Presented to **CIE Australia** (Australian National Committee on Illumination – ANCI) at the AGM held in Melbourne, Victoria, at Dulux Australia, on Monday 14th April 2008 on the occasion of the celebration of the 60th birthday that occurred on 3rd March 2008.

"Some Reflections on 60 years of Diamond Studded Achievements."

by
J Derrick Kendrick

Rather than attempting to compress 60 years of history of the Australian National Committee on Illumination (ANCI), now known as CIE Australia, into the 20 minutes of time I have been allocated to speak to you today I have chosen to select a few of the really special achievements that have marked the life of ANCI this past 60 years and its contribution to the International Lighting Commission (CIE). A Diamond Jubilee by convention celebrates sixty years of achievement and that is what we celebrate at this meeting today and why I refer to the achievements as diamond studded in the title of this talk.

At the outset I should acknowledge the help I have received from Dr W R (Bill) Blevin, Emeritus Professor Barry Cole, Dr Alec Fisher and Kevin Poulton, when I asked them for their views.

I would also observe that on re-reading my final draft text just before sending it off for printing I have suddenly realized that I have not included several significant persons in my recollections nor some very important topics of activity and endeavour. Please forgive – there just wasn't time to make contact nor to research the work done. I apologize in advance to those Australians who should be mentioned herein but are not included. I am sorry for these omissions!.

1. H G (Hal) Fallon and the founding of ANCI:

The first diamond studded achievement must be our actual formation in Sydney all those years ago. In fact there was a Conference held to discuss the formation of an Australian National Committee on Illumination (ANCI) on 10th November 1947 and it was at this meeting that it was agreed to hold the inaugural meeting of ANCI on **3rdMarch 1948** in **Sydney**. But the real achievement was the drive of the Illuminating Engineering Society of NSW leader, H G (Hal) Fallon of the Sydney County Council, for getting the initial meeting group together. Consider the difficulties of getting a senior person from the following group of professionals

organizations together today:

Standards Association of Australia
Council for Scientific & Industrial Research (National Standards Laboratory)
The Institution of Engineers, Australia
Institute of Physics
British Medical Association
Electricity Supply Association of Australia
Illuminating Engineering Society of NSW
Royal Australian Institute of Architects
Chamber of Manufactures (Australian General Electric Co. Ltd)
and
Institute of Optometrists (also known as Australian Optometrical Association)

Hal Fallon did get them first to a Conference and to an inaugural meeting and these organizations then formed the founding members of ANCI. But more than that, Hal Fallon, persuaded the Director of Standards Association of Australia, Mr W R Hebblewhite, to chair the Conference and the commencement of the first meeting and he subsequently got the Chief of the CSIR National Standards Laboratory, Dr R G Giovanelli, to be the new organization's Secretary and later – to agree to pay the annual dues for membership of the International Lighting Commission (CIE) – and also Mr W I Stewart, from the Standards Association, to be Standards Secretary. In addition, the Honorary Secretary of the International Lighting Commission, the renowned Sir Clifford Paterson from UK, was invited to attend and he did arrive and was present and contributed to this inaugural meeting on 3rd March 1948. Not an inconsiderable achievement it can be said. Hal Fallon became the first President of ANCI at this first meeting and held the position until 1955.

In his final Annual Report seven years later in **1955** Hal Fallon wrote: *"It may be justly claimed that our (ANCI) committee has established itself among the counsels of the International Lighting body and by bringing the Australian point of view to this forum of opinion has not only gained prestige but has benefited considerably by the contacts it has made."* And he subsequently wrote: *"I have no doubt that advantages in excess of the expenditure can accrue to the organizations which sponsor us and in the long run to the Australian community."*

2. Architectural Lighting Technical Committee:

One of the first assignments allocated to Australia by the CIE was to take the Secretariat of a technical committee to look into matters and report on Architectural Lighting. To be perfectly honest I believe that ANCI was thoroughly shocked by receiving such an assignment. This was not what they had expected to be doing when they formed a National Illumination Committee (NIC). Fortunately, one Dr Albert Dresler recently arrived in Australia from Germany to join the Department of Labour and National Service in their Melbourne offices was on hand by the time of the 11th October 1949 ANCI meeting. With his pre and post-war experience of CIE technical work in Germany he was able to advise ANCI not to be scared of this CIE

assignment. Indeed, he informed them that both Spain and Italy had previously held this assignment and that they had not done very well and he provided ANCI with a copy of the previous Italian Secretariat report. Subsequently, with Dresler's guiding hand, Australia made its first international survey report on Architectural Lighting and submitted it to CIE HQ.

Then there was the need for an Australian representative to attend the **1951** CIE Session in Stockholm and to present this Architectural Lighting report. This resulted in Dr R Giovanelli being chosen to go and represent Australia. In addition, Mr AL Brentwood of the Department of Labour and National Service, Melbourne, was also present in Stockholm having earlier presented a joint paper (with Dr A Dresler) on daylighting at the London Building Research Congress of 1951.

3. Dr Albert Dresler and the CIE Daylight Guide:

Because of his experience and wisdom in CIE matters it was natural that Dr Albert Dresler should become the second President of ANCI (from 1955 to his untimely death in July 1963). Dresler's work at the Department of Labour and National Service was now in the field of daylight and sunlight whereas his previous pre-war fields of expertise were in the fields of colour research, photo cells and photometry, and V_λ and the standard human observer,

In **1952**, following the Stockholm Session in 1951, ANCI was allocated responsibility for the CIE Secretariat on Daylight. It had already been agreed that the CIE Daylight committee would prepare a CIE "Guide to Calculation of Natural Daylight." The French committee member, Escherdesrivieres, had therefore offered and been accepted to prepare the draft Guide but when it was subsequently received it was immediately rejected as being far too French in its approach. Thus it was that the British delegate then offered to redraft the Guide and Dr Ralph Hopkinson invited Peter Petherbridge of the British Building Research Station to prepare the draft of the Daylight Guide. This was brought to the technical committee and was also rejected by them as being far too British in its approach. An impasse resulted. Various countries did not want their own daylighting methods excluded from such an Important document. The CIE Scope Committee, through Professor L Schneider of Germany, met with the Daylight committee and it was agreed that Dresler, as TC Chairman, should prepare an Australian draft of basic principles using daylighting Documents prepared by David Paix from the Commonwealth Experimental Building Station (CEBS) at North Ryde, Sydney, and the recent DLNS document entitled "Natural Daylight Diagrams" for the next draft version. But in addition, there would also be a second document that would contain, in brief two page descriptions, every other known daylighting design method from around the world. There were subsequently 57 different methods described!

But this tactical and political approach may have broken the Daylight committee deadlock only to then founder again when CIE HQ found that they didn't have the funds to publish the new Guide along with the backlog of other CIE documents.

They just didn't have the funding. By this time (July 1963) Dr Dresler had sadly died of a heart attack and his Departmental colleague, the late Jim Lowson, had taken over and begun to pilot the various adjustments requested for the Daylight Guide at the recent Vienna Session. Later it was suggested by ANCI that the Standards Association of Australia (SAA) might offer to pay for and publish the document. Time passed by and eventually the Daylight Guide was published by CIE in **1970**. To my mind the endurance and dedication of Australians in producing this Daylight Guide is a diamond studded achievement for CIE by Australia.

4. Changes to CIE Sessions:

It is believed that the young, ten years old, ANCI member of CIE was instrumental in causing a significant change to the conduct of CIE quadrennial meetings. In March **1958** the ANCI Minutes show that concern was being expressed as follows: "*Australia's view is that the presentation of individual papers during the CIE technical committee meetings* **interfered** *with the work of the Commission. The President of CIE, Dr J W T Walsh of Great Britain, suggested that ANCI recommend a change to the CIE Executive whereby there should be a Congress to precede the CIE Session by a week – during which time a large number of papers could be presented; (then) after the Congress the Working Groups and Secretariat Committees could get down to their work without interruptions caused by the reading of papers.*" This proposal was adopted by CIE for the Brussels Session in 1959. An important contribution by Australia.

5. Matters of colour in Australia:

Also in March **1958,** the ANCI Secretary/Treasurer. Dr W R (Bill) Blevin. of the Institute of Physics and CSIR (National Standards Laboratory) made an important statement in relation to the use of colour knowledge in Australia. He stated (that) "*in his opinion CIE should take a more active interest in the problems of industrial colour control. Although the CIE Colour System was now 27 years old Australian industry made little use of it in controlling colours but preferred to cling to old empirical procedures.*" This is a clear a statement that it was a great pity that nothing was being done by CIE to get the long-time unused knowledge of CIE actually applied in practice for the benefit of countries. A very far-sighted and important perception.

6. Lighting Education in Australia:

In **1960**, Stuart Lay of the DLNS, with prior experience of teaching lighting courses in Adelaide in the mid-1950's, encouraged ANCI to be a prime mover in approaching Australian Universities and Technical Colleges to mount courses in illuminating engineering. Under the banner of ANCI he established a 6-person sub-committee to develop a course in lighting education to be presented over a three week period as a full-time course at the University of NSW for 15 (sponsored) students in third term of 1961. Fundamentals rather than applied lighting practice

were to be offered. The Universities of NSW and Sydney in NSW were approached and did in fact put on special one term courses in fundamentals of lighting. In Victoria, Dr Dresler was instrumental in changing the basic lighting course offered by the Illuminating Engineering Society at RMIT and in instituting an Advanced Illumination course every two years. These education efforts, coupled with those of the Illuminating Engineering Society, were instrumental is raising the standards of lighting education throughout Australia.

7. Money Matters (1):

In many ways money matters seem to have dogged the life of ANCI. Up until the Washington Session of **1967** ie about the first 20 years of ANCI's existence, money problems did not occur. CSIR (National Standards Laboratory) paid the small annual affiliation fee directly from their funds and members organizations (mostly) paid their annual subscriptions on time when asked. [There was a problem one year with one organization!] But following the Washington Session things changed rather radically. Problems ensued when it was realized that the latest subscription was **2.8 times** the previous years dues! [In the report (above) of the CIE Daylight Guide in Section **3** (above) it was reported that the CIE was short of funds for publishing CIE documents in the later years of the1960's!] The previous annual subscription of US$220 was now to become US$600 – quite a large increase. By Octrober1967 an ANCI Finance sub-committee had recommended that the previous £8.00 membership subscription level be raised to £24 and that the £15 subscription level be raised to £50. In addition, that a new grade of member, called an Associate Organization, be created at £10 per annum to raise more funds. The ANCI Regulations were duly changed at the December1967 meeting to this effect.

But then it was learned that the British NIC's annual CIE dues were paid by the British government and accordingly during the ANCI Chairmanship of Professor Barry Cole (1968-71 and 1972-75) various approaches were made to the relevant Australian Ministry seeking payment of the annual dues and it is recorded in the Annual Report for the year **1973** that the Affiliation fee had been re-negotiated and CSIRO then continued to pay the annual dues with government funding support right through until they were "re-structured" in the1990's. [*Continued under* Money Matters (2) *below*.]

The year 1973 also marked the establishment of the Overseas Meetings Fund. This had come about because of Mr Alec Fisher who had become a Co-opted Member of ANCI in November 1970, and was then made an Australian delegate to the Barcelona Session in 1971.and in November 1972 he was nominated by ANCI to become a member of the CIE Action Committee. This proposal was accepted and involved overseas travel to meetings by Mr Fisher and hence the need for Australia to provide financial support and assistance for his representation of Australia at such meetings. And here it can be recorded with gratitude that the Illuminating Engineering Society decided to make a substantial annual donation to this fund.

8. Australians Overseas:

At this time in the growing history of Australia and the CIE it is important to note That with Mr Alec J Fisher on the CIE Action Committee (1972-1975) and which required overseas trips in order to participate and the recent effectiveness of the Australian delegation to the Barcelona Session in **1971** (comprising the leader, Professor Barry Cole, with Dr Bill Blevin, Mr Alec Fisher, Dr L O Freeman, Mr Jim Lowson and Mr L G Missen) this demonstrated that Australia was no longer to be considered geographically too remote to participate in CIE work. Here we had Bill Blevin contributing in photometry, Alex Fisher in road lighting, Barry Cole in signal lights and Jim Lowson in lighting practice and discomfort glare. The Discomfort Glare Secretariat was subsequently allocated to Australia for the quadrennium 1972-75. *** And some four years later at the London Session of **1975** one of the outstanding public discussions was that between Jim Lowson and the research findings of the American Blackwell that had led to American codes of lighting practice recommending horizontal illuminance values ten times higher than any other country in the world.

*** [Note: Kevin Poulton has kindly provided a personal communication of his recollections of the considerable efforts made by Australia in this area over very many years and this is given in Appendix I.]

Note: From this point onwards in this paper the author does not have access to records of ANCI Minutes of Meetings, nor Annual Reports or Financial statements and has to depend upon memory and the recollections of other contributors.

9. Australians at the Kyoto CIE Session:

We now move forward to **1979** and there were significant achievements by Australia and Australians that occurred that year at the CIE Session in Kyoto, Japan.

For some ten years or so Dr Bill Blevin (ANCI Chairman from1964-67 and previously Secretary/Treasurer) physicist and located at CSIR National Standards Laboratory, Sydney, had been advocating a change in the definition of the unit of measurement, the ***candel****a*, and at Kyoto he presented a keynote address on the topic to the wider lighting community advocating the case for change. The acceptance of this presentation at Kyoto was instrumental in demonstrating to the body of specialists from national standards laboratories and other academics that the redefinition now had general support and a few months later at the General Conference of Weights and Measures the redefinition was adopted. A truly significant achievement by an Australian.

But also in 1979 the late Jack Whittemore (ANCI Chairman from 1978 -1982) from the Electricity Authority of NSW, was the leader of the Australian delegation when, at the General Administration meeting, following on from the presentation of scientific and technical papers, the unbelievable happened. The ‘closed shop’ or

'select club' of countries running the 'upper echelons' of the CIE agreed to considerable changes in the manner in which CIE conducted its business. It was usual for the CIE Vice President to accede to the subsequent Presidency but the mood for change was in the air. Rather than Vice President Morren (Belgium) automatically becoming the next CIE President the meeting decided to vote on the Presidency and Professor J B de Boer of the Netherlands was elected and became CIE President on a program to reform the CIE. Mr Alec Fisher who had been CIE Vice-President (Publications) for four years was now elected Vice-President (Technical) for the next quadrennium (1979-1983) and was to become responsible for implementing the changes.*** Quite diamond studded achievements by Bill Blevin and Alec Fisher.

*** [Note: See Appendix II]

10. CIE structural changes:

de Boer was a Professor at Eindhoven University and supported by Phillips Lighting and during his term of office (1979-83) he was funded to travel the world visiting most CIE member countries including Australia during this quadrennium. During his world tour he sounded out the proposals for changes to the structure and administration of CIE and eventually at the CIE Session in Amsterdam in **1983** the current CIE structure with seven Divisions was approved and put into place. These changes had been proposed and subsequently made to the top echelons of CIE by a small group that included Australian, Alec Fisher*** The long-standing CIE Headquarters location in Paris was also moved to Vienna due to the actions of the Austrian NIC Chairman.

*** [**Note:** Dr Alec Fisher has provided the author with his recollections of this time and an edited version of his personal communication is included in Appendix II to this paper.]

11. Australia offers to host a CIE Session:

During the period of Chairman, the late Denis Irving (1983-1987), a most significant event was commenced when Australia presented an illustrated bid for the**1991** CIE Session to come to Australia and Melbourne was chosen for this event. It was quite an achievement to get the approval but we now had to sell the idea to CIE member countries who were largely used to travelling in the northern hemisphere.

To illustrate the problem: when visiting Moscow, USSR, we invited them to come to Melbourne for the CIE Session and received the anticipated reply – but it's so expensive to get there and it's such a long way away. To which we replied – so it's OK for us in Australia to *always* travel to the northern hemisphere and to pay the expensive travel costs each time to come to Europe for CIE meetings but you can't come just once to visit Australia!

And this is where we now pay credit to the considerable work of Dr Warren Julian who was Chairman of ANCI (1988-1992)when the date for Melbourne Session came around in July 1991. Warren Julian made innumerable planning visits to Melbourne to meet up with Dr Steve Jenkins, Dr Peter McGinley, Kevin and Madge Poulton and many other wonderful Victorians who ensured the memorable success of the first-ever CIE Session to be held 'down under' in the southern hemisphere.

12. Money Matters (2):

This CIE Melbourne Session achievement was certainly a diamond studded achievement in itself because it was highly successful but it was also diamond studded in other additional ways too. Had it not been for the profit made out of the Melbourne CIE Session it is very doubtful if ANCI would have survived. With successive Australian Federal Governments squeezing the finances and structure of the CSIRO it was inevitable that CSIRO would eventually say – sorry we can no longer afford to pay your annual dues to CIE. And so it came to pass that that happened when the CSIRO was re-structured and the National Measurement Institute created. The original annual dues were £20 Australian in1948 but with changes to the enlarged CIE administration, more costs ensued and a new formula for calculating payments was introduced that was based on (1) a basic fee that every member country pays and (2) a subscription fee based on a United Nations coefficient that indicated a standard of living – and thus it was assumed – an ability to pay. Thus Australia was equated with, say, the Netherlands – (but they have a large international lighting **manufacturing** industry that could assist in paying the annual dues whereas Australia doesn't have such an industry). The CIE Melbourne Session profit plus the sale of CIE publications in Australia enabled ANCI (which became CIE Australia in the mid to late 90's) to survive the ever-increasing annual membership fees that reached in excess of Aust$8.000 p.a. until quite recently when the figure has dropped slightly by about 3% p.a over the past two years.

But we now believe that this long-standing issue of ANCI/CIE Australia annual dues problem has finally been overcome by the strenuous efforts of Drs Alec Fisher and Warren Julian in year **2006** when in discussion with Mr Colin Blair and Mr Warren Miller of Standards Australia. It was argued, and accepted, that they (Standards Australia) should, under their government charter, support our international efforts to represent Australia in the international lighting standards scene ie the CIE. But also, as part of that agreement, that we should for our part continue to perform in accordance with our Constitution (see document *"CIE and CIE Australia: its importance to you"*).

13. More on Daylighting from Australia:

J Derrick Kendrick was invited to represent Australia as a Corresponding Member from **1963** onwards following the death of the late Dr Albert Dresler. These were giant shoes to fill it must be said, so much so that correspondence activities and dissemination of CIE daylighting matters around Australia rather than contributory knowledge and research activities were all that could be done in the early days. That was until 20 years later at a Daylighting TC meeting in Berkeley, California, In February **1983** when he spoke under the AOB Agenda item: " I've been on this international daylighting technical committee for 20 years and during all that time it has done nothing "international". This was greeted with stunned silence. "What do you mean?" said the Israeli Chairman, Elijah Ne'eman. Kendrick replied: "Well, for example, we could examine the social impacts of daylighting approaches around the world from the "worship" of daylight in Scandinavian countries to the new windowless buildings of southern USA and the windowless factories in USSR and all conditions in between, or we could examine the fluctuations and ***variability*** of daylight instead of always using the stationary grey overcast sky as the basis for so-called daylighting design. An American member then spoke and said he thought an International Daylight Measurement Year should be instituted. There was little further discussion and as it was getting late the Chairman said to me: "Alright , you can Chair a new committee to look into the matter". But when the Minutes of the meeting came out prior to the Amsterdam Session a few months later Kendrick did not notice that the word "***variability***" had become changed to "***availability***:"!!!!!!

So it was that at the Amsterdam Session in **1983** Kendrick became Chairman of a New CIE TC 3.07 charged with examining a proposal to introduce an International Daylight Measurement Programme (IDMP) to measure daylight ***availability*****.** Searching the daylighting literature he found very little concerning the Standardisation of daylighting measurements around the world. Thus it was obvious that the first thing to be done had to be to decide was what it that had to be measured, what equipment was to be used and what standards were to be applied. Two years later in 1985 at a TC 3.07 meeting in Lausanne, Switzerland, associated with a Lux Europa Conference, the sky elements to be measured were decided BUT it was also agreed there was no known equipment to actually do these sky measurements satisfactorily. So TC 3,07 then had to begin to create from scratch the appropriate measuring equipment. Two years later one TC member, the late

Professor Jurgen Krochmann from Berlin, designed a sky scanning device that scanned the sky vault in 20 seconds. This expensive instrument became one of the required items along with several others instruments that were defined. One other aspect of this required equipment design was the question of how often to take the measurements. One minute was suggested and agreed but the further question was that of the quality control of the data for statistical analysis. An American, Dr Richard Peres, came up with the answer to this question from his work in Albany, New York.

And so it was that some eight years later at the CIE Session in Melbourne in **1991**

That the draft Daylight Measurement Guide was produced (and dedicated to the late Jurgen Krochmann for his tremendous contributions) along with the long-term International Daylight Measurement Programme (IDMP) involving 20 countries and Commencing with an International Daylight Measurement Year (IDMY) was presented. The IDMP was now to be managed by a new CIE TC 3.25 (with J D Kendrick as Chairman) but the problems of making daylight measurements were not yet fully completed. It was now clear that there were no basic standards for quality control of the daylighting measurements themselves and so an emergency technical meeting open to all comers was called at the CIE Melbourne Session to deal with this matter. Derrick Kendrick chaired this meeting and first up he admitted that he did not know how to provide a standard of **absolute control** for daylighting measurements and invited the 35 participants present to tell him how it should be done. No–one around the table could answer the question. Even the American expert from CIE Division 2 from the Gaithersburg National Standards Office who had been invited to attend could not answer the question. No-one could calibrate their daylighting measuring equipment to values greater than 10,000 lux! Hence there was a big problem in accepting daylighting measurements up to and probably beyond 100,000 lux to even 180,000 lux (which had been claimed to have been measured during an interval on the Melbourne Cricket Ground when Colin Cowdrey from England was batting.).

There was only one other alternative available – that of accepting comparative calibration values over the required range. Accordingly it was decided to match closely and to calibrate four daylight measuring instruments at the one measurement site and then to distribute these four to other sites at the four corners of the globe for local comparative calibrations to take place before eventually returning the four original instruments to the original site for cross-checking of any variations that may have occurred. This was, and still is today, the only way of dealing with calibration problems of very high values of daylighting measurements. Absolute values are not yet possible at high values.

So it was that that very simple comment made at Berkeley led to a most unusual contribution being made by Australia. Subsequently further work was done by statisticians and mathematicians such as Dr Richard Kittler at Bratislava, Slovakia, on the data received from various parts of the world resulting in a new 15-sky CIE/ISO standard for different daylighting skies.

14. Australians at the top of CIE:

We have already referred to Dr Alec Fisher becoming a member of the CIE Action Committee and subsequently becoming CIE Vice-President (Technical). Such a High ranking position in CIE would usually precede an invitation to become CIE President in the following quadrennium but for a variety of reasons this sadly did not happen for Dr Alec Fisher but just reflect on the high standing this Australian had achieved on the international lighting scene. And then in 1991, following on the success of the Melbourne Session, Dr Warren Julian was invited to become

CIE Vice-President (Publications) and four years later the post was continued for a further four year term .Then, at the conclusion of this maximum allowed service in that CIE office, Dr Warren Julian was invited to serve as CIE Vice-President (Technical) and at the end of that quadrennium a further four years of service was offered to him and accepted and concluded with the maximum eight years permitted at the Beijing Session in 2007. It is understood that the CIE Presidency was offered but it was declined because of the need for time and money to undertake the role fully and properly. But such is the mark of achievement that these two Australians have reached in CIE circles that the significant accolade of a diamond studded achievement is fully warranted. They have served Australia well and proudly.

15. Conclusion:

There is no doubt that ANCI, now known as CIE Australia, has held it head very high and there is plenty of evidence available that we in Australia have punched our way well above our weight to coin a phrase in boxing parlance within ANCI and CIE Australia. We have consistently done this over the past 60 years that shows a record we can be justly proud of. May this continue forward into the future. Therefore on all the grounds described above and many others not included here I consider we are entitled to celebrate our sixtieth birthday today.

Appendix I

An edited personal communication received from Kevin Poulton on Australia's contribution's to the study of Discomfort Glare:

I think there should be some mention of Australia's contribution to the CIE Glare work since 1971. At Barcelona in 1971 James (Jim) C Lowson was appointed Chairman of TC 3.4 "Discomfort Glare", and myself as Secretary. In 1976 I became Chairman when Jim retired with ill health. I remained Chairman of that TC until it was disbanded in the 1979-83 CIE re-structure.

However in 1983 TC 3.4 did publish a Technical Report, No 55 "Discomfort Glare in the Working Environment". The TC's first Report in 25 years!

In 1987 at Venice a new TC 3-13 as formed with myself as Chairman. It was called "CIE Discomfort Glare Evaluation System". In 1995 we produced CIE Publication No117 which included The Unified Glare Rating System (UGR) which has now been widely accepted.

Other Australian Glare work was Publication No 112 "Glare Evaluation System for Use within Outdoor Sports and Area Lighting", 1994. Axel Stockmar (Germany) and I did most of this between 1987 and 1991 when the draft was presented and accepted here at the Melbourne Session in 1991, but it was not published until 1994.

I was also a Member of TC 3-01 " Glare from Small Sources" but after Dr Heini Einhorn (South Africa) died the TC also died.

Jim, followed by myself, in the1970s and 80s had many battles, first with Dykes-Brown, (UK) and later with Dieter Fischer (Netherlands), on the Glare section of the CIE Interior Lighting Guide, No 29. Sorry to say we lost that one but that was the politics of the CIE in full swing

I hope this fills in a bit more of the story.

Appendix II

An edited part of a personal communication from Dr Alec Fisher on the re-organization of CIE after 1983:

The election of Professor de Boer as President outwardly started the re-organization of the CIE with it becoming a technically oriented organization right into the top echelon of the administration and the technical/scientific work of the CIE being largely autonomous in Divisions with the Directors sitting on the Board – I was privileged to be very involved in this.

But the genesis started much earlier – de Boer had been the chair of the Road Lighting Committee that was very large and active. When I joined it was obvious that the business could not be conducted effectively at the TC committee meetings. Thus a system of sub-committees was established to tackle specific items and working as they wished; the Committee as a whole setting policy, working programs and reviewing progress to the publication stage. On the recommendation of de Boer I became Chair in1975 thro to 1983, when the Division structure was implemented, based on the experience and structure of the Road Lighting TC.

But it was not easy – meeting separately from the Board was the Action Committee – six or so TC coordinators to review and report on CIE activity – it was here that we started agitating for a bigger presence in the overall running of the CIE. Nito de Boer became President and with younger men around him – Mike Marsden (UK), Robbie Yates (South Africa) and me (all past members of the road lighting TC!) we all devised the reorganisation of Divisions covering an area of CIE activity, running a working program thro associated committees dealing with a single topic. By that time (1979 - 83) I was into the top echelon being CIE Publications Officer and also into setting out details of the reorganisation.

In 1983 I became Vice President Technical and charged by the President Gunter Wyszecki to install the Division Directors and oversee the implementation of the new structure – a rewarding time but with a mixed reception from some of the old TC chairs. However when people realised that there was a place for everyone and the Divisions were largely autonomous things settled.

Appendix III

Contributions to CIE Publications have been made by many Australians. Contributions by Emeritus Professor Barry Cole are described below – but there are several others that time limitations has prevented this author from researching:

CIE Road Signs Technical Report No 74 CIE: Paris (1988) ISBN 3 900 734 10 0 Prepared by CIE Technical committee 4-05 under the chairmanship of PL Walraven (The Netherlands). BL Cole was a committee member and a substantial contributor to the text. This became a standard text for traffic engineers

CIE A guide for the design of road traffic lights Technical Report No 79 CIE: Paris (1988) ISBN 3 900 734 15 1 Prepared by CIE Technical Committee 4-01 under the chairmanship of D. A. Schreuder (The Netherlands). BL Cole was a committee member and a contributor to the text.

CIE Review of the Official Recommendations of the International Commission on Illumination for the Colours of Signal Lights. Technical report No 107 CIE: Vienna (1994) ISBN 3 900 734 49 6. Prepared by Technical Committee 4-14 under the chairmanship of BL Cole. It was researched and written by BL Cole and JD Maddocks (Australia)

CIE The conspicuity of traffic signs in complex backgrounds Technical Report No 137 CIE: Vienna (2000) ISBN 3 901 906 00 2 Prepared by CIE Technical Committee 4-18 under the chairmanship of SE Jenkins. Principal contributors were SE Jenkins, PK Hughes and BL Cole.

CIE Colours of light signals. CIE/ISO Standard S 004 CIE: Vienna (2001) prepared by Committee TC4-14 under the chairmanship of BL Cole who wrote the text with the help of JD Maddocks. Translated into French and German.

International Recommendations for Colour Vision Requirements for Transport. Technical Report No 143. CIE: Vienna (2001). Prepared by Committee TC4-31 under the chairmanship of BL Cole who wrote the text.

CIE equations for disability glare CIE Technical Report 146 CIE: Vienna (2002). Prepared by TC 1-50 "Disability Glare Formula". Committee members: J. J. Vos (Chairman), The Netherlands; Barry L. Cole, Australia; H.W. Bodmann, Germany; Elisa Colombo, Argentina; Tetsuji Takeuchi, Japan; T.J.T.P. van den Berg, The Netherlands.

Appendix IV

Chairmen of ANCI and CIE Australia

(1)	**Mr Hal Fallon**	**(2 quadrennia)**	**1948 - 1955**
	(with Dr R Giovanelli (CSIR Nat, Stds Lab) as Secretary)		
(2)	**Dr Albert Dresler**	**(2 quadrennia)**	**1955 – mid.1963**
(3)	**Dr W Blevin**	**(1 quadrennium)**	**1963 – 1967**
(4)	**Prof. Barry Cole**	**(2 quadrennia)**	**1968 – 1977**
(5)	**Mr Jack Whittemore**	**(1 quadrennium)**	**1978 – 1982**
(6)	**Denis Irving**	**(1 quadrennium)**	**1983 – 1987**
(7)	**Dr Warren Julian**	**(1 quadrennium)**	**1988 – 1992**
(8)	**Mr Bryan Powell**	**(2 quadrennia)**	**1993 – 1999**
(9)	**Mr Derrick Kendrick**	**(2 quadrennia)**	**1999 – 2007**
(10)	**Dr Steve Jenkins**		**2007 -- present**

Appendix V

CIE Sessions

No.	Year	Venue	Country
**1	1903	ZURICH	CH
**2	1907	ZURICH	CH
**3	1911	ZURICH	CH
**4	1913	BERLIN	DE
5	1921	PARIS	FR
6	1924	GENEVA	CH
7	1928	SARANAC INN	US
8	1931	CAMBRIDGE	GB
9	1935	BERLIN KARLSRUHE	DE
10	1939	SCHEVENINGEN	DE
11	1948	PARIS	FR
12	1951	STOCKHOLM	SE
13	1955	ZURICH	CH
14	1959	BRUSSELS	BE
15	1963	VIENNA	AT
16	1967	WASHINGTON	US
17	1971	BARCELONA	ES
18	1975	LONDON	GB
19	1979	KYOTO	JP
20	1983	AMSTERDAM	NL
21	1987	VENICE	IT
22	1991	MELBOURNE	AU
23	1995	NEW DELHI	IN

24	1999	WARSAW	PL
25	2003	SAN DIEGO	US
26	2007	BEIJING	CN

**Although the CIE (Commission International de l'Eclairage) was born in 1913, the numbering of its Sessions has always included those of its predecessor, CIP (Commission Internationale de Photométrie).

Appendix VI

CIE Awards

Name	Year	Event	Venue	Country
Dr. Alec James Fisher	1988	CIE Meeting	Karlsruhe	Germany
Prof. Barry Cole	1995	23rd CIE Session	New Dehli	India
Mr. Kevin Poulton	1995	23rd CIE Session	New Dehli	India
Dr. W. R. Blevin	1999	24th CIE Session	Warsaw	Poland
Mr. John Shaw	2005	CIE Midterm Meeting	León	Spain
Mr. Peter Baxter	2007	26th CIE Session	Beijing	China
Mr. J. Derrick Kendrick	2007	26th CIE Session	Beijing	China
Mr. Bryan Powell	2007	26th CIE Session	Beijing	China

JDK: 10 April 2008