An overview of technical societies in the railway industry

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INTRODUCTION

The railway industry is a multi-disciplinary environment, incorporating a wide range of engineering disciplines, as well as operational and technical skills, and expertise. Within this environment a number of technical societies serve and constantly strive to positively influence the railway industry and its people. This article contains a brief outline of the following technical societies that exist within the railway industry:

- SAICE (South African Institution of Civil Engineering), and specifically its Railway and Harbour Division
- PWI (Permanent Way Institution)
- SASRE (South African Society for Railway Engineering)
- IRSE (Institution of Railway Signal Engineers)
- IHHA (International Heavy Haul Association)

SAICE (SOUTH AFRICAN INSTITUTION OF CIVIL ENGINEERING)

As SAICE and its divisions and branches will be familiar to most readers, this section on SAICE is intended to provide only a brief overview.

SAICE's mission statement is "to advance professional knowledge and improve the practice of civil engineering". In support of this mission, SAICE strives:

- to be a learned society for all those associated with civil engineering;
- to enable our members, through consultation and accountability, to provide the community with environmentally and economically sustainable infrastructure;
- to cater for the interests and needs of our members by creating an effective communication channel in a strong, dynamic and stable organisation;
- to provide our members with continuing education in technical, managerial and communication skills;
- to advance and uphold the professional ethics of the civil engineering profession;
- to enhance the recognition of civil engineering as a highly respected profession and a desirable career; and
- above all, to encourage our members to strive for excellence in civil engineering.

The SAICE Railway and Harbour Division focuses on the planning, design, construction and maintenance of facilities for transport via railways, harbours and pipelines. The purpose of the Division is therefore to advance and expand the science and practice of civil engineering in the provision and maintenance of these facilities, and to promote the civil engineering profession in this field. This is pursued by the holding of meetings, a biennial symposium, technical presentations, site visits and social gatherings.

▶ SAICE INFO

www.saicerailwayandharbour.co.za
www.saice.org.za

PWI (PERMANENT WAY INSTITUTION)

The Permanent Way Institution (PWI) serves all railway track engineers involved in the design, construction and maintenance of track and infrastructure. It has approximately 3 000 members in the UK and 420 in South Africa. The PWI was inaugurated in Nottingham, England, in January 1884, almost 130 years ago. This was the time when railway construction in South Africa had taken off in the Cape of Good Hope and in Natal. Today South Africa has the largest PWI section outside of the UK.

The PWI publishes a series of textbooks that are widely regarded as a reference library for railway civil engineers. It holds regular meetings through its various sections across the UK and beyond,

and holds highly regarded seminars and conferences to complement the regional meetings and to promote lively debate. It publishes a quarterly journal with technical papers, and hosts a comprehensive website with plentiful information available to those who need it.

The mission statement of PWI South Africa is as follows: PWI is a non-profit organisation, which is committed to adding value by promoting knowledge and development through the active involvement of PWI members, thereby assisting in continuous growth of the railway industry. The PWI is not involved with training, but shares knowledge through membership in a structured manner.

▶ PWI INFO

www.permanentwayinstitution.com

SASRE (SOUTH AFRICAN SOCIETY FOR RAILWAY ENGINEERING)

SASRE was originally the South African Railways (SAR) Engineering Society (established in 1932), and for its first 58 years was run out of the former SAR Chief Mechanical Engineer's (CME) office. For this reason it attracted members almost exclusively from the mechanical disciplines of the railways. Only SAR employees could become members, serve on the committee and have voting rights. Employees of private companies could only become associate members and had no membership rights. The CME was the Honorary President, his two assistant CMEs were the Vice-Presidents and all former CMEs were Honorary Life Members. Monthly meetings, at which technical papers were presented (and until 1989 were published in the form of an annual proceedings book), have taken place continuously since inception, apart from an interruption in activities during the Second World War. Visits to engineering concerns have also taken place regularly.

When Transnet was formed in 1990 and the SAR became Spoornet, the SAR Engineering Society had to change its name and became the South African Society for Railway Engineering (SASRE). At the same time the CME and the rolling stock divisions of the Chief Electrical Engineer's (CEE) offices merged within Spoornet (today Transnet Freight Rail) to form a new division called Rolling Stock. SASRE then, for the first time, actively started recruiting members from the electrical engineering discipline.

The railway mechanical workshops (formerly also under the CME) separated from Spoornet and became Transwerk (later Transnet Rail Engineering and today Transnet Engineering (TE)), and SASRE continues to draw many of its members from amongst TE's Johannesburg- and Pretoria-based employees.

The suburban railway ownership that also used to be part of the old SAR was removed from Transnet and given to the Department of Transport, and became known as the South African Rail Commuter Corporation (SARCC, today the Passenger Rail Agency of South Africa (PRASA)). As some of the Society's members were part of this exodus from Transnet, SASRE chose to amend its constitution to cater for non-Transnet employees as full members, thereby allowing them to serve as committee members. In 1990, as part of the Society's renaming, membership was therefore opened to anyone interested in railway engineering, be they from the private sector, government or Transnet. Over the past 20 years SASRE's committee and the role of president has been occupied by a good mix of members from Transnet and the private sector.

So, whilst SASRE's history was rooted in the mechanical engineering discipline, an effort has been made over the past 20 years to attract engineers and technical staff involved with the full spectrum of railway rolling stock, be they from the mechanical, electrical, materials, industrial or other engineering disciplines. SASRE continues to hold ten monthly meetings a year at which technical papers are presented. It also arranges visits to engineering concerns, hosts a golf day, an annual awards dinner and organises seminars on subjects of engineering interest. It continues to fulfil its founding constitutional mandate, which is to:

- promote the knowledge, widen the experience and increase the effectiveness of its members;

- give members opportunities for discussing railway engineering subjects; and
- foster the interchange of ideas between members in the various spheres from which the members are drawn.

▶ SASRE INFO

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IRSE (INSTITUTION OF RAILWAY SIGNAL ENGINEERS)

The IRSE is the professional institution for all those engaged in or associated with railway signalling, telecommunications and allied professions. The IRSE has its headquarters in London, in the UK, and is active worldwide. Founded in 1912, the Institution aims to advance, for the public benefit, the science and practice of signalling and telecommunications engineering within the industry and to maintain high standards of knowledge and competence within the profession. The IRSE is a licensed body of the Engineering Council, and IRSE members at the appropriate levels, particularly in the UK, are encouraged to register with the Engineering Council as Chartered Engineers (CEng), Incorporated Engineers (IEng) or Engineering Technicians (Eng Tech).

The Institution publishes its own magazine, *IRSE News*, which brings members up to date with the latest Institution activities. Regular features include short technical papers, an events diary, membership changes, news about the activities of the IRSE Council and committees, and letters to the editor. The IRSE holds regular technical meetings in London and at major membership centres worldwide. A full report of the meetings is included in the *IRSE Proceedings*, a journal which is published annually.

The IRSE also holds half-day and full-day seminars designed to brief members on topics of current interest within the industry. An international convention is held every year with several days of presentations and technical visits to gain understanding of railway practice in different countries. About every four years, the IRSE holds an international conference lasting three days, with papers covering a broad range of developments in the science of signalling and telecommunications for railway applications.

▶ IRSE INFO

www.irse.org

IHHA (INTERNATIONAL HEAVY HAUL ASSOCIATION)

The International Heavy Haul Association (IHHA) is a non-profit, non-political entity organised to facilitate and participate in the development or acquisition and distribution of knowledge germane to heavy haul railroad technology and operations. Membership is open to any heavy haul railroad regardless of country of origin. A heavy haul railroad is defined as one that meets at least two of the following requirements:

- Regularly operates or is contemplating the operation of unit or combined trains of at least 5 000 metric tons.
- Hauls or is contemplating the hauling of revenue freight of at least 20 million gross tons per year over a given line haul segment comprising at least 150 km in length.
- Regularly operates or is contemplating the operation of equipment with axle loadings of 25 tons or more.

The IHHA is dedicated to the pursuit of excellence in heavy haul railway operations, engineering, maintenance and technology. It strives to accomplish this mission through the acquisition of knowledge relevant to this goal by sponsoring and organising international and regional conferences, specialist technical sessions and specialist seminars; by commissioning guideline manuals; by preparing and distributing conference proceedings and technical documentation; and by related activities as recommended by the Board of Directors. The IHHA engages in a continual process of adaptation to ensure it satisfies the demands of state-of-the-art technical information that is relevant in a changing and developing industry.

The IHHA is a worldwide non-governmental, scientific and technological association of heavy haul railways and their advocates, and is incorporated in the State of Missouri in the United States of America as a not-for-profit association.

Based upon the work done by the Melbourne Research Laboratories of the Broken Hill Properties Co Ltd (BHP) for the Mt Newman Mining and Hamersley Iron railways in the Pilbara region of Western Australia, the idea sprang up in 1975-76 to disseminate the knowledge gained in that research programme with other heavy haul railways of the world. After discussions with other countries it was determined that they were not alone in their concerns and problems. Therefore, they sent out invitations world-wide to those railways that were involved in using dedicated unit trains to haul such commodities as coal, grain, iron ore, etc.

Members

The IHHA is governed by a Board of Directors, who are appointed by the member and associate member organisations to conduct the affairs of the association, and by a Chief Executive Officer appointed by the Directors. A Board of Directors Meeting is held annually in one of the members' country.

The membership of the IHHA consists of national and state organisations, private railway systems, and railway organisations and advocates interested in furthering the exchange of technical information that will benefit the world's heavy haul rail operations.

At the present time the membership of the IHHA is as follows:

- Australia – private railroads
- Australia –Australian Railway Association (public railroads)
- Brazil – VALE Companhia Do Rio Doce
- Canada – Railway Association of Canada
- China (People's Republic of China) – China Academy of Railway Sciences
- India – Indian Railways, Ministry of Railways
- Russia – Russian Railway Research Institute (JSC VNIIZhT)
- South Africa – Transnet Freight Rail
- Sweden/Norway – Nordic Heavy Haul Association
- United States of America – AAR Transportation Technology Center
- Associate Member – UIC (International Union of Railways) World Division

▶ IHHA INFO

www.ihha.net

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http://www.saice.org.za/downloads/monthly_publications/2013/2013-Civil-Engineering-May/#/0