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International Standardization of JSME

Message from the President Inaugural Address of the 90th President Aiming for a Society That Gains the Trust of the Public

Shigehiko Kaneko

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I am Shigehiko Kaneko, the 90th President of the Japan Society of Mechanical Engineers (JSME). It is my great pleasure to be able to take the lead in guiding a society that has almost 100 years of history. It has been 36 years since I became a member of the JSME, and I have been involved in the academic activities and management of the society as the head of the Dynamics, Measurement and Control Division, president of the Asia Pacific Vibration Conference, a chair of the Codes and Standards Center, a member of the Executive Board of Directors in charge of engineering activities, a member of the Executive Board of Directors in charge of finance, and President-Elect. I would like to express my gratitude to those who have given me guidance and cooperation.

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Prospects of Standardization Activity and Personnel Training of the Expert on Companies – In the Case of TC123 (Plain Bearings)

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1. Introduction

Recently, Japanese companies have been promoting globalization for industrial production. It is necessary to manufacture products of the same quality in global factories in order to supply Japanese brand products with superior quality to the world. Accordingly, the international standardization is an urgent task for the strategic management of company. To develop the standardization, the companies have to consider the definite strategy for achievement for a global viewpoint

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Standardization activities of Japan Society of Mechanical Engineers (JSME)

Takashi Yamamoto

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1. Present view and future subjects of international standardization activity of JSME

In the age when globalization in economic activities and borderless manufacturing activities are not avoided, it is necessary to collect the latest information concerning trends of international standardization by foreign countries which may inevitably affect the manufacturing activities of our country. For enactment of standards relating to manufacturing, manufacturing knowhow may be open to other companies.

ISO/TC108/SC2 (Measurement and evaluation of mechanical vibration and shock as applied to machines, vehicles and structures)
ISO/TC108/SC3 (Use and calibration of vibration and shock measuring instruments)
ISO/TC108/SC4 (Human exposure to mechanical vibration and shock)
ISO/TC108/SC5 (Condition monitoring and diagnostics of machines)
ISO/TC108/WG26 (Signal processing for the analysis of mechanical vibration and shock)
ISO/TC108/SC2/WG7 (Vibration of machines with active magnetic bearings)
ISO/TC108/SC2/WG31 (Balancing)

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Authorization system for Machinery Condition Analyst – Condition Monitoring and Diagnostics of Machines- in Malaysia

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The necessity and the importance of standardization of industrial products is well recognized. Recently, attention is paid to the standardization of quality certification of engineers who work in a factory, and its authorization system is moved to execution. The accreditation system of engineers in charge of condition monitoring of machines during their operation and diagnosing those machines through vibration, that is, qualification authentication system for those engineers based on ISO18436-2 has been discussed and investigated by TC108/SC5 National Committee, Japan Society of

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Message from the President

Inaugural Address of the 90th President

Aiming for a Society That Gains the Trust of the Public

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The role of JSME after the Great East Japan Earthquake

More than one year has passed since the Great East Japan Earthquake. My heart aches when I think of those still facing severe hardships. For the last year, my wish has been to contribute to solving the various problems that have arisen since the earthquake and reducing anxieties about the future. In July 2011, I visited some of the affected areas in Ishinomaki City and Onagawa Town with other members of the Executive Board of Directors and we were stunned by the scale of the destruction caused by the tsunami. In September 2011, I visited Katsurahama in Kochi prefecture when I attended the Dynamics and Design (D&D) Conference 2011 (a conference of Dynamics, Measurement and Control Division). Katsurahama is a beautiful scenic beach; however, I heard from the local people whom I met during my morning walk that they had immediately known that an earthquake had occurred some distance from there by observing the sea. I found a high awareness of earthquakes among the people living in those coastal areas. There are many notices and signs indicating the buildings designated as tsunami evacuation points and evacuation routes. People there are fully aware of the risk of tsunamis. According to a recent supposition formulated by a governmental committee, a tsunami 34.4 m high, which will be the highest estimated in Japan, may hit this area, requiring further preparedness against tsunamis.

For the last year, I have served as President-Elect; I have been mainly involved in activities of investigation and recommendation from a long-term standpoint since the earthquake. More than one year has passed since 11 March 2011 and various reports and books written from a variety of standpoints have been published. However, I feel that data with supportive evidence from the viewpoint of mechanical engineering are lacking. I believe that the role of JSME after the earthquake is to examine and analyze the mutual interactions between science/technology and the general public from various viewpoints and to show a constructive direction for the general public.

Sending messages to the public

During this term, JSME will enthusiastically address activities that increase JSME's presence and recruit talented young researchers of the next generation while using the strength of the JSME cultivated by the efforts of senior researchers. Also, we will examine a method of information transmission that is appropriate for the JSME and reexamine the activities to promote exchange among young, mid-career, and senior researchers. In addition, JSME plans to exert strong leadership in formulating a strategy for normalization and standardization by strengthening the cooperation with the government ministries concerned, industries, and domestic and international academic societies. We are also planning to start activities to extend the range of information transmitted to the general public.

Concretely, JSME will undertake the following projects and foster a scheme that will allow JSME to continue related activities in the future.

(1)Publication of a collection of technical data that can be cited and utilized

We plan to publish a collection of technical data after the publication of a report on the Great East Japan Earthquake prepared by the subcommittee for investigation and recommendation. Technical trends in specific technical fields have been featured in an almanac of mechanical engineering in the August issue of the Journal of the Japan Society of Mechanical Engineers and in the notes section of the Transactions of the Japan Society of Mechanical Engineers. However, their contents are not thorough, compared with the technical reports published by other societies, because of space limitation. Therefore, JSME would like to publish a collection of technical data on themes that are attracting much interest from the public, by establishing a special investigation committee. In selecting the committee members, it is important to consider ¹⁾ the balance of the number of committee members from universities and industries and that of the number of members from different fields, ²⁾ cooperation with related societies, and ³⁾ intercommunication between young and senior researchers. Thus far, the activities of JSME have been focused on holding meetings, soliciting papers, and formulating standards and rules, which mainly target specialists. We must prepare materials that explain technical content in an easy manner to transmit information targeting the general public in the future.

(2)Enrichment of content of JSME webpage for nonmembers

The JSME webpage includes information targeting mainly JSME members. It is necessary to periodically transmit new content to attract nonmember visitors. We will examine the transmission of easy-to-understand technical explanations for senior high school students and information on JSME events and mechanical engineering heritages for nonexperts, as well as a scheme to provide attractive content on the JSME webpage for students.

(3)Science and technology contests for senior high school students at JSME annual meetings

JSME will invite senior high school students who wish to major in science and technology [particularly students attending super science high schools (SSHs)] to the 2012 annual meeting held in Kanazawa, hold a poster session to present their research achievements, and honor those with excellent achievements. The Ministry of Education, Culture, Sports, Science and Technology has established SSHs for the purpose of fostering specialists in science and technology, and each SSH is implementing various efforts to provide education in advanced mathematics and natural science and to enhance creativity, originality, and international awareness of students. The themes selected by the SSHs include a wide variety of topics related to mechanical engineering: dynamics, energy, design, manufacturing, materials, robots, automobiles, aerospace, and environment. Therefore, it is expected that such high school students will have the chance to interact with researchers who are playing active roles in universities, research institutions, and companies. I firmly believe that we can show young students who wish to major in science and technology fields how exciting and important mechanical engineering is and cultivate their talents as mechanical engineers by providing a forum where SSH students can interact with JSME members.

Finances of JSME

In the last fiscal year, Japan suffered a full-year trade deficit. It has been reported that the deficit was the largest since fiscal 1979, when comparable statistical data first became available. The Great East Japan Earthquake had no small effect on the finances of JSME. Since before the earthquake, JSME had been suffering from a decrease in income from membership fees of associate and corporate members, sales of books, and advertising revenue, and new revenue sources should be sought. After the earthquake, several factors causing deficit, such as cancellation charges due to the cancellation of events, have been added. I asked Akira Yabe, President-Elect, to visualize the financial condition and carefully analyze the current financial condition on the basis of the closing account of the first term, with the council of policy and finance.

In addition, I would like to manage JSME keeping in mind the balance between maintenance cost and income in planning various projects.

Aiming for a society that gains the trust of the public

When I reviewed the situation in Japan after the earthquake, I came to the conclusion that my responsibility at JSME is equivalent to steering a tugboat in poor visibility. Because JSME is larger than other societies, we have a greater responsibility, that is, guiding the general public through difficult situations, like a tugboat guiding a mother ship through a narrow channel. Japan is now losing direction in the wake of an unprecedented disaster, changes in the economic situation, a sharp decline in the number of births with an increasing elderly population, and mismatches that occur among various standpoints in Japan; thus, guidance is required. How best can a society such as ours provide excellent guidance? Important features include the preparation of action plans to deal with various challenges, the ability to respond quickly and sensitively to situations as they arise, and the ability to reassure the general public by addressing the situation in accordance with up to date circumstances. To realize this, JSME has young members with innovative ideas, veteran members who have the ability to oversee cross-disciplinary fields, and senior members who have broad ranges of experience, making them effective trend watchers. I hope to achieve fruitful results by clarifying the issues to be solved by JSME in this term and aiming at a society that gains the trust of the public with the cooperation of JSME members.

Finally, I thank Dr. Junichi Sato, former President, members of the Executive Board of Directors for the first term, branches, divisions, and committees for their dedicated activities. I look forward to hearing your opinions and proposals and appreciate the continuous support and encouragement from the members of JSME.

Standardization activities of Japan Society of Mechanical Engineers (JSME)

Takashi Yamamoto

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Continued from page 1 Therefore, it is important to keep manufacturing level of our country dominated in the world and to attempt the promotion of the standardization activity, while maintaining a cultural manufacturing tradition in our country, that is highly ranked secret or unwritten law which is difficult to describe on the documents as higher-order knowhow.

In these circumstances, it is required for us to consider the followings subjects, that is, (1) renewal and improvement of thinking /policy of company administrators and persons in educational fields, and promotion of standard specialists, (2) activities by the industrial-government-academic complex for the proposal of international standards, (3) the necessity of an adequate collaboration with companions and colleagues in Asia Pacific region, (4) countermeasures for original standards and the enactment of a technological restriction of various foreign countries etc.

The enactment work of standards such as ISO and JIS has been conventionally conducted by the manufacturer's initiation. However, it is necessary to do the enactment of the standard and the activity of international standardization considering user's convenience and safety, environmental protection, and social responsibility, etc., with reflecting the achievement by academic activities, if it aims to promote the reasonable development of industry. It is important to go ahead to other countries by doing standardization activity on basis of activities for research and technological development.

2. The trend of standardization activities in Europe and USA

In advanced countries, Europe and USA, movement for technical domination of the home country in International standards is obviously recognized, that is, they try to establish the standards on the base of industrial strategy from the viewpoint of strengthening the global industrial competitiveness. Therefore, it is more important that competition is won by the development of a new product in a new global market. This can be realized by the strategic standardization activities.

Europe is active in standardization in a variety of fields. For instance, in the field of "Plain bearing" where the author is related, there are sixty eight ISO standards enacted based on the domestic standard DIN of Germany. And moreover, it should not be overlooked that the contents proposed based on private company standard is standardized to ISO. On the other hand, USA makes an effort to acquire the chairmanship of various technical committees and subcommittees of ISO rapidly in various fields in recent years, and the number of chairmanship and secretaryship has come to occupy the first in the ISO. This also suggests that USA have awoken the profit securing in an international market by standardization and that USA will bring standards determined in ASTM, SAE, and the MIL standard etc. as their original standards of various fields in the ISO field and transfer them to ISO standards in future. We should prepare measures immediately in response to the trend of such advanced countries.

3. The international standardization activity of JSME

The Committee of Standard and the Standard Committee of Power Generating Facilities are organized in the Center of Standardization of JSME (Fig.1). Those committees and their subsidiaries (Fig.2, Fig.3 and Fig.4) are doing various tasks and making drafts of ISO and Japan Industrial Standards, and also working on public relations or disseminations to JSME members.

Standards Committee of Power Generating Facilities is making not only Japanese original standards but also more widely applied standards concerning thermal power, hydro-power and nuclear power generations facilities, sometimes collaborated with American Society of Mechanical Engineers.

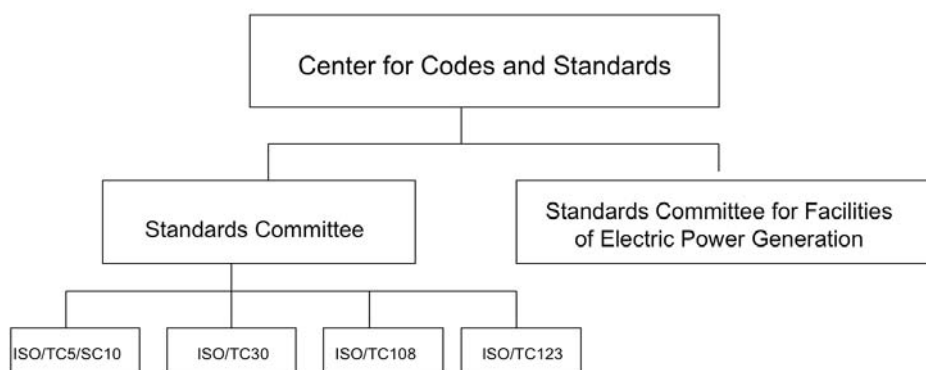


Fig. 1: International Standardization Committees of JSME

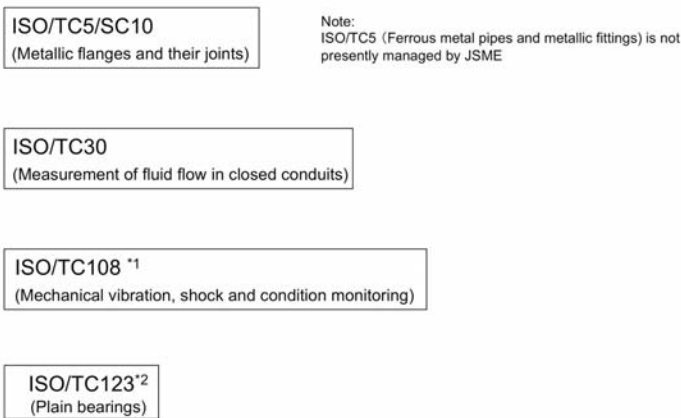


Fig. 2: Technical Committees of ISO managed by JSME

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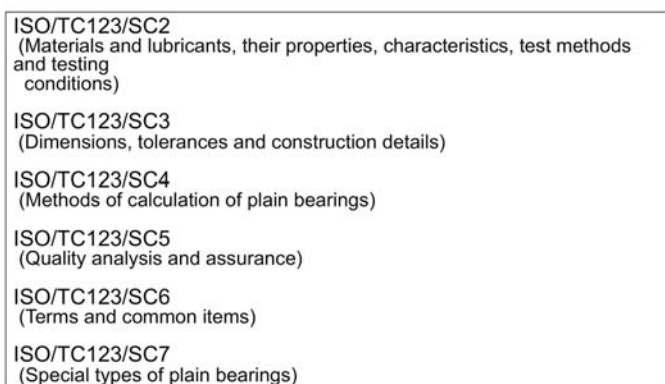


Fig. 4: Sub-committees of ISO/TC123 managed by JSME

follows.

- (1) It is a mission for the person involved in standardization to make a useful standard with right time when it is necessary. Conventionally "chasing type" of standard is enacted, namely, the standard will be made to suit the product when it spreads in the market. However, it is necessary to consider the enactment of "standard-leading type" of standard in the future, namely, the standard is first made and the product is made based on this standard. As a result, the activation of the product is developed by concerned manufacturing industry. The persons in charge of these jobs will be evaluated in each company.
- (2) It is necessary to identify qualitative, quantitative advantage of standardization (including disadvantage). With this management, they can easily win the approval and obtain the support from managers. Standardization is a technological method from the viewpoint of international strategy in spreading the product in market. The intellectual property right is a powerful arm for the monopolization in market. Using both properly is important.
- (3) The companies will be able to collaborate with other company people, and also to improve the international sensibility through joint efforts. In the international standardization work, they will have an opportunity to exchange information with competitors and to be supported through the exchange with foreign countries. Additionally, their practical skill of English language is strengthened.
- (4) It is necessary to establish the personnel training program from the long range perspective. Training program on the job is a powerful and efficient method in the improvement of personnel capability, the establishment of which needs understanding and support by the company itself.

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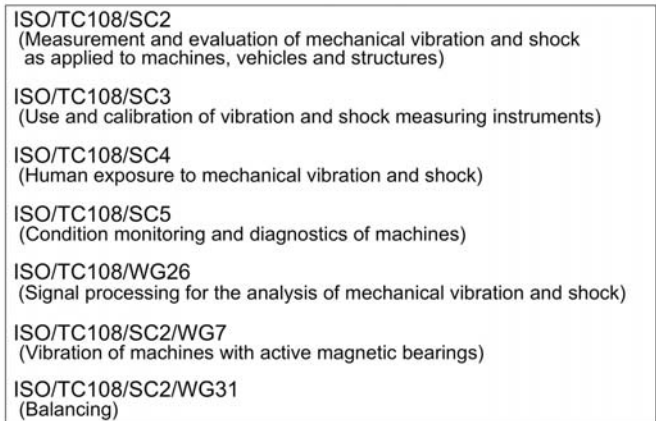


Fig. 3: Sub-committees of ISO/TC108 managed by JSME

It will be necessary, in addition to the conventional standardization activity above-mentioned that advancing positively the collection of technological information concerning enactment of standards, promotion of activities on research, education and public relations, strength of the relationship with intellectual property and copyright, and promotion of international exchange activities concerning the common interests of standardization. Various examinations and investigations are being conducted about a systematic and orchestrated activity of the international standardization at the Committee for International Collaboration of JSME.

4. Development in the future

Present subjects and the view relating to the advantage by international standardization activity are summarized as

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Continued from page 1 and should develop sustainable standards. The standard experts should not only have much knowledge, but also abundant experience and should be able to insist logically their own opinion on the international standards committee. Prospects of personnel training on the experts who develop the standards are explained.

2. Standardization of products

The companies in the progress of product standardization have developed themselves standards in reference with already published open standards. The structure of standard generally consists of industrial, national, regional and international standards (Numbers of national standard body: ISO:163, IEC:81, Numbers of published standards ISO:19,023¹⁾, IEC:6,513²⁾) as shown in Fig. 1. For plain bearing, numbers of standards are 38 on JIS and 72 on ISO.

The companies have established their own standards including a portion of original know-how on their technology to ensure the technological accumulation and tradition within the company. The open and closed range on the standards of the developed products must be strategically decided when the standardization progresses from the company standards to the public standards. There is the relationship between the open degree of standard, the turnover and the margin³⁾. The strategic point is a decision on whether is open or closed on access from competitors to own company standard. If the company standard is temporarily open, the competition among companies would be intensified and the margin decreases gradually. Accordingly, on the management, a part of developed technology is open, but the remainder are closed to keep confidentially the own technology. The boundary of the region and range between open and closed at the original technology should be strategically set to ensure the maximum profit by combining with open and closed parts.

2.1 Participation to national standardization activity

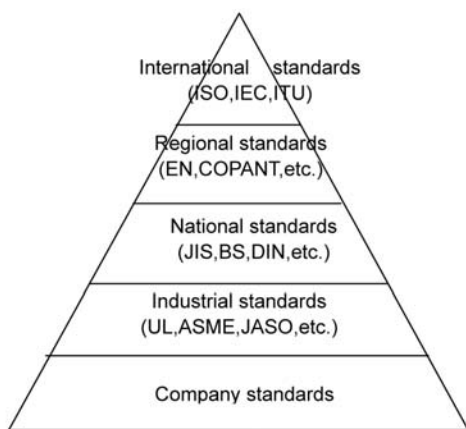
The drafting committee on JIS consists of 3 member bodies of neutrals, manufacturers and consumers. The committee is an opportunity where the manufacturers and consumers could directly reflect their own opinions.

Delegates from companies repeatedly discuss with members of neutrals, manufacturers and consumers. Through the discussion with the experts, they could pursuit the industrial technology and recognize the importance of the standardization again. By investing Japanese innovation technology into the standards, the standardization contributes to effective improvement of the quality of industrial product.

2.2 Participation to ISO standardization activity

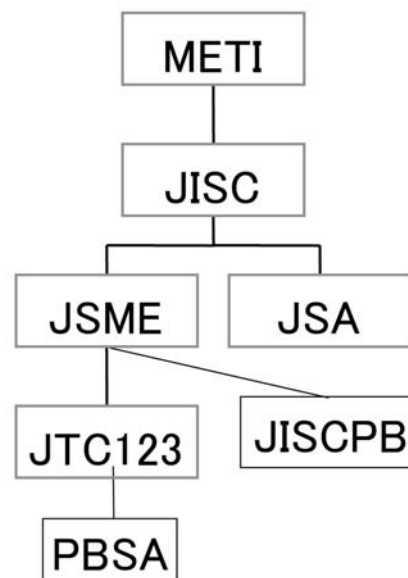
JISC (Japanese Industrial Standards Committee) undertakes ISO national standard body in Japan (in case of “Plain bearing” : JSME is in charge of management) and has a national committee as a mirror committee as shown in Fig.2. The national committee has played a role of voting, reviewing and developing for ISO.

As there was no industrial society of plain bearing in Japan, Japan Plain Bearing Standard Association (<http://>



Note: EN(Europe Norma) COPANT(Comisión Panamericana de Normas Técnicas), BS(British Standards), DIN(Deutsche Industrie Normen), UL(Underwriters' Laboratories), ASME(American Society of Mechanical Engineers), JASO(Japanese Automotive Standards Organization)

Fig.1 Classification of standards



Note METI: Ministry of Economy, Trade and Industry
 JISC: Japanese Industrial Standards Committee
 JSA: Japanese Standards Association
 JTC123: Japanese National Committee for ISO/TC123
 JISCPB: JIS Committee for Plain Bearings
 PBSA: Japan Plain Bearing Standard Association

Fig. Organization for plain bearing standardization in Japan

Table 1: Organization of ISO/TC123

TC,SCs	Title	Chairperson	Secretary	P-Members	O-Members (Countries)
TC123	Plain bearings	Japan	Japan	Austria, Brazil, China, France, Germany, Japan, Korea R, Russia, South Africa, Thailand, United Kingdom (11 countries)	23
SC2	Materials and lubricants, their properties, characteristics, test methods and testing conditions	Germany	Germany	Brazil, China, Germany, India, Japan, Korea R, Russia, South Africa, United Kingdom (9 countries)	9
SC3	Dimensions, tolerances and construction details	Germany	Germany	Brazil, China, Germany, Japan, Korea R, Russia, South Africa, Thailand, United Kingdom (9 countries)	8
SC4	Methods of calculation of plain bearings	Russia	Russia	China, France, Germany, India, Japan, Russia (6 countries)	15
SC5	Quality analysis and assurance	Germany	Germany	Brazil, China, Germany, Korea R., Japan, Russia, South Africa, United Kingdom (8 countries)	9
SC6	Terms and common items	Japan	Japan	Brazil, China, France, Germany, Japan, Korea R., Russia, Philippines, Thailand, United Kingdom (10 countries)	5
SC7	Special types of plain bearings	Japan	Japan	China, France, Germany, Japan, Korea R. (5 countries)	5

Table 2: Published standards since 2000 in ISO/TC123

SC	Number of present published standards	Number of published standards since 2000	Standard numbers of published standards since 2000
2	24	10	ISO4381:2011,ISO4383:2000,ISO4384-1:2000,ISO4384-2:2011, ISO6279:2006,ISO6281:2007,ISO6691:2000,ISO7146-1:2008,ISO7146-2:2008,ISO10129:2006
3	16	7	ISO3547-1~3547-4:2006,ISO12128:2001,ISO16287:2005,ISO/TR27507:2010
4	13	10	ISO12130-1~12130-3:2001,ISO12131-1~12131-3:2001,ISO12167-1~12167-2:2001, ISO12168-1~12168-2:2001
5	10	5	ISO3547-5~3547-7:2009,ISO3548-2:2009,ISO12307:2007
6	6	6	ISO4378-1~4378-5:2009,ISO/TR4378-6:2012
7	3	2	ISO14287:2012,ISO16287:2005
Total	72	40	

www.plain-bearing.jp/) was established in place of the industrial society in October 2004 to support the activities of the national committee. In this association, Japanese plain bearing manufacturers and the user companies give financial contribution to support the standardization activities in which they also participate in the discussion together with bearing researchers. Besides the annual general meeting, meetings such as decision making meeting, lectures on current problems of standards, etc. are held.

The national committee has 3 member bodies similar to the construction of JIS drafting committee. It develops the international standards which are as used as widely as possible by stakeholders in the global market. In case of ISO standards, as it takes 3 years to progress from a new work item proposal to the international standard, the published standards have to be developed to consider the use for a long time. Therefore, Japanese members should propagate and transfer the technology to the standards to further improve more quality by integrating all Japanese opinions.

As shown in Table 1, TC123 has 6 subcommittees under the parent committee. Japan has eagerly acquired secretariats of TC123, SC6 and SC7, and Japanese delegates have participated in all 15 international meetings and submitted a lot of proposals after being approved as P member in 2000. 40 standards were published after 2000 in Table 2 and many Japanese opinions are reflected in these standards. As a result, Japan has lead in the development of international standardization on the plain bearing. Near future issues are positively proposing the new work to activate the standardization. It has become a difficult age for a company to make a standard and to monopolize a market.

It is also possible to ensure the profits by the standardization due to creating several standards, before market decided by innovation technology which included the technology on companies, securing a market quickly together, and standing at predominance on a price competition.

3. Subject of personnel training engaged in standardization

3.1 Education in universities and training program in METI

The lectures on standards or standardization have not yet been carried out in the education of schools. However, now, some universities with master of technology management (MOT) prepare the curriculums as the standardization strategy theory, standard standardization for technology risk management from a viewpoint of preventing a company and a social loss, and are tackling personnel training positively. On ministry of economy, trade and industry (METI), the program of personnel training for (1) International standardization experts, (2) company people, (3) researchers, (4) consumers, (5)

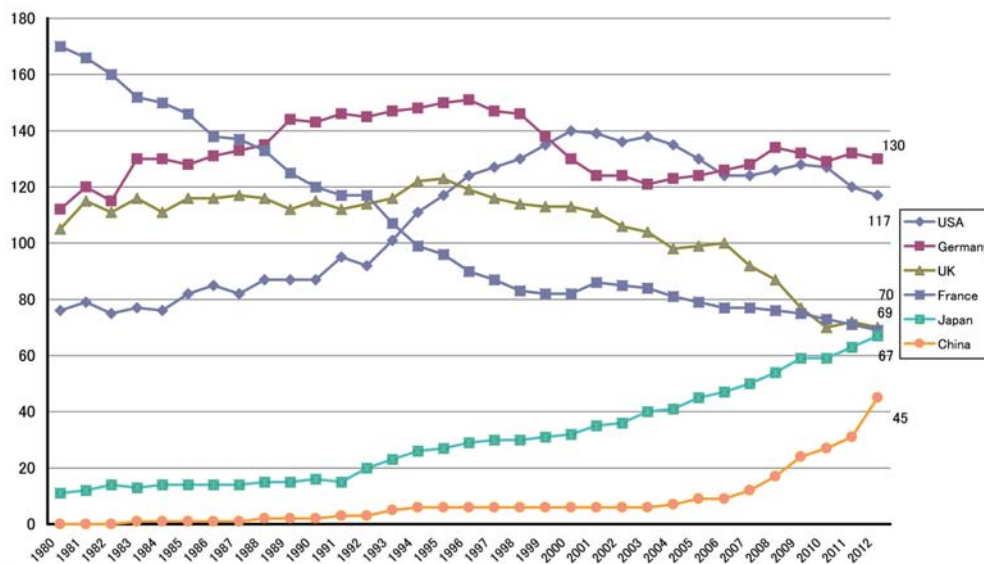


Fig.3 Transition on number of secretariats in main countries

university and graduate school students, (6) elementary, junior, senior high schools and national of college technology students, and (7) comprehension test for standardization, have been planned⁴⁾.

3.2 Personnel training in companies

The companies have conducted the education for compliance, in order to achieve a corporate social responsibility. Although the companies have enacted their principle and explained the importance of compliance on the daily work, environment and intellectual property for employers, it is difficult for a part of standardization activity to connect directly with the profits of the company. It contributes to a social responsibility, and the concept which can be said to be a volunteer activity is not fully evaluated and understood in company yet. Since it is now difficult to connect the result in a standardization activity to the achievements of a company directly except for the specific innovation technology field, top management may be hesitating to participate in a positive standardization activity. However, the participation in the international meeting of the above mentioned JIS, national and international committees can be used for encouraging the global personnel people as an expert. A participant on the international meeting of ISO can construct networks of foreign companies and also establish the relation which can obtain cooperation and support to the proposal, and reflect the technology of own country on a standard while recognizing the importance of standardization. Furthermore, if a committee's reliance can be obtained as a step-up, there is also a chance to work positively as an international chairperson, an international secretary, or a convener.

As shown in Fig. 3, the number of secretariat undertaking of TC and SC of ISO in Japan is working hard with 67 in 5th place after Germany (130), USA (117), UK (70), and France(69)⁵⁾. European and American members have gained initiative on ISO activity for a long time.

The international chairperson, the international secretary and the convener are required to act as a neutral position. It is necessary to summarize the opinions of each country and create quickly the global standard of highly added value by moreover activating the standardization. The activity as a secretariat builds deep relationship with P and O members, and also can greatly contribute to the pulling up the base of industry in the world, the nation and the local area. A standardization activity can be also connected with training of the personnel people who have excellent personality and can demonstrate the power not only for special technology but also for management.

In Fig. 3, China is positively promoting for the acquisition of secretariat. With the concerted efforts of government, the international standardization is planned as a national strategy, and also excellent personnel people are appointed on the standardization activity. It is expected that Japan will also demonstrate the strong point of 3 member bodies on the basis of instruction of JISC) and will advance exploitation of the standardization in emerging markets.

4. Conclusions

If a standard is by no means exclusively and appropriately rational and friendly to users, it cannot but turn its eyes to standardization. Simultaneously, it is a place which can greatly demonstrate the high technologies of Japanese companies. If the standardization activity leads to personnel training with achievement of a strategic target, i.e. profit creation of a company, it is still more effective because a company could change from the characteristics which the company own products and technologies to the open expressive medium as a standard.

The standardization activity needs abundant experience and knowledge. But, as it is now necessary to make quicker

and more positive proposals in order to globalize new technology, an appointment of young fresh people is required for activation of a standardization activity. The participants from the company to international standardization activities have the social responsibility as a representative of their country.

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- (3) Grindley,P, Standards, Strategy, and Policy, Oxford University Press, (1995)
- (4) METI, Report on Special Committee of Personnel Training Policy, (2008)
- (5) ISO Annual Report 2011, (2012)

Authorization system for Machinery Condition Analyst – Condition Monitoring and Diagnostics of Machines- in Malaysia

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Continued from page 1 Mechanical Engineers since 2003.

These engineers are expected to analyze the suitability of continuous operation of machines, to foresee/forecast the symptom of breakdown and influence on the future abnormality by observing the condition of machine quantitatively and finally to offer the improvement plan for those machines. Training program to become Machine Condition Analysts managed by Japan Society of Mechanical Engineers are executed by authorized third parties successfully, with total of 3300 people passed the examination and become certified as Machine Condition Analysts from 2004 to date. They are taking an active part in the front site of industry. Successful applicant's community are organized in each related domestic region, and they try to accumulate their experience with studying in the training association.

In the international relationship, the cross certification is done between United States Vibration Institute (VI), Canada Machinery Vibration Association (CMVA), and Korean Society for Noise and Vibration Engineering (KSNVE). Certification holders bring certificates on business trip abroad and present them to the local plant as their ability are highly evaluated. In the start-up of KSNVE, since the activity knowhow of JSME was transmitted, the preparation was completed from planning to the implementation in a short term, and this program started efficiently in the Republic of Korea.

By the way, in the engineering field, it is necessary to think about the matching between needs in industrial field and current seeds when always searching for needs of the industrial fields. It can be said that the society activity will be successful by the collaboration of the industrial-government-academic complex. The academic society is exactly a stage to achieve the collaboration by industrial-government-academic complex. People working and always acting on the front site of industries, are good at finding and recognizing needs of industrial fields. It is an important collaboration work for industrial-government-academic complex as to how to show valuable information and results obtained in industrial fields in the place of the education and academics, which can be exclusively accomplished exactly in the stage of academic society. The influence of industrial activity in the ASEAN region for Japanese economy is especially remarkable. It has a big effect on various Japanese companies through activities of the automotive and the related industries in recent years. It has been clarified that the promotion and education of diagnosis engineers for adequately watching and observing the condition of machines is an urgent subject from authors' survey result in Malaysia where the development of the machine industry and related manufacturing industries is remarkable.

Professor Salman Leong of UTM (University Technology Malaysia, the preeminent university in Malaysia) takes charge of the lecture and education of machine vibration, and has sent off many achievements to the academic society. The present author explained the investigation results obtained industrial fields concerning necessity of machine condition analysts and was requested by Professor Salman Leong to support to make a plan of authorization system and training program for machine condition analysis and diagnosis engineers (May, 2011). The author proposed the idea to establish the authorization system with cooperation of Japan Society of Mechanical Engineers.

In addition, the author heard from Dr. Aminudin Bin Abu (academic staff of MJIT (Malaysia-Japan International Institute of Technology) graduating from Professor Salman Leong's Laboratory) of his plan to make an engineer's course of condition monitoring and diagnostics of machine based on ISO18436-2 in the Department of Mechanical Precision Engineering of MJIT. MJIT was established in UTM in September, 2011 supported with 24 Japanese universities. Two departments, Department of Mechanical and Precision Engineering and Department of Electronic System Engineering are established, and Department of Environment and Green Technology Engineering, and Graduate Course of MOT (Management of Technology) will be established at the fiscal year of 2012. It should be noted that tribology is treated as an important field in Department of Mechanical and Precision Engineering. Great expectations are drawn to the machinery condition analysis



Fig.1 Scenery of the Practice of Training Course Held in Japan



Fig.2 Scenery of Participants Attending the Course Lecture



Fig.3 Malaysia-Japan International Institute of Technology

engineer's course from the viewpoint of contribution to the industrial field for MJIT.

Thus, various survey and discussion are conducted, and the review process in the Japan Society of Mechanical Engineers is steadily progressing in order to establish the authorization system on Program of Condition Monitoring and Diagnostics of Machines in Malaysia. For instance, the text book written by Professor Salman Leong for engineer's courses based on ISO18436-2, is examined closely, and as a result, it has been concluded that the book can be used for education materials. The lacking part will be added by request of persons concerned. The authorization system is composed of two organizations, that is Certification Organization (the Institution of Engineers, Malaysia: Interim name) and Training Organization. In case the present plan is consolidated, both Professor Salman Leong and Dr. Aminudin are expected to work in Malaysia as representative members on behalf of the Institute of Engineers, Malaysia supported by UTM and MJIT, the regular counterpart of Japan Society of Mechanical Engineers.

We are moving towards materializing the program for engineers of analysis and diagnosis of machines in Malaysia, situated in the middle of the ASEAN region, where JSME is expected to play a greater role.