

IRON AND STEEL SOCIETY (ISS) ANNUAL REPORT FOR 2016

1. Board membership

At the end of 2016, the membership of the ISS Board comprised 19 persons:

Dr Andy Backhouse (Outokumpu)
Prof Martin Brunnock (Tata Steel – Strip)
Mr John Dale (British Steel)
Prof Claire Davis (Warwick Manufacturing Group)
Mr Brian Edy (Swansea University, formerly Tata Steel)
Dr Geoff Hale (IOM3)
Mr Andrew Kirton-Vaughan (Tata Steel – Speciality)
Mr Joe Lee (Primetals Technologies Ltd)
Ms Emma Leighton (Taylor and Francis)
Dr Chris McDonald (MPI)
Dr Norrie McPherson (Taylor and Francis)
Dr Peter Morris (Beta Technology)
Dr David Price (Taylor and Francis)
Dr Ken Ridal (IOM3)
Mr Bob Ruddlestone (MPI)
Mr Martin Smith (Primetals Technologies Ltd)
Mr Mick Steeper (Independent Consultant)
Mr James Taylor (MPI)
Dr Richard Thackray (University of Sheffield)

One member left the Board (Dr Mike Copeland) during 2016 and three new members joined (Dale, Kirton-Vaughan and Taylor).

Throughout the year, Mick Steeper continued as Division Chair and Martin Brunnock continued as Deputy Chair.

All ISS Board members are members of IOM3.

2. Board meetings

Four board meetings were held in 2016 as follows:

3 February at Swansea University – 11 attended
28 June at MPI Teesside – 11 attended in person (and 3 by teleconference)
7 September at 297 Euston Rd – 10 (3)
1 December at 297 Euston Rd – 12 (1)

Mick Steeper chaired three meetings and Martin Brunnock one (June)

3. Activities during 2015

3.1. Technical programme *(Summary; details in Appendix)*

Two further events in the second series of Steel Strategy Seminars were planned but only one could be delivered. An event with a theme of the steel industry's R+D landscape, scheduled for May at MPI on Teesside, had to be postponed at the eleventh hour because of a dearth of registrations. However the other event (30th November at 297) went ahead and was arguably the most successful SSS to date. Its theme of a transformation towards recycling in global industry was probably responsible for a strong attendance and formidable program of speakers, although the ISS Board's recourse of writing to historic supporters may also have helped. The SSS series remains the Division's most successful proposition and the very high

presentation quality is being maintained, but attendance is becoming more and more of a challenge and will remain so until industry business prospects improve. The other significant public event organised by the ISS was Bessemer Day (incorporating the Bessemer Masterclass as well as the Bessemer Lecture and ISS awards ceremony). Following 2015's success at Sheffield's Cutlers' Hall, the concept of holding the event in steel industry locations was maintained in South Wales, with the SWMA (South Wales Materials Association) leading the organisation and with Swansea University hosting the daytime events, followed by a dinner at the city's Waterfront Museum. The whole event achieved strong support as well as considerable acclaim, even surpassing the previous year's success. The one disappointment was the unravelling of the extended project format of the Masterclass. Under Professor Alan Cramb of IIT Chicago as the Bessemer Laureate, a reversion to the historical single-day format took place, but the quality and enthusiasm of the 27 delegates (12 from academia and 15 with an industry background) gave everyone hope that a highly committed and capable generation of new steel industry professionals is on the rise.

With considerable help from outgoing IOM3 President Mike Hicks, the retention of the travelling format of Bessemer Day has now been secured, with 2017 and 2018 due to reprise Sheffield and South Wales respectively. 2019 and the 150th Anniversary of the Iron and Steel Institute will be a special case, but the conspicuously successful travelling model is expected to remain long-term.

3.2. Web-site developments

At the time of writing and after a long search, the ISS may have found a Webmaster, who is due to attend the next board meeting in February 2017 as an observer, pending a collective invitation to join the Board. ICT is still considered to be a main weakness of the Division, but the November SSS event saw a major push on social media use which included a notable record of the day's activity in the form of a Storify account and several IOM3TV interviews with speakers.

3.3. Engagement with technical community and/or local societies

Increased liaison with Germany's VDEh continues, including ISS member attendance of VDEh technical committee meetings and scientific panels. There is no doubt that the VDEh is by far the strongest of the European steel institutes now, with only AIM, ASMET and Jernkontorets among the others claiming to be maintaining historic levels and scope of their activities in industrial metallurgy generally. It is likely that VDEh will become accepted as the effective European Steel Institute (replacing the now-defunct ESIC) and in time the various national institutes may be expected to affiliate to it. It is hoped meanwhile that closer work with VDEh will give sufficient value to UK organisations to encourage more purposeful collective effort in support of the home steel value chain.

Local societies (notably the SMEA, CIE, SWMA and LISI) remain active in steel and all continue to deliver well-supported lecture programs. No steel-related conferences took place this year, however, and a point has now been reached whereby the flagship one (the SMEA's) may have been discontinued too long to be restarted easily. The ISS also noted with regret that the CIE's annual dinner had to be cancelled this year because of a lack of support.

3.4. Contributions to IOM3 house journals

Three active members of the ISS Board have direct roles in the delivery of the Ironmaking and Steelmaking and Steel World journals (Norrie McPherson took over as IM+SM Editor with his predecessor David Price continuing at Steel World and

with Professor Rob Boom chairing the Editorial Panel. Emma Leighton remains as Publishing Manager at Taylor and Francis)

After concerns about delays in journal publication early in 2016, stability has been restored. ISS members contributed copy to a wide range of the Institute's magazines and journals in 2016.

3.5. Other

The depressed state of the global steel industry continued in 2016, with overcapacity persistent and margins very low or indeed negative for many producers. In the UK, the protracted competitive challenge finally lead to a fragmentation of the dominant business (Tata Steel) which is still proceeding. The group's former Longs business and particularly its Scunthorpe plant has re-emerged as British Steel, while Liberty House looks set to acquire Speciality, having already secured and re-started the mothballed plate-making operations in Scotland and purchased the Sheerness plant as well as substantial former Caparo assets. For much of the year, strip operations in South Wales seemed to be in jeopardy, but 2016 ended with brighter prospects and a likelihood of investment at Port Talbot, also promising to bring more security to satellite businesses in the Valleys and on Deeside.

The prospects for R+D and through it the science of ferrous metallurgy remain in the balance, however. On the positive side, the prospects of a re-established research capability in Wales look strong and MPI seems to be consolidating, but at the same time the Swinden Technology Centre in Rotherham will finally close in 2017. Tata has committed to research at Warwick University and set-up a new R&D facility near the Port Talbot plant based at Swansea University. The new Advanced Steel Research Centre at WMG continues to develop, with a new building (opened summer 2016) and new equipment, funded by a HEFCE-Tata Steel grant.

In summary and in what is still an adverse business climate, sustaining (let alone developing) the knowledge community of steel is rarely a priority of the business making it, and any appetite for collaborative activity still succumbs to a self-interested survival instinct. Even following the strategic realignment of the ISS in 2015, our long-term aims do not sit comfortably with the short-term needs of the industry we serve.

The significant consequences of this challenge in 2016 were the failure of the Innovation Landscape Steel Strategy Seminar and the handing back to the ISSI of the 3rd International Conference on Ingot Casting, Rolling and Forging (ICRF3), originally scheduled to be held in the UK during the summer of 2018. This conference will now take place in Italy under the auspices of the AIM.

4. Strategy and Objectives for 2017 and Beyond

The new Divisional Policy Document for the ISS, developed throughout the second half of 2015, was published in the spring of 2016, and has been circulated throughout our peer community. This has lead in part to increased participation in political and economic bodies which are active in steel at a national level, notably the Steel Council.

The relevance of IOM3 to the steel industry, and through it to the broader national industrial strategy, appears to be increasing. In former but recent times (certainly within the last ten years) the IOM3 was implicitly accepted by the captains of steel in the UK as the natural professional home of their senior staff. Crucially, this used to apply to business and operational staff at least as much as to technical and engineering staff, but the waning of the UK industry has had the unforeseen effect of driving the Division into a narrower technical focus, since R+D and technical professionals are the group who have remained most active within the Institute. The technical focus is accentuated by the UK steel industry's standing in international

perception, with its technical capability nowadays more widely respected than its business leadership. More than most materials, however, steel is mature in scientific terms. There is little doubt that the survivors of today's global steel crisis will succeed more through astute business management than through radical new technologies at process level. Steel in the UK has a challenge to both maintain and rebuild upon its technical foundations, and the same challenge will bear on the ISS's course and priorities in the coming years.

4.1. Opportunities and constraints

The new Divisional strategy addresses a number of opportunities and constraints facing steel. Particularly important among these is the issue of an aging profession. The ISS will continue to focus on attracting young members, and on refreshing the image of industrial metallurgy as a career.

4.2. Specific targets for 2017

During 2017, the ISS will continue the Steel Strategy Seminars series and will also identify new conference themes, canvass our peer community to prioritise them and initiate the delivery of the sought-after ones. Overall however another year of relatively low activity is foreseen in terms of exposing IOM3 to financial risk. This approach is considered appropriate in the prevailing steel business climate.

4.3. Specific targets for the 3 years beyond 2017

In 2019, IOM3 will celebrate the 150th Anniversary of its founding organisation, the Iron and Steel Institute, and the ISS has commenced planning for an appropriate commemoration. A prospectus for the year's activities in steel will be prepared in the first half of the year, acting as a catalyst and a platform for the activities of the broader Institute.

The ISSI has granted IOM3 a European conference for 2020 (Electric Steelmaking). This is a highly prized event, in view of the increasing importance of recycling for a sustainable global industry. At longer range, IOM3 is also offered the SteelSIM (on simulation and modelling of steel processing and applications) conference for 2023.

Appendix: Technical Programme as of January 2017

Date (YY/YY/MM)	Status (Held /Progressing /Planned)	Title	Location	Organising Division(s) /Committee(s) /Collaborators	Financial Underwriter (IOM3/ Local/ Other)	100% Target No's	Actual No's
13/10/2016	Held	Bessemer Day, including Masterclass and Lecture	Swansea (University and Waterfront Museum)	ISS/SWMA	IOM3	M/class 24, Lecture 200	27 and 200
30/11/2016	Held	Steel Strategy Seminar Series 2, Seminar #4	297	ISS	IOM3	80	120
Spring 2017	Planned	Steel Strategy Seminar Series 2, Seminar #3 (rearranged)	MPI., Teesside	ISS	IOM3	80	
Autumn 2017	Planned	Steel Strategy Seminar Series 2, Seminar #5	TBA	ISS	IOM3	80	
Autumn 2017	Planned	Bessemer Day, including Masterclass and Lecture	Sheffield (Cutlers' Hall)	ISS/SMEA	IOM3	M/class 24, Lecture 200	
2020	Planned	European Electric Steelmaking Conference (EEC2020)	UK	ISS	IOM3	400 (series norm)	