

# A vision of IIW's role in the various world regions and developing countries

by

**CHRIS SMALLBONE**

Executive Director, Welding Technology Institute of Australia,  
IIW Director and Board Member

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## ABSTRACT

*The paper gives an overview of the work of the International Institute of Welding (IIW). The IIW recently completed its 3 year business plan (1998-2000) which includes ten key strategies. One of these is related to regional activities and the uplifting of welding in developing countries. A model used in Australia illustrates what can be achieved by true cooperative work. It is recommended that India investigates such models that may be of benefit to its industry and people.*

**Keywords :** *IIW, business plan, regional activities, developing countries.*

## INTRODUCTION

The IIW was founded in 1948 by the welding institutes or societies of 13 countries, who felt the need to create it, to make more rapid scientific and technical progress possible on a global basis.

Since then, welding associations in over 40 countries have become members and others are indicating interest.

From the beginning, the IIW set up international groups of specialists to study collectively the scientific phenomena associated with welding and allied processes, their more efficient industrial application and the means of communicating information about them.

## OBJECTIVES OF IIW

The IIW's objectives are :

- to organise the exchange of scientific and technical information and provide for the transfer of knowledge related to these techniques;
- to prepare recommendations, state-of-the-art reports and guidelines related to the various technical fields;
- to promote by all appropriate means the organisation of national welding institutes or associations in countries where these do not exist;
- to organise Annual Assemblies, International Conferences and Regional Congresses;

- to define guidelines for the education, training, qualification and certification of personnel involved in welding and rules for their application;
- to prepare and assist in the formulation of international standards in collaboration with the International Organisation for Standardisation (ISO);
- to promote and encourage the development of a sustainable environment within welding activities;

To achieve these objectives in practice, this means that experts from around the world are working in over 20 Commissions or other units (Appendix i) on a permanent basis to stimulate and co-ordinate research and to disseminate

information on welding processes, their application in terms of materials, design and inspection and other associated subjects such as health and safety, education, training and qualification, terminology and documentation.

## ACHIEVEMENTS OF IIW

These groups of experts have achieved many outputs useful to industry.

Each year about 400 papers emanate from the IIW working units of which about 40 are published in the IIW journal "Welding in the World". In addition, a total of some 20 books dealing with recommended practices or the results of international enquiries have been published mainly in two or more languages.

IIW has compiled a number of works of reference such as the Multilingual Collection of Terms for Welding and Allied Processes (9 volumes mostly containing 16 or more languages), the International Welding Thesaurus, the Index of Welding Standards, a collection of radiographs illustrating weld defects and a more recent product, the IIW Database on disk, listing IIW documents.

All these works were approved for publication by international groups of experts and so are authoritative.

As regards the objective of formulating international standards, the working units of the IIW have

supplied the technical basis of the great majority of welding standards issued by the ISO over the past 30 years. Members of these working units and their employers have therefore had a major influence over the content of such standards. Since 1989 the IIW has been authorised by ISO to prepare the final texts of international welding standards as an international standardising organisation.

IIW has also been successful in promoting the organisation of national welding associations. Such associations have been formed with a view to their becoming members of IIW, thus enabling experts from their respective countries to participate in IIW activities. The IIW is at present taking steps in conjunction with the United Nations Industrial Development Organisation (UNIDO), to promote membership in developing countries which could benefit greatly from the collective knowledge of the IIW in many areas, in particular welding education, welding science and practice, and the health and safety of welding personnel.

IIW annual assemblies take place annually on the invitation of one or other of the member countries and last for a week. Three days are normally devoted to parallel sessions of the Commissions and other working units. In addition, two days are devoted to an international conference on a specified theme. The papers presented at this

conference are published in bound volumes available for purchase.

Recent and future public event themes are:

- 1987 Performance of dynamically loaded welded structures.
- 1998 Welding in shipbuilding.
- 1999 The human factor and its environment.

Other specialist public events and seminars are usually held in association with the Annual Assembly.

Generally, over 30 countries are represented by about 450 delegates at annual assemblies. Attendance at meetings of IIW working units is confined to those who have been appointed by their national delegation whereas the International Conference is open to any person.

People can be appointed to be members of their national delegation. The appointment process varies from one country to another but the main criteria are :

- to be known by the relevant national authority responsible for the appointment of the country's delegation;
- to be an expert in a subject studied by an IIW Commission or other Working Unit;
- to have the motivation and energy to participate in the co-operative work of the unit which may meet not only at the Annual

Assembly, but more frequently in order to maintain progress.

- to feel an interest in working with people of other nationalities whose basic assumptions and habits of thought may well be quite unfamiliar.

For those committed to co-operation, there are many opportunities for a person to contribute to, and learn of, work which will be valuable to them professionally and to their employers, to make the acquaintance of fellow experts from other countries, to gain, through personal contacts and technical documents, advance knowledge of impending developments and, in some cases, to influence the content of international welding standards.

The IIW will continue the programmes of its various working units, particularly on the occasion of forthcoming Annual Assemblies, which will be held as follows :

1999 Portugal, 18-25 July, Lisbon  
2000 Italy 9-14 July, Florence  
2001 Brazil  
2002 Denmark  
2003 Romania  
2004 Japan

The IIW's first Regional Congress was held in Australia in 1988, followed by Brazil (1992), New Zealand (1996), South Africa (1997), Iran (1998), the next one in 2000 in Australia. The purpose of these Congresses is to assist technology development and diffusion in areas

far removed from the locations of the majority of Annual Assemblies and to encourage the membership in developing countries in these areas.

The policies of IIW are decided by the General Assembly on which are represented all the national member societies. The General Assembly elects the President of IIW and the members of the Board of Directors which directs the affairs of the IIW. The Board of Directors comprises twelve Directors among whom are elected the President, three Vice-Presidents and the Treasurer.

The day-to-day work is ensured by a Permanent Secretariat under the responsibility of a Chief Executive.

The Secretariat maintains contact between IIW and other international bodies such as the International Organisation for Standardisation, United Nations agencies and the Union of International Technical Associations.

The IIW is funded by the member societies paying an annual subscription on a scale designed to reflect, as equitably as possible, the dependence of their country on welding technology. Such subscriptions are modest and sufficient to pay only a part of the cost of running the Secretariat and associated activities. Further income is derived from the sale of books and other documents, and fees which are collected from each Annual Assembly participant.

By far the greatest contribution from member societies comes in the form of the input of their delegates to the working programmes of the commissions. The cost of delegates attendance at Annual Assemblies and any intermediate meetings of Commissions and Sub-Commissions is borne by their Member Societies or their employers.

Throughout the life of IIW, the scope of its technical programmes has been expanded to include new technologies. Such have included more recently, the joining of plastics and composites, the capabilities of computers in design, process control, inspection and information handling, welding in a variety of environments and under remote control, new concerns for the health and safety of those working in industry and the education, training and qualification of personnel.

The Institute constantly examines its role and develops a strategy to be able to offer its present and potential member societies the opportunities and benefits they seek.

One of the most recent innovations of the IIW is the setting-up of an international scheme for the qualification of personnel involved in welding operations. This scheme allows the Authorised National Bodies (ANBs) to deliver, under the control of the IIW, Diplomas of International Welding Engineers, Technologists, Specialists and Practitioners. The certificates holders

are de facto recognised as able to be welding co-ordinators according to the recent ISO Standards.

### **IIW STRATEGIC PLAN AND BUSINESS PLAN (1998-2000)**

The IIW, at its Annual Assembly in Hamburg in July 1998, approved both its strategic plan and Business Plan for the next three years. A key strategy to be introduced is the promotion of IIW involvement with developing countries and regional activities. In today's world, no country or organisation can remain in isolation with issues now becoming truly global e.g. the ozone layer problem, Chernobyl etc.

Most people in the world simply wish for a decent job and roof over their heads, sufficient food and security for their families and a decent education for their children.

Welding is an enabling technology that can assist developing countries in uplifting the quality of life of their people.

Part of the vision of IIW is to have an influence in the promotion of welding technology in all countries of the world. In particular, IIW wishes to be able to grow to an optimum size whereby the necessary identified services can be provided to its members. However, there are over 190 countries in the world and all use welding and joining to varying degrees and only 43 of these countries are members of IIW.

To achieve this part of its vision, IIW is now at a stage in its development where it can act as a facilitator through its member societies to meet the needs of many non-member countries and at the same time improve its own image and influence on the global stage.

Budget limitations and the small number of IIW staff has meant concentrating efforts on satisfying the needs of the "order" member countries from the developed world.

Now, particularly with the shifting of global industrial and population growth, the IIW should assist in helping meet the needs of these new centres as well as those of the developing countries.

The main needs of developing countries are arguably, in education, training, health and safety as well as the introduction of appropriate technologies to be customised for use in their industries.

Some countries possibly have a perception that IIW is an organisation for the "boffins" involved in research and development and could question whether IIW can help meet such needs.

IIW has tremendous strength in its member countries. Its member societies have resources to assist in establishing within a particular country or region :

- an organisation that would be responsible for the promotion of welding technology and related disciplines;

- the required welding education and training infrastructures;
- the appropriate technologies to assist the different industries being established and able to be self sustaining.

However, a proper business plan for each country would need to be devised, financially supported and implemented with appropriate milestones and key performance indicators.

Depending upon the geographic size of the country, its industrial size and distribution an appropriate master plan should be possible.

Consider a model being utilised in Australia which was originally conceived in 1992 as a plan for Southern Africa but never implemented.

In late 1997, 48 Industry Companies, 6 State and Territory Governments and the Federal Government through DIST (Department of Industry, Science and Tourism), contributed \$3.5m dollars for the WTIA to establish the OzWeld Technology Support Centre Network.

The employment by WTIA of 6 State Technology Managers, 1 National Hotline Engineer and 1 National Technology Advisor and the incorporation of 28 Australian Technology Support Centres in that Network as well as 5 International ones so far, has enabled a fantastic bank of knowledge, skills, services and facilities to be made accessible

to Australian industry. The money from Industry and Government is committed until the end of 2000.

This will assist companies through :

- Provision of Technical Information and Advice
- Technical Problem Solving
- Applied Research and Development
- Transfer of Technology
- Related Training

When one considers that Australia has probably less than 50 welding engineers/technologists and less than 500 welding supervisors how can one ensure that there are competent technology receptors in industry to take and implement the appropriate technologies.

WTIA is presently preparing to be audited by the International Institute of Welding (IIW) to become the Authorised National Body (ANB) for the administration of the International Education, Training and Qualification Program for welding personnel. The scheme was officially launched in July 1997.

Two Universities and 36 TAFEs will be assisted and accredited by WTIA to train internationally qualified welding engineers, technologists, specialists, practitioners, welders and inspectors to meet industry needs.

The WTIA is a core partner of the CRC-MWJ, working with other research establishments, both locally and internationally. Also, 280 industry specialists on ten WTIA

Technical Panels, currently work with the research community to develop welding research and development projects. A Manager, complete with secretariat and technical support, serves as a vital conduit facilitating both the technology transfer of research results and bringing the needs of industry to the attention of the research community.

If one considers a country such as India, a similar or improved model could apply.

## CONCLUSIONS AND RECOMMENDATIONS

It is recommended that the Indian Institute of Welding investigates the possible models that could be utilised in India to assist its industry, in particular, small and medium enterprises.

India has a wealth of technology support centres that could be utilised in such a model. The experiences of IIW member countries such as Australia could be utilised to help ensure its success.

## APPENDIX I

### Working units

Hereunder are listed the Board of Directors, Commissions, Study Groups and Select Committees and their Chairmen.

### COMMISSIONS

**Commission I** - Mr. G. Engblom, AGA AB, Sweden  
Brazing, soldering, thermal cutting and flame processes

**Commission II** - Mr. D. Kotecki, Lincoln Electric Company, United States  
Arc Welding

**Commission III** - Ir. A. W. M. Bosman, HOOGO VENS, Netherlands  
Resistance welding and allied joining processes

**Commission IV** - Dr. D. Russell, TWI, United Kingdom  
High energy density welding

**Commission V** - Mr. T. A. Siewert, National Institute of Standards and Technology (NIST), United States  
Quality control and quality assurance of welded products

**Commission VI** - Mr. O. Dellby, SVETSKOMMISSIONEN, Sweden  
Terminology

**Commission VII** - Mr. Ch. Ahrens, Schweisstechnische Lehr- und Versuchsanstalt, Germany  
Authorisation and qualification

**Commission VIII** - Dr. G. McMillan, United Kingdom  
Health and safety

**Commission IX** - Prof. B. de Meester, Catholic University of Louvain, Belgium  
Behaviour of metals subjected to welding

**Commission X** - Dr. S. J. Garwood, Rolls Royce and Associates, United Kingdom  
Structural performance of welded joints, fracture avoidance

**Commission XI** - Dr. G. E. Gnriss, Rheinisch-Westfälischer TUV, Germany  
Pressure vessels, boilers and pipelines

**Commission XII** - Prof. M. Ushio, Osaka University, Japan  
Flux and gas shielded electrical welding processes

**Commission XIII** - Dr. S. J. Maddox, The Welding Institute, United Kingdom  
Fatigue of welded components and structures.

**Commission XIV** - Dr. R. Long, USA  
Education and training

**Commission XV** - Prof. A. Hobbacher, Fachhochschule Wilhelmshaven,

Germany  
Fundamentals of design and fabrication  
for welding

**Commission XVI** - Prof. A. Benatar, Ohio  
State University, USA  
Polymer joining and adhesive  
technology.

**Board of Directors Working Group  
"Regional Activities and Liaison With  
Developing Countries"** - Chairman. C.  
Smallbone, Australia

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#### STUDY GROUPS

**The physics of Welding** - Prof. Dr. G.  
den Ouden, Delft University of  
Technology, The Netherlands

**Technical and economic information** -  
Mrs. N. Fauriol, Institut de Soudure,  
France

**Welding research strategy and  
collaboration** - Dr. R. E. Dolby, The  
Welding Institute, UK

#### Select Committees

Aluminium and aluminium alloys - Mr. C.  
Boucher, Institute of Welding, France

**Permanent joints in new materials and  
coatings for aircraft engineering** - Prof.  
K. Yushchenko, E. O. Paton Electric  
Welding Institute, Ukraine

**Standardisation** - Dr. D. Shackleton,  
United Kingdom

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