

10 May 2005

**The Secretary
Standing Committee on Science and Innovation
House of Representatives
Parliament House
Canberra ACT 2600**



Dear Dr. Dacre,

Thankyou for your invitation to submit our views on pathways to technological innovation, as part of the inquiry being conducted by the House of Representatives Standing Committee on Science and Innovation. We also express our appreciation to the Australian Government Minister for Science, the Hon. Dr. Brendan Nelson, MP, for initiating the request.

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As you are no doubt aware – GBC has been researching, designing, manufacturing, marketing and distributing High-Tech Scientific Instrumentation all over the world, for almost 30 years. There is simply no association or representative body in Australia, that has truly represented our interests to Government. Our struggles with the difficulties inherent in attempting to operate as an Australian Company in Australia, have finally taken their toll. On 21 June 2005 we will be opening a new manufacturing plant in Penang, Malaysia, where their government has been extraordinarily welcoming and cooperative.

Our experience and recommendations are included in the enclosed submission and its two appendices, for the consideration of the Committee.

Yours faithfully,

**RON GREY
MANAGING DIRECTOR
GBC SCIENTIFIC EQUIPMENT PTY LTD**

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SUBMISSION

**To the Standing Committee on Science and Innovation
Parliament of Australia – House of Representatives
“Pathways to Technological Innovation”**

By

GBC Scientific Equipment Pty Ltd

Prepared by Neil G. O’Loghlen

Authorised by Mr. Ron G. Grey, Managing Director

1. Introduction

- 1.1 GBC is a wholly Australian-owned and operated company, involved in the development, manufacturing and marketing of High-Tech scientific analytical instrumentation products including:-

BASIC PRODUCTS

GBC SCIENTIFIC EQUIPMENT PTY LTD

AAS	Atomic absorption spectrophotometer. Elemental analysis of liquid samples used predominantly in – mining; QC; water analysis; forensic analysis; clinical analysis; environmental research.
UV-Vis	Ultra violet visible spectrophotometer used predominantly in clinical; pharmaceutical; environmental analysis and colour matching.
ICP-OES	Inductively coupled plasma optical emission spectrometer. Applications similar to AAS.
ICP-TOFMS	Inductively coupled plasma, time of flight mass spectrometer. Applications similar to AAS but with PPT detection limits and simultaneous determinations.
MFR	Micro Fourier Rheometer. Applications in the rheometric properties of printing inks; bodily fluids and polymers.
XRD	X-ray Diffractometer. Applications analysis of the internal crystal structure of materials e.g. mining; QC; metallurgy; polymers.
HPLC	High Performance Liquid Chromatograph. Used in the analysis and identification of biological and organic compounds such as drug, vitamin, proteins, etc including specialized biotechnological studies.

- 1.2 GBC was founded by three Australian engineers in 1977 – Ron Grey, Ivan Bartlett and Peter Charlton – they had all previously been employed by the Australian

company, Techtron, which was subsequently bought out by the American company, Varian Inc. in order to gain access to its Intellectual property relating to AAS.

- 1.3 GBC derives 95% of its income from exports, and markets its products worldwide through more than 100 countries. It markets exclusively through its own distribution agencies, which have been assiduously developed and serviced over the years.
- 1.4 The original AAS had been developed by a UK expatriate – Dr. Alan Walsh (subsequently knighted) – working for the Australian CSIRO, in 1954. This instrument was an historic milestone in the realm of Scientific Analysis. GBC's original product in 1977 was a low cost and reasonably priced version of this AAS, but offered superior features and customer benefits in comparison with the USA versions. This became possible following the expiry of CSIRO patents, which had been sold originally into the USA; UK and Japan, as well as the local subcontractor to the CSIRO – Techtron (which was immediately targeted for an USA takeover).
- 1.5 It is interesting to note that GBC would never have been established if the patent rights of the CSIRO had not expired. Dr. Alan Walsh and the CSIRO had a virtual monopoly on the technology in 1954. Undoubtedly, the CSIRO made some financial gain from the licencing of its Intellectual Property. In the final analysis – the return on investment for the Australian taxpayer as a result of the brilliant CSIRO development, has been totally inadequate. It certainly led to the spectacular expansion of massively profitable American Companies – Perkin Elmer (the original licensee) and, (via takeover of the Australian manufacturing sub-contractor to CSIRO) Varian Inc. The UK and Japanese licensees were highly successful, but failed to achieve the dominance of the two Americans.

GBC has earned more than \$400 million for the Australian economy, since it was established. 50% of this can be directly attributable to AAS. The direct earnings of licenced USA-based organizations which had started in the 50's, could only be expressed in terms of hundreds of \$billions.

It is a classical instance of a spectacular failure to capitalize on our own national investments. There is some evidence that both Alan Walsh and the CSIRO wanted to develop the concept commercially, but found the experience “too difficult”, and opted for the convenience of the cash offered at the time, rather than “the box”.

The actual events at this time would comprise a fertile study for the Standing Committee, in determining how to obstruct successful development of the pathway to technological innovation, and minimize its benefits.

- 1.6 It is equally interesting to note that a high proportion of academia regard these CSIRO failures in the development of the AAS in a totally different light, and even today, express a preference for Varian products, on the grounds that their predecessors had somehow endorsed the American company as their own progeny! It is also relevant to observe, that around a third of current Varian employees in Australia are involved in product R&D, and the outcomes of their efforts simply add to the IP rights of their American owners. Probably with some assistance from Australian R&D grants!

1.7 Within the parameters of worldwide analytical scientific instrumentation – GBC appears to be unique insofar as it is Australian owned and based. This automatically implies the following burdens:-

- Despite earning 95% of its income from overseas. Its export revenue is almost totally dependent on the vagaries of the floating Australian Dollar, which has varied by up to 50% over the past few years!
- Australia's continuing refusal to become a member of the IADB (Inter American Development Bank) imposes severe limitations on GBC's High-Tech ability to trade into South America – with quite serious economic effects.
- There is no representative body in Australia to effectively project GBC's interests to Government. SIA (Science Industry Australia) represents the Australian interests of Importers; Academics; Foreign-owned Resource Miners, and some parasitic service providers. In the final analysis, local manufacturing and development interests are overwhelmed and outvoted.
- The additional revenue demanded by Electronics based distribution agencies in Australia, increases the cost of some basic componentry and materials by approximately 40%. This burden is further increased by continually escalating labour and other indirect costs.
- Australian high-tech trading policy appears to be almost completely dominated by its compliance with American interests. In 1993, GBC began to develop its legendary ICP-TOFMS, and spent more than \$15m over the next 8 years to develop and perfect this unique instrument. Some Australian Government R&D financial support was gratefully received during the development phase. When the project began, there was absolutely no suggestion that Mass Spectrometers would be banned, under the provisions of the WMD "Trigger List", specified by the Nuclear Suppliers Group (NSG), which had been established by the USA to counter their perceived lack of influence in the United Nations International Atomic Energy Agency (IAEA). Whilst still supporting the GBC development – Australia was involved in discussions which would ultimately result in the banning of Mass spectrometers in 2001 – without any warning, advice or consultation with GBC! The worldwide consequences to GBC exports and revenue have been significant.

1.8.1 An extensive debate needs to be initiated on the definition and implications of the term "National Interest". The term has become a last desperate political refuge when attempting to explain questionable decisions.

The fastest growing industry in Australia is the Finance Industry – supported by a massive increase in personal borrowings, and an unprecedented deficit in the balance of trade payments. The AUD\$ has fluctuated significantly over a few years, and the nett worth of most Australians has increased in book value. The so called Resource boom has occurred primarily in the mining resource industry which is now 100% owned by foreign interests. Importers, Retailers, Mining Resources together with the Finance Industry dominate the Stock Market. It is not unreasonable to postulate that what is "good" for the Stock Market is rarely "good" for the consumer (The Australian public).

It would appear that the definition of “National Interest” used by our senior politicians and bureaucrats is – “In the best interests of the Finance Industry”.

- 1.8.2 The Finance Industry and its supporters have been encouraging the influx of foreign manufacturers and industries over many years. The impact of the foreign owned automobile industry in Australia – other than providing a diminishing number of menial jobs for Australians – is now forcing more and more Australian companies into bankruptcy and the tentacles of the Finance Industry. The ever increasing demands for “Cost-down” quotations from automotive suppliers has become a massive burden on Australian owned industry – the original requirement for a minimum Australian content in locally manufactured vehicles, has either been disbanded or ignored. Component supplies are being shamelessly sourced overseas.

The frenzy of Free Trade Agreements we are currently watching, will result in the ultimate decimation of Australian-owned manufacturing industry. It will finally remove any vestige of hope for the Science Industry to “commercialize” its ideas or foster its graduates for the benefit of Australia. The Brain Drain is about to become a Tsunami!

Australia’s own Chief Scientist (who is employed by a foreign-owned multinational) has predicated that any Australian owned industry would be doing very well, if its turnover reached \$500m before it was “taken over” by a multi-national. It would seem that Australia really only wants to breed turkeys for American thanksgiving dinners! Current statistics indicate that more than 4% of GDP is already being shipped offshore as dividends to foreign owners. This has significant impact on the capacity of Industry to pay, in order to reduce trade deficits.

- 1.9 GBC will shortly be opening a new facility in Penang, Malaysia to manufacture and distribute AAS. It is conservatively estimated that this action will, not only generate a 30% savings in cost, but also provide a partial and commercial response to Australia’s non-membership of the IADB. Our principal markets are in Asia and the Middle East, and physical location in Malaysia may well prove to be an effective counter to the perception of Australia’s continuing alignment with American interests in the region.
- 1.10 Attached as Appendix B is the successful nomination for Ron Grey to be awarded the Clunies Ross National Science and Technology award in 2003. It contains information relevant to the identification of successful pathways to technological innovation. Also attached as Appendix A is a copy of a letter to the Minister for Science, Dr. Brendan Nelson on 22 December 2004, together with its attachments.

2. Pathways to Commercialisation

- 2.1.1 Unfortunately, the development and nurturing of fundamental knowledge in basic science disciplines – Chemistry; Physics; Mathematics; Engineering and to a lesser extent, medicine – has not been spectacularly successful within Australia over recent decades. The relevant faculties at most Australian Universities almost completely rely on foreign students for their continuing survival and as a supplement to their continuing “Grants” mentality.

2.1.2 Australian students at primary and secondary levels have been encouraged to concentrate primarily on subjects that they “enjoy”. Hard science subjects demand some discipline, and cannot generate the same level of excitement that accrue from “Underwater Basket-weaving” subjects like Social Studies; Psychology; Law; Economics and “My Rights”. A simple analysis of the Tertiary Qualifications of Members of Australia’s two houses of parliament, would demonstrate the disparity of outcomes in educational disciplines.

2.1.3 Perhaps the most unfortunate aspect of the “Grants” mentality in academia, is the reality that it constitutes a “Capitalistic Communism”. A service-oriented infrastructure has been developed, in order to support and propagate the success rate of Grants applicants. The inhabitants of the resultant sub-culture, simply compound the perception of more “snouts in the trough”. The recipients of government grants appear to be permanently ignorant of the paths to successful commercialisation.

The real issue, is not so much a question of who deserves the rewards for personal effort? – the inventor or the designer? But more a question of how to reconcile the interests of the physicist, who developed a concept, and the engineer/s who made it work? The best solution is to make them work together, and share both the failures and the successes. This cannot be achieved in an academic institution, without some restructuring of existing vested interests. The very nature of this inquiry into Pathways to Innovation, simply reinforces the biased and dominant perspective of academic researchers in the equation.

2.1.4 GBC acknowledges the necessity to harness the economic realities of both Concept and Product development. Either “the Market” or “Necessity” identify a demand within the operating parameters of the organization. It then simply becomes a process of development by relevant specialists. GBC restructured its R&D function in 2000, and introduced “commercial reality” into both “New Product Development” and “Existing Product Development” – Engineers; Physicists and Marketers began to accept the same goals and objectives – culminating in successful worldwide product launches. Fundamental to this development and marketing process – is the guaranteed access to a worldwide distribution network, which has been established and maintained through more than 100 different countries and agents over nearly 30 years.

2.1.5 GBC has not been reluctant to accept concepts or products originating elsewhere.

2.1.5.1 The very first AAS built in the founders’ kitchens and garages was developed in 1977, well after the CSIRO patents on the product had expired. The success of the design was related to User-friendliness; lower cost; and improved analysis recording, together with other additional features.

2.1.5.2 ICP and HPLC technology was acquired by purchase from Labtam and ICI in the nineties.

2.1.5.3 In 2000 GBC agreed to develop and market the MFR from the basic model developed by the Applied Physics Division of the CSIRO – this is truly “breakthrough technology” and should be subject to additionally subsidized assistance.

2.1.5.4 The original concept for the ICP-Time of Flight Mass Spectrometer was also “Breakthrough Technology” originally conceived in Wollongong University and commenced development at GBC in 1993. Over the ensuing years of development, the concept was radically changed as the product was developed for commercial application by physicists, engineers and specialists from many nations. In 2001 it complied with its original specification, in that it could:- “simultaneously identify and quantify any element in the Periodic Table, present in a sample, with an accuracy of parts per trillion, in less than 10 seconds”. There are more than 103 elements in the Periodic Table – it has become an Australian tragedy, that one of them is Uranium!

Australia seems to agree with the USA, that the best way to stop people being scalded by boiling water, is to ban the manufacture of thermometers that can measure 100°C and above! Ignoring the well publicized example of Eve in the Garden of Eden, when she was banned from eating apples off a single tree – Australia agreed with the USA to ban the sale of Mass Spectrometers which can identify elements with an atomic weight greater than 225! The all-powerful American Instrumentation lobby had won the day!

2.1.5.5 The XRD, which is subject to progressive development, was part of the acquisition of Difftech from Canberra by GBC in 2002.

3. Intellectual Property and Patents

3.1 We have expressed our view elsewhere, that the source of an idea – albeit in an educational or Research Organization – is not the primary rationale for achieving everlasting financial reward.

It is fundamental, that anything destined to be used for the benefit or destruction of mankind can only be derived by gaining some understanding and control over predictable outcomes already programmed into our universe. This initial insight is simply the beginning of a development process that **MUST** be followed before optimum benefit can be achieved.

Chinese legend asserts that the culinary delights of roast pork were discovered when a farmer accidentally burnt his house down with his pigs inside. Fortunately, a development process then ensued that did not demand that anybody wishing to eat roast pork, had to burn their home! The entire logic of the preparation and cooking process was subsequently developed and is still in a process of continuing improvement, even to this day.

3.2 It is recognized that some large organizations with massive resources and established product lines (e.g. Automotive; Pharmaceuticals etc.) are often eager to obtain control over a new patent/IP, in order to ensure that no successful product development occurs which might potentially damage their current monopolies of existing product line/s. This practice involves very doubtful ethics.

- 3.3.1 It is apparent that almost everything involved in the “Commercialization” of I.P. reinforces the dichotomy which research establishments see as existing between Concept Originator and Concept Product Development. The barriers between the two protagonists must be eliminated, minimized or addressed in order to ensure that maximum benefit accrues to all involved – including the country of origin that provided the environment in which a concept has been identified and developed.
- 3.3.2 There is little doubt that the concept of the Atomic Absorption Spectrometer was identified and initially developed by the CSIRO under the auspices of the Australian Government. The related commercial return to Australia, for this quantum improvement in scientific analysis, is nothing short of a National disgrace. Doubtless some minimal returns were experienced by the CSIRO, until the patents expired – but massive returns were achieved by the licencees, including one of two current American instrumentation monoliths who bought out a fledgling Australian contractor to the CSIRO, who had been licenced to build AAS, and who was given an offer he simply could not refuse. This strategic and irresistible takeover by Varian, ensured that Australia itself could never benefit from the results of its own research! – and repetition of the same process has now been guaranteed by the AUS-USA FTA.

4. Skills and Business Knowledge

- 4.1 Reference has already been made (1.7) to the fact that there is no representative body in Australia to effectively project GBC’s interests to government. The SIA membership is dominated by academics; wholesalers and importers; together with those who represent foreign-owned resource industries.
- 4.2 The loudest voices within the Science Community belong to academics who perpetually bemoan their inability to “commercialize” the results of their endeavours. The popularity of their cause, is proportionally inverse to their level of marketing skills and Business Knowledge. In fact, they have established a perception of “status”, distinct from the much more “pedestrian” efforts involved in the process of “commercialization”. The inimical dichotomy generated by the deliberate separation of Research and Development has created a malaise that will become an incurable scourge, if not soon addressed directly.
- 4.3 GBC does not really experience any great difficulty in developing, marketing and distributing the product of its own development engineering. Over nearly three decades, it has established a world-wide network of service and distribution agents through more than 100 countries. Consumer and customer acceptance of analytical concepts developed by GBC is constantly under review. Manufacturing and Marketing skills, together with the full range of associated disciplines are constantly brought to bear on all “In-house” development projects. Where specific human knowledge/skills are identified as needed – GBC will conduct a worldwide search to satisfy the need. A host of different nationalities and cultures is represented in the GBC workforce, and there is zero discrimination on the basis of gender or creed. The emphasis throughout, is on teamwork and contribution. Current protagonists of other interests, are busily attempting to advertize that Australian Manufacturing

Industry is simply not cost-competitive in the International Market place. In the case of High-Tech Scientific Instrumentation – GBC has continuously proved that this assertion is complete “hogwash”. In fact, one of GBC’s principal marketing strategies is based on highly competitive pricing.

- 4.4 It is interesting to note that some authorities believe that the simple process of funding a manufacturing and marketing structure to be magically incorporated into the Research establishment itself – as per CRC’s, or more recently, the funding given by the Queensland Government to some tertiary based research establishments – represents the best solution to the problem. The CSIRO spectacularly demonstrated with its AAS in the mid 50’s – this approach is doomed to failure. Academia simply does not possess hard-headed commercial expertise, practical manufacturing and effective design engineering, together with knowledgeable and existing Marketing expertise that has access to world markets – no Funding Grant will ever address these deficiencies. A genuine effort needs to be made to identify and encourage Australian organizations with the existing ability and resource to provide these elementals.

It is most likely that (like GBC), preferential treatment has already been given to foreign monoliths, and suitable Australian organizations forced to migrate, to gain recognition and some form of commercial assistance.

It is interesting to note that GBC products – though technically superior to their foreign equivalents – are largely ignored by Australian Academics and institutions. We realistically believe that this phenomenon is not only related to “Snob Value”, but also related to the fact that buying locally, does not ensure a funded overseas trip for the purchaser! This also explains the reality that less than 5% of turnover is derived from local sales.

5. Capital and Risk Investment

- 5.1 Included within Appendix A, is a letter to Mr. Alan Lawrenson of the SIA which includes a copy of a letter written to Mr. John Brumby, of the Victorian Government on 18 October 2002, and includes reference to GBC’s views on Venture Capitalists and Risk Investment.

This unanswered letter, expresses the GBC experience that we are grateful to have escaped the clutches of Venture Capitalists (regardless of their country of origin).

There can be no doubt that access to Capital and a realistic assessment of investment risk is of paramount importance to commercialization – together with objective and fundamental support procedures, relating to feasibility analysis, and Return on Investment projections. The act of being sold or “taken over” by progressively larger monoliths does not constitute growth or a long-term “Return”. GBC has never yet encountered a Venture Capitalist who did not look for some form of executive or corporate ownership, which ensured that his shareholders would always gain a return on investment – usually accruing from the sale or disposal of the enterprise! A simple review of any Venture Capitalist’s annual reports, will substantiate this assertion.

Any respectable industrialist will contest the academic assertion, as recently voiced by Australia's Chief Scientist, that any Australian-owned business is doing very well, if it can achieve a turnover of \$500m per annum, before it was "Taken Over"! This unequivocal destiny is, undoubtedly, not in "The National Interest", and should be resisted at any cost. It is reasonable to question how effective our Armed Forces would become, if we replaced the well-known assertion that "every soldier has a Field-Martial's baton in his knapsack" with, "No Australian soldier will ever gain promotion beyond a Battalion Commander (Lieutenant-Colonel)!?"

- 5.2 Development of new products automatically implies a constant demand on current revenue. GBC has always been deeply committed to the conversion of customer needs, into accurate and reliable products. This has come at a considerable cost to the organization.

When available and appropriately approved, Government R&D Grants have been most welcome and supportive. They would normally constitute between 12-14% of GBC's total R&D expense. However, access to such grants cannot be relied on, and are often subject to varying provisions and conditions. The development of the OptiMass 8000 – ICP-TOFMS, took eight years and approx. \$15m of GBC's resources. Whilst providing some R&D subsidies over the development period – 1993-2001 – the Australian Government was also supporting American led actions to ban the sale of Mass Spectrometers! Undoubtedly, the original development would not have commenced in 1993 if the Australian Government had been honest about its intentions to GBC, at least.

- 5.3 Allocation of R&D grants to Commercial Enterprises, should always be made on the basis of potential Nett value accruing to Australian interests. GBC has often complained about discriminatory practices in the allocation of Government support to foreign owned competitors (without result). Massive grants have already been made to our foreign-owned competitors for the development of ICP's to directly compete with our Australian product. The official rationale for this discrimination is that our competitors have the capacity to spend much more money on research, because of the numbers they employ – and whilst the percentages are similar, the resultant Nett Grant is huge by comparison.

As an example, a third of Varian's total workforce in Melbourne is devoted to R&D activities, which directly benefit their American owners – this level of staffing increases the size of grants made to American owned IP, and discriminates against the local industry. We would therefore suggest that Australia should demand and consider its own ROI, before subsidizing foreign-owned Research.

The Victorian government's self-advertized efforts and subsidies to encourage Varian to centralize HPLC activities in Melbourne, is/was simply scandalous.

- 5.4 Having experienced phases where Venture Capitalists et al, were not interested in providing access to Capital Resources – GBC has become a strong advocate of traditional banking support for industry. In 1997, the major shareholder in GBC – Orica – had declared that it was to be sold, with disastrous effects on turnover for the next 3-4 years. It became obvious during this period, that foreign competitors in

the market place were highly interested in buying GBC's Intellectual Property only, and closing down all other GBC activities.

The ANZ Bank was the first financial institution willing to help the current Managing Director and founder, to regain Australian control of the business in 2000.

- 5.5 It has become increasingly obvious over the past few years that some commercial research and development organizations are using their R&D Grants to subsidize huge salary offers made to attract some of our valued and experienced Research and Development staff away from GBC.

We regard this practice as highly unethical, and should be prohibited.

6. Business and Scientific Regulatory Issues

- 6.1 GBC products are marketed and serviced worldwide, and must therefore comply with the most stringent regulatory requirements in existence. This prerequisite is not disputed by GBC – however, the following observations are relevant:-
- 6.1.1 Most geographic market sectors appear to specify their regulatory requirement, in terms that undoubtedly favour their local products. The European and American sectors are notoriously addicted to this practice. Australian academics and Government departments are actively at the other end of this spectrum, and obviously prefer foreign instrumentation to the local product. GBC is very rarely invited to tender for supply to such institutions.
- 6.1.2 The administrative requirements relating to compliance with EMC regulations in Australia are particularly onerous, and could certainly be simplified to everyone's advantage, without prejudice to the engineering implications of the regulations.
- 6.1.3 Safety requirements for Scientific Instrumentation in Australia seem to be much less demanding than in any other region of the world marketplace. As a consequence, some devices of questionable safety levels, often appear in our marketplace – usually offered for sale on the basis of "Lower Price".
- 6.2 The "Trigger List" appended to the Nuclear Suppliers Group (NSG) agreement signed by Australia in 2001, includes provision for "blanket control" of all Mass Spectrometers. In reality, the consequence of this regulation has been, that Mass Spectrometers cannot be sold to any nation which is not favoured by our American Allies. Whilst we can sell to UK; USA; Israel and even France – we cannot sell to India; Pakistan; Iran or North Korea!

Although the purpose of this regulation is ostensibly to prevent the spread of Weapons of Mass Destruction (WMD) – it becomes inane, when considering that there are three separate types of WMD:-

Nuclear
Chemical
Bio Chemical

Mass Spectrometers could be used partially in the production of Nuclear Materials only. Liquid Chromatography is the most appropriate analytical method used in the identification and production of Chemical and Bio Chemical WMD's, but absolutely no endeavour or "Trigger List" has been made to control instruments using this technology, and they are universally common.

Almost all of the progress in preventing the spread of Nuclear WMD's has been achieved by the UN, through the International Atomic Energy Association (IAEA), of which Australia is not only a member, but a contributor and participant. The NSG provisions have simply provoked angst and resentment in the international science community.

It is also worth noting that ANSTO scientists have recently been given unrestricted access to GBC's laboratories, in order to use our OptiMass 8000 ICP-TOFMS to test for Uranium in the Urine of Australian Iraq veterans, who had been exposed to the after-effects of American Uranium based armour-piercing hardware. This is patently not an application which encourages the spread of Nuclear WMD, but arguably is well and truly in Australia's genuine "National Interest". It also generates reasonable conjecture on the reasons why no Australian Government Research Institution has purchased one of these instruments!

7. Research and Market Linkages

7.1 Research activities used to be viewed historically as either "Controlled" or "Uncontrolled" – where Controlled Research was performed in order to achieve a specified objective, and Uncontrolled Research was performed without a specific objective in mind, but motivated by a desire to increase knowledge of the Universe.

GBC believes that 100% of its Research activities should be "controlled" within the specific development categories of either New Products and/or Existing Products. The Development Engineering Department is structured accordingly and includes Physicists; Chemists; Engineers from all disciplines (electrical; mechanical; electronics; production; IT; optical etc.) Draughtsmen; Modelmakers; Tradesmen etc. They operate in teams which are project-based. All potential projects are initially identified by Marketing Chemists; Physicists and Engineers who are in constant contact with consumers and agents throughout the world. They are initially specified in detail by the Marketing Specialists, who act in response to identified Customer or Market needs. The specified requirements are subjected to feasibility studies; time and ROI estimates. If accepted by Senior Management Review, an appropriate Engineering Development team is identified and allocated to the project. The original Marketing Specialist who initiated the functional specification, remains in constant contact with team functions.

- 7.1.1 Uncontrolled research activities are ideally suited to dedicated Research Institutions and should always be funded by governments or their appointed representative bodies.
- 7.2 In circumstances where GBC has undertaken the development of patented concepts, – we prefer that the originator, or his representative, actually work with the development team. In the case of the ICP-TOFMS, – an associate professor from Wollongong University who held the original patent, – actually resided in Melbourne and worked with the Development group for more than 12 months during the early development.

In this case, it became obvious in a relatively short space of time, that the developments achieved as a result of the GBC efforts, were well beyond the scope of the original Researchers patent, and a completely new patent registered.

Where at all possible, GBC regards close contact between the Researcher, the Developer and the relevant market forces, as mandatory for the success of the total Development Process.

8. Factors Determining Success

- 8.1.1 It is apparent that deep consideration needs to be given to the semantic definition of the word “Success”, in relation to the Commercial Development of Australian Technological Innovations.
- 8.1.2 It seems that the definition applied to the Committee’s Inquiry, relates predominantly to ensuring some form of adequate financial return to Researchers and Organizations, who have been granted Government funding to perform a research activity, that has culminated in Intellectual Property or patent held by the Research Authority. There may be no real concern with matters relating to fundamental “National Interest”; Value Adding to Australian Resources; Increase in International Trade; Maximization of Australia’s Assets; Added Returns to Australian-owned entities or even the establishment of additional Australian-owned entities in the world of commerce – let alone improving the welfare, safety or security of Australian citizens in their own country.
- 8.1.3 This submission is based on the premise that the definition of “success” does in fact embrace all of the factors identified in 8.1.2 (et al), and does not only apply to increased returns for funded Researchers.
- 8.2.1 The primary factor impacting successful “commercialization” of product, is that the organization performing the Development Phase, must not only understand the nature of the intended product market, but possess the ability to access and influence that market. It must possess the engineering and manufacturing resource to develop, build and distribute the “end product”, in a way that satisfies **all** “Customer Needs”, at an economic cost. It must possess, or have access to, sufficient resource to generate and maintain adequate materials and staff inventory to manage the replication of successfully developed processes.

- 8.2.2 Every possible endeavour must be made to reduce/eliminate ongoing barriers between Researcher and Developer. They must already share a mutual objective relating to the successful marketing of the concept as a product. They should always operate as a team for their mutual benefit. There can be no senior or subordinate partner entity in the venture – communication must be complete and trusting. Their interests should be combined as an operating Business Entity with adequate reporting functions.
- 8.2.3 The type of industry associated with the concept may warrant some specific considerations. Within the High Tech generic classifications there are many industry categories with a specialized variety of constraints, restrictions and demands:- Pharmaceuticals; Chemicals; IT; Whitegoods; Electronics; Bio Chemicals; Defence; etc. etc. Most of these industries in Australia have become dependant on foreign-owned interests, and should be reviewed in an endeavour to establish whether this dependency is truly in the “National Interest”.
- As an example, most of the Electronics Industry, which has involvement in a myriad of High Tech applications, moved offshore to lower labour cost countries as a consequence of the government decision to allow Phillips to import television sets, more than 20 years ago. Currently, any imported electronic component is obtained at an inflated cost to the Australian consumer, – the lower offshore manufactured costs, are inflated by increasing import agency margins, together with transport and distribution costs. This represents a significant difficulty for local manufacturing enterprise.
- 8.2.4 The floating Australian dollar is a continuing burden to any Australian export based industry – and is a disaster simply waiting to happen, when viewed in conjunction with an ever increasing trade deficit.
- 8.2.5 Australia’s continued refusal to join reputable international trade funding bodies such as the IADB, is not only discriminatory against potential Australian exporters to South America, but genuinely restrictive.
- 8.2.6 Whilst access to local funding resources is imperative for effective development activities – the secret to success is embodied in changing the objectives of the funding process, from providing benefit to the finance industry, to providing assistance to the success of Australian Industry, for the greater benefit of all Australian Taxpayers.
- 8.2.7 Australia should reduce the value of any takeover bid for an Australian Company by a foreign entity without Government approval to, say, \$20m AUS. No Australian Mineral or Resource mining entity should be foreign-owned.

9. Foreign Strategies Relevant to Australia

- 9.1 The impact of Australia’s decision to join the USA and UK in the Iraq venture, has had significant impact on trade into the Middle East and Asia. Our preferred alignment with US interests, and our pre-emptive strike options in Asia have

mitigated against a major proportion of potential trade with India, China, Asia and the Middle East.

- 9.2 France, Germany, Russia and China have made significant inroads into the Middle East and Asian markets as a response to the activities of the “Coalition of the Willing”. Australia’s apparent desire to undermine the authority of the UN is not viewed favourably in the region, to the detriment of GBC’s trading expansion.
- 9.3 All of the design, quality, and manufacturing techniques developed by the Japanese in the last half of the twentieth century, but now claimed as their own by the Americans, under the general term, “Lean Manufacturing” – are relevant to the successful commercialization of technical concepts. A basic and continual insistence on the collection and analysis of factual data before taking any action is fundamental. Current trends towards the justification of Strategic Actions by the use of “Advertizing Spin”, supported by emotive and anecdotal misdirection, is not only totally inappropriate, but will effectively guarantee longer term failure.

10. Attachments

- Appendix A: GBC letter and attachments to Minister for Science, Hon. Dr. Brendan Nelson 22 December 2004
- Appendix B: Nomination for Clunies-Ross Science and Technology Award – Ron Grey 2003.

APPENDIX B

**To GBC Submission
To Standing Committee
On Science and Innovation
10 May 2005**

**CLUNIES ROSS NATIONAL
SCIENCE & TECHNOLOGY AWARD**

2003 AWARD NOMINATION FORM

RONALD G. GREY

GBC SCIENTIFIC EQUIPMENT PTY LTD

NEIL G. O'LOGHLEN TOTAL QUALITY

3 Haven Court,
P.O. BOX 708,
Cockatoo, 3781

ABN : 93 931 174 650

PHONE: (03) 59680220
A.H. (03) 59688612
FACSIMILE: (03) 5968 0148
Email totqual@rie.net.au

19 July 2002

Mr. J. F. H. Clark, AM
Chairman - Executive Committee
Ian Clunies Ross Memorial Foundation
Suite 505, 89 High Street
Kew Vic 3101

Dear Sir

Clunies Ross National Science & Technology Award 2003
Nomination: Mr. Ronald G. Grey - Managing Director, GBC Scientific Equipment Pty Ltd

It is my pleasure to nominate Mr. Ronald G. Grey to receive a Clunies Ross National Science and Technology Award in 2003. I enclose herewith details of his citation for your earnest consideration.

Mr. Grey is, and has been, one of the unsung heroes and stalwarts of Australian scientific innovation; manufacturing and international marketing. He epitomizes the intentions of the award in that he has for more than 25 years, persistently struggled against extraordinary difficulties to establish and maintain a highly significant contribution to science and its continuing application to the economic, social and environmental benefit of Australia.

I have been a practicing Management Consultant for more than 20 years and have been privileged to provide Consulting Services to many of Australia's principal companies including General Motors; BHP; Tubemakers; Taubmans; Nissan; CIG; Nippondenso (Aust.); Nylex Corporation; Griffin Press; Yazaki Aust.; etc. including - over the past decade, GBC Scientific Equipment Pty Ltd, of which Mr. Ron Grey is the Managing Director and the sole survivor of the original three founders.

It is most unusual to find any Australian company which derives 95% of its income from exports, let alone one which survives in the realm of international scientific instrumentation, dominated by giant American Corporations such as Perkin Elmer and Varian!

The Atomic Absorption Spectrometer was an Australian invention - but, like so many other icons - the inventor took his expertise into the USA for further market development. Ron Grey and his two original partners designed and built their all-Australian model in 1977 (the AAS SB900) and so began a lifetime of struggle and perseverance to design, develop and market internationally competitive scientific instrumentation. This personal objective has been achieved against what other people would call "overwhelming obstacles". He is personally, much better recognized and acknowledged in the scientific establishments of America, Europe, Asia and the Middle East than he is in Australia. His company (GBC) has been targeted, threatened, taken over, bought out, offered for sale, and bought back. He has had to struggle against highly skilled and well funded competition as well as internal and external corporate forays. He has struggled with an unsympathetic manufacturing environment whose objectives are inimical to effective product development, and a bureaucratic system which supports these more populist objectives.

cont.../2

Mr. J. F. H. Clark, AM
19 July 2002
Page 2

The greatest challenge has been the continuing struggle for finance, in an unforgiving and hostile environment. He has been forced to mortgage almost all of his possessions at some stage of the GBC saga. Some R&D financial assistance has been given historically – but, even as you read this letter – current applications for R&D assistance have been “suspended” awaiting further consideration/funding!

Though not the primary rationale for this nomination – it is pertinent to note that Mr. Ron Grey was a founding member and a director of Photron Pty Ltd – which is the largest world OEM supplier of Hollow Cathode and Deuterium Arc lamps. Its manufacturing base is currently located in Thailand.

I have been associated professionally with hundreds of Australian Company Directors and Senior Executives. I do not know of any Australian who has demonstrably and persistently achieved so much for the benefit of international scientific research and instrumentation, and ultimately to the economic, social and environmental benefit of Australians. GBC has received many specialized awards, but its founder and driving force has not been given any personal recognition for his unswerving dedication to the design and development of improved scientific instrumentation.

I append a brief synopsis of his C.V. for your information.

Yours faithfully



NEIL G. O'LOGHLEN
PRINCIPAL

CV SYNOPSIS – RONALD G. GREY

Managing Director and Principal Shareholder – GBC Scientific Equipment Pty Ltd

Ron Grey is a graduate engineer and Melbourne born Australian who has spent almost all his working life with GBC Scientific Equipment. He had previously spent some time manufacturing his own Sound Systems; some time at Varian, and a period as an instructor at the Army School of Signals.

He is married with three daughters. The family lives in a bayside property directly overlooking Port Phillip Bay. Ron is a qualified pilot who enjoys flying. In his younger days he was the Australian Hang Gliding Champion, and still holds the Australian distance record for rigid wing Hang Gliders. He has sailed in many ocean races, including the Melbourne-Hobart and Melbourne-Devonport classics. Current time constraints limit his marine activities to deep-sea fishing, which he pursues with typical determination and gusto.

Ron is very much a citizen of the world, and in the prime of life. He is internationally recognized as an expert in Scientific Equipment, and demonstrates outstanding managerial abilities and talent to the highest standards. He supports the Winston Churchill statement that "Responsibility is the price of success"—and has always been prepared to "listen and think" before he acts.

CLUNIES ROSS NATIONAL SCIENCE AND TECHNOLOGY AWARD

2003 AWARD NOMINATION FORM

(Nominations close Friday 26 July 2002)

CONFIDENTIAL

The appropriate nominee is a person who has, often against difficulties and always with persistent commitment, made important contributions to science and its application for the economic, social or environmental benefit of Australia. These are the people and the sources of inspiration that the Foundation would seek to identify and honour.

Nominations close Friday 26 July 2002.

Nominalors must complete each section either using the detachable form contained in this booklet or in a separate document completing each section No. 1 to 8. The nomination form is also available on the website at www.cluniesross.org.au. The signed nomination must be posted or delivered to the address shown on page 8. Faxed or emailed nominations will not be accepted.

1. PERSON OR ORGANISATION MAKING THE NOMINATION

Name Neil G. O'Loughlen

Position Principal

Organisation Neil G. O'Loughlen Total Quality

Address 3 Haven Court (PO Box 708)
Cockatoo Vic 3781

Telephone (03) 5968 0220 Fax (03) 5968 0148

Email totqual@rie.net.au

2. PERSON BEING NOMINATED

Name Ronald Garwood Grey

Position Managing Director

Organisation GBC Scientific Equipment Pty Ltd

Relevant Qualifications (attach CV if available) Diploma of Communications
Engineering - RMIT 1971

Business Address 12 Monterey Road (PO Box 1226)
Dandenong Vic 3175

Telephone (03) 9213 3666 Fax (03) 9213 3677

Email rgrey@gbcsci.com

Date of Birth 14-10-47

Home Address 401 Beach Road
Beaumaris Vic 3193 Telephone (03) 9589 5585

3. REASONS FOR NOMINATION

Ron Grey was the leader of the three founding partners of GBC Scientific Instruments in 1977. He has spent a lifetime dedicated to developing and expanding the only wholly Australian owned and operated scientific equipment company in Australia. GBC – researches; designs and manufactures a range of complex scientific instruments in Australia. It markets internationally, and provides customer service and support facilities through an agency and distribution network in more than 78 countries. 90-95% of its income is generated from export sales.

Ron Grey is the personification of the intent of the Clunies Ross National Science and Technology award. From the original AA spectrometer built in a domestic garage in 1977, with the electronics built on a kitchen table, – his commitment to the success of Australian scientific instruments has been unsurpassed. He has seen his founding partners move to other pursuits, his company thrive and prosper, incredibly innovative expansion of the product range, and a majority shareholding taken by a corporate giant, but in 1997, GBC was put on the market as superfluous to the corporations "Core Business". Then followed:-

- the humiliations inflicted by unrelenting international competitors as a result of the "For Sale" sign
- the intentions of prospective international-based buyers to take over the products and patents, but close the Australian Manufacturing base.
- struggles with economic reality, in assessing, and evaluating a lifetime commitment to basic research and development.
- the personal persistence and sacrifice necessary to raise the capital necessary to remove the company from the threat of its international predators seeking an even greater share of international scientific equipment markets.
- the unrelenting commitment to Australian science and technology that provided the administrative expertise and negotiating skills to extricate the organization from the tentacles of corporate malaise.
- the corporate restructuring and personal direction of the engineering function to facilitate the revival of the design and development of the Optimass 8000 ICP-TOFMS which has not only won 2001 State and National Engineering Excellence Awards from the Australian Institute of Engineers but international awards. Its citation states that this spectrometer is capable of determining all metallic elements and isotopes in a sample with an accuracy of parts per trillion, in less than 10 seconds! This instrument has been on working display in both the USA and Europe generating an extraordinary response to Australian technology.

Ron Grey has been the Managing Director and leader of GBC since its inception in 1977 and its first sales and incorporation in 1978. A medical instruments supplier – Ramsay Surgical – had bought worldwide wholesale rights, but after 2 years frustration, GBC took back the overseas rights and Ron Grey personally headed overseas with the company's last \$5,000 to find customers. He returned with more than two months work and the determination to establish a worldwide distribution network. The rest is history.

GBC would currently rank 3rd in the top ten AAS Scientific Instrument Designers and Manufacturers in the world. Until Orica decided that scientific instruments was not part of its Core Business and advertized GBC "For Sale" in 1997 – the company had been operating around \$20m annual sales. The result was a rapid deterioration to less than \$13m annual sales by January 1999 and significant reductions in staff levels. Current sales are improving at around \$19m/annum.

After great personal sacrifice Ron Grey raised the capital to buy GBC back from Orica in February 2000 and forestall the possibility of its being swallowed by its competitors and preserve its development, research and manufacturing base in Australia. The product range has since been increased by the introduction of:

MFR - released Pittcon 2001 - New Orleans

XRD - released Analytica 2002 - Munich

932 Plus

Ultra Z AAS - released Pittcon 1999

ICP-TOFMS - released Pittcon 2002 - New Orleans

A list of the current product range is appended as Appendix A.

As Managing Director of GBC - Mr. Ron Grey has been personally involved in every facet of the company's operation - from innovation through design; research and development; customer relations; engineering; manufacturing; quality control; sales; marketing; finance and accounting; imports; exports; trade and industrial relations. He has performed every task personally - at some stage of GBC's progression through time. His knowledge, leadership and drive have provided an inexorable driving force towards ultimate success. Although GBC has been recognized by some relevant corporate awards (a list of awards is appended as Appendix B), the person most responsible has largely remained anonymous.

It is significant that, in the process of normal corporate development, GBC has acquired the technology and staff of Labtam and its ICP in 1990, ICI Instruments Division in 1993 and Difftech with its XRD in 2001. All of these Australian companies would otherwise have foundered, and their technical and scientific expertise moved in other directions. The technology and the staff have prospered under the auspices of Ron Grey and GBC.

Mr. Grey is personally responsible for selecting and establishing a formidable network of approx. 80 GBC product distribution agencies throughout the world. He has been the driving force behind the network that provides the basis for GBC's international success and technical evolution.

List of Attachments

Appendix A Basic Products GBC

Appendix B GBC Awards

APPENDIX A

**to nomination
R. G. Grey**

**BASIC PRODUCTS
GBC SCIENTIFIC EQUIPMENT PTY LTD**

- AAS** Atomic absorption spectrophotometer. Elemental analysis of liquid samples used predominantly in – mining; QC; water analysis; forensic analysis; clinical analysis; environmental research.
- UV-Vis** Ultra violet visible spectrophotometer used predominantly in clinical; pharmaceutical; environmental analysis and colour matching.
- ICP-OES** Inductively coupled plasma optical emission spectrometer. Applications similar to AAS.
- ICP TOF-MS** Inductively coupled plasma, time of flight mass spectrometer. Applications similar to AAS but with PPT detection limits and simultaneous determinations.
- MFR** Micro Fourier Rheometer. Applications in the rheometric properties of printing inks; bodily fluids and polymers.
- XRD** Xray Diffractometer. Applications analysis of the internal crystal structure of materials e.g. mining; QC; metallurgy; polymers.

APPENDIX B

to nomination
R. G. Grey

AWARDS

GBC SCIENTIFIC EQUIPMENT PTY LTD

- 2001** Australian Engineering Excellence Awards 2001. OptiMass 8000 – Inductively Coupled Plasma Time-Of-Flight Mass Spectrometer.
Institution of Engineers Australia. Engineering Excellence Award 2001 for Engineering Innovation for OptiMass 8000 Inductively Coupled Plasma Time-Of-Flight Mass Spectrometer.
- 2000** Premier Regional Greater Dandenong Business Award.
Greater Dandenong Premier Regional Innovation Award.
- 1999** Australia's Best Manufacturers Award 1999. Overall Achievement in Manufacturing Excellence. Plantline Voice of Manufacturing.
- 1998** SPIA 98 - Science Product Innovation Award.
R&D Award – Development of GBC OptiMass 8000.
- 1997** RMIT University. Centre for Manufacturing Certificate of Appreciation 1997.
- 1995** The Age, Dun & Bradstreet Victorian Business Award for Manufacturing November 1995.
ICI Australia Advanced Sciences Group. Technical Innovation Award 1995.
- 1992** Australian Export Awards Finalist. Commonwealth Bank Small/Medium Manufacturers Award.
Governor of Victoria Export Award 1992 for significant advancement in export by a small exporter.
- 1991** Top 10 Product of 1991 Spectroscopy Winner. Laboratory Equipment Profiles issue.
Premier Regional Business Awards. Export Performance Award 1991.
- 1990** Australian Export Award – Commonwealth Bank for Manufacturers Awards.
International Business Achievement. Commonwealth Bank for Manufacturers Award.
- 1988** Governor of Victoria Export Award 1988.
- 1984** Department of Trade Export Award for outstanding Export Achievement.
- 1980** Industrial Design Council of Australia. Finalist - Prince Philip Prize for Australian Design 1980.

4. FULFILMENT OF CRITERIA

Commitment

From the original AAS designed and built by Ron Grey and 2 associates – Ivan Bartlett and Peter Charlton (GBC is a mnemonic of their surnames) – on a kitchen table and garage in 1977, to the present day, when the GBC ICP TOF-MS can analyse to parts per trillion with simultaneous determination in less than 10 seconds – Ron Grey has initiated and nurtured continuous and progressive innovation as fundamental to competing in an international marketplace. His insistence on customer and market related innovation is fundamental in GBC product development. His commitment has never varied over a quarter of a century, and his never-ending search and research for a desired outcome is legendary.

Contribution

Very little scientific achievement would even be experienced without the ability to measure and analyse. Ron Grey's contribution to the broader science community, can only be measured in the terms of quantum improvement in the science of measurement itself, ranging from the early AAS replications, to the current sophistication of the OptiMass 8000. A major part of the GBC budget is devoted to research and development. In financial terms, it is estimated that in excess of \$15m has been devoted to R&D of new GBC products over the past few years – at a time when the company's accountant has been struggling to meet the overdraft payments to an unforgiving bank. When Orica announced that GBC was "For Sale" in 1997, and plunging sales forced the retrenchment of loyal employees – it was Ron Grey who mortgaged his home, possessions and life insurance to support and save the remainder. He worked longer, harder and tirelessly to recover the position and finance the purchase of GBC back from Orica (the major shareholder). GBC is now the only Australian owned and operated designer and manufacturer of atomic absorption spectrometers, and related analytical instruments.

Performance

Both the science of measurement and the measurement of science have benefited from Ron Grey's knowledge, persistence, determination and drive. He has provided the Australian vision for the future of spectroscopic analysis from the early days in the 70's. The vision has been progressively and systematically improved with the passage of time. His vision for the future is as vibrant and challenging today as it was some 25 years ago. He has watched many of his colleagues succumb to the attractions of other pursuits, and has overcome countless obstacles in the development of his company.

The performance of Ron Grey is reflected in the performance and development of his company – critical nodal points could be summarized as

1977	First AA spectrometer designed and built.
1978	First sales to Australian market.
1980	Ron Grey establishes first international sales with GBC's last \$5,000.
1983	Turnover reaches \$3m.
1985	ICI Australia acquires 50% of GBC.
1988	First Export Award.
1990	Labtam assets acquired.
1991	USA subsidiary established.

1991	Turnover reaches \$20m.
1993	GBC purchases ICI Instruments Division.
1995	ICI Australia (now named Orica) increased shareholding in GBC to 67%.
1997	Orica announced that GBC was not a part of its "Core Business" and was to be sold!
1997-2000	"Years of Agony" sales down to \$13m.
Feb 2000	Ron Grey buys out Orica's shareholding.
2000	GBC agreement with CSIRO to develop and market the Micro Fourier Rheometer developed by the Applied Physics Division.
2001	GBC acquires Difftech (ACT) and XRD.
2001	Australian Engineering Excellence awards Optimass 8000 – Inductively Coupled Plasma Time of Flight Mass Spectrometer.
2002	Turnover approaching \$19m.

Persistence

The years between September 1997 – when GBC was announced "For Sale" by Orica – and 2000, when Ron Grey regained Orica's share of the company are described as "Years of Agony" under the previous heading.

Some of the events included in the sorry period included:-

- Spectacular decline in sales and income.
- Orica assistance conditional on changes to shareholders agreements.
- Orica treasury took control of GBC's banking and denies management contact with banks.
- Orica suspended GBC supplier purchases.
- Orica inspired "Below Cost" sales of instruments.
- Staff retrenchments.

A lesser man could well have cashed in his investment, and withdrawn to a far less stressful existence, as had been done by other founding directors – Ivan Bartlett and Peter Charlton.

Ron Grey never lost his vision through these difficult years, and persisted in his desire to keep GBC operating as an Australian company. When Orica announced its intention to replace its three Directors on the GBC board in 1999 – Ron Grey launched the campaign that resulted in his successful acquisition of Orica's 67% shareholding.

The Extra Mile

Despite consistent Orica resistance—Ron Grey presided over a complete restructuring of the R&D function in 1999. The emphasis was inexorably shifted from Research to Development—development of existing product, as well as new product. Commercial considerations and Customer needs became fundamental to the Engineering process. The ability and drive, that saw Ron establish a successful world wide distribution network, now saw him use 'customer needs' and 'user friendliness' to drive engineering product improvement and development. The positive results are already apparent.

Ron had always held options over the sale of GBC shares. He held firm against external competitors and marauders, who tantalised Orica Treasury during the years it was for sale. He had formally reminded Orica members of the GBC Board of their legal responsibilities to GBC, and detailed GBC performance since the sale process was commenced in 1997, together with sound corrective action imperatives. Orica sold its shareholding to Ron Grey in February 2000 and the following events ensued:-

- Reorientation of corporate priorities to a Customer/End-user focus.
- Pragmatic approach to product development as opposed to esoteric Research activities.
- Restructure of Engineering Development Organization.
- Resignation of R&D Director and replacement of Marketing Manager.
- Restructure USA subsidiary.
- Establishment of Middle East subsidiary.
- Establishment of separate GBC Australia Sales Organization.
- Development of Team structure and activities in normal operations—harnessing individualism to corporate responsibilities.
- Supportive financial backing for Business Operations.
- Restructure of Sales and Marketing organization to support customer focus imperatives.
- A deliberate programme of Value Analysis/Value Engineering projects to improve product performance, reliability and profitability.
- Development and launch of 932 Plus, utilizing a new "six-shooter" lamp—proving to be a spectacular success.
- Launch of the Micro Fourier Rheometer, developed in conjunction with CSIRO.
- Introduction of E sales.
- Significantly improved Service and Warranty response.
- Launch of Optimass 8000 – ICP TOF MS.
- Launch of XRD.

These events have transpired over the passage of the immediate past "Extra Mile" – the future in front of Ron Grey represents many extra kilometers of dedicated application and undoubted achievement.

5. REFEREES REPORTS

Name and contact details.

Mr. Ian Fraser 4 Lookes Avenue
 Balmain East 2041
 Telephone: (02) 9555 8587
 E-Mail: IanFraser@sydney.net

- Founding Member/Chairman/Director of the Australian Scientific Industry Association.
- Advisory Board Member Australian Atomic Energy Commission.
- Honorary member of staff RMIT Physics Department.
- Founder and Director (Retired) ETP Pty Ltd.

Mr. Peter Dawes Managing Director
 SGE Group of Companies
 7 Argent Place
 Ringwood 3134
 Telephone: (03) 9872 3266
 E-Mail: pdawes@sge.com.au

- SGE currently employs 300 staff with manufacturing operations in Melbourne and Sydney as well subsidiary sales operations in the USA, the UK, France, Germany, Italy, India, China and Japan. An extensive distributor network covers all areas of the world.
- SGE has developed and markets throughout the world a variety of products for gas chromatography, liquid chromatography, mass spectroscopy and more recently DNA sequencing and high throughput analysis.

5(a) REFEREE REPORT

MR. IAN FRASER

Ms Mary Bolger, Award Secretary
Ian Clunies Ross Memorial Foundation
Suite 505,
89 High Street,
Kew
Victoria 3101

17/07/2002

Dear Ms Bolger,

I am pleased to provide a reference for Mr. Ron G. Grey of GBC Scientific Equipment Pty Ltd as part of his nomination for a Clunies Ross award.

I have known Ron Grey through business for over twenty years. I speak of him as a fellow businessman, and as a colleague involved in various Industry bodies.

In assessing the contribution Ron Grey has made to the scientific instrument industry, the research / academic community, and the larger Australian community I would ask you to view it in the context of it's happening – throughout twenty seven dynamic years in Australia's growth. It was 1964 when Donald Horne discovered we were the Lucky Country; 1966 that Geoffrey Blainey found we laboured under the Tyranny of Distance; we had to wait till 1984 for Barry Jones to recycle a much lived in title and repeat it from one end of the country to the other – Sleepers Awake, Sleepers Awake!

Well, by 1984 Ron's company, GBC, had already won an Australian Export Award for Outstanding Export Achievement and a Governor of Victoria Export Award Commendation for Export Endeavour. It's fair to say Ron Grey was already very much awake, overcoming distances and trusting less to luck, and more to hard work.

When GBC commenced business there were few in Australia – particularly among 'establishment' Australia, such as bankers, who believed that an Australian based hi-

tech industry could survive. The Varians and SGEs of Australia were the rare , much flaunted, but little understood examples. There was little local climate that was really conducive to starting and growing export oriented, high value adding technology based business – this was yet to develop. Ron and some fellow believers set out to succeed in export markets with an Australian made product

Having broken away from a (US owned) company, which enjoyed local icon status, to make a similar product it was not the easiest of starts with hesitant support from the Government nurturers. Ron met those challenges with doggedness and personal commitment . Throughout my knowing Ron I think his steadfast commitment to what he was doing was a part of him that has always made me respect and admire the man

There were many, many lessons to be learned and few, if any, teachers. MBA's were just arriving. Most business was really technology driven – build a better mouse-trap and the rest will fall into place. Lead time to market. Pathway to market. Just-in-time production. Supply chain management. ISO quality standards for production and research – were just some of the things Australia had yet to catch up on. – at the same time as getting our collective head together on having industries other than mining and agriculture. Venture capital was still always off and financing a start-up business meant the entrepreneurs house on the line and probably loans from family.

It might surprise to know that Ron Grey has only recently been able to take the mortgage off his house -- for the first time. Building a 200 employ international company requires real personal commitment, and persistence! Being the driver and developer of any company is difficult. Doing it in a business area almost totally new to the prevailing business infrastructure of the day, and, at the same time wrestling with obtaining finance, understanding export marketing, growth, production, R&D, and management of all kinds requires special people,

I believe that Ron was one of the few who actually started with a long-term vision not just a short-term financial goal. That vision is still rolling out and still evolving. He started with a commercially and technologically innovative product that had immediate market appeal and reconciled the company's meagre resources with a market opportunity. But all the time using it to fund more leading edge technology and capture wider markets.

GBC started business as a manufacturer of an established scientific instrument.. In a country that lives on the ten second grab and the briefly spectacular it is still not well understood that building a winning team, developing real core competence, professional marketing, distribution, strong brand image, quality reputation takes time and positions a company to more easily and successfully introduce innovation. It is akin to building a relationship with a Japanese company before you build a business with them.

GBC under Ron Grey's leadership has managed to achieve both. They have built a business machine and innovative products. The pace of innovation at GBC, I believe, is considerably higher than in many competitor companies, and is applied across three areas of analytical instrumentation. The company has grown to take a respected position in the market. If you compare GBC to others it deserves much praise for the way it has developed its core products to a high level of market appeal by introducing better products containing innovative technology. At the same time it has decentralised from a single core product range into new areas such as High Performance Liquid Chromatography and, more recently, Mass Spectrometry. Taking both of these into the open, and well funded arms of the bio-tech revolution.

It takes real leadership to hold to the line over many years and many hurdles. There were quite a few couldn't stay the course including ICI Australia. There were times when the linkages between government and industry and government funded research could have been so easily exercised in GBC's interest and for

the betterment of Australia but for some now-lost reasons were not. It wasn't an easy course and many times Ron must have faced major financial, business and personal challenges.

The man and the company persisted and did succeed. It's efforts were not only rewarded by winning many Australian expressions of success but significantly acknowledged by judges of international standing on many occasions including awards for having "leading innovation" in their field. Over twenty significant awards in just over twenty years including "Australia's Best Manufacturers Award" and the "Institution of Engineers Australia Excellence Award for Engineering Innovation for an Inductively Coupled Plasma Time-Of-Flight Mass Spectrometer" and the "Laboratory Equipment Top 10 Products of 1991 Award "

Ron Grey has an obvious deep appreciation of the benefits of innovation and networking. At an early stage he was an active supporter and promoter of developing an "industry approach" to growing such industries in Australia. He was a foundation mover of companies working together as people/organisations with mutual interests and objectives. He promoted companies working together and linking research industry and Government. Of public sector research feeding innovation and networking into Australian business. He put his money and time into the concept. I well remember calling on him for support when I was involved in the Australian Scientific Industry Association. He attended; he accepted office; he took action; and achieved outcomes for the association. He was among the first to support, with scarce money and time, the establishment of the Australian Scientific Industry Association and later the Technology Industry Exporters Group - a self-help industry growth group.

He was a significant supporter of research programmes in local public research organizations. Taking a longer-term view and by his, and his company's involvement underwriting and ensuring the existence of such research in Australia.

I hold Ron Grey in very high personal regard.

I am very pleased that he is being nominated for an Ian Clunies Ross award. I endorse unreservedly his nomination and commend him to the Award Committee.

Yours faithfully,

A handwritten signature in cursive script, appearing to read "Ian Fraser".

Ian Fraser

4 Lookes Ave

Balmain East 2041

5(b) REFEREE REPORT

MR. PETER DAWES



SGE International Pty Ltd

ACN 006 941 260

7 ARGENT PLACE RINGWOOD
VICTORIA 3134 AUSTRALIA
TELEPHONE: +61(0)3 9874 6333
FACSIMILE: +61(0)3 9874 5672
WEB SITE: <http://www.sge.com>

23 July, 2002

To Whom It May Concern

I first worked with Ron Grey on a development project in 1981 where he helped us with the development of a boosted output spectral source for spectroscopy applications. The project was not a success for reasons that Ron was proven correct on and I was wrong. We have not had any commercial relationship since and despite an inauspicious start, we have stayed in close contact through our shared interest in the development of a successful scientific instrument industry in Australia that can compete strongly worldwide.

Ron has a very long standing involvement in the development and commercialisation of the Australian atomic spectroscopy technology but has gone further than this and developed and commercialised several other Australian technologies. In taking this technology to the world, Ron has built one of the few significant Australian scientific instrumentation export businesses. This has not been an overnight success, it has been achieved over 24 years of hard work and tenacity. As well as leading the development of various technologies at GBC, Ron has had more than his fair share of more complicated issues to deal with involving diverse and complicated shareholding of the business.

Ron has built a business across several technologies and product ranges. In the process he has taken on ideas developed in Australia such as the Time of Flight Mass Spectroscopy technology originally from Wollongong University. This was a very big, technically difficult and high risk project for a company the size of GBC and has led to a sophisticated, very competitive instrument that has now been released onto the world market. Notwithstanding the other successful development and commercialisation projects that Ron has run, this project alone is a very impressive achievement and is testament to the innovative environment he has created at GBC. It is also one of many examples of his success in driving the most difficult part of the process which is turning an idea into a product and commercial reality.

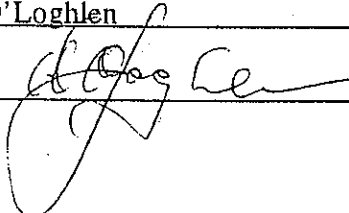
.../2

6. OTHER ASSOCIATED REWARDS ALREADY RECEIVED BY PERSON BEING NOMINATED

None known.

7. SIGNATOR OF NOMINATOR


Nominators Name: Neil G. O'Loughlen Date 23/07/2002

Nominators Signature: 

8. CERTIFICATION

It is certified that the nomination is made by a current member or official of the following organisation.

Organisation: Neil G. O'Loughlen Total Quality

Name of person certifying nominator: V. J. Fenwick 

Position held in Organisation: Partner