



CIRENCESTER SCIENCE AND TECHNOLOGY SOCIETY

2007 May - edition Number 7

Notes from the Editors desk

Perhaps a few of our members will have been thinking I had forgotten them after the rush of activity before Christmas. The truth is that the committee have been putting a lot of thought into how best to communicate Society news, announcements, comment, reports and items of general interest. Members will be aware that the cost of printing handling and posting hardcopy is a very significant item for the Society's accounts. With this in mind it has been decided that hardcopy newsletters will now be distributed at the monthly meetings of the Society. Naturally the website will continue to have a downloadable version on line for those who use a computer and can print copies for themselves.

Your committee has also been studying the benefits of registering the Society as a Charity. If this is successful it will benefit the Society in many ways, but principally financially as this will place us in a more favourable tax position. I understand this may need small changes to the constitution of the Society but we will find out in due course.

Our inaugural Patricia Clarke lecture which was open to the public was a great success. Lord May who kindly agreed to talk with us chose 'Hard Choices for Tomorrows World' which focussed upon the increasing levels of carbon dioxide being generated and its social consequences. We were honoured to have Professor Patricia Clarke in attendance to hear Lord May.

Since our last issue some of our members have been able to make visits to a couple of places of technical and scientific interest and I have included a brief note on what we were able to see. Many of our members are retired folk and as one of those I am only too aware that one loses touch with what is going on in this increasingly technical world. These visits are very refreshing bringing to us a small understanding of what is being discovered or developed in the laboratorys and industry today. Note that we have a visit planned to the Royal Society Summer Science 07 show. There are details in the text.

Bunny

SCIENCE AND TECHNOLOGY SOCIETY COMMITTEE

Chairman: Dr. Geoff Richards

Vice Chairman: Prof. Peter Stoward

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates

13th June at 7.30pm at the RAC.

Dr Eleanor Highwood of the

Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

- 1 Editorial
- 2 Committee, meetings, happenings and contents
- 3 Happy birthday and past events
- 4 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- 8 Welcome and forthcoming events

Happy Birthday to our Society



The Society celebrated its 10th Birthday with a lunch at the Royal Agricultural College. The photograph above includes some of our founder members who were able to attend.

Left to right in the picture we have: Prof. Peter Stoward FRSE, Prof Roy Postlethwaite FRCPath, Dr Eric Gibson CBE FRSC, Prof Pat Clarke FRS DSc, Dr Geoff Richards OBE, Dr Doug Gunary MBE, Dr Fred James MD. Dr Bernard Tinker OBE, Dr Theo Stening FRSC.

The College maintained its reputation for a fine lunch which was much enjoyed by the forty members and guests. It was an occasion that we only rarely get in our Society where members were able to reminisce and to socialise with others of like mind.

A few notes on past events

This years programme has been perhaps one of the most varied and intensive yet. In particular the Patricia Clarke public lecture that Lord May presented to us at the end of January was a highlight of the year. However one must not overlook the quality of other presentations we have heard, which range through medical science, nanotechnology, power generation, and mathematics. All of these are reported in our website and form an interesting archive of our activities.

Apart from lectures we have had a most interesting debate where the motion was 'This House supports Euthanasia'. This proved to be a most interesting evening where members could be involved. The result was a spirited discussion from both sides of the argument.

The committee would like to promote similar evenings and would welcome suggestions from members as to the subjects we might discuss.

Visits made by the Society so far this year.

The BMW MINI assembly line at Cowley

The plant is very new and is a good demonstration of what an automated plant can achieve. The visit really consisted of two parts first of which was the assembly of the car body from preformed panels and parts. This process is entirely managed through computer controlled robots.



Cars are only assembled when the Company has a specific order for that car. Some 1½ million options are available for the MINI, all these options are incorporated on the production line. The result is that on the line a sports version of say bright red with cd player and GPS can be followed immediately with a family salon hatch back in black with no hesitation. Even the wide range of engine variations and transmissions is coped with.

The first impression is of flailing robotic arms picking up, placing and welding pieces of all sorts and in any order (although of course it is computer controlled). It is by any standard a staggering sight particularly when there are few if any humans to intervene in the process. The flying sparks from the welding are a hazard and one has to wear protective goggles.

The second part of the assembly we were allowed to see was the final assembly of the car and its initial testing. What is significant here is the way all the options are presented to the operator in the right order to coincide with the production line itself. Obviously in this area there are less robots but they are still very essential in the assembly as a whole. Particular robotic aspects were the introduction of the engine unit to the body and also the insertion of the windscreens and windows.

A good demonstration of the success of the assembly line was the fallout of non starters at the end of the line. It was noted that very very few fell into this category.

We are limited by the hosts on these occasions as to how many folk can go. In this case we were overwhelmed by the interest and so several people could not go. The committee could run this again say in a couple of years. Please let us know of your interest.





CIRENCESTER SCIENCE AND TECHNOLOGY SOCIETY 2007 May - edition Number 7

Notes from the Editors desk

Perhaps a few of our members will have been thinking I had forgotten them after the rush of activity before Christmas. The truth is that the committee have been putting a lot of thought into how best to communicate Society news, announcements, comment, reports and items of general interest. Members will be aware that the cost of printing handling and posting hardcopy is a very significant item for the Society's accounts. With this in mind it has been decided that hardcopy newsletters will now be distributed at the monthly meetings of the Society. Naturally the website will continue to have a downloadable version on line for those who use a computer and can print copies for themselves.

Your committee has also been studying the benefits of registering the Society as a Charity. If this is successful it will benefit the Society in many ways, but principally financially as this will place us in a more favourable tax position. I understand this may need small changes to the constitution of the Society but we will find out in due course.

Our inaugural Patricia Clarke lecture which was open to the public was a great success. Lord May who kindly agreed to talk with us chose 'Hard Choices for Tomorrows World' which focussed upon the increasing levels of carbon dioxide being generated and its social consequences. We were honoured to have Professor Patricia Clarke in attendance to hear Lord May.

Since our last issue some of our members have been able to make visits to a couple of places of technical and scientific interest and I have included a brief note on what we were able to see. Many of our members are retired folk and as one of those I am only too aware that one loses touch with what is going on in this increasingly technical world. These visits are very refreshing bringing to us a small understanding of what is being discovered or developed in the laboratorys and industry today. Note that we have a visit planned to the Royal Society Summer Science 07 show. There are details in the text.

Bunny

SCIENCE AND TECHNOLOGY SOCIETY COMMITTEE

Chairman: Dr. Geoff Richards

Vice Chairman: Prof. Peter Stoward

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates

13th June at 7.30pm at the RAC.

Dr Eleanor Highwood of the

Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

- 5 Editorial
- 6 Committee, meetings, happenings and contents
- 7 Happy birthday and past events
- 8 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- 8 Welcome and forthcoming events

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates
13th June at 7.30pm at the RAC.
Dr Eleanor Highwood of the
Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

Contents of this issue

- 9 Editorial
- 10 Committee, meetings, happenings and contents
- 11 Happy birthday and past events
- 12 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- **8** Welcome and forthcoming events

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates
13th June at 7.30pm at the RAC.
Dr Eleanor Highwood of the
Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

Contents of this issue

- 13 Editorial
- 14 Committee, meetings, happenings and contents
- 15 Happy birthday and past events
- 16 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- **8** Welcome and forthcoming events

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates
13th June at 7.30pm at the RAC.
Dr Eleanor Highwood of the
Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

Contents of this issue

- 17 Editorial
- 18 Committee, meetings, happenings and contents
- 19 Happy birthday and past events
- 20 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- **8** Welcome and forthcoming events

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates

13th June at 7.30pm at the RAC. Dr Eleanor Highwood of the Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

- 21 Editorial
- 22 Committee, meetings, happenings and contents
- 23 Happy birthday and past events
- 24 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- 8 Welcome and forthcoming events

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates
13th June at 7.30pm at the RAC.
Dr Eleanor Highwood of the
Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

- 25 Editorial
- 26 Committee, meetings, happenings and contents
- 27 Happy birthday and past events
- 28 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- **8** Welcome and forthcoming events





CIRENCESTER SCIENCE AND TECHNOLOGY SOCIETY

2007 May - edition Number 7

Notes from the Editors desk

Perhaps a few of our members will have been thinking I had forgotten them after the rush of activity before Christmas. The truth is that the committee have been putting a lot of thought into how best to communicate Society news, announcements, comment, reports and items of general interest. Members will be aware that the cost of printing handling and posting hardcopy is a very significant item for the Society's accounts. With this in mind it has been decided that hardcopy newsletters will now be distributed at the monthly meetings of the Society. Naturally the website will continue to have a downloadable version on line for those who use a computer and can print copies for themselves.

Your committee has also been studying the benefits of registering the Society as a Charity. If this is successful it will benefit the Society in many ways, but principally financially as this will place us in a more favourable tax position. I understand this may need small changes to the constitution of the Society but we will find out in due course.

Our inaugural Patricia Clarke lecture which was open to the public was a great success. Lord May who kindly agreed to talk with us chose 'Hard Choices for Tomorrows World' which focussed upon the increasing levels of carbon dioxide being generated and its social consequences. We were honoured to have Professor Patricia Clarke in attendance to hear Lord May.

Since our last issue some of our members have been able to make visits to a couple of places of technical and scientific interest and I have included a brief note on what we were able to see. Many of our members are retired folk and as one of those I am only too aware that one loses touch with what is going on in this increasingly technical world. These visits are very refreshing bringing to us a small understanding of what is being discovered or developed in the laboratorys and industry today. Note that we have a visit planned to the Royal Society Summer Science 07 show. There are details in the text.

Bunny

SCIENCE AND TECHNOLOGY SOCIETY COMMITTEE

Chairman: Dr. Geoff Richards

Vice Chairman: Prof. Peter Stoward

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates

13th June at 7.30pm at the RAC.

Dr Eleanor Highwood of the

Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

- 29 Editorial
- 30 Committee, meetings, happenings and contents
- 31 Happy birthday and past events
- 32 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- 8 Welcome and forthcoming events

Happy Birthday to our Society



The Society celebrated its 10th Birthday with a lunch at the Royal Agricultural College. The photograph above includes some of our founder members who were able to attend.

Left to right in the picture we have: Prof. Peter Stoward FRSE, Prof Roy Postlethwaite FRCPath, Dr Eric Gibson CBE FRSC, Prof Pat Clarke FRS DSc, Dr Geoff Richards OBE, Dr Doug Gunary MBE, Dr Fred James MD. Dr Bernard Tinker OBE, Dr Theo Stening FRSC.

The College maintained its reputation for a fine lunch which was much enjoyed by the forty members and guests. It was an occasion that we only rarely get in our Society where members were able to reminisce and to socialise with others of like mind.

A few notes on past events

This years programme has been perhaps one of the most varied and intensive yet. In particular the Patricia Clarke public lecture that Lord May presented to us at the end of January was a highlight of the year. However one must not overlook the quality of other presentations we have heard, which range through medical science, nanotechnology, power generation, and mathematics. All of these are reported in our website and form an interesting archive of our activities.

Apart from lectures we have had a most interesting debate where the motion was 'This House supports Euthanasia'. This proved to be a most interesting evening where members could be involved. The result was a spirited discussion from both sides of the argument.

The committee would like to promote similar evenings and would welcome suggestions from members as to the subjects we might discuss.

Visits made by the Society so far this year.

The BMW MINI assembly line at Cowley

The plant is very new and is a good demonstration of what an automated plant can achieve. The visit really consisted of two parts first of which was the assembly of the car body from preformed panels and parts. This process is entirely managed through computer controlled robots.



Cars are only assembled when the Company has a specific order for that car. Some 1½ million options are available for the MINI, all these options are incorporated on the production line. The result is that on the line a sports version of say bright red with cd player and GPS can be followed immediately with a family salon hatch back in black with no hesitation. Even the wide range of engine variations and transmissions is coped with.

The first impression is of flailing robotic arms picking up, placing and welding pieces of all sorts and in any order (although of course it is computer controlled). It is by any standard a staggering sight particularly when there are few if any humans to intervene in the process. The flying sparks from the welding are a hazard and one has to wear protective goggles.

The second part of the assembly we were allowed to see was the final assembly of the car and its initial testing. What is significant here is the way all the options are presented to the operator in the right order to coincide with the production line itself. Obviously in this area there are less robots but they are still very essential in the assembly as a whole. Particular robotic aspects were the introduction of the engine unit to the body and also the insertion of the windscreens and windows.

A good demonstration of the success of the assembly line was the fallout of non starters at the end of the line. It was noted that very very few fell into this category.

We are limited by the hosts on these occasions as to how many folk can go. In this case we were overwhelmed by the interest and so several people could not go. The committee could run this again say in a couple of years. Please let us know of your interest.





CIRENCESTER SCIENCE AND TECHNOLOGY SOCIETY 2007 May - edition Number 7

Notes from the Editors desk

Perhaps a few of our members will have been thinking I had forgotten them after the rush of activity before Christmas. The truth is that the committee have been putting a lot of thought into how best to communicate Society news, announcements, comment, reports and items of general interest. Members will be aware that the cost of printing handling and posting hardcopy is a very significant item for the Society's accounts. With this in mind it has been decided that hardcopy newsletters will now be distributed at the monthly meetings of the Society. Naturally the website will continue to have a downloadable version on line for those who use a computer and can print copies for themselves.

Your committee has also been studying the benefits of registering the Society as a Charity. If this is successful it will benefit the Society in many ways, but principally financially as this will place us in a more favourable tax position. I understand this may need small changes to the constitution of the Society but we will find out in due course.

Our inaugural Patricia Clarke lecture which was open to the public was a great success. Lord May who kindly agreed to talk with us chose 'Hard Choices for Tomorrows World' which focussed upon the increasing levels of carbon dioxide being generated and its social consequences. We were honoured to have Professor Patricia Clarke in attendance to hear Lord May.

Since our last issue some of our members have been able to make visits to a couple of places of technical and scientific interest and I have included a brief note on what we were able to see. Many of our members are retired folk and as one of those I am only too aware that one loses touch with what is going on in this increasingly technical world. These visits are very refreshing bringing to us a small understanding of what is being discovered or developed in the laboratorys and industry today. Note that we have a visit planned to the Royal Society Summer Science 07 show. There are details in the text.

Bunny

SCIENCE AND TECHNOLOGY SOCIETY COMMITTEE

Chairman: Dr. Geoff Richards

Vice Chairman: Prof. Peter Stoward

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates

13th June at 7.30pm at the RAC.

Dr Eleanor Highwood of the

Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

- 33 Editorial
- 34 Committee, meetings, happenings and contents
- 35 Happy birthday and past events
- 36 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- 8 Welcome and forthcoming events

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates
13th June at 7.30pm at the RAC.
Dr Eleanor Highwood of the
Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

Contents of this issue

- 37 Editorial
- 38 Committee, meetings, happenings and contents
- 39 Happy birthday and past events
- 40 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- **8** Welcome and forthcoming events

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates
13th June at 7.30pm at the RAC.
Dr Eleanor Highwood of the
Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

Contents of this issue

- 41 Editorial
- 42 Committee, meetings, happenings and contents
- 43 Happy birthday and past events
- 44 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- **8** Welcome and forthcoming events

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates
13th June at 7.30pm at the RAC.
Dr Eleanor Highwood of the
Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

Contents of this issue

- 45 Editorial
- 46 Committee, meetings, happenings and contents
- 47 Happy birthday and past events
- 48 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- **8** Welcome and forthcoming events

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates

13th June at 7.30pm at the RAC. Dr Eleanor Highwood of the Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

- 49 Editorial
- 50 Committee, meetings, happenings and contents
- 51 Happy birthday and past events
- 52 Recent visits
- 6 Chairman's end of session review
- 7 The Society's finances
- 8 Welcome and forthcoming events

Treasurer: Tony Gordon

Programme Organiser: Dr. Roger Wheeler

Minute Secretary: Mrs Kathleen Wells

Membership Secretary: Mrs Joan R Cooper

Committee members: Dr Andrea Tales

Prof. Roy Postlethwaite

Newsletter Editor: Bunny Lees-Smith

Society Meeting times and dates
13th June at 7.30pm at the RAC.
Dr Eleanor Highwood of the
Department of Meteorology, University of Reading will give a talk entitled

'From Dust till Dawn: Exploring Saharan Dust Storms and their influence on Climate Change'

Other Happenings - Watch the CSTS website for information and details of next seasons programme when they are announced.

- 53 Editorial
- 54 Committee, meetings, happenings and contents
- 55 Happy birthday and past events
- **Recent visits**
- 6 Chairman's end of session review
- 7 The Society's finances
- **8** Welcome and forthcoming events