



**The minutes of the Division 4 meeting, Toronto, Canada, on the 4th in September 2000, 3pm - 4pm, and on the 7th in September 2000, 2pm - 5pm.**

16 NC's were represented: Belgium, Brazil, Canada, Finland, France, Germany, Great Britain, Hungary, Italy, Japan, The Netherlands, Republic of Slovenia, Turkey, South Africa, Switzerland and the United States of America, altogether 51 persons attended the meetings (appendix 1).

**Monday 4.9.2000**

**1. Opening of the meeting**

Division director, Pentti Hautala, opened the Division meeting with a word of welcome to all present Division members and guests. A special word of thanks was spoken to our host, Dr. Werner Adrian.

Also new Division secretary Tapani Nurmi introduced himself.

Draft agenda, which had been delivered to the all members earlier, was accepted as the agenda of the Toronto meeting.

**2. Apologies for the absence**

Division director had received five messages of the absence; Pieter Walraven, Ron Simons, Duco Schreuder Hans-Allan Löfberg and Wout van Bommel.

**3. Approval of the executive summary of the minutes of the last division meeting**

The last meeting was held on the 29th and 30th in June 1999 in Warsaw, Poland. DD noticed that this summary has been published as a part of the CIE Division 4 news (vol 10). The summary was approved.

**4. Announcements**

4.1 Division director announced that the Board of Administration has appointed new division members:

The Netherlands	Ton van den Brink
Sweden	Tore Gabrielsson
Poland	Wojciech Zagan

The meeting wished the new division members warmly welcome.

The division director also announced:

TC 4-19 has a new chairperson : Michèle Colomb (France)

TC 4-35 has a new member: John Rands (USA)

4.2 The new division secretary made a short summarization of the proposal about the new policy of the communication of the Division 4:

- The division has the new webpages in the address: <http://www.tut.fi/cie4/>

- The secretary suggested, in the future as much as possible of the communication will be done with email and pdf-files as attachments or pdf-files in our www-pages. Understandably those members who still would like to have normal letters can have those.

The division members agreeded this policy by general consent.

## **5. Report by the Division director**

The main problem in CIE is the money; the costs of the publication are rather big compared with the incomings.

Some countries haev a long delay in paying their dues.

In the CIE there has been discussions about new formula concerning the calculation of their fees/dues

CIE is doing "Strategy & Marketing plan" to improve CIE's imago.

Dr Janos Chanda has published the mailing list of the Lighting Education.

CIE has modernized it's webpages, there has been nowadays 50-80 visitors / day.

There has also been discussions about the distribution of CIE standards in CIE websites.

There has been discussions about liaison/co-operation with CEN and PIARC.

## **Thursday 7.9.2000**

DD Pentti Hautala reopened the meeting Thursday 7.9.2000 at 3 pm.

## **6. Editors report**

Patrick Baldrey was not able to attend this meeting in Toronto.

## **7. Progress Reports by TC-chairmen**

Progress reports of the next TC:s were presented:

TC 2-32, TC 4-21, TC 4-26, TC 4-35, TC 4-33, TC 4-36, TC 4-37,  
TC 4-38, TC 4-40, TC 4-41

All these reports are as appendices of these minutes.

The rest of TC:s did not have meeting in Toronto but there was a short discussion about the situation of these TC:s.:

**TC 4-10:** Ad de Visser told us: GTB is not against the two remaining publications about front fog lamps and cut-off. Editing is necessary. Dr. Manz offered to volunteer. If however it would appear to be necessary that a large file exists with comments that still should be entered, in that case a decision to skip the documents might be considered. The meeting made a decision "let's look first, after that decision, then maybe publishing".

There was a discussion about abolishing this TC but Dr. Schmidt-Clausen considered that this TC should not be brought to the end but a new task should be investigated.

**TC 4-14:** Ad de Visser told he has contacted Pieter Walraven and Pieter considered it is not necessary to have a new voting. Ad is checking this.

**TC 4-15:** DD told us there has been a voting about publication with one upstaining vote, the other votes were positive, only some small editorial comments. Ron Simons makes this editorial work.

**TC 4-16:** DD told us there is not enough information about this TC, Ad de Visser promised to ask Mr. Simons about the situation of this TC.

**TC 4-18:** DD told that the report of this TC has already been published. De Visser suggested that this TC can therefore be abolished. Dr. Adrian suggested that the work of this TC should be continued. The meeting agreed the new terms of reference should be defined and after that also there should be a new number for this TC.

**TC 4-19:** DD told a new chairperson has been appointed to this TC (Michèle Colomb) and that there are "positive wishes" the work of this TC is going to advance well.

**TC 4-24:** Peter Blaser told us shortly about the situation of this TC; in the next meeting there will be a new draft to discuss.

**TC 4-25:** DD told us that there has been a voting about publication with one negative vote. DD asks Kai Sørensen and van Bommel how to resolve this situation.

**TC 4-27:** There is not accurate information about this TC, DD will ask the chairman (Walraven) about this TC.

**TC 4-31:** DD informed that draft 4 is published, and draft 5 is "coming soon". DD will ask the chairman (Cole) about the exact situation of this TC.

**TC 4-32:** DD read the email which Pieter Walraven had sent; a voting will be before the Christmas 2000.

**TC 4-34:** TC-chairmen Robert Yates informed us the paper has been published and publication has been greeted with satisfaction. Yates suggested this TC can be abolished, meeting agreeded.

**TC 4-41:** TC-chairperson (Kate Painter) was not able to attend Toronto meeting and therefore this TC had only a short "unofficial meeting".

## 8. Progress Reports by Reporters

**R 4-14:** Pentti Hautala told that "there's nothing to report yet"; More information is needed. Pentti tries during the one year to garner the information needed.

**R 4-21:** Schwab has sent a letter of resignation as reporter. De Visser would try to find a successor but did not yet succeed. Japan showed interest becoming a member of a new TC, that should be established to their opinion.

**R 4-22:** New reportership (1999), Steve Jenkins was not present, so no report in this meeting.

**R 4-23:** Eirik Bjelland had a presentation about the Road Lighting Management Systems in Road Maintenance. He will make the www-pages in order to demonstrate this information.

**R 4-23:** Pieter Walraven was not present in the meeting, so no report in this meeting.

## 9. New R&D reports

Peter Blasern told there is a group of people who would like to investigate the Road surface characteristics (reflection properties). Dr. Schmidt-Clausen told his group is doing this kind of things (pavement which will give maximum benefit with simultaneous automobile and road lighting), there are also some reports ready. Dr. Schmidt-Clausen promised to inform as much as he can in the next meeting.

## 10. Discussion of the new items

The discussion concluded with the decision that in the future all the reports will be asked in advance both from the national delegates as well as from the TC chairmen.

## 11. The liaison matters

- Ad de Visser told us about co-operation with GTB: Last meeting the chairman of GTB did a presentation on the organisation of GTB and the major working items of that time. Information updates in both directions were reported by Mr De Visser as liaison CIE / GTB. In detail this concerned: written reports to GTB about the activities in CIE re the issues relevant to GTB in particular TC 4-10 and TC 4-14; a table containing a survey of all CIE Division 4 TC's; the web site address of CIE.
- CEN had invited DIV 4 in its meeting, DD is going to be there.
- PIARC has invited to participate in it's TC:s, DD mentioned there are at least three committees which are suitable to DIV 4 members:

ST-1 / C 1 Surface Characteristics

Schmith-Clausen is going to participate this committee

ST-3 / C 13 Road Safety

Stuart Yerrel is going to participate this committee

ST-3 / C 5 Road Tunnel Operations

Marc Gillet is going to participate this committee

There are two ways to participate: to be a member or to be a corresponding member; DIV 4 is going to send an answer in October about the way of participating.

## **12. Activity plan of the Division 4**

Discussion about this subject; here are the main ideas:

- It was decided, it is a good idea to wait a little bit before making the activity plan of the division 4.
- If TC:s are running properly, then also division is doing the same.
- Division members should have some "input" before every meeting, so that they could get acquainted with the cases in advance.
- All ideas should be written down, so they will not disappear.

## **13. Planning meeting in 2001 in Istanbul, Turkey**

Our Turkish representative Dr. Sermin Onaygil made a short summary.

- until now everything is OK
- the first announcement of symposium has been sent
- the abstracts should be sent until the end of October 2000
- in the next "NEWS" there will be more information about this meeting.

## **14. Planning the future meetings**

### **2002 meeting:**

Brazil representatives said that Rio de Janeiro should be a good place for the meeting in 2002, but there is not an official support for the invitation yet.

Dr. Giuseppe Rossi presented official invitation to have this meeting in Italy, the place will be Torino or some other place.

Indian representatives presented also an official invitation to have the meeting in New Delhi in October-November.

James Havard told that Division 5 has also been invited to Italy in 2002.

After short discussion the voting resulted in a vast majority for Italy.

**2003 meeting:**

Justin Rennilson made a short summary about the situation of this meeting. Our meeting will be during the 23rd June - 2nd July in 2003. In WWW-pages ([www.cie-usnc.org](http://www.cie-usnc.org)) there are more information about this meeting.

**15. Other business**

No discussion

**16. Closure**

DD closed the meeting (4.45 pm), thanking the Canadian hosts, especially Dr. Werner Adrian, about excellent meeting facilities.

We all are looking forward to our next meeting in Istanbul.



Tapani Nurmi  
Secretary, CIE DIV 4



## Meeting 3. - 8. September 2000 in Toronto, Canada

### Attendees:

Pentti Hautala	Finland	Mujgan Serefhanoglu Sozen	TR
Tapani Nurmi	Finland	Ed Morec	USA
Peter Blaser	Switzerland	Rados Topalova	Canada
Heinz Terstiege	Germany	R. Gerald Irvine	USA
J. Rennilson	USA	Paul J. Lutkevich	USA
H.J. Schmidt-Clausen	Germany	Dennis Culley	ZAF
Masao Furusho	Japan	Dennis Couzin	USA
Tetsuji Takeuchi	Japan	Paulo Candura	Brazil
Kohei Narisada	Japan	Elvo Calixto Burini Jr.	Brazil
Marko Bizjak	Slovenia	J. Stuart Yerrell	U.K.
Andrew Silbiger	Canada	Robert S. Yates	South Africa
Gordon Low	Canada	Gillet Marc	Belgium
Joe Bastianpillai	Canada	Werner Adrian	Canada
Neil Hodson	USA	Axel Stockmar	Germany
Kulwant S. Kang	Canada	Sándor Almási	Hungary
Paolo Soardo	Italy	Jozsef Horvath	Hungary
Giuseppe Rossi	Italy	Pranab Bandyopadhyay	India
Vincent Ledoux	France	Panchy Arumugasaamy	USA
Douglas J. Mace	USA	Marek Lasinski	Poland
Peter Dibbern	Germany	Ed NG	Canada
Carl K. Andersen	USA	Jacek Wild	Poland
Patrick Rombauts	Belgium	Norbert Johnson	USA
Ad de Visser	The Netherlands	Nigel Pollard	U.K.
Ton van den Brink	The Netherlands	Sermin Onaygil	Turkey
Eirik M. Bjelland	Norway	Elizabeth Alvarez del Castillo	USA
Alexei Korobko	Russia	John M. Hart	USA
Jose Luiz Pimenta	Brazil	Richard E. Stark	USA
David Coatham	U.K.	Floris Alain	France
John Rands	U.K.	A. Ketvirtis	Canada



### **TC 2-32 Measuring retroreflectance of wet road markings**

TC 2-32 met on Tuesday, Sept 5th 2000 afternoon with 18 people attending.

A second draft of our Technical Report was reviewed and several comments and changes recommended. Time did not allow a complete review of the entire draft and therefore the parts not reviewed in this meeting will be reviewed individually and comments given to the chairman. Several assignments were made to members.

Next meeting of TC 2-32 will be held in May 2001 at DIV 2 meeting in Gaithersburg, MD.

### **TC 4-21 Interference by Light of Astronomical Observations**

The Chairman (Dr. D.A. Schreuder) being unable to attend the meeting, has asked Mr. N.E. Pollard to chair it for him.

Two meetings since Warsaw, both in liason with IAU meetings, One in August 1999 at the UN in Vienna, the second in Manchester in August 2000.

This meeting:

Five members of the TC were present together with nine guests.

The minutes of the last two meetings were agreed together with a request to CIE Division 2 to adopt the conversion factor between the light technical parameter of luminance in "candelas/metre<sup>2</sup>" to that of astronomies "magnitude /arcsecond<sup>2</sup>". Of  $3.2 \times 10^{-6} \text{ cd/m}^2 = 26.33 \text{ mag/as}^2$ .

The TC also proposes to adopt a reference value of  $3.52 \times 10^{-4} \text{ cd/m}^2$  for the minimum natural background luminance, (based on the above).

We then heard of the valuable work being done in Turin, Italy with regard to setting limits for upward light from towns, ranging from 1% to 10% depending on their distance from astronomical observatories.

The need to reinforce the relationship between sky glow and upward lumens was discussed and that a number of comparisons could be made where the "lumen count" on the ground was easily obtainable together with detailed satellite images.

This was followed by discussions on the TC proposal to adopt a "maximum lumens/area" figure for similar zones but it was felt the areas and lumen definitions need clearer classification.

The need for updating Pub. 129 was discussed in line with the above, and the work of TC 5.12 on Obtrusive Light and it was agreed that a 1st draft would be available for working on by the next meeting in either March or September 2001, which would rest with the Chairman.



#### **TC 4-26 Systems for measurement of photometric quantities of road lighting installations**

Eight members attended this meeting, of which three were member of the committee.

Ms. Korobko from Russia and Mr. Elvo C. Burini from Brazil asked to become new members.

Mr. Van den Brink from NL asked to become a new corresponding member.

During the meeting chaps 8, concerning illuminance measurements, of the distributed draft was reviewed by the attendees: some modifications and supplements were suggested and agreed. The problem of result presentation was discussed and some guidelines were given.

The discussion covers some general aspect of the guide. It was suggested and agreed that the guide shall describe the scientific aspects, the standardisation aspects will be covered by an other document.

#### **TC 4-35 Tunnellighting**

We had two meetings since June 99. One took place in May 2000 in Agio, the other here in Toronto on Tuesday.

Draft 6 ( January 99) has been reviewed on the basis of the comments accepted in Agio and has become draft 6-2.  $L_{seq}$  method shall be incorporated in the body of the document by including the atmosphere and the wind-screen effect.  $L_{20}$  method will be maintained as an appendix as previously voted in Boston and confirmed here. A new meeting is planned in February 2001 in Slovenia. The rest of the comments that were not analyzed here will be review at that time with the adapted  $L_{seq}$  methodology.



#### **TC 4-36 Visibility design for Roadway lighting**

Twenty-three members and guests attended the meeting. There were presentations on comparison between accidents and lighting with headlights included and future research with older drivers. Dr.'s Narisada and Rossi are continuing their research into visibility and measurement. The chairman provided a folder with the visibility position of the IESNA. The research of Mr. LeCocq on Quality Criterium of STV and the paper of Dr. Narisada have already been made available. Other documents such as the calculation report of Mr. LeCocq, the headlighting paper of Mr. Keck and the information in the IESNA standard if available will be sent to the members.

Several assignments were made for the next meeting in Istanbul. The goal is to produce a document containing visibility research that is available, the methods practiced in various countries and a document outlining the basis for a design methodology. The aim is to complete this work by the end of the current quadrennial period.

#### **TC 4-37 Road transport lighting for developing countries**

Following the Warsaw meeting, the emphasis of TC 4-37's work has changed slightly and its scope expanded. Its aim is to provide practical guidance to developing countries on the most effective ways for them to improve night-time road safety through better visibility and visual guidance. Its output will be a manual intended for planners, city and district engineers, consultants, policy-makers and project officers in national and international aid agencies.

The Committee has agreed on the detailed contents of the four main chapters of the manual, covering-general issues and night-time safety/accident statistics; markings, signs and reflectorisation for rightway infrastructure; road user marking and lighting; fixed roadway lighting. Members of the committee have agreed to collect the material necessary for producing a first draft of the manual for discussion at its next meeting in Istanbul. There will be increasing liaison with PIARC's Road Safety committee to seek funding/sponsorship of the manual.



### **TC 4-38 Daytime visibility requirements for roadway signs**

The meeting opened at 1:30pm in the Rosedale room. There were too many participants to fit into the room. Therefore, the meeting was moved to the available Younge room. Tom Schnell addressed the participants and provided an overview of the meeting agenda. A membership roster and a roster for the friends of the committee was passed around. TC4-38 now has 17 members (10 up from 1999) and 13 friends (7 up from 1999). Important portions of the minutes from the last meeting in Warsaw were read by Tom Schnell, in order to emphasize the TC decisions that were made in Warsaw. One major decision was that the title of the TC was to remain Daytime Requirements of Roadway Signs.

Tom Schnell indicated, that TC4-38 will have a home page. A graduate student of Tom is setting up this password protected page to allow the sharing of electronic information as required for the development of the technical report. Additional information as to the operation of the web page will be sent to the membership via e-mail.

Tom stated that the most important task of the present meeting was to develop the outline for the technical report, streamline this outline with the activities of TC 4-40, and to generate writing assignments. To that effect, the table of contents of the old report was reviewed. The outline of the technical report for TC 4-40 was reviewed as well and common topics were discussed. The committee brainstormed on items that are important for the daytime visibility of roadway signs. Discussed items included:

Fluorescence, use and comprehension of symbols, daytime scene background characterization, conspicuity (external and internal to sign), message content for comprehension, compliance, environment, dawn/dusk, effectiveness of signing.

Discussions as to possible collaboration with TC 4-40 were held. TC 4-40 has formed working groups that contain members of both TC 4-40 and TC 4-38. Work results that are common will be used in both TCs. The groups are as follows:

\* TC 4-40, Group 1: Roadways and signing scenarios. This group is chaired by Prof. Schmidt-Clausen and has three additional members (4-40 and 4-38).

\* TC 4-40, Group 2: Signs and Signing Factors. This group is chaired by Kai Sörensen, and has three additional members (4-40 and 4-38).

\* TC 4-40, Group 3: Human Factors. This group is chaired by Helmut Frank, and has five additional members (4-40 and 4-38) The remaining three working groups of TC4-40 have little or no common ground with TC4-38 at this time. To facilitate the development of our technical report, the committee has formed the following additional working groups:



\* TC 4-38, Group 1: The need for Signing, Signing Effectiveness: Alison Smiley, W.Janssen, P. Dibbern

\* TC 4-38, Group 2: Daytime Fluorescence: Sue Chrysler, Chris Gaudette, B. Brekke, Dennis Couzin, V. Ledoux, J. Ewald.

\* TC 4-38, Group 3: Environment, Fog, Snow, Rain, Dirt, Vandalism: Toru Hagiwara, Tom Schnell, Carl Andersen

\* TC 4-38, Group 4: Cognitive Issues: Prof. Schmidt-Clausen, Prof. Adrian, R. Topalova, Tom Schnell

It was decided, that group four would prepare the preamble of the report by discussing the cognitive processes when seeing a sign. The sequence will be Detection, Perception, Cognition and Response. The report will have the following rough outline:

Scope, Cognitive Processes when Seeing Signs, The Need for Signs, The Roadway System, Sign Types and Physical Sign Factors, User Characteristics, Sign Effectiveness, Sign Application Guidelines. The time schedule for the individual working groups is to have all draft write-ups with the chairman by February 15, 2001.

Follow-up meetings will be held in San Diego together with TC 4-40 on March 4-6 (approximate) and in Istanbul on September 6 (approximate). Exact announcements will be distributed to the TC at a later time after coordination with TC 4-40 and Division 4.

The meeting closed at 4:00pm



#### **TC 4-40 Requirements for retroreflective traffic signs**

Technical Committee 4-40 on Requirements of Retroreflective Traffic Signs met at 9 am on Wednesday 6 September in the College room of the Courtyard by Marriott in Toronto, Canada.

15 members, corresponding members and 3 guests were present. The three guests requested membership together with two corresponding members. The names will be submitted to the Division 4 web-site together with the minute within the next few weeks.

The table of contents distributed at the Warsaw meeting was discussed in detail and the group arrangement originally proposed was modified.

Five groups were formed: These are: 1. Roadway, 2. Signs and Sign Factors, 3. Human Factors, 4. Vehicle and Headlights, 5. Scenario Calculations.

Group chairs were selected and members of each group identified. Beginning drafts of these groups will be written and submitted to the TC chairman by mid-February 2001. The next meeting is planned for March 5-6, 2001 in San Diego, California. Three such meetings are planned for 2001.

Committee adjourned at 11.30 am.

#### **TC 4-41 Crime and lighting**

1. Little ongoing research has been reported in the past 12 months except from the UK where Kate Painter has prepared a new cost/benefit analysis, the results of which will be presented, in Istanbul, in September 2001.

2. More work is required on quality criteria. What we can say is that the best results, in before/after studies in the UK, are when minimum illuminance levels "before" of less than 1 lx, with Mercury or LPS lamps, are replaced with HPS giving minimum levels of more than 2.5 lx.

3. The title and terms of reference of the committee will be reviewed. The question of car parks and shopping walls (outdoor) will be considered.

4. A guide on "How to do a lighting and crime study" will be prepared.