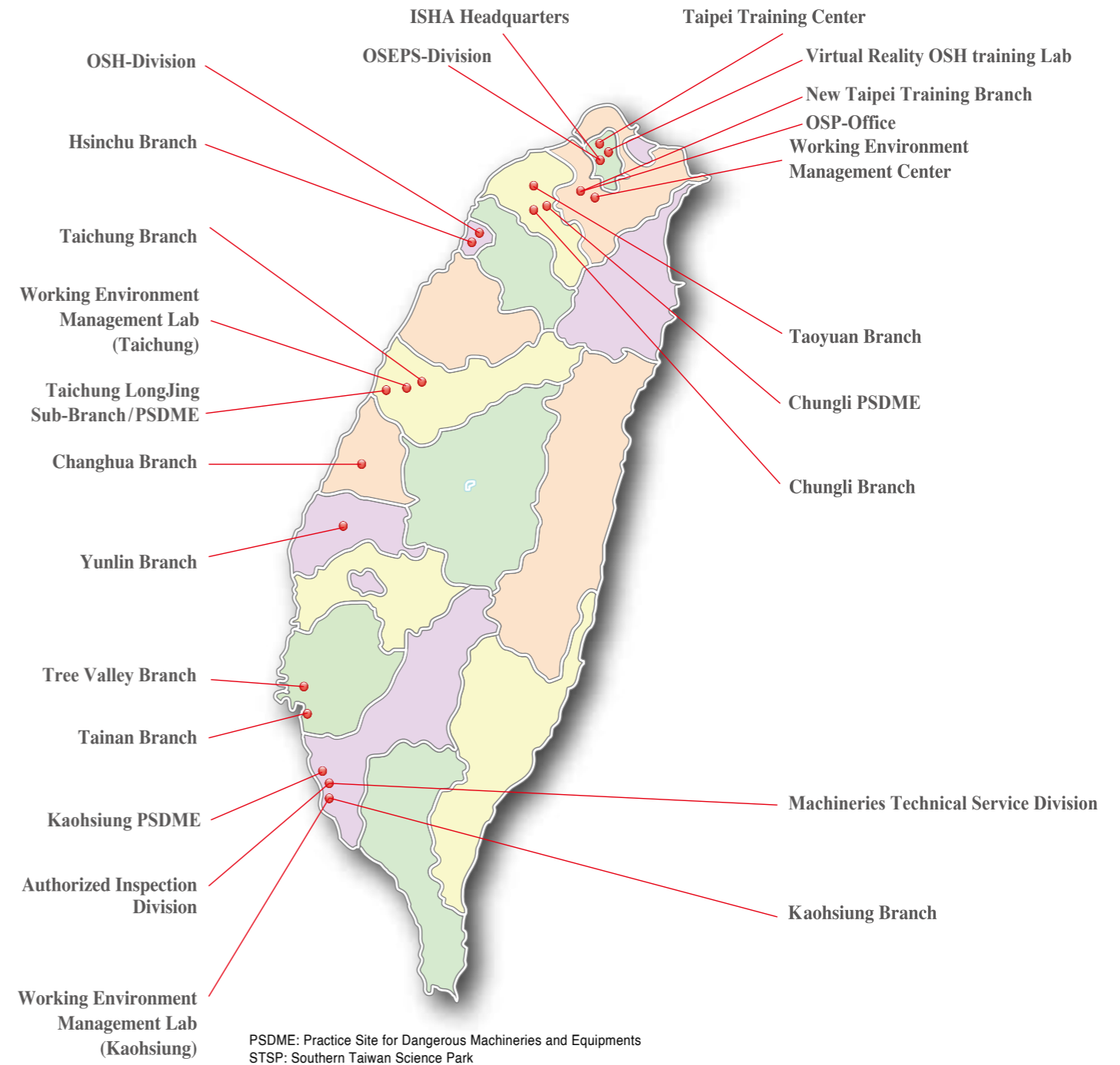
Organization of ISHA



SD: Sustainable Development
PSM: Process Safety Management
OHS: Occupational Health Service
OSEPS: Occupational Safety and Environment Protection Service
OSP: Occupational Safety Project

PSDME: Practice Site for Dangerous Machineries and Equipments
STSP: Southern Taiwan Science Park

Locations of ISHA offices



PSDME: Practice Site for Dangerous Machineries and Equipments
STSP: Southern Taiwan Science Park

OHS: Occupational Health Service
OSEPS: Occupational Safety and Environment Protection Service
OSP: Occupational Safety Project

Part 2 Review of Activities in 2021



Aiming for the goals of zero accident, improvements of working environments, health promotion and prevention of occupational injuries and diseases, ISHA continued to conduct these following activities in 2021:

1. General Activities

- The 2021 annual General Assembly Meeting for members was on The meeting was honor to have speech on line from Mr. Kenji Kondo, Chairman of The High Pressure Gas Safety Institute of Japan(KHK)
- As of the end of 2021, there were 159 corporate members and 651 individual members enrolled with ISHA.
- Three times of board meetings of supervisors and directors and two times of board meetings of supervisor generals and director generals were held in 2021.
- The ISHA monthly journal, Industrial Safety and Health, was published as scheduled in a timely manner. A total of 390 issues have been published up to the end of 2021. The journal was linked with the Chinese Electronic

Periodical Services (<http://www.airtilibrary.com/>) and articles have been downloaded 12,320 times in 2021.

- ISHA was keeping the record of injury-free working hours for businesses who enrolled with the “extensive zero accident campaign” in the year of 2021. From its inception on May 1, 2006 to the end of 2021, a total of 1,418 businesses participated in this campaign.
- Finance Committee, Membership & Constitution Committee, Zero-Accident Promotional Committee and Property Management Committee, Construction Safety Committee, Wellness Promotional Committee, Safety Signs Promotional Committee, Innovational and Development Committee, etc. held committee meetings respectively in 2021.

2021 ISHA's on-line Annual General Assembly Meeting was held on Oct.23.



Awards for guidance to improving OSH at work by professional.



Mr. Kenji Kondo, Chairman of The High Pressure Gas Safety Institute of Japan(KHK) gave a speech on the 2021 ISHA's on-line Assembly.

2. Technical Services

The Technical Services Division provides OSH services on assessment, survey, design, improvement planning, systematic management procedures, and instructions to various industries throughout Taiwan. The Division also edited and compiled textbooks, pamphlets, guidelines, manuals, handbooks, videos and other OSH-related teaching materials for OSH professionals and businesses. In addition to these routine activities, the Division accomplished the following projects in 2021, commissioned by:

◆ The Industrial Development Bureau (IDB) of the Ministry of Economic Affairs, Executive Yuan on:

1. Project on Industrial working Environment Improvement. This project aims to help industries improve safety and health by providing technical guidance in the areas of working environment improvement, risk management, research on safety and health regulations, and related promotions and campaigns etc..
2. Project on strengthening public safety management for high-risk industries.

◆ Occupational Safety and Health Administration (OSHA), Ministry of Labor on:

1. Project on improvement OSH workplace of fabricated rubber products industries by providing guidance and subsidies at factories.
2. Project on prevention of occupational accidents and publicity project on mechanical hazard (ex. getting caught, pinned, or rolled up; getting pierced, cut, or scraped).
3. Project on utilizing smart intrinsic safety techniques for controlling Industrial hazards.
4. Project on OSHMS-performance audit & quality assurance project on the enrolled businesses.
5. Project on promotion for occupational health hazardous exposure monitoring and management system.
6. Project on building a Health Service System to safeguard workers' health.
7. Project on prevention occupational injuries on temporary or short-term workers in the construction industry. Completion 3,398 on-site workshops inspected and improved.

◆ Institute of Labor, Occupational Safety and Health (ILOSH), Ministry of Labor on:

1. The foundation and guidance compilation of third-party auditing system for scaffoldings and supports of formwork.
In Taiwan ,occupational disasters in the construction industry is around 46 percent in

all industries. The main mediums of causing disasters are the temporary structures such as scaffoldings, formworks, retaining supports, working platforms, etc.

The purpose of the research was to learn the management system of the developed countries, to counselling establishing of professional third-party audit units.

2. A study of workplace hazardous agent health effects and recommended exposure limits(RELs).

◆ The Management Office of the Science Park Administration, the National Science Council, Executive Yuan on:

Project on improvement of safety and health for high-risk of medium and small enterprises. Audits of 40 higher risk factories and 15 construction sites .

◆ Health Promotion Administration (HPA), Ministry of Health and Welfare, Executive Yuan on:

Occupational health promotion for workplaces in Central Taiwan Assisted 548 workplaces to complete applications of voluntary accreditations, held a recognition convention for signed-up workplaces with achievements.

◆ Labor Standards Inspection office of New Taipei Government:

1. Work safety promotion, counselling , education and training of construction projects under NT 50 million.
2. Improvement for safety and health in the New Taipei City.

3. Working Environment Management

Founded in 1999, the Working Environment Management Center of ISHA provided services to various factories and enterprises among its occupational health lab and three branch offices, located in Taipei, Taichung, and Kaohsiung, in 2021:

- (1) 282 factories for physical factors, 382 factories for chemical factors performed in Taipei.
- (2) 431 factories for physical factors, 544 factories for chemical factors performed in Taichung.
- (3) 394 factories for physical factors, 508 factories for chemical factors performed in Kaohsiung.
- (4) Commissioned by enterprises to complied quality planning on workplace environmental monitoring for compliance EHS requirements, the Center performed a total of 1,232 plants in 2021.
- (5) Coordinated with Occupational Safety and Environmental Protection Service Division at the "promotion for working environment of rubber industries, the Center performed a total of 40 plants .
- (6) Coordinated with Occupational Health and Hygiene Service Division at the "promotion for occupational hazard exposure monitoring management system", the Center performed a total of 40 plants .
- (7) Occupational Health Laboratory was accredited by OSHA, Taiwan, for ISO/IEC 17025 extension certification and additions.

ISHA president Mr. Tang Da-Toung(right 2) attended 2021 occupational health and occupational medicine conference



ISHA's secretary general Mr. Li Lien-Hsiung (left 1) attended 2021 presentation on the results of improving process safety management and optimizing the working environment.



4. Education and Training

In compliance with government policy for occupational safety and health in Taiwan, the Education and Training Division of ISHA actively holds a series of seminars, campaigns, and demonstrations for training of voluntary inspections of punch and press machines, chemical equipment, and introduction of new advanced OSH technologies. The various training courses conducted by the Education and Training Division in 2021 were as follows:

- (1) Training courses for Occupational Safety and Health Supervisors
- (2) Training courses for Occupational Safety and Health Managers
- (3) Training courses for Occupational Safety and Health Specialists
- (4) Training courses for Operational Supervisors of High Pressure Gases and Construction Industries
- (5) Training courses for Operators of Dangerous Machinery and Equipment
- (6) Training courses for Supervisors of Hazardous Work Operations
- (7) Training courses for Operators of Specific Hazardous Tasks
- (8) Training courses for First Aid personnel
- (9) Training courses for Zero Accident Campaign
- (10) Training courses for Fire Protection Specialists
- (11) Training courses for Drivers and Carriers of Hazardous Materials
- (12) Training courses for Operators in All Industries A total of 4,229 training courses were offered by the Division to 125,106 trainees in 2021.

Items	boilers	pressure vessels	high pressure gas equipments	high pressure gas containers	over 3 tons fixed crane	over 3 tons mobile crane	construction elevator	gondola
Sub-totals	1,701	8,770	13,411	2,592	9,155	2,705	319	172

• Dangerous machinery or equipment placed or installed before the Labor Safety and Health Law was enacted.

5. Authorized Inspection (of Dangerous Machinery and Equipment)

Designated by the Ministry of the Interior as an inspection institution in Southern Taiwan to inspect boilers and pressure vessels, the Authorized Inspection Division was established in Kaohsiung in 1985. In 1988, designated by the Council of Labor Affairs, Executive Yuan, the services of the Division were extended to include authorized inspection on dangerous equipment in Southern Taiwan. The jurisdiction of the Division covers cities and counties of Chiayi, Tainan, Kaohsiung, and counties of Pingtung, Taitung, Penhu and Kinmen etc. A total of 38,762 inspection services were carried out in 2021 (included welding inspection, structural inspection, completion inspection, alteration inspection, renewal inspection, inspection on pre-existing dangerous machinery or equipment and periodic inspection).

◆ **Elevator and below 3 tons crane inspection**
 ISHA was designated by the Interior Ministry ,to inspect elevator and below 3 tons crane in Taiwan. A total of 2877 inspection services carried out in 2021.

6. International Exchange Activities

- (1) The National Safety Council (NSC) hold an online global congress from March 3 to 5, 2021. ISHA's director Mr. Chang Ching-Lin participated on behalf of the ISHA.
- (2) The 35th Conference and Annual General Meeting of Asia Pacific Occupational Safety and Health Organization was hosted by the Japan Industrial Safety and Health Association (JISHA) from October 27 to 28, 2021 by on-line. Dr. Shu Chi-Min, ISHA's director general presented a paper. Mr. Chang Ching-Lin, ISHA's director was in attendance at the Annual General meeting.
- (3) ISHA was honored as a Semi-Finalists in the 2021 NSC Green Cross for Safety awards. The Association was selected for the project of mentoring small and medium-sized enterprises to improve safety and health.

- (4) ISHA's general director, professor, Shu Chi-Min. had the honour to get the 2021 Trevor A. Kletz Merit Award.

7. Virtual Reality (VR) Training for Safety

ISHA developed and provided Virtual Reality(VR) training software in safety include hazard recognition, emergency situations and fall protection training. such as "safety publicity experience from hazards by falling or flying objects ", "Safety Publicity Experience from hazards with Aerial work platform", " Safety Publicity Experience from exposure to electrical hazards on construction sites. and " Safety Operation Experience from hazards with Punching and Shearing machinery "



Lifter VR Training



Forklifter Training Vedio

35th Conference and Annual General Meeting of Asia Pacific Occupational Safety and Health Organization) was held online from 10/26 2021 to 10/29/2021. ISHA'S director Mr. Chang Ching-Lin (Right third row third column) attended web AG meeting.



Part **3** Occupational Safety and Health Profile of Taiwan



Taiwan's OSH Policy and Trend

The setting of Taiwan's occupational safety and health policy is based on the domestic trend of social economic development and occupational accident, international development trend, ILO conventions and guidelines as well as the practices of global advanced countries.

To ensure everyone a safe, healthy and decent work environment, the main focuses of Taiwan's OSH policies are:

With reference to International Labor Organization (ILO) conventions, including the "Promotional Framework for Occupational Safety and Health Convention" (ILO No.187) which was announced by the ILO in 2006, Taiwan has taken proactive steps to define a national OSH policy, to construct a national system of laws, regulations, and enforcement, and to implement national programs for OSH. In taking these actions, OSHA has given shape to an OSH culture based on people which emphasizes workers' safety and health and has steadily built safer and healthier working environments. OSHA was founded on February 17, 2014 with the goal of enabling every

individual to enjoy a safe, healthy, and decent work environment as well as occupational injury and disease diagnosis, compensation, and rehabilitation services, to safeguard the health the labor force and boost national competitiveness. OSHA's current organizational framework is as follows: The Director General is in charge of overall work, with two Deputy Directors General and one Secretary General subordinate to the Director General. There are also four functional divisions, three Occupational Safety and Health Centers, and five supporting offices, based on operational needs. The organizational chart is shown below.

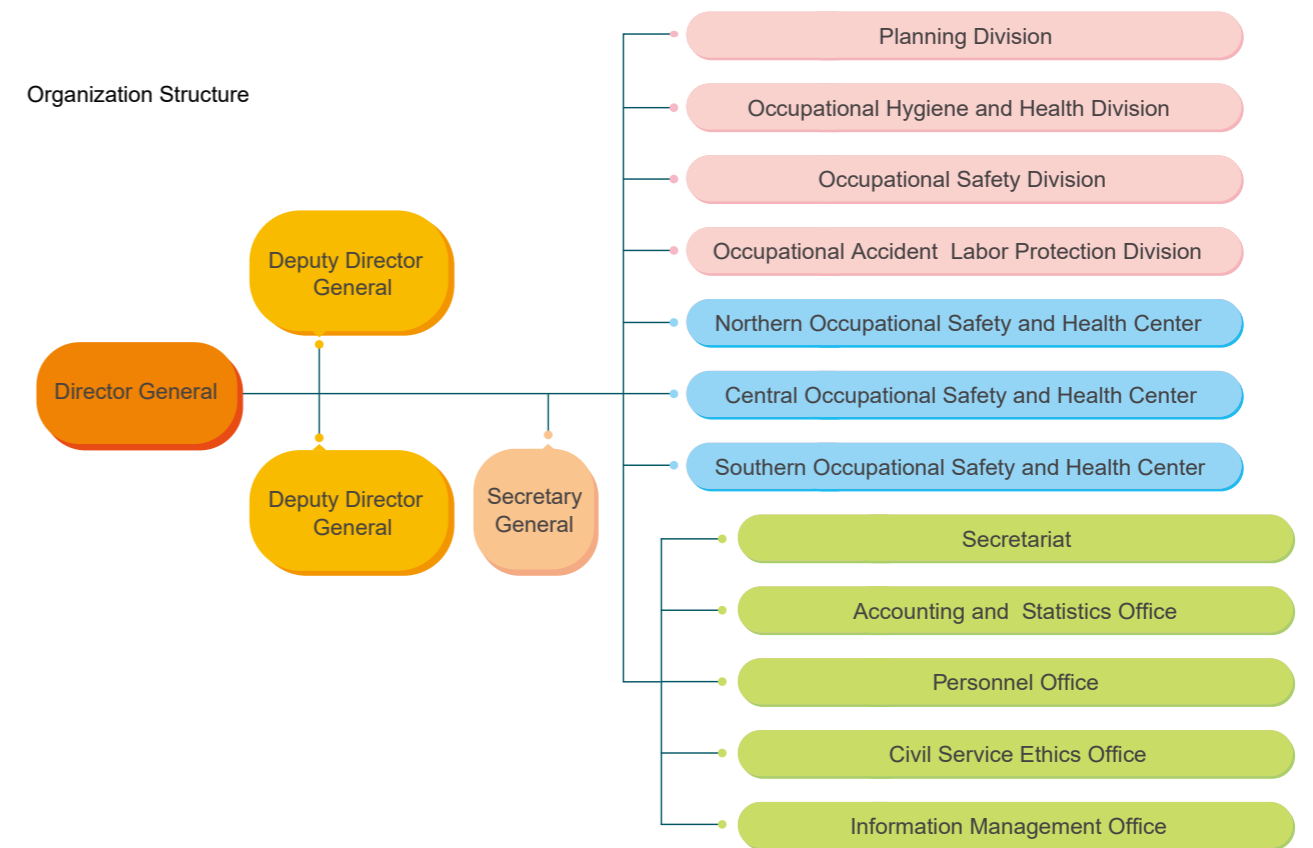


Figure 1 Organization Structure of OSHA

◆ Taiwan's OSH collaboration scheme

The Taiwan's OSH collaboration scheme of employees, employers, public agencies and relevant organizations is shown on Figure 2. Ministry of Labor is the central competent authority of Occupational safety and health. As a subsidiary agency of the MOL, OSHA is obligated to the formulation and execution of occupational safety and health policies. The tasks of OSHA include planning and executing occupational safety and health, occupational accidents labor protection, labor inspection and supervision, and something their related. Its visions are to provide every workers with safety, health, and decent workplaces, to improve the access to competent services of the diagnosis of occupational diseases, occupational compensation and rehabilitation, and to ensure safe and healthy workforce to enhance national competitiveness.

OSHA vertically integrates planning of the occupational health and safety policies and executions, which strengthens the function and efficiency of occupational accident prevention, speeds up the reduction of occupational accident rates, increases the occupational health and care rates, and ensures workers' health and safety. Also, by means of further horizontal integration of "Prevention, Compensation, and Rehabilitation", to bring into the diagnosis of occupational ailments, investigation of occupational diseases, workers' compensation for occupational accidents and rehabilitation, to strengthen the rights and interests of the victims and to fulfill the goal of Occupational safety and health policies.

Some parts of regional labor inspection are empowered to special agencies of some

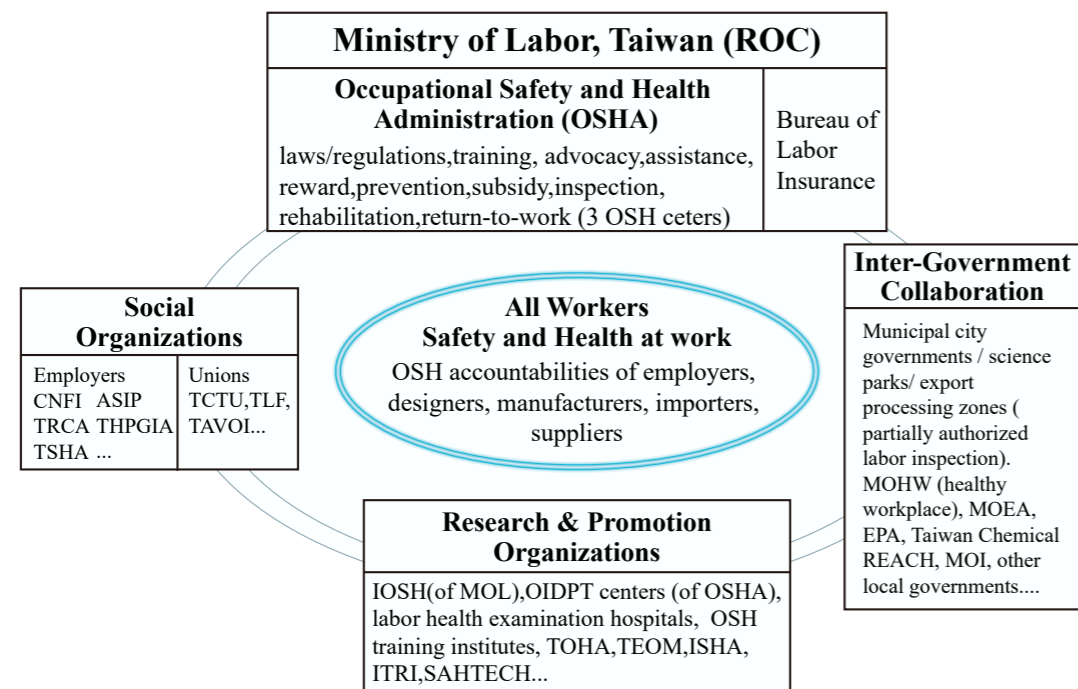


Figure 2 Taiwan's OSH collaboration scheme

ministries (such as the Science Park Bureau of Ministry of Science & Technology and the Export Processing Zone Administration of MOEA) and some municipal city governments. MOL also sets up Institute of Labor and Occupational Safety & Health, Bureau of Labor Insurance and Workforce Development Agency to facilitate OSH related affairs, such as research, assistance, training, and the insurance, compensation and statistics of worker general and occupational accidents.

The intervention strategies of OSHA fostering business entities to take OSH fully responsibility include advocacy, compliance assistance and inspection. Except empowered agencies, OSHA accounts for national labor inspection. The types of inspection include labor conditions inspection, OSH special inspection, cross inspection, labor complaint inspection, occupational accident inspection and general inspection. OSHA

also increases presence in the workplace. Except the necessary inspection candidates, 20% of year list must be the entities either new or not been inspected within 5 years. The trend of occupational accident rate has continuously decreased in recent 10 years due to the effectiveness of numerous national accident prevention programs. By means of advocacy and training, OSHA educates front-line workers and SME to enhance accident prevention knowledge. OSHA also promotes Safety Partnership to collaborate with business entities, organizations and other government agencies for leveraging limited resources to prevent occupational risks, injuries and diseases.

The MOL minister and deputy ministers frequently lead occasional site-visits with relevant agencies and/or local governments to emphasize OSH and to foster the safety culture of business entities.



Figure 3 Taiwan's OSH major programs



◆ Occupational Safety and Health Programs

Taiwan's OSH major programs are as follow (Figure 3):

- (1) OSH Self Management
- (2) Chemical Registration, Labeling, Communication and Management
- (3) Exposure Assessment and Control
- (4) Occupational Health Service and Diseases Prevention
- (5) OSH Training
- (6) Machinery and Equipment Safety
- (7) Construction Safety
- (8) Process Safety Management
- (9) Occupational Accident Notification, Investigation, Insurance and Compensation
- (10) Occupational Accident Workers Rehabilitation and Return-to-Work

(11) SME OSH Assistance

◆ Institute of Labor, Occupational Safety and Health(IOSH)

IOSH involves in the following OSH related researches: safety management, mechanical safety, electrical safety, chemical safety, safety system integration and risk control, construction safety, workplace monitoring, labor exposure surveys, biological monitoring, musculoskeletal disorder prevention, slips/trips/falls prevention, high temperature hazard prevention, noise exposure assessment, non-ionizing radiation evaluation, biological hazards prevention, industrial ventilation, particles and nano-material hazard prevention, health promotion, health protection for female workers, vocational rehabilitation,

vocational mental health, occupational disease surveillance, occupational epidemiology, occupational cancer, prevention of vulnerable population and emerging hazards, etc.

◆ OSHA Vision and Mission

In 1966 the United Nations adopted the International Covenant on Economic, Social, and Cultural Rights, which states that every individual is entitled to a safe and healthy work environment. Taiwan signed and adopted the Covenant in 2009 and has been promoting its implementation since then. Also, Taiwan is facing the state of becoming an aged society and having a low birthrate. Through a comprehensive regulatory framework, Taiwan is pro-actively addressing the problem of OSH rights for vulnerable workers and is forming a complete occupational protection net.

and illness," and to comply with the Ministry of Labor's policies of "safe work," "safe workplace," and "safe labor," the OSHA has laid out the following policy objectives: (1) Continue to reduce the rate of occupational accidents and illness, ensure protection for worker basic rights. (2) Assist industry to manage risks of occupational hazards, promote economic development and growth. (3) Ensure a decent work environment that protects workers' rights and physical and mental health, as well as upgrades national competitiveness. (4) Build a sound diagnosis, compensation, and rehabilitation system for victims of occupational accidents and illness, protect the vulnerable and ensure respect for workers' rights. (5) Strengthen occupational safety and health and build a basic infrastructure for rehabilitation of injured or sick workers in line with international standards.

Source: <http://www.osha.gov.tw>

In order to put into practice the vision of "providing every worker with a safe, healthy, and decent workplace" and "building a sound system of diagnosis, compensation, and rehabilitation for occupational accidents

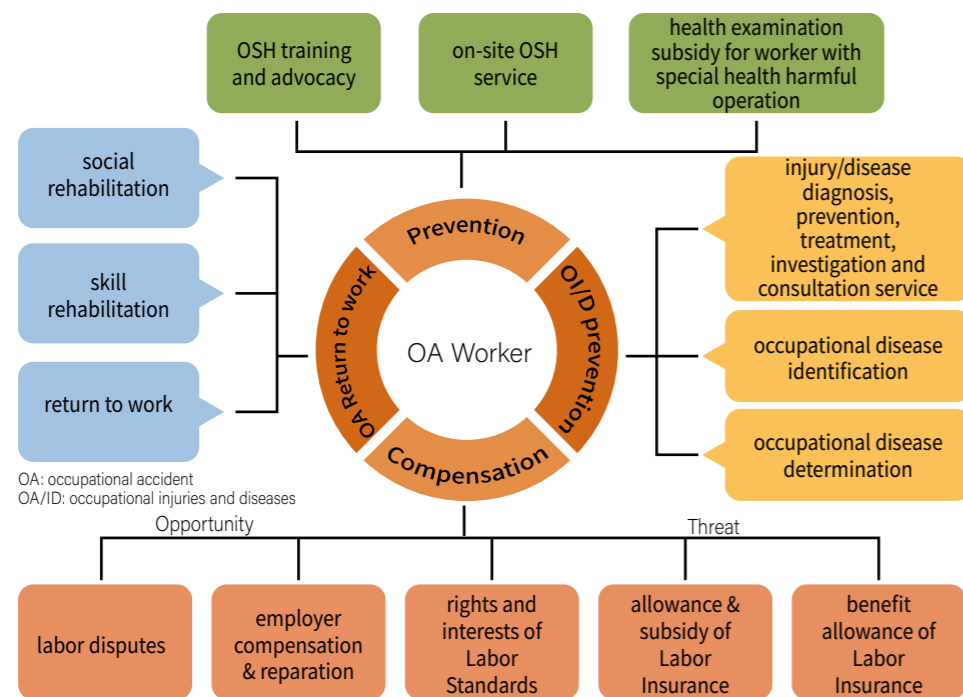


Figure 4 Protection and resource map for occupational accident workers.



2021 National Occupational Safety and Health Award, ISHA's director general, professor, Dr. Tasi Peng-Jy(right), won "the Individual Contribution Award".



ISHA's director general, professor, Dr. Shu Chi-Min, won "National Industry-Academia Master Award" (Engineering Field).

Part **4** Appendices



Appendix-1

Statistics of Occupational Injuries in Taiwan from 2016 to 2021

1. The per thousand rate of occupational injuries in all industries

Year	Total	Injury or Illness	Disability	Death
2017	2.773	2.576	0.171	0.025
2018	2.612	2.422	0.165	0.024
2019	2.496	2.333	0.140	0.023
2020	2.549	2.390	0.135	0.023
2021	2.469	2.319	0.130	0.021

2. The per thousand rate of occupational injuries by industry

Agriculture, forestry, fishing & animal husbandry

Year	Total	Injury or Illness	Disability	Death
2017	1.104	0.921	0.098	0.084
2018	1.355	1.142	0.103	0.109
2019	1.126	0.962	0.073	0.091
2020	1.306	1.154	0.078	0.075
2021	1.161	1.026	0.084	0.051

Mining & quarrying

Year	Total	Injury or Illness	Disability	Death
2017	4.374	4.101	0.273	-
2018	6.971	6.435	0.536	-
2019	6.759	5.677	0.081	0.270
2020	4.317	3.778	0.270	0.270
2021	4.263	3.464	0.533	0.266

Manufacturing

Year	Total	Injury or Illness	Disability	Death
2017	2.904	2.594	0.290	0.021
2018	2.718	2.420	0.277	0.020
2019	2.494	2.245	0.225	0.024
2020	2.517	2.286	0.211	0.020
2021	2.570	2.320	0.228	0.022

Electricity & gas supply

Year	Total	Injury or Illness	Disability	Death
2017	1.015	0.852	0.122	0.041
2018	1.412	1.090	0.282	0.040
2019	1.395	0.997	0.359	0.040
2020	1.416	1.259	0.157	-
2021	1.571	1.257	0.314	-

Construction

Year	Total	Injury or Illness	Disability	Death
2017	10.036	9.051	0.427	0.108
2018	9.385	8.851	0.415	0.113
2019	9.073	8.647	0.329	0.098
2020	9.266	8.758	0.397	0.110
2021	8.604	8.203	0.297	0.105

Trades (wholesale & Retail)

Year	Total	Injury or Illness	Disability	Death
2017	2.284	2.142	0.131	0.011
2018	2.124	1.991	0.116	0.016
2019	2.037	1.905	0.123	0.009
2020	2.056	1.932	0.112	0.012
2021	1.985	1.869	0.108	0.009

Accommodation & food services

Year	Total	Injury or Illness	Disability	Death
2017	3.787	3.746	0.035	0.006
2018	3.837	3.775	0.053	0.009
2019	3.884	3.820	0.060	0.003
2020	4.009	3.976	0.033	-
2021	3.562	3.512	0.047	0.003

Transportation & storage

Year	Total	Injury or Illness	Disability	Death
2017	4.424	4.201	0.169	0.053
2018	4.017	3.805	0.170	0.042
2019	4.208	4.206	0.138	0.044
2020	4.453	4.271	0.133	0.049
2021	4.534	4.371	0.120	0.044

Information & Communication

Year	Total	Injury or Illness	Disability	Death
2017	0.465	0.433	0.014	0.018
2018	0.383	0.356	0.023	0.003
2019	0.357	0.345	0.013	-
2020	0.393	0.381	0.012	-
2021	0.396	0.375	0.021	-

Finance & insurance

Year	Total	Injury or Illness	Disability	Death
2017	0.253	0.238	0.015	-
2018	0.200	0.187	0.010	0.003
2019	0.213	0.195	0.015	0.003
2020	0.178	0.165	0.010	0.003
2021	0.163	0.158	0.005	-

Real estate, rental & leasing

Year	Total	Injury or Illness	Disability	Death
2017	1.093	1.058	0.021	0.014
2018	1.060	1.039	0.021	-
2019	1.163	1.149	0.014	-
2020	1.245	1.238	0.007	-
2021	1.086	1.061	0.019	0.006

Educational services

Year	Total	Injury or Illness	Disability	Death
2017	0.496	0.468	0.025	0.003
2018	0.479	0.467	0.012	-
2019	0.414	0.375	0.035	0.003
2020	0.492	0.466	0.026	-
2021	0.410	0.393	0.014	0.003

Cultural, Sporting & Recreational Services

Year	Total	Injury or Illness	Disability	Death
2017	2.001	1.932	0.059	0.010
2018	1.899	1.822	0.067	0.010
2019	1.845	1.760	0.056	0.028
2020	1.907	1.861	0.036	0.009
2021	1.335	1.299	0.036	-

Public Administration & Defense; Compulsory Social Security

Year	Total	Injury or Illness	Disability	Death
2017	0.630	0.535	0.088	0.007
2018	0.753	0.577	0.166	0.029
2019	0.737	0.638	0.085	0.014
2020	0.594	0.480	0.107	0.007
2021	0.665	0.590	0.068	0.006

Professional, scientific & technical services

Year	Total	Injury or Illness	Disability	Death
2017	1.028	0.982	0.036	0.010
2018	0.933	0.868	0.050	0.015
2019	0.859	0.813	0.044	0.002
2020	0.977	0.927	0.038	0.012
2021	0.855	0.816	0.028	0.012

Healthcare & social welfare services

Year	Total	Injury or Illness	Disability	Death
2017	0.681	0.666	0.015	-
2018	0.810	0.791	0.017	0.002
2019	0.718	0.689	0.030	-
2020	0.734	0.721	0.013	-
2021	0.889	0.878	0.011	-

Support Services

Year	Total	Injury or Illness	Disability	Death
2017	2.567	2.414	0.107	0.046
2018	2.499	2.373	0.103	0.022
2019	2.391	2.298	0.065	0.029
2020	2.632	2.479	0.015	0.038
2021	2.657	2.543	0.093	0.021

Other services

Year	Total	Injury or Illness	Disability	Death
2017	2.029	1.894	0.121	0.014
2018	2.002	1.882	0.112	0.009
2019	2.009	1.917	0.081	0.011
2020	2.009	1.901	0.091	0.016
2021	1.960	1.881	0.070	0.009

Please Note: Occupational injury incidence rate = Occupational injuries insurance benefit receipts / Insured workers under labor insurance program * 1,000.

Source: Bureau of Labor Insurance, Institute of Labor, Occupational Safety and Health, MOL. (<http://www.mol.gov.tw>)

Water Supply & Remediation Services

Year	Total	Injury or Illness	Disability	Death
2017	4.676	4.429	0.227	0.021
2018	5.190	4.742	0.407	0.041
2019	4.561	4.107	0.415	0.039
2020	4.456	4.001	0.303	0.152
2021	3.726	3.464	0.206	0.056



ISHA's Taichung branch got the permission for the education and training category of excavator simulation system.



ISHA Taichung branch obtained the certificate of qualified site, machinery and equipment of skills certification.

Appendix-2

List of ISHA training courses

1 甲種職業安全衛生業務主管教育訓練班	Training for occupational safety and health managers (I)
2 乙種職業安全衛生業務主管教育訓練班	Training for occupational safety and health managers (II)
3 丙種職業安全衛生業務主管教育訓練班	Training for occupational safety and health managers (III)
4 營造業甲種職業安全衛生業務主管教育訓練班	Training for occupational safety and health managers (I)-construction sector
5 營造業乙種職業安全衛生業務主管教育訓練班	Training for occupational safety and health managers (II)-construction sector
6 營造業丙種職業安全衛生業務主管教育訓練班	Training for occupational safety and health managers (III)-construction sector

7	職業安全管理師教育訓練班	Training for occupational safety supervisors
8	職業衛生管理師教育訓練班	Training for occupational health supervisors
9	職業安全衛生管理員教育訓練班	Training for occupational safety and health specialists
10	高壓氣體製造安全主任安全衛生教育訓練班	OSH training for production safety directors of compressed gases
11	擋土支撐作業主管安全衛生教育訓練班	OSH training for supervisors of retaining and bracing operations
12	露天開挖作業主管安全衛生教育訓練班	OSH training for supervisors of open excavation operations
13	模板支撐作業主管安全衛生教育訓練班	OSH training for supervisors of frame modeling and bracing operations
14	隧道等挖掘作業主管安全衛生教育訓練班	OSH training for supervisors of digging operations in tunnels
15	隧道等襯砌作業主管安全衛生教育訓練班	OSH training for supervisors of lining operations in tunnels
16	施工架組配作業主管安全衛生教育訓練班	OSH training for supervisors of assembly operations with scaffold
17	鋼構組配作業主管安全衛生教育訓練班	OSH training for supervisors of assembly operations with steel structure
18	有機溶劑作業主管安全衛生教育訓練班	OSH training for supervisors of operations with organic solvents
19	鉛作業主管安全衛生教育訓練班	OSH training for supervisors of operations with lead
20	缺氧作業主管安全衛生教育訓練班	OSH training for supervisors of operations associated with the risk of anoxia
21	特定化學物質作業主管安全衛生教育訓練班	OSH training for supervisors of operations with specific chemical substances
22	粉塵作業主管安全衛生教育訓練班	OSH training for supervisors of operations associated with dusts
23	高壓室內作業主管安全衛生教育訓練班	OSH training for supervisors of interior compressed operations
24	吊升荷重在三公噸以上固定式起重機操作人員安全衛生教育訓練班	OSH training for operators of fixed cranes with over 3 tons of load
25	吊升荷重在三公噸以上移動式起重機操作人員安全衛生教育訓練班	OSH training for operators of mobile cranes with over 3 tons of load
26	吊籠操作人員安全衛生教育訓練班	OSH training for gondola operators
27	甲級鍋爐(傳熱面積在500平方公尺以上者)操作人員安全衛生教育訓練班	OSH training (I) for boiler operators with over 500 sq M of heating surface area
28	乙級鍋爐(傳熱面積在50平方公尺以上未滿500平方公尺者)操作人員安全衛生教育訓練班	OSH training (II) for boiler operators with between 50 and 500 sq M of heating surface area
29	丙級鍋爐(傳熱面積未滿50平方公尺者)操作人員安全衛生教育訓練班	OSH training (III) for boiler operators with less than 50 sq M of heating surface area
30	第一種壓力容器操作人員安全衛生教育訓練班	OSH training for operators of class (I) pressure vessels
31	高壓氣體特定設備操作人員安全衛生教育訓練班	OSH training for operators of specific equipments with compressed gases

32	高壓氣體容器操作人員安全衛生教育訓練班	OSH training for operators of compressed gas vessels
33	小型鍋爐操作人員特殊安全衛生訓練班	Special OSH training for operators of small boilers
34	荷重在一公噸以上之堆高機操作人員特殊安全衛生訓練	Special OSH training for operators of forklifts with over 1 ton of load
35	吊升荷重未滿三公噸之固定式起重機移動式起重機等操作人員特殊安全衛生教育訓練	Special OSH training for operators of fixed crane, mobile crane, and derrick with less than 3 tons of load
36	使用起重機具從事吊掛作業特殊安全衛生教育訓練	Special OSH training for rigging and hoist with cranes
37	以乙炔熔接裝置或氣體集合裝置(簡稱乙炔熔接等作業)從事金屬之熔接切斷或加熱作業人員特殊安全衛生訓練	Special OSH training for welding, cutting, and heating with Acetylene welding tools or gas operated tools
38	火藥爆破作業人員特殊安全衛生教育訓練	Special OSH training for operators of jobs with dynamite and/or other explosives
39	高壓室內作業人員特殊安全衛生訓練	Special OSH training for indoor operators working under compressed air
40	職業健康服務護理人員安全衛生教育訓練	OSH training for registered nurses of occupational health care service
41	急救人員安全衛生教育訓練	OSH training for first aid personnel
42	一般安全衛生教育訓練	General safety and health training
43	製程安全評估人員安全衛生教育訓練	OSH training for safety process assessors
44	危險物品運送人員專業訓練班	Training for drivers and carriers of hazardous materials
45	防火管理人訓練班(初訓)	Training for fire protection management personnel (initial training)
46	防火管理人訓練班(複訓)	Training for fire protection management personnel (advanced training)
47	一般行業職業安全衛生在職教育訓練	On-the-job occupational safety and health training for general occupationals
48	營造業職業安全衛生在職教育訓練	On-the-job occupational safety and health training for general occupationals of construction industry
49	職業安全衛生管理人員職業安全衛生在職教育訓練	On-the-job occupational safety and health training for specialists
50	高壓氣體作業主管,營造作業主管,及有害作業主管職業安全衛生在職教育訓練	On-the-job occupational safety and health training for supervisors of compressed gases, construction, and harmful operations
51	具有危險性之機械或設備操作人員職業安全衛生在職教育訓練	On-the-job occupational safety and health training for operators of dangerous machineries and equipments
52	特殊作業人員職業安全衛生在職教育訓練	On-the-job occupational safety and health training for operators of special operations
53	急救人員安全衛生在職教育訓練	On-the-job safety and health training for first aid personnel

Appendix-3

Main OSH Laws and Key OSH-by Laws of Taiwan

① Main Laws on OSH

Category	Key Phrases of Acts
1. Occupational Safety and Health Act	The Act covers general responsibility of employers, machinery safety, chemical hazard communication & exposure assessment, occupational health protection, maternity and youth worker protection, OSH management, contractor and subcontractor management, severe occupational accident notification, monthly occupational accident statistics, supervision & inspection, penalty, etc.
2. Labor Inspection Act	The Act is enacted to implement labor inspection, enforce labor laws and regulations, protect the rights and interests of employees and employers. The scope of labor inspection includes the enforcement of this Act, Labor Standards Act, Occupational Safety and Health Act and other labor laws & regulations, including process safety management, dangerous machinery /equipment inspection, management of designated inspection agency, inspection procedures, etc.
3. Occupational Accident Labor Protection Act	MOL prepares and allocates (1) the surplus of the incomes and expenditures of the occupational accident insurance program of the Labor Insurance Fund, (2) special budget fund and (3) administrative fines for the expenses of this Act.
4. Labor Insurance Act	The coverage of Labor Insurance is categorized as 1.General insurance (including maternity, injury or diseases, disability, old-age and death benefits) and 2.Occupational accident insurance (including injury or disease, medical-care, disability and death benefits).
5. Labor Standards Act	The Act is enacted to provide minimum standards for working conditions. Employer shall take precautions for the safety and benefit of employees against occupational hazards, create proper working conditions and provide welfare facilities. Original business entity shall supervise the contractor or subcontractor to provide their workers with such labor conditions as prescribed in the Act.

② Key OSH by-laws

Category	Key Phrases of Regulations, Rules and Standards
1. General occupational safety and health	OSH enforcement, safety and health installations, OSH management, risk assessment, self inspection, pregnancy workers, female workers after giving birth less than a year, youth workers, female worker working in night shift, incentives and awards for promoting OSH, etc.
2. General workplace management	process safety management, workplace monitoring, oxygen deficiency prevention, OSH labelling, etc.
3. High pressure gas	worker safety for handling high pressure gases.
4. Health management	health examination body management, worker health protection, occupational disease prevention, etc.
5. Education and trainings	worker OSH education and trainings
6. Chemical substances	hazard labelling and communication, permissible exposure levels, intoxication prevention, specific chemical substances, organic solvents, lead, tetra alkyl lead, dusts, etc.
7. Mechanical safety	general safety protection of machine and equipment, type inspection and verification, dangerous machinery and equipment inspection, designated inspection agency, crane, lift, boiler, pressure vessel, industrial robot, etc.

Category	Key Phrases of Regulations, Rules and Standards
8. Specific operations	abnormal atmosphere pressure, work at height, work at high temperature, precision vision work, etc.
9. Targeted industrial sectors	construction, harbor loading and unloading, ship tanker cleaning and dismantling, forestry, mining, etc.
10. Occupational accident protection	occupational accident labor protection enforcement, subsidy and granting, labor insurance during medical care, occupational accident prevention, worker rehabilitation, return to work, etc.
11. Others	labor inspection enforcement, factory act enforcement, imminent dangers, work related injuries and diseases, etc.

Appendix-4

Monthly Journals of Industrial Safety and Health published in 2021





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