

‘The GASG – its history and its future’

by Joe Watson

During the 1980s and 1990s, considerable interest developed in sensors and transducers as a subject in its own right, in part because digital technology was burgeoning and the question of how to acquire digital information from a fundamentally-analog world was presenting many major problems. Within the purely electronic orbit, work on A-D conversion was complemented by that on signal-acquisition circuitry that could accommodate the wide range of phenomena being addressed by an equally wide range of physical, chemical and biological sensors. It was during this period that several attempts were made to set up some sort of organisation for addressing sensor technology as a whole – but these were scuppered by the sheer breadth of the science and technology that had to be accommodated. That is, any conference or colloquium on sensors had to offer a set of largely unrelated papers, the result being that few delegates were prepared to attend to hear perhaps one paper at such a gathering. The most successful such organisation was the UKSG (United Kingdom Sensors Group).

So, it is not surprising that in late 1992 about a dozen niche special interest groups were financed by the DTI (Department of Trade and Industry) of the time through its ASTTP (Advanced Sensor Technology Transfer Programme). In September of that year, Mark Churchyard and Jo Bazeley of the DTI, Peter McGeehin of the UKSG, Jonathan Gilby of City Technology, and Russ Pride of British Gas attended a meeting that spawned the GASG, which along with its sister organisation SWIG (Sensors for Water Interest Group) are the only ones still in existence – and both are burgeoning!

Not being quick enough off the mark, I accepted Peter’s nomination as Chairman, and now, twenty years later, it is my great pleasure to tell you that the three founding members are all with us today as GASG Guests, and I trust that they will accept the first slices of our 20th Anniversary Birthday Cake.

The wheels of the DTI then ground rather slowly, but several meetings ensued that resulted in the DTI supporting the newly-minted GASG for three years, after which it succeeded in becoming entirely self-supporting, as it is today. The first ‘proper’ colloquium was held at the DTI premises in London in December 1993, and included the election of the first Committee. Interestingly, it and subsequent meetings attracted much the same numbers as nowadays, though naturally there has been an almost complete ‘churn’ of members since then. However, five delegates to that meeting are also still with us – Rob Bogue, who is now a Committee Member and will speak later today; and very staunch members Mike Byrne of EI Electronics in Ireland, Stuart Hopkins, formerly of SIRA and now a Consultant, Rob Newbury, then of Pollution Monitoring Systems and now also a Consultant, and Mike Williams of Cranfield University. Peter Walsh of the Health and Safety Laboratory, then

in Sheffield and now in Buxton joined us shortly afterwards and he is still on the Committee and assiduously taking notes for the Newsletter right now.

Following the formation of the GASG, three colloquia per year ensued, very often at the premises of host companies, R&D organisations, and universities. These included the opulent Research Centre of British Gas at Loughborough, which was particularly popular, but which is regrettably no longer part of any of the current gas companies. However, our last colloquium was held at the equally opulent headquarters of the National Physical Laboratory (NPL), and previous colloquia have taken place at such prestigious venues as Rolls Royce in Derby, St. Bartholomews Hospital in London, AWE Aldermaston, the Royal Astronomical Society and the IoP and IEE to name but a few. However, it has to be said that the most popular venue was unquestionably the Berkshire Brewery in Reading, possibly resulting from the free availability of the product...

Often, such venues were provided gratis, which helped to keep our Registration Fees and Annual Subscriptions very low, but present-day financial strictures have recently conspired to prevent many institutions from hosting us without charge, which has in turn compelled us to increase the GASG income by raising some of the annual and colloquium fees a little. However, these charges remain low mostly because of the voluntary work of our long-serving Committee Members.

Over the years, in addition to the many talks that have kept us all up-to-date on gas sensing devices and their applications, we have had some quite remarkable and unexpected contributions. For example, the natural olfactory powers of animals have not been forgotten – Keith Mackenzie of Canine Defensive Search Specialists gave a talk on ‘The role of the canine in vapour detection’; and Matilde Briens of Inscentinal (*sic*) spoke about ‘Gas sensing using sniffer bees’ – and showed that they were more sensitive than either dogs or pigs! There were also two front line gas detection instrument operatives, Danny Ashley and Andy Humber, who effectively put us all right on the sort of controls and displays that were really needed in very smoky and dangerous conditions – and those that were not really fit for purpose!

Also, most of us will not forget my own good American friend, Verne Brown, who very sadly departed this mortal coil only a few months ago. I had the good fortune to meet him when we were both at the Davis campus of the University of California, and when he returned to his old University of Michigan town, Ann Arbor, I frequently visited his first premises (over the fire station!) to design the electronic circuits for those very early solid-state sensors made by the Figaro Co. of Japan. Verne came over to speak at two of our colloquia, and at the first, he showed a slide of one of the very earliest methods of gas detection, which consisted of a man being lowered head first into a manhole by two other men grasping his ankles. (There was presumably no Health and Safety equivalent in the USA at that time!) His firm, ENMET, prospered, and eventually became a customer of

Alphasense, from which fellow American, John Saffell, its Technical Director and one of its founders, also became a good friend of the Browns. John will be speaking later today.

The Figaro Co. (a fine Japanese appellation!) was invited to send a speaker to one of our colloquia, too, and actually sent no less than four and refused any expenses whatsoever.

That, then, is the potted history of the GASG – but what of its future? The membership has been stable at around seventy members for many years, which may imply that we have garnered all the possible members in this admittedly niche technology. However, there is a marked absence of those firms specialising in sales of gas sensors and instruments, often sourced from abroad; and we could certainly benefit for many more overseas members who can keep us informed of the differing requirements and technologies in their home countries, and could eventually play a major part in making the GASG a truly international venture.

Regarding future colloquium talks, there are certainly many new avenues of R & D that would be of considerable interest to many Members. For example, electronic nose technology has taken off again for medical purposes, notably in the USA, where a NASA spin-off has resulted in the Cyranose 320 (what a marvellous name!) that was used to screen the exhaled breath of 475 patients of whom 252 had been diagnosed with lung cancer and 223 with lung diseases other than cancer. The breath test correctly identified 96 percent of the patients already known to have lung cancer. Also, new carbon-nanotube-based Raman spectroscopy sensors have been reported that can detect various chemical vapours at the level of a few hundred femtomoles per litre (IEEE ‘Spectrum’, June 2013). There is much more – but can we afford to bring in speakers from abroad to address our colloquia?

Possibly the main attraction of the GASG is that it is basically a small but very friendly organisation that provides a means of keeping up-to-date with the science and technology of gas sensing and analysis, and for networking at the colloquia, but tends to leave the more commercial aspects and regulatory matters to other organisations such as BASEEFA and COGDEM, with both of which we have good relations via a number of dual memberships. However, the only constant in life, as in everything else, is that there will be change, and is it really up to the members of the GASG - possibly even more so that our dedicated and long-term Committee - to come up with suggestions and caveats about the group as it stands. So, please go to it, and perhaps begin with a simple first idea. As you all know, we publish a Newsletter three times per year that could well benefit from a flow of unsolicited articles - including Guest Editorials - so please do send in whatever takes your fancy and would appeal to other GASG members. Thus, I may yet lose the status of writing the most boring editorials in the Western world.

To conclude, I hope that you will each enjoy this 20th Anniversary Colloquium – and at least one slice of our birthday cake along with your glass of wine.